Álvaro Matias · Peter Nijkamp
Manuela Sarmento *Editors*

Quantitative Methods in Tourism Economics

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Preface

This volume is already the fourth one in a series on *Advances in Tourism Economics* streamlined by the Portuguese Association in Tourism Research and Development (APIDT). It contains a set of contributions on modern methods and techniques in tourism research. It is the offspring of a major international conference on Tourism Economics (ATE2011), held in Lisbon in April 2011, at the headquarters of Universidade Lusíada de Lisboa. The fact that on a regular basis a volume with refreshing and innovative studies on tourism behaviour and policy is published reflects the maturity of this branch of economics research.

Tourism economics is partly based on established principles from the economics discipline, but it also incorporates elements from sociology, psychology, organization theory and ecology. It has over the years turned into an appealing multidisciplinary approach to the understanding of the impacts of leisure time in a modern society, including cultural heritage, sustainable quality of life and industrial organization of the hospitality industry.

The present volume comprises novel studies – mainly of a quantitative-analytical nature – on the supply, demand and contextual aspects of modern tourism. It contains a sound mix of theory, methodology, policy and case studies on various tourism issues in different parts of the world.

The editors wish to thank Sandra d'Afonso Matias and Ellen Woudstra for their indispensable support in preparing the above-mentioned conference and taking care of the reviewing and editorial process of the present publication.

Summer 2012

Lisboa, Portugal — Álvaro Matias
Amsterdam, Netherlands — Peter Nijkamp
Lisboa, Portugal — Manuela Sarmento

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Editorial Introduction

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Álvaro Matias, Peter Nijkamp, and Manuela Sarmento

1.1 Introduction

It is fascinating to watch an anthill. Thousands of ants are extremely busy, and show an extraordinary mobility drift. Their movements may sometimes look a little bit chaotic, but a closer inspection brings to light that they all follow certain rules. Their apparent chaos hides rational behavioural patterns instigated by their sense of collective survival. It is equally fascinating to watch a modern large airport. There, thousands of people are moving around, in all directions, and the spectator gets the superficial impression of a strange chaotic system. But, here again, we know that this seemingly chaotic mobility pattern is governed by the strict behavioural rules of air travellers – mostly tourists – who are rationally seeking to reach their final destination. The difference between ants and airline passengers is perhaps that ants do not know how to relax, whereas tourists seek to relax through their trips. But in all cases, we observe mass movements that are induced by rational choice mechanisms.

In our age of globalization, tourism has become a lifestyle, almost a part of our daily lives. Worldwide, the volume of tourism is still on a rising edge, and with the growth of the emerging economies it seems plausible that both domestic and international tourism will continue to be one of the most dynamic industrial sectors.

For several decades, tourism has enjoyed strong interest from various scientific disciplines, in particular geography, economics, and management. It is noteworthy that one of the leading geographers of the last century, Walter Christaller – the world

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famous inventor of the hierarchical Central Place Theory – in his later career wrote one of the first articles on the geography of tourism (see Christaller 1964). Almost 50 years ago, he was able to pinpoint one of the prominent drivers of tourist behaviour: namely to relax in undiscovered or unknown places, but nevertheless non-central places "you ought to have seen". He identified several places with unspoilt nature and absolute tranquillity. Interestingly enough, many of these places are nowadays tourist hotspots largely affected by mass tourism.

In the twenty-first century, Christaller's 'core-periphery' model still applies, but as tourism activity turns increasingly global, another important flow emerges and consolidates in the opposite direction, often from peripheral areas into large urban centres, with the latter (e.g. New York, Paris, London, Lisbon, Madrid, Amsterdam or Rome) attracting herds of tourists regardless of seasonality trends (Mathieson and Wall 1982).

Modern tourism has in fact many faces, ranging from visits to local amenities to 'space tourism' (for the happy few). Tourism mirrors the diversity in lifestyles in a modern society; some tourists only want to relax, whereas others want to enjoy an unprecedented experience. But in all cases, we witness a new trend in tourism, viz. the emancipated tourist who is well prepared and well-informed, and who wants to have 'value for money'. Tourism has turned into an advanced high-tech sector, which has spread out all over the world.

The tourist industry nowadays is a complex and multifaceted local/global system, with many actors and places involved. From a systemic perspective, it makes sense to distinguish three force fields, viz.: the behavioural patterns on the demand side; the organizational and institutional structures on the supply side; and the macro-systemic impacts of tourism from an economic and ecological viewpoint. These three force fields also form the cornerstones of the present volume on 'Quantitative Methods in Tourism Economics', in which a rich set of refreshing and original quantitative research methods and results concerning tourism economics are included. The methods and models presented here address:

- Behavioural issues (Part I);
- Supply of tourist amenities (Part II);
- Macro and sustainability issues (Part III).

Each of these three parts is further subdivided into individual papers of a quantitative nature. We now provide a concise positioning of each contribution.

Part I, on the behavioural aspects of tourism economics, contains a selection of six quantitative analyses of the behaviour and/or attitude of tourists. This part begins with a study by Ana María Campón Cerro, Helena Maria Baptista Alves and José Manuel Hernández Mogollón on a conceptual framework for measuring loyalty in tourism. The authors argue that a successful marketing strategy must focus not only on winning new customers but also on maintaining the loyalty of hard-won existing ones. The relational approach to marketing sets customer loyalty as a strategic objective, given that many firms have come to realize the economic importance of a loyal customer base. Operationalizing the construct of loyalty in the tourism industry is fraught with difficulties. Researchers have chosen to use a wide variety of conceptualizations in their causal models of the determinants of loyalty

in tourism. The aim of this study is to examine the treatment and the operationalization of the loyalty construct in tourism, based on the results of several studies found in its literature review. The research that has been examined focuses on what produces loyalty to destination, accommodation, and other tourism products of interest, and that was published in the form of either scientific articles or Spanish and international doctoral theses. The fundamental research question is, therefore, to find out how to measure loyalty on the basis of those elements that generate value for the tourist at the destination level.

Next, Antónia Correia and Pedro Pimpão pay attention to the often unknown intentions of tourists to return to the same destination. The question why and how tourists decide to revisit the same destination is a topic that still deserves solid empirical research. The aim of their chapter is to examine return behavioural intentions of tourists, by considering their motivations and trip characteristics, and by disentangling nationalities and individual characteristics to account for the heterogeneity of tourists. The empirical research, using a mixed logit model, was conducted on the basis of a sample of British and German tourists who had visited the Algarve (Portugal) in 2009. The results of this study – apart from confirming that pull motivational factors exert more influence on destination return intentions than push motivational factors – show that the profile and intentions of German and British tourists are rather heterogeneous. The managerial implications of these findings point to the need to address specific markets.

A subsequent study undertaken by Carolina Fernandes, Manuela Sarmento and Alvaro Matias concerns youth tourism, in particular the satisfaction of what are known as 'interrailers' (mainly young backpacking tourists). Youth tourism is a segment of tourism that has recently experienced accelerated growth; it is a well-known market segment in global travel. For the young generation, *InterRailing* is a well-known form of travelling, due to its low-cost nature. The research analyses backpacking with the objective of defining and comparing the satisfaction of interrailers concerning the quality of services offered in Italy, Greece and Croatia. Four main tourism activities were analysed: namely, transportation, accommodation, catering and local tourism entertainment. Two scientific methods of observation are used: direct observation and inductive natural quantitative exploration. This study was based on a mix of enquiries among, and interviews of, interrailers travelling in a certain period. The application of descriptive and multivariate statistics allows the authors to extract interesting conclusions from their study. A main finding is the existence of substantial differences in interrailers' satisfaction regarding the transportation service and local tourist entertainment. This difference was not found for accommodation and catering, in all three destinations concerned.

The behaviour of tourists is diverse, and hence difficult to forecast. Riëtte Louw and Andrea Saayman present a forecasting study on tourism in South Africa, using a single equation causal approach. International tourist arrivals in South Africa have increased significantly over the past 15 years, and the country is ranked amongst the top-30 most popular destinations. It is therefore necessary to undertake evidence-based research on forecasting tourism demand in South Africa. This chapter

aims to expand on forecasting intercontinental tourism demand for South Africa by using a single equation causal approach. Autoregressive Distributed Lag models, supplemented with an error correction term, are estimated for tourist arrivals from Asia, Australasia, Europe, North America, South America, and the United Kingdom. In-sample (*ex post*) forecasts were performed as well, and the forecasting accuracy was evaluated.

Tourist behaviour is increasingly influenced by the rapid development of the Information and Communication Technology (ICT) sector. Célia Ramos and Paulo Rodrigues provide, therefore, a study on the importance of ICT for tourism by employing a dynamic panel study. The complementary nature of tourism products requires information to be easily accessible from different places around the globe. Electronic distribution in tourism has facilitated the sharing, communication, and booking of products, and has contributed to the increase of tourism demand, as well as to the emergence of a new type of traveller: one who seeks more experiences and sophistication in his travels. The Internet is of increasing importance as a result of the sharp growth in the number of online reservations observed over recent years. Hence, current tourism demand analysis cannot neglect electronic tourism, so that, in addition to typically-used determinants, variables that represent the impact of the technological environment on tourism activity also need to be considered. In this chapter, using dynamic panel data models, evidence is found that the Internet has encouraged the increase of tourism demand and may in fact be one of its determinants.

A final quantitative study in Part I addresses the relationship between migration and tourism, with an application to New Zealand. The author, Murat Genc, argues that tourism is an important sector in many countries as a source of foreign exchange earnings. Not surprisingly, agencies such as the UN World Tourism Organization (WTO) and the World Trade Organization have been treating tourism processes as an equivalent to actual goods exports. Understanding the factors that affect the flows of international tourism has been an important issue in empirical research in tourism. One of the main methodologies used in the empirical analysis of tourism demand is based on the well-known gravity model. Gravity models have been used extensively in empirical studies in the area of international trade. This chapter estimates a gravity model by using an unbalanced panel data set consisting of more than 190 countries with whom New Zealand has traded between the years 1981 and 2006. The estimation technique employed is a count panel data model. This chapter tests whether, ceteris paribus, tourism flows to New Zealand from countries with bigger stocks of migrants are larger. The gravity model used controls for standard determinants of trade that might be confused with migration, such as the size of the economy or the distance to New Zealand. By applying panel data techniques, unobserved permanent characteristics of countries and global trends that might stimulate both migration and trade are also controlled for.

The next part of the present volume, Part II, deals with the supply side of tourism. The first contribution in this part, written by Martin Rosenfeld and Albrecht Kauffmann, addresses the question how local public investments can be used to steer and support the tourism industry. This chapter presents the results of an

empirical study for the East German state of Saxony. Since the 1990s, tourism has been one major area of the economy in Saxony, where new local public infrastructure has been created. The question is whether this newly-built tourism infrastructure has been able to change the path of economic development in those municipalities where the investment has occurred. The question is whether it is possible to activate the tourism industry with the help of public investment at locations that are completely new to the tourism industry. The econometric estimations and a survey of businesses in the field of tourism make it clear that the new tourist infrastructure really has had a positive effect on local employment, but not everywhere and not in every case. Tourist infrastructure will only have a major positive impact on economic development if a municipality already has a "track record" of being a tourist destination and is well-equipped with the relevant complementary factors for tourist activities and the "primary features" of tourist destinations. This indicates that a local tradition in the area of tourism is an important pre-condition for the economic success of new public infrastructure. From a more general point of view, there seems to be quite some path-dependency in local economic development.

A major determinant of modern tourism is related to health motives. This issue is taken up in the present volume by Celeste Eusébio, Maria João Carneiro, Elisabeth Kastenholz and Helena Alvelos. The authors claim that the increasing awareness of the benefits that tourism brings to visitors and to destinations, and of the existence of groups whose disabilities may constrain them from participating in tourism, has contributed to a rise of social tourism programmes worldwide. For a long time, health has been one of the main issues of social concern. Additionally, the increase of life expectancy and population ageing are distinguishing features of modern societies. Taking into consideration that the elderly tend to suffer from several disabilities which may limit their ability to engage in tourism, some related to health problems, the development of social health tourism programmes for this segment is crucial and represents an important market opportunity. The development of these kinds of programmes also results in relevant economic benefits for tourism destinations. This chapter presents a methodology to quantify the total economic benefits – direct, indirect and induced – of a social tourism programme. This methodology was used to quantify the total economic benefits of a Portuguese social tourism programme focused on health tourism for the senior market in 2007. The empirical study shows that this social tourism programme has high multiplier effects, and originates considerable economic impacts for the national economy in terms of output, employment, household income, and value added. The results provide useful inputs for the development of social tourism programmes aiming at maximizing the economic benefits of these programmes.

Another motive for international tourism is the supply of cultural capital. In their contribution, Stella Kostopoulou, Nikolaos Vagionis and Dimitris Kourkouridis address the importance of cultural festivals for regional economic development. Cultural events are increasingly considered to be a cost-effective way to boost local economies of host cities and regions, and have thus become a subject of interest at the academic and public policy level. Research results on the impact of festivals and events underline the fact that important direct and indirect economic benefits are

often generated for host communities. One area of research that has not received much attention is the analysis of the perceptions of local key interest groups about the impact of cultural festivals on host communities. And, therefore, the purpose of this chapter is to present an instrument to assess the perceptions of festival organizers, local authorities, and the tourism market about the economic impact of regional cultural festivals on local communities. The aims of the research are to assess if and how festivals act as regional development stimulants that encourage local economic revitalization, and to investigate whether festivals are incorporated into regional economic development policies. To this end, a Delphi method was implemented by means of a research survey with representatives of the key interest groups. The study looks at film festivals that take place on a regular basis in regional towns in Greece, and makes use of primary data obtained by a questionnaire survey addressed to festival organizers, local authorities, and hotel managers about core economic and tourism impacts of film festivals and their significance for host communities.

Next, a study is presented on rural tourist accommodation. The authors, Rafael Suárez-Vega, Laura Casimiro-Reina, Eduardo Acosta-González, and Juan Hernández-Guerra, take their starting point in the fact that the traditional quantitative analysis of spatially-varying relationships assumes that the interdependence among variables measured at different locations is constant over space. This assumption does not fit the data when the analysed variable presents spatial dependence. To tackle this problem, Geographical Weighted Regression (GWR) is considered. The methodology proposed in this chapter combines a genetic algorithm to automatically select the factors that best explain the dependent variable and GWR to determine the local estimations of the coefficient of regressors. A hedonic price model to analyse the rural tourism market on the island of La Palma (Canary Islands, Spain) was estimated in the case study. The results show that significant regressors are not homogeneously distributed throughout the island. Instead of a constant value, maps of values of the coefficients were obtained. These maps may be helpful to householders in order to implement local actions based on the rental price of every house, and estimate the economic returns of new rural houses sited in specific areas of the island.

In the final chapter of Part B, Pilar Talón Ballestero and Lydia González Serrano address the important issue of yield management in tourism. The main aim of their study is to assess the position of Yield Revenue Management (YM) and its current state of affairs in the hotel sector in Madrid. To evaluate the status of YM implications, the establishments chosen were three-, four-, and five-star hotels situated in Madrid which were open in 2008. The results of this work allowed the authors to: (a) propose an application model based on the expert opinion accumulated from Delphi, which permitted them to appraise the degree of development of YM in Madrid hotels; (b) analyse the running of YM in Madrid hotels through surveys given to independent and international hotel chains in Madrid; (c) identify the deficiencies, difficulties, and errors encountered; (d) suggest ideas to improve the general level of service.

The last part of this publication, Part III, is related to macro- and sustainability issues. Its first chapter, written by Marcelino Sánchez-Rivero, Juan Ignacio Pulido Fernández and Pablo Cárdenas-García, addresses an important dilemma, viz. tourism growth versus economic development. The authors state that the debate about the role of tourism as an economic development tool is not new, although in recent years, there have been interesting new contributions. Many institutions have highlighted the importance of tourism as an engine of social transformation and a tool for promoting economic development and growth potential. The aim of this study is twofold: on the one hand, to determine the existence of a relationship between the growth of tourism in a country and its level of economic development, and, if so, with which sign; and on the other hand, to identify the factors that favour or hinder this relationship. The empirical analysis was performed at a country scale (117 countries) using canonical correspondence analysis. For the period 1999–2008, 14 variables from different sources (the World Travel & Tourism Council, Human Development Report-UNDP Management, and the Economic Development Group of the World Bank) have been used. The results show that the correlation between tourism growth and economic development only occurred in those countries with a lower level of economic development in the period analysed. Therefore, the tourism growth of a country does not automatically result in economic development, unless specific conditions are favourable for encouraging this process.

It is evident that tourism is determined by gender, wages, and other factors. Raquel Vale Mendes and Laurentina Cruz Vareiro present, therefore, an applied study on the social elements in the tourism sector in Northern Portugal. A significant proportion of jobs in the tourism industry are occupied by women, which is not surprising, given that this industry is characterized by a relatively higher percentage of female employees. Despite the evidence of female progress with regard to their role in the Portuguese labour market, women continue to earn less than their male counterparts. This is clearly the case in the tourism industry, where the statistics reveal a persistent gender wage gap. The objective of this chapter is to provide empirical evidence on the determinants of gender wage inequality in the tourism industry in northern Portugal. Relying on firm-level wage equations and production functions, gender wage and productivity differentials are estimated and then compared. The comparison of these differentials makes it possible to infer whether observed wage disparities are attributable to relatively lower female productivity, or instead to gender wage discrimination. This approach is applied to tourism industry data gathered in the matched employer-employee data set *Quadros de Pessoal* (Employee Records). The main findings indicate that female employees in the tourism industry in northern Portugal are less productive than their male colleagues, and that gender differences in wages are fully explained by gender differences in productivity.

An increasingly important element in tourism, with far-reaching policy and institutional implications, is the need for sustainable development. This challenge is discussed by João Romão, João Guerreiro and Paulo Rodrigues, who combine theory and empirics to come up with interesting conclusions. In the long run, the competitiveness of tourism destinations is linked to their sustainability. In order to

preserve the characteristics that guarantee attractiveness, local natural and cultural aspects must be included in the tourism supply, in order to create a differentiated product. Their chapter systematizes the main theoretical contributions on the competitiveness and sustainability of tourism and analyses how the regions of South-western Europe are incorporating natural endowments and cultural resources into their tourism offer in order to reinforce their attractiveness. This analysis uses a panel-data model to estimate a regional demand function that incorporates new and traditional factors of tourism competitiveness (local, national, and cultural resources). The most important result arising from this study is that the factors of competitiveness related to the sustainability of tourism destinations which were taken into consideration, all have a positive impact on regions' competitiveness.

It goes without saying that the worldwide financial crisis and economic downturn will have an impact on the tourism industry. In this study, Chin Yi Fang, offers a perspective on this issue from China. In fact, the financial crisis that originated in the US in 2007 and subsequently progressed into a world financial crisis and global economic recession – the Great Recession (see Reinhart and Rogoff 2009) – caused a negative wealth effect which influenced tourism flows to Taiwan, among other destinations worldwide. In addition, however, restrictions on Chinese tourists to Taiwan were also relaxed in July of 2008. This study aims to examine whether the financial crisis or the deregulation of Chinese tourists affected the performance of hotels in Taiwan. A metafrontier approach to data envelopment analysis (MDEA) was used in this paper to estimate the efficiency scores and metatechnology ratios (MTRs) of many international tourism hotels (ITHs) and standard tourism hotels (STHs) in Taiwan during the period ranging from 2005 to 2010. The results indicate that the MTR of ITHs with more service facilities was worse than that of STHs with specialized room revenue during the economic downturn. However, after the Chinese tourists policy deregulation, the MTR of ITH had increasingly outperformed that of STH. A truncated regression with a bootstrap procedure then examines the impact of macroeconomic and microeconomic variables on hotel efficiency and output slacks. In addition to the insignificant effects of the financial crisis on the efficiency of Taiwanese hotels, China/Taiwan tourism policy deregulation has apparently had a favourable influence on hotel efficiency, but mainly benefitted the occupancy rate, and had an unfavourable impact on the room revenue.

The next study addresses environmental management practices in Spain. Using the *Partial Least Squares* (PLS) technique, the authors, Alfonso Vargas-Sánchez and Francisco José Riquel-Ligero, present an analytical study of the environmental management practices employed by the golf courses of Andalusia (Spain). As the basis for their study, they use the principles of institutional theory. They make use of this theoretical framework to delimit the institutional setting of these organizations, and, at the same time, to define the pressures exerted by this institutional setting towards the adoption of responsible environmental policies. In recent years the growth of golf-related tourism in Andalusia has been accompanied by the construction of numerous golf courses. As a consequence of this phenomenon, there has been a broad-based social debate on the impact of facilities of this type on the natural environment.

Finally, a marketing and distributional perspective on the tourist sector is offered by Vicky Katsoni, Maria Giaoutzi and Peter Nijkamp. Distribution channels are the paths by which tourism organizations can execute the communication and sales of their products and services. To varying degrees, all tourism product suppliers depend on these channels for the distribution of their products. Tourism destination organizations and individual businesses often find themselves making decisions concerning the development and distribution of their products, without having a full understanding of how the channel operators perceive and react to these strategic actions. If the proper distribution channels are developed, they can go a long way towards determining the patterns of destination use, penetrating target markets, and creating an economic impact, as it is important to have an awareness of, and access to, effective distribution intermediaries. The specific objectives of this study were to compare the importance that international and domestic tourists attribute to various forms of information, both at tourism destinations and in the pre-trip context, and to carry out an analysis of their information-sourcing behaviour, based on internal and external information sources, including the use of the Internet. Research in the province of Arcadia (Greece), in the form of a longitudinal study, offers an appreciation of not only what channels of distribution might best match the needs of a particular tourism destination, but also what product development and marketing actions would help the channel operators to draw visitors to it.

It is evident that the dynamics in the tourist industry and its worldwide effects will continue to attract the attention of both the research and the policy sector in the years to come. Rather than speculating on non-observed facts, there is a clear need for evidence-based research in order to map out the complex dynamics of the tourist industry.

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Part I

Behavioural Issues

Loyalty Measurement in Tourism: A Theoretical Reflection

2

Ana María Campón, Helena Alves, and José Manuel Hernández

2.1 Introduction

A successful marketing strategy must focus not only on winning new customers but also on developing the loyalty of hard-won existing ones (Palmer 1994). The relational approach to marketing sets customer loyalty as a strategic objective given that many firms have come to realize the economic importance of a loyal customer base (Oliver 1999). Reichheld and Sasser (1990) are frequently cited to highlight this importance. In quantitive terms it estimates that a firm might increase its profits by between 25 % and 85 % by retaining 5 % of its customers. A key tool for determining the aforementioned impact is the concept of Customer Lifetime Value (CLV), an idea gaining importance as a measure of business success. Nevertheless, there are authors who counsel the maintaining of a certain degree of caution when it comes to measuring the value of a customer. Saren and Tzokas (1998) defend the idea that calculations cannot be based on repeat purchases given that in some sectors these are uncommon. With regard to the tourism sector, Bigné et al. (2005) hold that it is difficult to measure loyalty on the basis of repeat purchases because consumption is

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infrequent and customers may prefer to visit new places. In line with this assertion two issues present themselves: the need to study those factors that promote loyalty towards destinations or tourism businesses, and the importance of operationalizing the construct of loyalty as the final and fundamental element of previous models of study and so to try to reflect the dimensions it really possesses in a sector with such special characteristics as tourism.

Operationalizing the construct of loyalty in the tourism industry may turn out to be a complex task. Those who have written on this matter have chosen to use a wide variety of conceptualizations in their causal models of the determinants of loyalty in tourism. For this reason and with the aim of offering an overview of research on this construct in the literature, the objective of this present study is to examine the treatment and the operationalization of the loyalty construct in tourism, based on the results of several studies found in the literature review carried out. The research that has been examined focuses on what produces loyalty to destination, accommodation and other tourism products of interest and that was published in the form of either scientific articles or doctoral theses. The question at stake is, therefore, to find out how to measure loyalty on the basis of those elements that generate value for the tourist at the destination level.

The interest of this present study, at a general level, lies in the need to provide a response to relationship marketing and customer loyalty in the tourist industry as questions currently of interest (Bigné 1996, 2004; Oh et al. 2004; Bigné et al. 2008). More specifically, the importance of a study such as this has to do with the need to produce an operationalization of the construct of loyalty in tourism, that is as finely grained and real as possible. To this, is it important to show what factors produce it and how it correlates with other constructs. Such information is key for implementing relationship strategies that seek to develop a base of loyal customers that improve the profitability of destinations and tourism organizations.

This study is divided into five parts. The first of these is introductory in nature and presents the question under examination, the study's objective and interest. The theoretical framework in which the study was carried out is then presented with reference being made to relationship marketing and customer loyalty as questions to be examined, as well as, how they are dealt with in the literature. After that the methodology used is set out and the main results are presented. Finally some conclusions and final reflections are offered.

2.2 Customer Loyalty in the Tourism Sector

2.2.1 The Impact of Loyalty as a Strategic Objective of Relationship Marketing

Since the 1990s there has been a large and growing interest in relationship marketing, within the broader field of marketing (Christopher et al. 1994). This has arisen as a response to a new competitive era characterized by growing maturity, fragmentation, complexity and competitive intensity in markets. At the

same time customers have been seeking more personalized treatment and become more sophisticated, which has forced organizations to focus their efforts on the construction and maintenance of relationships with the various parties who participate in the process of interchange of businesses (customers, suppliers, competitors, divisions of the company and employees, nonprofit organizations, government, etc.) (Hunt and Morgan 1994; Grönroos 1999; Payne 2000).

There is no agreed definition of what constitutes relationship marketing although some conceptualizations of it have common denominators (Grönroos 1996, 1999). Though many ideas about had been raised previously (Payne 2000) it was not until 1983 that it was introduced by Leonard Berry who defined it as "attracting, maintaining and – in multi-service organizations – enhancing customer relationships" (Berry 2000: 150). However, he later broadened his focus to the rest of the stakeholders involved in the interaction between customers and businesses (Martín 2005a).

Many businesses notice that the creation of long-term relationships with customers and other businesses is of competitive advantage to them (Ganesan 1994), as it contributes to the effective and efficient demand of goods and services of value for some sectors of the market (Hunt et al. 2006). However, the strategy of relationship marketing should only be put into practice when this competitive advantage is sustainable over time (Morgan and Hunt 1999). The process of creating and maintaining relationships with customers involves the carrying out of investment and the incurring of opportunity costs (Bendapudi and Berry 1997). In order to construct long-term relationships businesses must take account of the following: the activities carried out to create commitment and trust between a supplier and its customers produce costs, once the relationship is established the investment in it does not cease, when a relationship exists various departments of the organization are involved in it, and it is expected that the combined costs of the three previous points will be less than those involved in obtaining the same income through a series of discrete transactions (Blois 1996a, b).

Reichheld and Sasser (1990) is often cited to justify the benefits of implementing a relationship marketing strategy and it claims the following benefits from retaining customers: as purchases increase, operational costs fall; businesses with loyal customers can charge more for their goods and services; and there is free advertising in the form of word of mouth recommendations provided by loyal customers. In quantitive terms it estimates that a firm might increase its profits by between 25 % and 85 % by retaining 5 % of its customers.

CLV is an idea which is gaining ground as a tool to manage and measure the success of businesses as it allows quantifying the value of loyal customers. Gupta et al. (2006: 141) define it as "the present value of all future profits obtained from a customer over his or her life of relationship with a firm". Reichheld and Sasser (1990) hold that if firms knew the real costs of losing customers they would accurately assess the investment necessary to retain them. Maicas et al. (2006) maintain that losing a customer is a serious blow to a company as it will need to invest resources in advertising, promotions, and discounts, among others, to attract new customers to substitute for the ones they have lost. Furthermore, loss of

customers may have other negative consequences such as negative word of mouth comments and damage to the prestige and reputation of the company.

Palmer and Mayer (1996) argue that the retention of a customer does not necessarily involve loyalty. Customers may remaining due to not having an alternative provider or because they may be tied down by frequent purchase program, which may mean the end of their loyalty when the program ends. Reichheld (1994) holds that customers may remain loyal to a company not as result of promotions and loyalty programs but due to the value they receive.

Oliver (1999: 34) defines loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". Saren and Tzokas (1998) point out that though research has often focused on the identification of repeat purchases as proof of the existence of a strong relationship there are also authors who have defended the necessity of conceptualizing loyalty in socio-psychological terms more than in behavioral ones. This is due to the fact that in some industries repeat purchases are uncommon so customer value has to be measured in different ways; for example, in terms of quantity purchased, propensity to give positive word of mouth recommendations or willingness to participate in dialogue with the firm. Taking loyalty to be a relationship between attitude and behavior allows for it to be studied as a causal agent that leads to the identification of antecedents and consequences of the relationship. Traditional models have classified these antecedents into three categories: cognitive, associated with informal beliefs about the brand; affective, related to feelings toward the brand; and conative, behavioral disposition related to brands (Dick and Basu 1994). Ndubisi (2007) notes that it is important to empirically study the impact of the determinants of relationship marketing on customer loyalty. This knowledge will help produce better management of company-customer relationships and achieve a higher level of customer loyalty.

2.2.2 The Study of Loyalty in the Tourism Industry

Loyalty in the tourism sector has been poorly studied, so there are many outstanding questions about how to keep these particular customers loyal in the long-term (Zamora et al. 2005). Tourism has seen the introduction of relationship marketing techniques and indeed has been in the vanguard of the industries that have adopted this focus. Nevertheless, the concept of destination loyalty has received little attention in the literature (Fyall et al. 2003; Yoon and Uysal 2005) and neither have companies that offer accommodation (Aksu 2006).

Today destinations face the toughest competition in decades and it may become tougher still in years to come so marketing managers need to understand why tourists are faithful to destinations and what determines their loyalty (Chen and Gursoy 2001). One might usefully ask whether a particular destination can generate loyalty in people who visit it. In this regard Alegre and Juaneda (2006: 686) hold

that "some tourism motivations would inhibit destination loyalty", such as, for example, the desire to break with the monotony of daily life, engage with new people, places and cultures or look for new experiences. However, risk-averse people may feel the need to revisit a familiar destination. Barroso et al. (2007) found four groups of tourists, on the basis of the need for change which tourists have when it comes to taking a trip. These groups show significant differences depending on the intention of the tourists to return or to recommend the destination.

Riley et al. (2001) note that the literature on loyalty demonstrates a problem in its conceptualization, to be resolved by empirical means or operational definitions, depending on the purpose of the study. From the classical viewpoint, loyalty is a difficult to define abstraction because of the different roles it can play. This depends on the antecedents of attitudes and values, the repetition behavior and the specific characteristics of the object of loyalty. As a concept, it involves the power to attract the object and the propensity to commit the individual. The empirical question to be answered is what pattern of behavior in tourism consumption can be interpreted as an indicator of loyalty.

Yoon and Uysal (2005) note that destinations can be considered as products and tourists can visit them again or recommend them to other potential tourists such as friends or family. Chen and Gursoy (2001) operationally defined destination loyalty as the level of tourists' perception of a destination as a good place, one that they would recommend to others, noting that studies which only consider repeat visits as an indicator of loyalty to the destination are deficient. This is because those who do not return to a particular destination may simply find different travel experiences in new places, while maintaining loyalty to the previously visited destination. Also, these authors argue for the intention to recommend a destination as an indicator of loyalty. An airline ticket has the potential to be sold routinely, but with regard to a trip to a particular destination it may be unlikely that a purchase would actually occur, so that willingness to recommend the product could be an appropriate indicator for measure of loyalty to the destination concerned. Therefore they point out that tourism researchers should use appropriate variables to evaluate the loyalty of the tourist to a specific tourism product.

2.3 Methodology

For the purposes of the present study a literature review was carried out, this is a methodology which is defined as "identify, obtain and consult the literature and other materials that are useful for research purposes, where you have to extract and gather relevant and necessary information with respect to our research problem" (Hernández et al. 2007: 23–24). The recommendations made with regard to it by Hernández et al. (2007) have been taken into account. As a technique, it was used the content analysis, defined as "a technique for collecting, sorting and analyzing the information contained in communications expressed orally or in writing by an objective, systematic and quantitative process, with a descriptive and inferential aim with respect to the context where they arise" (Bigné 1999: 259). By means of

Table 2.1 Research review (74 documents)

Destinations (42 documents)	Murphy et al. (2000), Bigné et al. (2001, 2005), Chen and Gursoy (2001), Kozak (2001), Lee (2001), Petrick et al. (2001), Tian-Cole et al. (2002), Baloglu et al. (2003), Tian-Cole and Crompton (2003), Lee et al. (2004, 2007), Chi (2005), Martín (2005b), San Martín (2005), Yoon and Uysal (2005), Alegre and Cladera (2006, 2009), Gallarza and Gil (2006), Hernández et al. (2006), Huang and Chiu (2006), Um et al. (2006), Barroso et al. (2007), Chen and Tsai (2007), Cladera (2007), Hui et al. (2007), Jang and Feng (2007), Kao (2007), Li et al. (2007), Yüksel and Yüksel (2007), Chi and Qu (2008), Kim (2008), Prayag (2008), Rodríguez del Bosque and San Martín (2008), Sanz (2008), Lee (2009), Martínez et al. (2009), Mechinda et al. (2009, 2010), Yen et al. (2009), Vale et al. (2010), Yüksel et al. (2010)
Accommodations (17 documents)	Gould-Williams (1999), Kandampully and Suhartanto (2000, 2002), Back (2001), Bowen and Chen (2001), Choi and Chu (2001), Kim and Cha (2002), Tsaur et al. (2002), Skogland and Siguaw (2004), Lin (2005), Voces (2005), Loureiro and Miranda (2006, 2008), Chitty et al. (2007), Shammout (2007), Sophonsiri (2008), Hu et al. (2009)
Others (15 documents)	Buracom (2002), Petrick and Backman (2002), Bigné and Andreu (2004, 2005), Petrick (2004), Alén and Fraiz (2006), Alexandris et al. (2006), Li (2006), Alén et al. (2007), Matzler et al. (2007), Faullant et al. (2008), Li and Petrick (2008a, b), Anuwichanont and Mechinda (2009), Kan et al. (2009)

content analysis a large quantity of textual material is reduced to a few categories and the frequency that each category has for the variable proposed (Callejo 2007). In this study the unit of analysis is published research articles from scientific journals and doctoral thesis that were accessed from the databases provided by electronic libraries of the University of Extremadura (Spain) and Beira Interior (Portugal). The selected documents deal with the utilization of study models to determine the factors that generate loyalty towards destinations, accommodation and other tourism products of interest. On this basis the final construct, loyalty, was studied, it sometimes being studied through behavioral intentions. Table 2.1 lists all the studies collected and analyzed.

2.4 The Operationalization of the Loyalty Construct: Results

The analysis of the 74 studies examined reveals that while many authors directly present loyalty as the result of some models proposed for the determination of loyalty to destinations, accommodation and other tourism products of interest, others include loyalty in behavioral intentions. Loyalty was analyzed as a separately construct in 47 studies of the 74 looked at, that is to say in 64 %, while it appears as included in other constructs in 27, that is to say, in 36 % (see Fig. 2.1).

Table 2.2 lists all those articles which present loyalty as a separated construct and as result of the models analyzed. The following studies treat the loyalty construct as one-dimensional: Gould-Williams (1999), Kandampully and

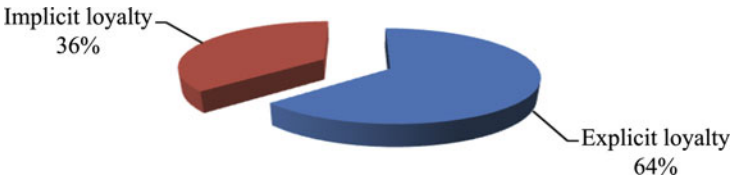

Fig. 2.1 Explicit loyalty and implicit in behavioral intentions

Suhartanto (2000, 2002), Bowen and Chen (2001), Chen and Gursoy (2001), Buracom (2002), Tsaur et al. (2002), Bigné and Andreu (2004, 2005), Skogland and Siguaw (2004), Chi (2005), Lin (2005), San Martín (2005), Voces (2005), Yoon and Uysal (2005), Alexandris et al. (2006), Gallarza and Gil (2006), Huang and Chiu (2006), Loureiro and Miranda (2006, 2008), Chitty et al. (2007), Kao (2007), Matzler et al. (2007), Shammout (2007), Yüksel and Yüksel (2007), Chi and Qu (2008), Faullant et al. (2008), Kim (2008), Prayag (2008), Rodríguez del Bosque and San Martín (2008), Anuwichanont and Mechinda (2009), Kan et al. (2009), Martínez et al. (2009), Yen et al. (2009), Mechinda et al. (2010), Vale et al. (2010). While these treat it as two-dimensional, distinguishing between attitudinal and behavioral loyalty: Lee (2001), Martín (2005b), Hernández et al. (2006), Li et al. (2007), Li and Petrick (2008a) and Mechinda et al. (2009). Yüksel et al. (2010) treat loyalty as a three-dimensional construct distinguishing between the cognitive, affective and conative, while Lee et al. (2007) distinguish between the attitudinal, conative and behavioral loyalty. Some of the researchers who regard loyalty as a one-dimensional construct focus on a specific strand of it, attitudinal in the case of Mechinda et al. (2010) and behavioral in the cases of Kan et al. (2009) and Yen et al. (2009). Li and Petrick (2008b) studied the multi-dimensionality of loyalty through five separate constructs: cognitive, affective, conative, attitudinal and behavioral loyalty, applied to cruise liner tourism. In their study they postulate that conative, affective and cognitive loyalty together form a higher order factor, attitudinal loyalty. However, this claim is not backed up by the data as a competitive model based on the idea that attitudinal loyalty is one-dimensional offers a better fit than other combinations. Other authors who have looked at the multidimensionality of the construct are Back (2001) and Li (2006).

Loyalty as a one-dimensional construct appeared in 36 studies, that is to say 77 % of the total, followed by loyalty as a two-dimensional construct (6 %, 13 %), loyalty as a multi-dimensional construct (3 %, 6 %) and loyalty as a three-dimensional construct (2 %, 4 %) (see Fig. 2.2).

With regard to the indicators utilized, the authors preferred a multi-item to a single-item (Chen and Gursoy 2001) or a two-item scale embodied in the willingness to revisit and to recommend (Kandampully and Suhartanto 2000, 2002; Bowen and Chen 2001; Bigné and Andreu 2005; Chi 2005; Matzler et al. 2007; Chi and Qu 2008; Faullant et al. 2008; Prayag 2008). These two indicators are used in other multiple constructs of loyalty together with other items (Gould-Williams 1999; Buracom 2002; Tsaur et al. 2002; Bigné and Andreu 2004; Skogland and Siguaw 2004; Lin 2005;

Table 2.2 Loyalty construct (47 documents)

Author/s (year)	Subsector	Loyalty construct	Indicator/s
Gould-Williams (1999)	Accommodations	Guest loyalty	I shall certainly recommend this hotel to anyone asking advice
			I shall say positive things about this hotel to other people
			This hotel will be my first choice if staying in the area again
Kandampully and Suhartanto (2000, 2002)	Accommodations	Customer loyalty	Intention to repurchase
			Intention to recommend
Bowen and Chen (2001)	Accommodations	Loyalty	Intent to return to the hotel
			Willingness to recommend the hotel
Chen and Gursoy (2001)	Destinations	Loyalty destination	Willingness to recommend a destination
Back (2001)	Accommodations	Attitudinal cognitive loyalty	The hotel . . . provides me superior service quality as compare to any other hotel brands
			No other hotel brand performs better services than the . . .
			I believe . . . hotel provides more benefits than other hotel in this category
		Attitudinal affective loyalty	I love staying at the . . . hotel
			I feel better when I stay at . . . hotel
			I like . . . more so than other hotel brands
		Attitudinal conative loyalty	Even if another hotel brand is offering lower room rate, I still stay at the . . . hotel
			I intend to continue staying at . . . hotel
			I consider the . . . hotel to be my first lodging choice
		Behavioral loyalty	Could you please estimate how many times you have stay with . . . hotel during the last year?
			Could you please estimate how many times you have stayed with other hotel brands during the last year?
			Could you please estimate the proportion of staying at the . . . hotel as compared to the overall hotel staying in the last year?

Lee (2001)	Destinations	Attitudinal loyalty	How many times have you visited the U.S. in the past 3 years?
			How many other times have you visited the U.S.?
			How many holiday trips have you taken for four nights or more somewhere outside of Japan and South Korea?
			How many times have you visited the U.S. in the past 3 years?
			How likely is it that you will visit the U.S. in the next 5 years?
		Behavioral loyalty	Which one of these countries would you most like to visit in the next 2 years?
			How interested are you in visiting the U.S. in the next 12 months
Li (2006)	Others	Attitudinal cognitive loyalty	The . . . provides me superior service quality as compare to any other cruise lines
			No other cruise line performs better services than the . . .
			I believe . . . cruise line provides more benefits than other hotel in this category
		Attitudinal affective loyalty	I love cruising with . . .
			I feel better when I cruise with . . .
			I like . . . more so than other cruise lines
		Attitudinal conative loyalty	Even if another cruise line is offering lower rate, I still cruising with . . .
			I intend to continue cruising with . . .
			I consider . . . my first cruising choice
		Behavioral loyalty	–
Buracom (2002)	Others	Loyalty	Continue to do business with the service provider
			Recommend friends and relatives to do business with the service provider
			Consider the service provider the first choice to buy services
			Pay higher price for the benefits received from the service provider
			Switch to a competitor if experiencing a problem with the service of this provider
Tsaur et al. (2002)	Accommodations	Guest loyalty	Recommend the hotel to others
			Revisit the hotel for the next stay
			Provide positive referral to others

(continued)

Table 2.2 (continued)

Author/s (year)	Subsector	Loyalty construct	Indicator/s
Bigné and Andreu (2004)	Others	Loyalty	Say positive things about this museum/park
			Encourage to visit
			If I had to choose again, I would choose it
			Back to the museum/park in the coming years
Skogland and Siguaw (2004), Lin (2005)	Accommodations	Loyalty	I consider myself to be a loyal guest of the hotel
			If the hotel were to raise the price of my stay, I would still continue to be a guest of the hotel
			If a competing hotel were to offer a better rate or discount their services I would switch
			In the near future, I intend to use this hotel more often
			A long as I travel to this area, I do not foresee myself switching to a different hotel
			I would highly recommend the hotel to my friends and family
			I am likely to make negative comments about the hotel to my friends and family
Bigné and Andreu (2005)	Others	Loyalty	Recommend this room/museum
			Revisit this room/museum soon
Chi (2005), Chi and Qu (2008), Prayag (2008)	Destinations	Destination loyalty	Intention to revisit
			Willingness to recommend
Martín (2005b)	Destinations	Attitudinal loyalty	Willingness to tell positive aspects of the destination
			Willingness to recommend the destination
			Willingness to encourage other persons, friends or relatives, to visit . . .
			Intention to revisit . . . in the future
			Consider . . . as first choice among alternatives
			Willingness to revisit the destination but the prices are higher than other years
			Willingness to revisit the destination but the prices are higher than those offered in other locations
		Behavioral loyalty	Number of times you have visited . . .
			Frequency of visit . . . with respect to other vacation destinations
			Frequency of recommend the visit to others

San Martín (2005)	Destinations	Loyalty	Try to return . . . in the coming years
			After my current experience, I think I will visit . . . again in the future
			I will encourage my family and friends to visit . . .
			I recommend . . . if someone asked me for advice
Voces (2005)	Accommodations	Loyalty	–
Yoon and Uysal (2005)	Destinations	Destination loyalty	In the next 2 years, how likely is it that you will take another vacation to Northern Cyprus?
			Please describe your overall feelings about your visit?
			Will you suggest . . . to your friends/relatives as a vacation destination to visit
Alexandris et al. (2006)	Others	Loyalty	How much determined you are to continue skiing in the . . . skiing resort
			How much committed you are to continue skiing in the . . . skiing resort
			How much difficult would be for you to stop skiing in the . . . skiing resort
Gallarza and Gil (2006)	Destinations	Loyalty	Likelihood to return to same destination in next 5 years
			Likelihood to return to same area in next 5 years
			Likelihood to recommend the destination to friends and relatives
			Likelihood to recommend the agency to friends and relatives
			Same situation, same choice of agency
			Same situation, same choice of destination
Hernández et al. (2006)	Destinations	Attitudinal loyalty	I will return to . . . my next holidays
			I will recommend . . . to my family and friends
			I intend to holiday in . . . within the next 3 years
		Behavioral loyalty	How many times have you visited the tourism destination?
Huang and Chiu (2006)	Destinations	Loyalty destination	–

(continued)

Table 2.2 (continued)

Author/s (year)	Subsector	Loyalty construct	Indicator/s
Loureiro and Miranda (2006, 2008)	Accommodations	Loyalty	I will speak well about this lodging service to other people
			I will recommend the lodging if someone ask for my advise
			I will encourage my friends and relatives to visit this rural lodging
			In the next vacation I intend to return to this lodging
			I would come continually even if the lodging price will increase
			I prefer to pay a bigger price here than in other rural lodgings for the advantages that I receive in this rural lodging
Chitty et al. (2007)	Accommodations	Loyalty	If I were faced with the same choice again I would stay at this hostel
			If I were faced with the same choice again I would stay at this type of room
			I would stay in hostels operated under the same chain elsewhere
			I will recommend this hostel to my friends
Kao (2007)	Destinations	Loyalty	–
Lee et al. (2007)	Destinations	Attitudinal loyalty	This place means a lot to me
			I enjoy recreating at this place more than any other place
			I am very attached to this place
			It would be difficult to change my beliefs about this place
			Even if close friends recommended another place, I would not change my preference for this place.
			I would not easily change my selection of this place as a recreation site
		Conative loyalty	I would recommend this place to people who seek my advice
			I would tell other people positive things about this place
			I would recommend this place to my friends
			I would visit this place again
		Behavioral loyalty	In a typical year, how many days do you spend recreating at this place?
Li et al. (2007)	Destinations	Attitudinal loyalty	–
		Behavioral loyalty	–

Matzler et al. (2007)	Others	Loyalty	Plans to revisit
			Recommendation to others
Shammout (2007)	Accommodations	Loyalty	I really care about the future of this hotel chain
			I am willing to put in extra effort to stay with this hotel chain
			I am proud to tell others that I stay at this hotel chain
			For me this hotel chain is the best alternative
			I expect to stay with this hotel chain regularity in the future
			I feel very Little loyalty to this hotel chain
			As a guest of this hotel chain, I feel that I am prepared to pay more for their high quality products/services
			I would recommend this hotel chain to others
			I stay at this hotel chain on a regular basis
			This hotel chain stimulates me to stay
			I have used this hotel chain for a number of years
			I feel very strong loyalty to this hotel chain
Yüksel and Yüksel (2007)	Destinations	Expressed loyalty intentions	Choose again
			Say positive things
			Recommend to those seeking my advice
			Encourage others
			Do more shopping
Faullant et al. (2008)	Others	Loyalty	Repurchase intention
			Word of mouth
Kim (2008)	Destinations	Destination loyalty	Likeliness (attitude)
			Revisit (probability)
			Recommendation (word of mouth)

(continued)

Table 2.2 (continued)

Author/s (year)	Subsector	Loyalty construct	Indicator/s
Li and Petrick (2008a)	Others	Attitudinal loyalty	I believe . . . provides more benefits than other cruise lines in its category
			No other cruise line performs better services than . . .
			I feel better when I cruise with . . .
			I like . . . more than other cruise lines
			I consider . . . my first cruising choice
		Behavioral loyalty	During the last 3 years, how many times did you cruise with . . .?
			During the last 3 years, how many times did you cruise with any cruise line (including . . .)?
Li and Petrick (2008b)	Others	Cognitive loyalty	. . . provides me superior service quality as compared to other cruise lines
			I believe . . . provides more benefits than other cruise lines in its category
			No other cruise line performs better services than . . .
		Affective loyalty	I love cruising with . . .
			I feel better when I cruise with . . .
			I like . . . more than other cruise lines
		Conative loyalty	I intend to continue cruising with . . .
			I consider . . . my first cruising choice
			Even if another cruise line is offering a lower rate, I still cruise with . . .
		Attitudinal loyalty	–
		Behavioral loyalty	Proportion of brand purchase (the number of cruises the respondent had taken with the focal cruise line in the past 3 years, divided by the total number of cruises s/he had taken during that time)
Rodríguez del Bosque and San Martín (2008)	Destinations	Loyalty	I will try to return . . .
			I think I will revisit . . .
			I will encourage relatives and friends . . .
			I would recommend . . .
Anuwichanont and Mechinda (2009)	Others	Loyalty	It could not see the indicators because the authors cite an article that is not found in the references

Kan et al. (2009), Yen et al. (2009)	Others	Behavioral loyalty	What percentage of your total expenditures for... do you spend in this ...?
			Of the 10 times you select a ... to buy ... at, how many times do you select this ...?
			How often do you buy ... in ... compared to other ... where you buy ...?
Martínez et al. (2009)	Destinations	Loyalty	Willingness to revisit the city
Mechinda et al. (2009)	Others	Behavioral loyalty	Number of repeated visit
		Attitudinal loyalty	I consider myself a loyal visitor of this place
			My next trip will most likely be this place
			I would visit this place again
			I would recommend this place to people who seek my advice
			I would tell other positive things about this place
Mechinda et al. (2010)	Destinations	Attitudinal loyalty	I will recommend others to use medical tourism from this hospital/clinic in Pattaya
			I will tell other positive things about medical tourism provided by this hospital/clinic in Pattaya
			I consider myself to be a loyal customer of this hospital/clinic
			If I had to do it over again, I would choose this hospital/clinic
			I try to deal with this hospital/clinic again because it is the best choice for me
Vale et al. (2010)	Destinations	Loyalty	–
Yüksel et al. (2010)	Destinations	Cognitive loyalty	Didim provides me superior service quality as compared to other places I have been to
			No other destination performs better than Didim
			Overall quality of Didim is the best as a tourism destination
			I believe Didim provides more benefits than other places
		Affective loyalty	I love staying in Didim
			I feel better when I stay in Didim
			I like Didim more than other destinations
		Conative loyalty	If I am given a chance, I intend to continue making my holiday in Didim
			I consider Didim to be my first holiday choice

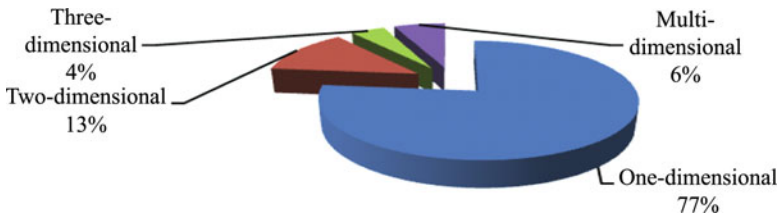

Fig. 2.2 Dimensionality of explicit loyalty

Martín 2005b; San Martín 2005; Yoon and Uysal 2005; Gallarza and Gil 2006; Hernández et al. 2006; Loureiro and Miranda 2006, 2008; Chitty et al. 2007; Lee et al. 2007; Shammout 2007; Yüksel and Yüksel 2007; Kim 2008; Rodríguez del Bosque and San Martín 2008; Mechinda et al. 2009; Mechinda et al. 2010). Of the 47 studies that deal with loyalty directly, 30 use repeat visits and recommendations as indicators of loyalty either alone or accompanied by other factors, that is to say 64 % of the total. It must be emphasized that those authors that differentiate between, on the one hand, attitudinal and behavioral loyalty (Martín 2005b; Hernández et al. 2006; Lee et al. 2007; Li et al. 2007; Li and Petrick 2008a, b; Kan et al. 2009; Mechinda et al. 2009, 2010; Yen et al. 2009) and, on the other, cognitive, affective and conative loyalty (Lee et al. 2007; Li and Petrick 2008b; Yüksel et al. 2010) use indicators which do not coincide with constructs of the same category.

Table 2.3 lists the studies that take loyalty to be an indirect result of the models studied. Most of the studies deal with the final result as a single construct. This construct may be the intention to return (Murphy et al. 2000; Choi and Chu 2001; Petrick et al. 2001; Petrick and Backman 2002; Alegre and Cladera 2006, 2009; Um et al. 2006; Cladera 2007), intentions regarding future behavior (Tian-Cole et al. 2002; Baloglu et al. 2003; Lee et al. 2004; Alén and Fraiz 2006; Alén et al. 2007; Chen and Tsai 2007; Sophonsiri 2008; Hu et al. 2009; Lee 2009), the probability of a recommendation or a repeat visit (Hui et al. 2007), future destination selection (Tian-Cole and Crompton 2003) or word of mouth recommendation (Kim and Cha 2002). Other authors chose to use two constructs (Bigné et al. 2001, 2005; Kozak 2001; Petrick 2004; Barroso et al. 2007; Sanz 2008) which usually took the form of the intention to return and the intention to recommend (Bigné et al. 2001, 2005; Petrick 2004; Barroso et al. 2007; Sanz 2008). There was one article which differentiated between three constructs as a result, namely the intention to pay a return visit in the short, medium or long term (Jang and Feng 2007). In 20 of the 27 studies examined (74 %) a single construct was used while 7 (22 %) studies used two constructs, basically the intention to return and recommend. Only one study (4 %) used three constructs (see Fig. 2.3).

With regard to indicators, the authors again preferred multi- to single-item scales (Choi and Chu 2001; Tian-Cole and Crompton 2003; Um et al. 2006; Cladera 2007; Alegre and Cladera 2009), all being related to the probability of returning, or scales with two items (Murphy et al. 2000; Bigné et al. 2001, 2005; Kozak 2001; Kim and Cha 2002; Petrick and Backman 2002; Alegre and Cladera 2006; Barroso et al. 2007;

Table 2.3 Behavioral intentions construct and others (27 documents)

Author (year)	Subsector	Behavioral intentions and others	indicator/s
Murphy et al. (2000)	Destinations	Intention to return	Intention to return to Victoria within 2 years
			Intention to return to other island destination within 2 years
Bigné et al. (2001)	Destinations	Return	Would you return to . . .?
		Recommend	Would you recommend it to someone?
Choi and Chu (2001)	Accommodations	Repeat patronage	Likelihood of returning to the same hotel in subsequent trips
Kozak (2001)	Destinations	Intention to return to the same destination	How likely to revisit the same destination
		Intention to visit other destinations in the same country	How likely to visit other destinations in Mallorca
Petrick et al. (2001)	Destinations	Intentions revisit destination	How likely they would visit the destination in the next 2 years
			How likely they would visit the destination and see a show in the next 2 years
			How likely they would visit the destination and visit and book a package in the next 2 years
Kim and Cha (2002)	Accommodations	Word of mouth	I want to recommend this hotel to others
			I want to tell other persons about good things of this hotel
Petrick and Backman (2002)	Others	Repurchase intention	If I were to purchase a golf vacation, the probability that the vacation would be at XYZ Resort in (name of city) is . . .
			The likelihood that I would consider purchasing a golf vacation to the XYZ Resort again is . . .
Tian-Cole et al. (2002)	Destinations	Future behavioral intentions	Encourage friends and relatives to go to this refuge
			Visit the refuge again in the future
			Say positive things about the refuge to other people
Baloglu et al. (2003)	Destinations	Behavioral intention	Revisitation for pleasure next year
			Revisitation intention for pleasure in the next 3 years
			Recommending Las Vegas to their friends and/or relatives

(continued)

Table 2.3 (continued)

Author (year)	Subsector	Behavioral intentions and others	indicator/s
Tian-Cole and Crompton (2003)	Destinations	Future destination selection	Intention to visit a destination
Lee et al. (2004)	Destinations	Behavioral intention	Recommend to advisees
			Positive word of mouth
			Long-term intention to revisit
			Short-term intention to revisit
Petrick (2004)	Others	Repurchase	If I were to purchase another cruise, the probability that the vacation would be with XYZ Cruise Line is . . .
			The likelihood that I would consider purchasing a XYZ cruise again is . . .
		Word of mouth	When discussing this week's cruise with other people, which of the following best describes how positively or negatively you will talk to others about XYZ cruise line?
Bigné et al. (2005)	Destinations	Intention to return	Would you return to . . .?
		Willingness to recommend	Would you recommend it to someone?
Alegre and Cladera (2006)	Destinations	Intention to return	How often they have holidayed in the Balearic Islands
			They chose to return to the same area for their holiday
Alén and Fraiz (2006), Alén et al. 2007)	Others	Behavior intentions	If I can, I have the intention of coming back to this spa resort
			I will give good references of this establishment to others
			I will advise others on the bad quality of this establishment
			If I have any problem with this establishment I will go to another one
			I rather pay a higher price than in other establishments, because of the advantages it offers
			I consider this spa resort the first on my list
			I will encourage my family and friends to come
			I would continue to come even if the prices were higher
			For some services I go to other establishments because they have lower prices
			I would recommend it to anyone that asks me

Um et al. (2006)	Destinations	Revisit intention	How likely would you return to Hong Kong for pleasure travel?
Barroso et al. (2007)	Destinations	Intention to recommend	Will you recommend that others visit this destination and its surroundings?
		Intention to revisit	Will you return to visit this destination again?
Chen and Tsai (2007)	Destinations	Behavioral intention	Likeliness to revisit
			Willingness to recommend
Cladera (2007)	Destinations	Intention to return	Intention to return
Hui et al. (2007)	Destinations	Likelihood of recommendation/revisiting	Likelihood of recommending
			Likelihood of revisiting
Jang and Feng (2007)	Destinations	Short-term revisit intention	Revisit interest within next 12 month
			Revisit likelihood within next 12 month
		Mid-term revisit intention	Revisit interest within next 3 years
			Revisit likelihood within next 3 years
		Long-term revisit intention	Revisit interest within next 5 years
			Revisit likelihood within next 5 years
Sanz (2008)	Destinations	Intention to return	Do you intend to return to . . .?
			Do you intend to . . . continue to be your second home?
		Intention to recommend	Would you recommend someone . . . as a tourist destination?
Sophonsiri (2008)	Accommodations	Intentional behaviour	I would recommend this holiday resort to someone who seeks my advice
			I would consider this holiday resort my first choice, if I were going back to Samui Island
			I am a loyal patron of this holiday resort
			If I were going to Samui Island next time, I would definitely go back to this holiday resort

(continued)

Table 2.3 (continued)

Author (year)	Subsector	Behavioral intentions and others	indicator/s
Alegre and Cladera (2009)	Destinations	Intention to return	Intention to return
Hu et al. (2009)	Accommodations	Behavioral intentions	Repurchase intentions
			Willingness to recommend
			Price sensitivity
Lee (2009)	Destinations	Future behaviour	Willingness to revisit
			Willingness to recommendation to others
			Positive word of mouth to others

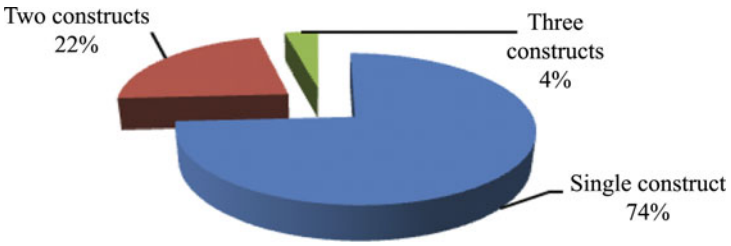

Fig. 2.3 Number of constructs used for implicit loyalty study

Chen and Tsai 2007; Hui et al. 2007), half of which were related to the intention to return or recommend (Bigné et al. 2001, 2005; Barroso et al. 2007; Chen and Tsai 2007; Hui et al. 2007). As previously happened, when authors opted to use more than two items both the intention to return and the intention to recommend appear accompanied by other indicators (Tian-Cole et al. 2002; Baloglu et al. 2003; Lee et al. 2004; Petrick 2004; Alén and Fraiz 2006; Alén et al. 2007; Sanz 2008; Sophonsiri 2008; Hu et al. 2009; Lee 2009). This happened in 15 out of the 27 papers, that is to say 56 % of the total.

Once the constructs arising from the models proposed by the various authors had been studied it could be observed that both those who treated loyalty as a separately construct and those who examined it indirectly in the form of behavioral intentions, etc. frequently use the intention to return and recommend indicators. It can thus be concluded that there are no significant differences between studies – regardless of whether they treat loyalty explicitly or implicitly – that look at destination loyalty and loyalty to accommodation or other tourism products given that one way or another the great majority study loyalty in terms of intention to return and recommend, in spite of the existence of other formulas or the fact that they may be accompanied by other indicators.

Either explicitly or implicitly in behavioral intention, loyalty in selected works appears as a result of models which combined mainly construct such as satisfaction (present in 76 % of analyzed researches), quality (39 %), image (34 %), value (20 %) or overall satisfaction (18 %). It is noteworthy that although the final aim of relationship strategy is loyalty, its main components, trust and commitment, only appear in 14 % and 4 % of analyzed works respectively, as well as other constructs related to relationship (5 %). Only 14 % of studies demonstrate a relationship orientation. This situation suggests that there is a gap related to relationship orientation in researches focused to study models to determine the factors that generate loyalty towards destinations, accommodation and other tourism products of interest. Related to the methodologies used by these researches, they are mainly developed with structural equation models. These are methods widely used for determining causal relationships between factors. LISREL and AMOS are the more handled programs, although in some cases EQS and PLS are used too. Other analyses, with less impact in these works, are regression and logistic regression, descriptive analysis, reliability of scales and neural models.

2.5 Conclusions and Final Reflections

Relationship marketing is a strategy that aims to give continuity to the organization through the establishment of lasting and mutually beneficial relationships between companies, customers and other market players. Value creation and individualized marketing, by contrast with traditional mass marketing may contribute to the generation of loyal customers, which would allow for the making of profit from the value that those customers contribute to firms over time. Palmer (1994) emphasized that a successful marketing strategy should focus not only on winning customers but also on winning their loyalty.

In this respect various questions arise about how to define, measure, and operationalize the loyalty construct in empirical studies. This present study has tried to answer the final two questions. It may be difficult to correctly measure and operationalize the loyalty construct in the tourism industry if it is only understood in terms of repeat purchases. The review of the literature concerned with the determination of factors which influence loyalty at the level of destination (destination, accommodation and other tourist products of interest) produced the results set out below and it is was possible to establish that operationalization in this field has been carried out in a varied manner but frequently with common denominators. The research findings of this present paper reveal that not all the studies (64 %), analyzed, relating to loyalty to destinations, accommodation and other tourist products of interest, address loyalty as a separated construct and as the final result of their models. 36 % did so via behavioral intentions. 77 % of the studies that dealt with loyalty as a separated construct did so on a one-dimensional basis, 13 % on a two-dimensional basis, 4 % on a three-dimensional basis and 6 % on a multi-dimensional basis. With regard to the indicators used, authors preferred multi-item to one- or two-item scales, which were embodied in terms of intention to return and recommend. In total 64 % of the studies reviewed examined the construct in terms of intention to return and recommend, whether alone or accompanied by other items. In those studies of the loyalty construct which looked at it as embodied in other constructs, the treatment of the final construct shows greater variety though also the presence of points in common. 74 % of cases preferred to use a single construct, while 22 % used two constructs and 4 % three. Authors once more preferred multi-item to single item scales (all related to intention to return) or two-item scales (half of which related to the intention to return and recommend). As was previously the case, authors mainly opted to use more than two items. Both, intention to return and to recommend, alone or with other indicators, appeared in 56 % of cases. In both type of analyses, it becomes clear that they frequently use the intention to return and recommend indicators, either alone or accompanied by other items (64 % and 56 % respectively). It can thus be concluded that there are no significant differences between studies – regardless of whether they treat loyalty explicitly or implicitly – that look at destination loyalty and loyalty to accommodation or other tourism products given that one way or another they frequently study loyalty in terms of intention to return and recommend, regardless of the existence of other formulas or the fact that they may be accompanied by other

indicators. Thus, in the studies reviewed, what predominates is intention to return as an indication of customer loyalty, as well as the disposition to recommend, these being more appropriate for tourist services, which have a lower consumption frequency (Chen and Gursoy 2001). Nevertheless Figs. 2.2 and 2.3 set out the multiple options identified, which may offer good research results as their authors demonstrate. When deciding to use a greater or lesser number of dimensions the results of the study by Li and Petrick (2008b) could be taken into account as they produced the best fit with a competitive model based on the traditional view that the attitudinal loyalty is one-dimensional, and not the combination of the cognitive, affective and conative constructs.

In summary, based on the literature review about studies that address the causal factors that determine loyalty in tourism at the destination level (destinations, accommodation and other tourism products of interest), it is found out that the general opinion of the authors does not only include the revisit in the operationalization of loyalty, because it can be infrequent as Bigné et al. (2005) pointed out. But also, it has to be into account the recommendation as Chen and Gursoy (2001) defended. Therefore, it seems suitable that a correct operationalization of loyalty in tourism should include revisit and recommendation, independently of other formulas combined with other indicators, or if the loyalty construct appear in an explicit way in the model or implicit in behavioral intentions. Thus, this is an attempt to solve the question posed by Riley et al. (2001) about the problem of conceptualize loyalty in tourism, and an answer for the objective of this work.

Knowing the factors that create loyalty in the tourism industry, and a good operationalization of loyalty construct is key to implement and measure the impact of relationship marketing strategies. It is necessary to recognize what generates loyalty and which are the main indicators for measuring it (revisit and recommendation) to design relationship strategies of success. The result will be obtaining the benefits identified by Reichheld and Sasser (1990). In the case of tourism, those benefits are related with getting a loyal customer base that will improve the profitability of tourism destinations and their organizations. Probably these results show the latent need to revise the concept of CLV in the tourism industry, because customers not only worth by their repeated purchases, but also by the recommendations they make to other tourists. However, an important challenge in quantifying the power of recommendations emerges. Also, currently it is necessary to take into account that recommendation is not made by word of mouth (WOM) only. The expansion of the information and communications technology (ICT) has introduced the concept of word of mouse (eWOM) to recognize the potential of recommendation via Internet (websites, social networks, blogs, etc.). This is a challenge for academics and practitioners.

With regard to the limitations of this present study the first that might be mentioned is the difficulty involved in an exhaustive revision of the literature on a global scale. Although every effort has been made to identify the largest possible number of studies of interest there can be no certainty that nothing has been missed, in spite of the thoroughness of the search carried out. Other limitation have to do with the subjective aspects of the carrying out of the search in terms of identifying relevant documents and making certain classifications as well as the risk of having

introduced erroneous data into tables and figures. Although every effort has been made to carry out the work required for this study in the most methodical manner possible it has to be recognized that it may not always have been possible to achieve this. Any errors identified will be corrected in future research.

As regards the direction of future research, given that the study proposal regarding the loyalty construct set out by Li and Petrick (2008b) seems complete and exhaustive, in terms of items and dimensions and in spite of the fact that the results drawn from it tend towards simplification, this study could be replicated in other kinds of tourism or destinations, different from cruise liners. These could include cultural, nature, business, and rural tourism, etc. and destinations with these characteristics. To complement this study it would be interesting to come up with an operationalization proposal for loyalty based on the literature here carried out. After a preliminary test, it could be incorporated into a structural model that seeks to find the factors that create loyalty to a destination, accommodation or other tourist product. Thus the final performance of the loyalty construct could be tested.

As for the implications of this issue in the study of tourism marketing, the aim here was to make a modest contribution to progress in understanding the processes which produce loyalty in tourists, and also to make progress in management techniques and marketing in this context. The research field is broad and interesting and it all aims to contribute to the better management and performance of tourism organizations and destinations, in this case from the implementation of customer retention tools that attempt to monetize the value these customers provide over time.

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Tourists Return Intentions: A Mixed Logit Approach

3

Antónia Correia and Pedro Pimpão

3.1 Introduction

Repeat purchase has been accepted as one of the major topics in tourism marketing destinations, since it is more cost-effective to retain the same visitors than capturing new ones (Jang and Feng 2007). Nevertheless the open sky policy of airlines, backed in 80s, shaped new directions on tourism, increasing the number of passengers and the number of destinations available to visit. These new trends challenging the probability of the destinations retain their visitors, enhancing the need for further research on this field. This article aims to understand why and how tourists intend to return, and give insights into the heterogeneity of return intentions patterns within the two main nationalities of tourists in the Algarve. Bearing in mind that nationalities are not the only predictor of heterogeneous behavioural patterns, socio-economics, length of stay and frequency of travelling are also considered. To do so, this research observes the influence of such variables on tourist return intentions in the context of a sun and sand mature destination as such as the Algarve, in south of Portugal.

The contributions of the present research to tourism literature are described above. Firstly, it focuses on the factors re-attracting tourists to the region, disentangling the effect of the general desire to travel (push motivations) from the destination's attributes (pull motivations) that may be understood as competitive advantages of the destination. Secondly, following Kozak (2001, 2003), this study analyses heterogeneity in the intentions of tourists from the United Kingdom and Germany to return to the same destination; thus, bringing further insights into the

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presence of heterogeneity in tourists' patterns of behaviour by nationality, as previously called for in the literature (Kozak 2003). Thirdly, it adopts a mixed logit model, previously adopted by Nicolau and Más (2006) and Correia et al. (2007a). The advantage of this model relative to standard logit models is that this model allows to identify homogenous and heterogeneous variables in the sample. Furthermore, it focuses on a sun and sand mature tourism destination where retain tourists is of utmost importance, since over 60 % of the tourists are repeat visitors. The implications of this study are crucial in terms of defining market strategies that are best suited to keep these tourists whose play a strong role in the general development of the Algarve as a tourism destination.

3.2 Literature Review

The multi-disciplinary characteristics of motivations and destination choice provide an issue that merits further research, with the aim of achieving a construct concept within the social sciences that explains why people travel (Holden 2006). The consumer is understood as a rational being, whose preferences and choices depend on intrinsic and extrinsic factors also known as push and pull motivations (Crompton 1979). Past research on tourist motivation has shown that push and pull motivations play a critical role in tourist travel selection and evaluation (Baker and Crompton 2000; Fodness 1994; Kozak 2001; Trauer and Ryan 2005). From this process, and based on previous experience, the tourist defines his/her behavioural intentions. Behavioural intentions represent the willingness to return (Williams and Soutar 2009; Yoon and Uysal 2005), and is of paramount importance if tourism development is to be sustained in a mature destination such as the Algarve.

The most common variables used to explain behavioural intentions are the post-purchase evaluation process (Dick and Basu 1994; Oliver 1999; Yoon and Uysal 2005), quality or perceived quality performance (Um et al. 2006; Baker and Crompton 2000), previous experience (Court and Lupton 1997; Mazursky 1989; Petrick et al. 2001), image (Bigné et al. 2001), perceived risk (Petrick 2004; Yüksel and Yüksel 2007), culture (Chen and Gursoy 2001; Reisinger and Turner 1998; Ross 1993; Yüksel 2001) and emotions (Yüksel and Yüksel 2007; Bigné and Andreu 2004). More recently, Sparks (2007), Lam and Hsu (2006) and Jang and Feng (2007) predict tourism behavioural intentions grounded in the theory of planned behaviour (Ajzen 1991) using its core constructs.

Although there is a number of studies about tourism behavioural intentions, most of them rely on post-purchase evaluation or in attitudinal studies eventuating that post-purchase evaluation depends on the tourist's motivation (Mannell and Iso-Ahola 1987; Ross and Iso-Ahola 1991; Silvestre and Correia 2005; Correia et al. 2007a, b).

In addition to the strength of motivations explaining tourists' behavioural intentions, there is another type of influence, related to their personal characteristics (demographic and psychographic) and personal constraints, that is determinant in the decisions taken (Nicolau and Más 2005; Mieczkowski 1990; Oppermann 1996).

Other studies also demonstrate that, in fact, tourists of different nationalities are assumed to have different patterns of behaviour (see, for instance, Kozak 2002, 2003; Nicolau and Más 2005; Richardson and Crompton 1988). For example, Kozak (2002) uses univariate and multivariate statistics to show that some tourists' motives differ between nationalities and the place visited. Richardson and Crompton (1988) conclude that cultural values emerging from nationality influence patterns of behaviour. Other studies assert that, in fact, tourists of different nationalities are assumed to have different patterns of behaviour (see, for instance, Kozak 2002, 2003; Nicolau and Más 2005; Richardson and Crompton 1988; Pizam and Sussmann 1995). Kozak (2002) concludes that the motivations of British and German tourists in relation to Turkey and Mallorca are different. Although there are evidences of differences among nationalities, the controversy and criticisms about the explanatory power of this variable (Dann 1993) mean there is still room for more research on this issue (Pizam and Sussmann 1995; Mykletun et al. 2001).

On the other hand, variables like frequency of travelling also play a role in behavioural intentions (Sönmez and Graefe 1998) along with the number of previous visits (Lam and Hsu 2006), which considerably influences the intention to return, especially in mature destinations; thus, providing evidence of heterogeneity in tourist behavioural intentions.

3.3 Conceptual Model and Hypotheses

Our conceptual model grounds on theory of planned behaviour (Ajzen 1991). Accordingly the behavioural return intention is assumed to be the initiator of a new decision, representing the effort that a person will do to perform a behaviour. Under this assumption, the mediator effect of motivations, social and cultural factors will allow to understand how and why tourists decide to return to the Algarve (Fig.3.1).

Based on literature and in the anticipated derived utility from the return to the destination by the tourists, the following hypotheses are defined:

Hypothesis 1 (Push motives): The intention to return of British or German tourists travelling to the Algarve is influenced by their push motives (social and personal). This hypothesis has previously been tested by Severt et al. (2007), Jang and Feng (2007), McCabe (2000), Baloglu (1997), Gartner (1993), Dann (1996) and all of whom, within different contextual settings of destination choice, present evidence that emotional motivations/affective image influence tourism return behaviour.

Hypothesis 2 (Pull motives): The intention to return of British or German tourists travelling to the Algarve is influenced by their pull motives (cognitive). Evidence of the influence of destination attributes on the probability of returning are in the studies of Severt et al. (2007), Jang and Feng (2007), Kozak (2003) and Nicolau and Más (2005).

Hypothesis 3 (Socio-demographic characteristics): The intention to return of British or German tourists travelling to the Algarve is influenced by their

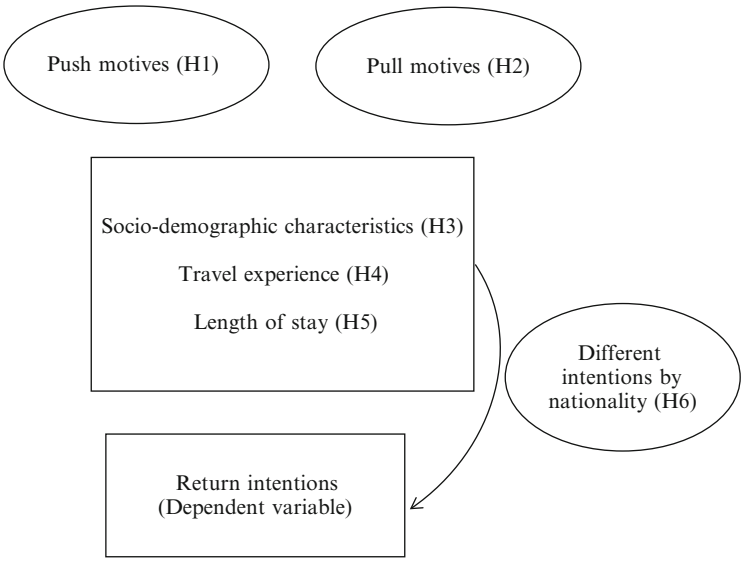

Fig. 3.1 Conceptual model

socio-demographic profile characteristics, such as age, level of education, gender and family status. This is a traditional hypothesis of demand models based on questionnaire data Correia et al. (2007c), Goodall and Ashworth (1988), Weaver et al. (1994), Woodside and Lysonski (1989), Zimmer et al. (1995). This hypothesis validates the socio-economic characterisation of the questionnaire's respondents and allows profiling the returning tourists.

Hypothesis 4 (Frequency): The intention to return of British or German tourists travelling to the Algarve is influenced by their previous experience of vacations. There are evidences in the literature that previous experience plays a role in tourists' decisions (Mazursky 1989; Court and Lupton 1997; Petrick et al. 2001).

Hypothesis 5 (Duration): The intention to return of British or German tourists travelling to the Algarve is influenced by the length of their stay in previous visits. Money and Crotts (2003) show that tourists who choose familiar destinations, such as the Algarve, stay there for less time. Gokovali et al. (2007) and Barros et al. (2010) argue, by means of a survival model, that length of stay and familiarity with the destination have a positive relation. Furthermore, Petrick (2004) proves that repeat visitors stay for a shorter time than first time visitors.

From the above hypotheses emerges the final one that, in fact, gives rise to the present research: to attempt to establish whether British and German tourists have different patterns of behaviour, namely:

Hypothesis 6 (Nationality differences): British or German tourists intending to return to the Algarve have different motivations for their intentions to return. Hofstede (1994) argues that, although there are assumed cultural differences between countries, these differences may coexist at regional or community level.

Some evidence that the behaviour of tourists varies with nationality can be used to test this hypothesis. In fact, several authors show that tourists from different nationalities possess different patterns of behaviour (Crotts and Reisinger 2010; Kozak 2002, 2003; Nicolau and Más 2005; Richardson and Crompton 1988). Moreover, Calantone et al. (1988) and Chen and Kerstetter (1999) found a relationship between perceived image and the tourists' country of origin. In fact, this is the main hypothesis of research that aims to study the influence of nationality on the intention to return.

3.4 Methodology

Consider the case of British and German tourists who take vacations in resorts in the Algarve. These tourists, due to their own motivations, intend to return (or not) for a future holiday at the same destination.

The model used in this research is the following:

$$U_{ij} = C_0 + \alpha_{ij} + \beta.X_{ij} + \varepsilon_{ij} \tag{3.1}$$

where U_{ij} defines the utility derived from the intention to return ($j = 0,1$) made by the individual (i) who completes the questionnaire. C is a constant defining the average utility defined as the difference between the probability of returning or not to the visited destination, α_{ij} is a random alternative specific constant associated with the individuals and alternatives. β is a vector of random parameters of individual specific and alternative specific attributes. X_{ij} is a vector of individual specific and site-specific attributes. ε_{ij} is an unobserved random term for the utility of returning to the visited destination by the individual that is independently distributed with a Gumbel distribution.

The alternative specific constant is a random parameter that is allowed to vary across individuals. Each random parameter, $\alpha_{ij,}$ is assumed to exist with two components, an average and a random term, that reflects taste variation and is assumed to be normally distributed:

$$\alpha_{ij} = \gamma_j + \mu_{ij} \tag{3.2}$$

γ_j is a vector of parameters that identify the average preference for alternative j in the analyzed population. μ_{ij} is a random term assumed to be normally distributed with a mean of zero and σ_j standard deviation, which represents the marginal distribution of αij and captures individual $i's$ deviation from the average preferences for alternative j. μ_{ij} are individual and other specific unobserved random disturbances and are the sources of unobserved heterogeneity across individuals in the preferences for alternative j.

The probability that individual i will intend to return to the destination j, conditional on μ_{ij}, can be described by a binomial logit form:

$$P(j = 1|\mu_{ij}) = P(\beta, x_i) = \frac{e^{\beta' x_i}}{1 + e^{\beta' x_i}} \tag{3.3}$$

The unconditional probability is obtained by integrating the random terms out of the probability:

$$P(j) = \int_{\mu_{ij}} P(j/\mu_{ij}) g(\mu_{ij}) d\mu_{ij} \tag{3.4}$$

This integral has no closed form and therefore exact maximum likelihood is not possible. The integral has an expected value and can thus be approximated by simulation, the simulated log-likelihood function being maximized (Hajivassiliou and Ruud 1994). For a given value parameter μ_{ij}, a value of αij is drawn from its distribution. Using this draw value, the product of standard logit is calculated. This process is repeated for many draws and the result is taken as the approximate return- intention probability:

$$SP(j) = \frac{1}{R} \sum_{r=1}^{R} P(j/\mu_{ij}) \tag{3.5}$$

R is the number of draws in the simulation, and $SP(j)$ is the simulated probability that individual i will return to j. The simulated maximum likelihood is maximised as:

$$SLL = \sum_{i=1}^{I} \ln P(j) \tag{3.6}$$

The estimated parameters are those that maximise SLL. The bias in SLL decreases as the number of draws increases. Train (1998) suggests the use of the Halton sequence of draws instead of random draws. Based on the choice made by tourists who visit the Algarve, the paper estimates a mixed logit model.

In order to test the underlined hypotheses, a mixed logit is adopted assuming that the probability of returning, rather than not returning, can be described by a cumulative logit-probability function of the exogenous variables Xi, Prob (return/type):

Based on this definition, the above-mentioned probability for return i is estimated as:

$$\Pr(\text{Re}turn_i|v_i) = \int_{-\infty}^{+\infty} P(\beta, v_i)\, N(\beta_{21}|\mu_{21}, \sigma_{21})\, d\beta_5 \tag{3.7}$$

where $N(\bullet)$ is the normal distribution, and

$$v_i = \beta_0 + \sum_{i=1}^{k} \beta_i X_i + \varepsilon_i \tag{3.8}$$

Xi is the variables from the questionnaire distributed to this population. The v_i is measured by the probability that the tourist declares an intention to return to the visited destination (Yes = 1, No = 0), labelled *no return* and measured *Xi* as observed characteristics.

3.5 Data and Results

The empirical study was carried out by means of a questionnaire distributed throughout 2009, which was presented to a stratified, random sample of British and German tourists at the end of their vacations, with the central aim of determining their reasons for their intention to return to a specific destination. This survey considered the push and pull motives based on the literature review of destination choice studies and the socio-demographic profile of the respondents, in addition to some trip characteristics.

The questionnaire included three sections. The first one rates a set of 15 push motives and the second includes 19 pull motives (destination attributes). The set of push and pull motives are the most quoted in the literature (Correia et al. 2007b), and measured using a five-point likert scale ranging from 1 (not important) to 5 (extremely important) the importance of each factor to their intention to return. The third includes a dichotomous variable related with the intention to return or not, ranging from 0 (no return) to 1 (return). The latter section considers the socio-demographic factors (age, gender, education, travel companion, marital status, and frequency of travelling abroad and length of stay in Algarve on the present visit).

The definition of the sample was based on the number of passengers departing from the Algarve airport of Faro. Budgetary restrictions and the limited time available caused a decision to collect data from 2,000 respondents from the United Kingdom and Germany departing from Faro airport. These nationalities represent 56.3 % of the European tourists in Algarve. The sample was randomly stratified by the number of tourists by nationality. Hence data about British tourists account for 81.3 % whereas German account for 18.7 % of total sample, accordingly to the number of overnights registered to those nationals in Algarve.

The returned questionnaires totalled 1,500, from which 1,212 completed questionnaires were retained for the present analysis, representing a response rate of 61 % of the sample chosen. This corresponds to a sampling error of 2.8 % with a confidence interval of 95 % and this was considered an acceptable sample of respondents (Dillman 1978). The questionnaires received but not considered for the present research were discarded due to missing fields and other problems.

Table 3.1 Socio-demographic and tripographic characterisation of the sample

	Frequency (%)	Average	Standard deviation
Gender			
Male	63.7		
Female	36.3		
Average age		48 years old	13.6
Education (qualification level)		13 years	3.2
Marital status			
Single	31.0		
Married	69.0		
Travel companion			
Husband/wife	45.4		
Friends	6.0		
Family	34.2		
Alone	10.4		
Group	4.0		
Travel experience			
It is my first trip	0.3		
1 time per year (once)	10.3		
2 times per year (twice)	25.6		
More than 3 times per year	63.8		
Length of stay		9.1 days	10.3
Motivations for return (climate and beach)	Scale: 1 = not important to 5 = extremely important	4.5	0.7

The extensive examination of the survey validity, reliability and generalisability leads to the inference that there is nothing in the evaluation to suggest that it is either invalid or unreliable. The characterisation of the respondents is displayed in Table 3.1.

The general characteristics of these respondents indicated that they were British or German tourists travelling as couples, with an average age of 48 years and a standard level of education with an average 13.3 years of schooling. They are frequent flyers since they travel more than twice a year and spend more than 9 days on average at Algarve on the present visit. This profile leads to an overall definition of the responding tourist as early middle-aged couples and experienced tourists, motivated to return to the Algarve by its sun and beach attributes.

A mixed logit model was fitted, with the observed dichotomous variable (return) used to classify the individuals who declared that they will (=1), or not return (=0) as the dependent variable for British and German tourists, and the variables listed in Table 3.2 above as explanatory variables. From the set of push and pull motives considered in the questionnaire, some were discarded from the analysis because the model performs well without these variables. The Mixed logit is considered the most promising state of the art discrete choice model currently available to analyze

Table 3.2 Characterisation of the variables

Variable	Description	Min[a]	Max[b]	Mean	Std. Dev[c]
Dependent variable					
Return-British	British tourists declare that they will return	0	1	0.24	0.43
Return-German	German tourists declare that they will return	0	1	0.20	0.29
Socio-demographic characteristics hypothesis					
Age	The respondent's age	18	85	43	14
Education	Education (number of years of education) (4-primary school, 24–Ph.D.)	4	24	13.28	3.66
Genre	The gender (0 = male, 1 = female)	0	1	0.42	0.49
Marital status	Marital status (1 = single; 2 = married; 3 = with children)	0	1	1.75	0.47
Frequency hypothesis					
Frequency	Number of times you travel abroad for holidays during a year? 1 = once, 2 = twice, 3 = three times a year, 4 = more than three times a year	1	4	3.07	0.94
Duration hypothesis					
Duration	What was your length of stay? (number of days)	2	90	8.81	8.09
Push and Pull hypothesis					
How important to you are the following factors if you decide to return? (1 = not important, 5 = very important)					
Push 1	Do different things	1	5	3.47	1.38
Push 2	Have an adventure	1	5	2.56	1.48
Push 3	Talk about the vacations	1	5	2.81	1.47
Push 4	Release stress	1	5	3.36	1.36
Push 5	Escape from routine	1	5	3.93	1.31
Pull 1	Landscape	1	5	4.39	0.75
Pull 2	Nature	1	5	4.33	0.79
Pull 3	Cultural attractions	1	5	4.00	0.93
Pull 4	Nightlife	1	5	3.77	0.95
Pull 5	Transport	1	5	3.85	0.93
Pull 6	Shops	1	5	4.31	0.80
Pull 7	Lodging	1	5	4.35	0.90
Pull 8	Climate	1	5	4.47	0.74
Pull 9	Beach	1	5	4.09	0.92
Pull 10	Gastronomy	1	5	4.13	0.85
Pull 11	Relaxing environment	1	5	4.05	0.89

[a]Min = minimum
[b]Max = maximum
[c]Standard deviation

questionnaire data, Hensher and Greene (2003). The advantage of the Mixed Logit over alternative models is based in two improvements. First, it allows the error term to combine different statistical distributions, which is an improvement relative to alternative specifications that rely in one specific distribution. Second, it allows for random taste variation parameters (parameters that describe characteristics not linked to observed characteristics, whenever the traditional logit allows for taste variation related to observe characteristic).

Focusing on the adequacy of the standard logit model, the RESET test is implemented. The result gives evidence of mis-specification of the logit model. This may be due to the presence of unobserved heterogeneity, depending on the aforementioned explanatory variables. A HAL test of Chesher and Santos-Silva (2002) was applied, using likelihood ratio procedures to test against this type of heterogeneity. Firstly, it was considered that it was dependent on all of the explanatory variables. Next, a classic selection procedure is applied. The findings display evidence of unobserved heterogeneity depending on age and education, inducing the estimation of a mixed logit model with random coefficients for these variables. Table 3.3 displays the results.

Model parameters β relate changes in the explanatory variables X_i to changes in the response probability. While the parameter signs indicate the direction of the relationship, they are not directly interpreted as marginal changes to the mean value of the dependent variable. This is because of the non-linear form of the distribution function. Based on the global model, using the transformation $100(e^{\beta}-1)$, it can be said that each additional visit of the individual British tourist yields a decrease of about 44.95 % in the likelihood of returning to the Algarve, while for a German tourist it is about 17.87 %.

3.6 Discussion

The findings point to a significant correlation between the probabilities of returning to the Algarve with the exogenous variables. Taking the evidence of the heterogeneity in the sample, the mixed logit model is chosen as the adequate representation of the data. The dependent variable is a dummy: to return $=1$, and not to return $= 0$. Statistical tests detect mis-specification in the standard logit model, in addition to evidence of heterogeneity in the standard logit model, concluding that the mixed logit better fits the data. Let us now consider the significance of the findings for the hypotheses proposed, followed by an interpretation of this tourist behaviour in relation to nationality.

The hypothesis 1 is accepted in some cases and rejected in others within the nationalities. These findings show that the push motivations change with nationalities, in accordance with Kozak (2001, 2003), who finds evidence of cross-cultural differences, which enable us to understand more clearly why British and German tourists intend to return to the Algarve. Thus, it seems reasonable to assume that, in general, the intentions to return derive from the tourists' feelings that the Algarve is a good place to escape from routine. British tourists recognise

Table 3.3 Parameter estimates and t-statistics

	Coefficients	(t-Stat)	Coefficients	(t-Stat)	Coefficients	(t-Stat)	Coefficients	(t-Stat)
	Mixed logit				Standard logit			
Variables	British		German		British		German	
Homogeneous variables								
Intercept	−1.78*	−13.86	−9.97*	−8.86	−22.10*	−8.92	−9.65*	−5.60
Genre	−0.35*	−3.21	0.25	1.59	−0.44***	−1.87	0.03	0.14
Civil state	0.50*	4.63	0.04	0.31	0.61**	2.45	−0.12	−0.48
Frequency	−0.60*	−8.88	−0.08	−0.86	−0.73*	−4.94	−0.11	−0.74
Duration	−0.04***	−1.71	0.03*	2.91	−0.04	−1.21	0.02	1.25
Push 1 do different things	0.71*	7.79	0.70*	4.94	0.84*	4.89	0.57*	2.91
Push 2 have an adventure	−0.01	−0.13	−0.16**	−2.24	−0.02	−0.17	−0.09	−0.76
Push 3 talk about the vacations	0.10***	1.78	0.03	0.38	0.12	0.98	0.00	0.02
Push 4 release stress	−0.16**	−2.54	0.28*	2.99	−0.20	−1.47	0.23	−1.54
Push 5 escape from routine	0.32*	3.56	0.47*	3.36	0.40**	2.34	0.44**	2.21
Pull 1 landscape	0.45*	2.81	0.08	0.47	0.55	1.64	0.04	0.14
Pull 2 nature	0.52*	3.95	−0.39**	−2.50	0.62**	2.11	−0.12	−0.47
Pull 3 cultural attractions	−0.64*	−7.84	1.00*	7.98	−0.78*	−4.35	0.83*	4.05
Pull 4 nightlife	0.54*	6.33	0.00	−0.04	0.68*	3.64	−0.04	−0.26
Pull 5 transport	0.08	1.27	−0.62*	−7.05	0.08	0.55	−0.42*	−3.28
Pull 6 shops	0.16	1.46	0.27**	2.19	0.20	0.92	0.13	0.65
Pull 7 lodging	1.08*	5.28	0.04	0.29	1.37*	3.42	0.09	0.40
Pull 8 climate	0.34*	2.67	0.02	0.15	0.43	1.61	0.01	0.07
Pull 9 beach	0.61*	7.45	−0.76*	−8.70	0.73*	4.50	−0.58*	−4.38
Pull 10 gastronomy	−0.18**	−2.31	0.16	1.75	−0.21	−1.36	0.07	0.48

(continued)

Table 3.3 (continued)

	Coefficients	(t-Stat)	Coefficients	(t-Stat)	Coefficients	(t-Stat)	Coefficients	(t-Stat)
	Mixed logit				Standard logit			
Variables	British		German		British		German	
Pull 11 relaxing environment	0.49*	6.67	0.35*	3.30	0.59*	3.43	0.20	1.13
Heterogeneous variables								
Age	−0.02*	−4.39	0.02**	2.36	−0.02**	−2.10	0.01	0.46
Education	−0.07*	−4.99	−0.05**	−2.55	−0.09*	−2.74	−0.08	−2.42
Nobs	1.212		1.212		1.212		1.212	
Log likelihood	−247.21		−243.51		−248.31		−249.08	
Chi square	20.01		11.14					
Degrees of freedom	3.00		3.00					
Prob (chisqd > value)	0.00		0.002					
RESET on stand. logit	−3.02		0.011					
HAL on standard logit	25.11		0.001					
LR: standard versus mixed	31.15		0.002					

Dependent variable: to return to the Algarve for a vacation = 1, and 0 = elsewhere

***Means statistically significant at 10 %

**Means statistically significant at 5 %

*Means statistically significant at 1 %

the social acceptability of the destination among their peer groups. In contrast, the Germans perceive the Algarve as the ideal place to rest (release stress and escape from the routine).

The hypothesis 2 is also accepted in some cases and rejected in others, since the pull factors are sometimes statistically significant whilst they are insignificant at other times, even at the 10 % level of significance. This is also in accordance with previous research by Kozak (2001, 2003).

The hypothesis 3 is accepted, although the conclusion is mixed, since the socio-demographic characteristics produce mixed findings. These findings are in accordance with previous studies that argue that the determinants of tourism choice is specific to the contextual life settings of the individual more than on age cohorts or level of education (March and Woodside 2005). This is also in accordance with Gibson and Jordan (1998) who found that gender does not explain the diversity of travel styles. In this case, the likelihood of returning decreases for British women, whereas it increases for German men. In this case, the likelihood of returning to the Algarve decreases with age for British tourists and increases for German tourists.

The hypothesis 4 is accepted. The conclusion is that frequency of travelling abroad influences negatively the decision to return, meaning that those who travel more are more unlikely to return to the Algarve. This result is in accordance with Pearce (1996) who argues that the more experienced tourist tends to seek novel destinations, attempting to fulfil the desire to learn more and experience other destinations, consequently perceiving less the risk of travelling to new destinations. This is the case of British tourists since the standardised coefficient is negative and statistically significant; however, it is not the case with Germans.

The hypothesis 5 is accepted. The conclusion is that length of stay has a mixed influence on the intentions to return. The coefficient is negative and statistically significant for British tourists. This signifies that non-returning tourists opt for extended lengths of stay. In fact, Hughes (1995) proves that recent customers tend to repurchase but that the strength of their repurchasing intentions will decrease over time. However, this is not the case of German tourists, who demonstrate that the longer they spend at a chosen destination increases the likelihood of returning.

Comparison with previous results for both sub-samples allows us to accept the hypothesis 6, due to the different findings for the two nationalities analysed. Taking into consideration the statistically significant variables, it is verified that some are positive for British tourists and negative for Germans, which, on the contrary, signifies that different nationalities react differently to different variables.

3.7 Conclusion

What are the implications of these results for research and tourism strategies? They signify that different nationalities behave similarly relative to certain factors, but differently relative to others (Kozak 2001, 2002). In general, both nationalities intend to return to do things that they have not already done, meaning that the

Algarve has some tourism potential. The British want, in addition, social recognition from their peers and they intend to return because of the nightlife, climate and the beach. Germans intend to return to escape from routine and release their stress. In addition to the landscape, they appreciate the cultural attractions. Findings suggest that the profile and motivations of Germans and British are quite different (Kozak 2002), the former enjoy active holidays, whereas the latter seek tranquillity. These results conform to the widely accepted profiles of British and German tourists, showing that, in fact, the tourists' behaviour and motivations differ across individuals, according to their nationalities (Geertz 1973; Hofstede 1994), particularly in relation to return intentions. These findings are of paramount importance for the development of the commercial and political approaches to tourism, in which a clear understanding of tourists' behaviour from a social perspective is crucial.

In relation to the literature analysing return intentions, this paper cannot be directly compared with the papers referred to, since it uses an innovative approach that enables the identification of heterogeneous variables in the data permitting the statistical definition of clusters, in addition to the fact that it focuses on low-cost travel tourism. However, the paper is somewhat comparable with Correia et al. (2007b), since it adopts the same model. On the other hand, while this paper analyses different nationalities, the paper mentioned analysed a single nationality, thus focusing on individual heterogeneity. The present research focuses on two types of heterogeneity: nationality and individual, which represents a positive contribution to this research field.

With regard to the managerial implications, it calls for specific tourism strategies in respect of different nationalities, taking into account the heterogeneity that exists within each nationality. Moreover, age and education are random, signifying that they vary in each nationality. In other words, British and German tourists on vacations in the Algarve comprise a mixture of age and education levels. This signifies that the development of an effective tourism strategy that targets individual tourists is a complex issue, since it must take into account role differences identified within nationalities, combined with individual preferences specific to each individual (Jafari and Way 1994). Further these findings suggest the competitive attributes of the region for both nationalities. The competitive attributes of the destination are those pull motives that have a positive and significant standardised coefficient in the mixed logit model, which, due to this positive influence, represents the capacity of the destination to retain the tourists' loyalty. Inversely, the negative coefficients are the perceived disadvantages of the region. Accordingly landscape, nightlife, lodging, climate, beach and relaxing environment are the main attributes that drive the British intention to return, where cultural attraction and gastronomy may lead to the intention of not return. On the other hand German intention to return is driven by relaxing environment and cultural attraction where nature, transports and beach may lead to the intention of not return.

This paper has two main limitations related to the data set. Firstly, the data span is relatively short. Secondly, the sample procedure adopted was restricted to tourists visiting one single destination, thus the conclusions are limited. Rather, it calls

attention to the value of identifying heterogeneity in their client base, considering different nationalities as a crucial variable in order to explain intentions to return.

The limitations of the paper suggest directions for new research. Firstly, additional research is needed to confirm the findings of this paper, as well as to clarify the above-related issues, such as, the impact of nationality on attitudinal measures of the tourists' affective attachment to the destination. Secondly, research concerning different nationalities' return intentions must be expanded to consider other destinations, including newly-emerging regions and resorts. It is also necessary to consider motivations and learning processes within the set of determinants of the tourists' decisions. In order to acquire more generalised knowledge, a larger data set would be necessary, particularly from qualitative (Tribe 2004, 2006) or mixed methodologies and alternative theoretical traditions (Jafari 2003).

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Evaluation of the Interrailers' Satisfaction Regarding the Tourism Services and Activities in Italy, Greece and Croatia

4

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4.1 Introduction

Tourism in the last decades has turned itself into one of the most dynamic industries around, from both an economical and socio-cultural point of view. Consumers are faced with a large quantity of services meant to meet all their needs. However, organizations are aware that meeting consumer needs is not enough; consumer satisfaction is met by making a consumer feel drawn into an experience which puts an emphasis on quality.

A client determines the quality of a service depending on the grade of satisfaction drawn from having his expectations met. Therefore, in order to satisfy a client, it is necessary to first have a profound knowledge of his needs, and secondly, to possess and pursue this process of as-effectively and consistently as possible.

Two decades ago, researchers suggested a new term to describe the style of travel exercised by youth, based on the liberty of choice and the use of economical services; this term was *backpacker*. The growth of this segment, with its distinct behavioural patterns, drew some authors to think and research this segment, and analyse intrinsic as well as extrinsic aspects, InterRail stood out, as an extremely attractive form of transportation.

4.2 Concept of Tourism

Tourism is probably the activity that best characterizes contemporary societies; it is also a collective practice. At the basis of tourism we find a series of processes that are both diverse and complex; their manifestation is sub-adjacent and allows each and every individual to become a tourist (Leme and Neves 2007). Tourism is

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"movement of people in their own country or crossing national borders. Reveals the presence of various elements, interaction and relation of individuals and groups, human comprehension, sentiments, perceptions, motivations, satisfaction, pressures rejections and the notion of pleasure, that lead to great changes in society" (Marujo 2008:14).

In its complexity and multiplicity, according to Ramos (1996:83) "affects people, the location and culture of a country or region (...) it is a phenomenon with multiple characteristics that has increasingly come to assume significant importance in various levels, in the relations between regions, countries and continents".

Therefore, tourism is an agent for social change that affects all the factors linked with the culture of societies: norms, values, ideologies and beliefs. It is considered an activity that enables people to interact by sharing cultural, social and economic diverse experiences (Mazon 2001).

4.3 Tourism Activities

Based on their importance, some activities are crucial to tourism; without them it would not be possible to structure tourism into an economically viable activity, tourist consumption is fundamental to other activities that rely directly on it for subsistence, which are classified as follows (Cunha 2009):

- **Transportation:** tourism, by definition, presupposes dislocation and as a result, transportation automatically becomes crucial to tourism. Despite its attraction, a location or region cannot develop touristically without accessibility to other forms of transportation. The existence of ports, railways, roads and air routes leads to the development of tourist destinations. For the harmonious development of tourist destinations, the actual transportation method is just as important as the infra-structure that makes that form of transportation possible.
- **Accommodation:** the importance of accommodation is derived from the definition of a tourist as one that spends at least one night at the location visited. Therefore, it is easy to conclude that although some tourist attractions exist without accommodation, it is not possible to structure a successful tourist destination without some form of accommodation. Making accommodation available to tourists for lucrative purposes is considered touristic. Accommodation is essential for tourist destinations, without accommodation these would simply not exist.
- **Catering:** it is of extreme importance as it meets the needs of the tourist. A variety of establishments prepares and provides food and beverages to the tourist and these establishments can be classified as restaurants in a big variety.
- **Tourist Entertainment:** these attractions are of prime importance to the tourist product of a region. Without these attractions there wouldn't be a need for any of the other services, and tourist destinations as are known today, simply wouldn't exist.

4.4 Youth Tourism

Backpackers have been described in many ways; Hampton (1998) notes that these tourists generally do independent tours, survive with little economic resources, use local transport, take all their belongings in backpacks and avoid crowds whilst trying to discover new sites.

The statistical concept of "youth" was first defined in 1985 by the UN General Assembly, within the framework of the International Year of Youth as the age group between 15 and 24 years. However, the same House added that, in addition to the statistical definition of the term "youth", the sense of the word "youth" varied in different societies throughout the world and that the definitions of youth had changed continuously in response to the fluctuations of the political, economic, and socio-cultural circumstances (Youth at the United Nations 2009).

Giaretta (2003:8), in his studies has chosen the age group composed of individuals between 18 and 35 years old to define tourism of youth. For the author, the tourism of youth is "practiced by a homogeneous group of young people, with the marked characteristics by age group, life style and state of mind, which triggers a series of sub-segments divided into several types of tourism").

4.4.1 Backpacking

Backpacking is an alternative form of tourism. This term defines the style of economic and independent travel, practiced by young people from throughout the world, who seek to learn about natural attractions and culture in a great number of destinations, having a high degree of interaction between the travellers themselves and the people of local communities, usually in a long period of time (Oliveira 1998, 2000). Swarbrooke and Horner (1999) argued that the backpackers can be considered as a true market segment of international tourism.

Even prior to the appearance of the word "*backpacker*", Kotler et al. (1999) had defined this tourist as a drifter in a rather similar way to what we refer today as "backpackers"; that is the "type of international tourists that adventure in locations distant from the traditional routes. This type doesn't have a fixed route or agenda planned and travel without any well-defined purpose (...) usually they stay in youth hostels or campsites in the company of friends (...)" (p. 662).

The term *backpacker* was thus introduced to tourist study by the Australian Philip L. Pearce, in 1990, and has often been used to define the segment of travellers who have a style of travel independent, flexible and economical, for long periods and who seek to know several destinations on the same journey.

The segment *backpacker* presents a series of characteristics that make it possible to differentiate it from the other. Kotler et al. (1999) were one of the first to characterize the market for independent travellers and young people, at the time known as drifters, dividing them into permanent or temporary travelers.. Permanent travelers, according to the author, follow a style of life which is totally focused on travel, remaining "on the road" for many years, while the temporary only travel for

a short period of time and then return to their daily lives. This last definition of travellers seems closer to the current *backpacker* one.

According to Loker-Murphy and Pearce (1995), the reasons that lead the tourists to choose this type of trip, are that it is cheap, it offers an opportunity to get to know other people and to become better acquainted with the reality of the country, the long extension of the time travel, as well as independence, flexibility, convenience and ease, prior experience as *backpacker* and recommendation from other people.

Swarbrooke and Horner (1999) cite as characteristics of travel for backpackers the following: independence, instead of the acquisition of travel packages; desire to keep the expenses to the lowest level possible; the trend of trying to escape from the local traditional tourist and the possibility of extending the duration of the trip in addition to the common period of 2 weeks of vacation.

The backpackers are different than the other tourists, because they are not fans of the package tour; they travel with a limited budget; they travel to see the maximum possible, going beyond the common tourist attractions in order to experience and learn more about the country being visited; backpackers require certain social skills, and their behaviour is more open and tolerant to different cultures.

4.4.1.1 Definition of Backpacking

Backpackers are often open to experience the local way of life; it is often cited that meeting with other people is a strong motivator. Their activities focus mainly on nature, culture or adventure (Loker-Murphy and Pearce 1995). These characteristics are related to the fact that the backpackers travel more than other tourists, they demand unusual attractions or unexpected experiences and their tight budget is related to the long duration of their travel (Loker-Murphy and Pearce 1995).

Although backpackers have been described in many ways, Hampton (1998) notes that these tourists are generally seen as independent tourists who survive with little economic means, using local transport, carrying all their belongings in the back, avoiding crowds and discovering new places. In short, Visser (2004) describes the tourists' backpackers as a sub-sector of international tourism with characteristics that include communication networks, demand for affordable accommodation and a parallel structure for restaurants and services support (Hampton 1998).

Backpackers usually spend at least one night of travel in hostels and youth hostels while travelling, follow an agenda of flexible travel, emphasize the importance of meeting with other travellers, prefer long periods of holidays and emphasize informal and participative activities.

In spite of the fact that tourist *backpackers* have been defined in various ways by academics according to their main characteristics, it is worth pointing out that a more precise definition of the term *backpacker* must have content less practical.

Therefore, the heterogeneity of this segment, must be taken into account when the attempt to define (Loker-Murphy and Pearce 1995; Moshin and Ryan 2003). Thus, a more appropriate definition for backpacker would be: "young people of any age, who are basically carrying out independent and economic travel -, avoid mass

tourism and luxury, stay in economic lodgings, negotiate prices when possible and use the infrastructure of services (restaurants, communications, transport), which allows them to, often, a closer contact with the population visited and the style of life in the region".

4.4.2 Travelling in Europe by Rail

Nowadays, the European Union (EU) has a rail network of 210,000 km and offers a large number of international passenger transport services. There are 5,000 km of lines of great speed in various countries, with trains reaching 320 km/h, making rail transport more competitive and, therefore, more attractive, with a view to opening for international passenger transport services (Official Website of the European Union 2009).

The InterRail is a product for any age and a pivot in the curriculum of a young tourist; a the ticket for this international train is personal and non-transferable, available to citizens of any nationality (with 6 months' residence in a European country) with which young people with less than 26 years old may travel through Europe by train in 2ND class (Trains from Portugal 2009a, b; Free to explore Europe 2007; Be Young 2009).

This pass allows young people to travel with special prices or with reductions in certain shipping companies (Trains from Portugal 2009b; InterRail.net 2009).

You can travel with the InterRail pass in the following European countries: Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Denmark, Slovakia, Slovenia, Spain, Finland, France, Great Britain, Greece, Hungary, Holland, Italy, Luxembourg, Republic of Macedonia, Montenegro, Norway, Poland, Portugal, Czech Republic, the Republic of Ireland, Romania, Serbia, Sweden, Switzerland and Turkey (Trains from Portugal 2009c).

Currently, there are two kinds of InterRail pass:

- The InterRail Global Pass allows free transit between the 30 countries of the area InterRail: Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Denmark, Slovakia, Slovenia, Spain, Finland, France, Great Britain, Greece, Hungary, Holland, Italy, Luxembourg, Macedonia, Montenegro, Norway, Poland, Portugal, Czech Republic, the Republic of Ireland, Romania, Serbia, Sweden, Switzerland and Turkey (Trains from Portugal 2009c).
- The InterRail One Country Pass allows travel freely in the (s) Company (s) of railways in only one country with the exception of the following: Bosnia-Herzegovina and Montenegro, Belgium, the Netherlands and Luxembourg are included in the Benelux Pass that includes the three Countries, the Pass to Greece can include the boats Superfast Ferries and Blue Star Ferries of maritime company ATTICA, which makes the connection between Italy and Greece, in which case designated by Greece Plus. THE InterRail One Country Pass considers the travel in the countries and railway companies.

4.5 Tourist Satisfaction

One cannot minimize the importance of customer satisfaction. Without a client, the service company has no reason to exist. All the service companies need to define and measure proactively the satisfaction of the customer. It is then expected that the customers do sometimes complain; thus the company can identify problems in the system of service provision or measure the progress of the company regarding the satisfaction of the customer, based on the number of complaints received (Gerson 1998).

The level of satisfaction of a client or homogeneous group of customers depends not only on the extent to which the attributes of a product meet the needs of the customers; it also depends on the expectations of customers to the overall performance of the product (Pires and Santos 1996).

Although there are a variety of alternative definitions, the most popular definitions are the degree of satisfaction of the client and the comparison of customers' expectations with regard to their perceptions. This comparison is based on what the marketing professionals call model of breakage of expectation (expectancy disconfirmation model). Expressing it in a simple way, if the perceptions of a client meet their expectations, it is said that the expectations are confirmed and the client is satisfied.

There are two types of breakage of expectation; if the real perception falls short of what was expected, the result will be a drop of expectation, which results in dissatisfaction of the customer and can trigger the negative mouth-to-mouth publicity and/or the defection of the client. On the other hand, if there is a positive expectation, when the perceptions exceed the expectations, they'll result in satisfaction of the costumer (Hoffman and Bateson 2006).

4.5.1 Measuring Tourist Satisfaction

Before measuring anything, we must know what we are measuring and why. The first benefit of a measurement program is that it gives a person immediate feedback that is objective and meaningful.

It may also be the basis for a system of rewards that can only succeed if based on given objective and quantifiable measures. The benefits of measuring quality and customer satisfaction can be summarized in four topics (Gerson 1998; Hoffman and Bateson 2006):

- It is providing the people with a sense of achievement and fulfilment, is translated in good customer service.
- It is giving people a standard performance that should try to achieve, will lead them into improving and increasing customer satisfaction.
- It is offering immediate feedback, especially when the client is to measure the action of the supplier.
- It is suggesting what must be done to improve the quality and customer satisfaction and how to do it (this information may also come directly from the client).

The methodologies used are different depending on the size of the work and the types of desired results. Also, the techniques and media for the collection of information vary, depending on the type of methodology used (Pires and Santos 1996):

- **Qualitative Research:** the quality of the research takes understanding subjectively the customer experience when buying or using a product or service. There are no rigid measurements in qualitative research.
- **Quantitative Investigation:** quantitative research and objectives are measurable. The data was obtained using a pre-determined standard. To complete the research, statistical analysis were made on the data, to determine the degree of satisfaction of the clients and the assessment made by these the quality of the service.

4.6 Service Quality

The quality of a service, according to Téboul (1999) is created at each point of interaction involving the provider of the service, the worker and the client. For this author, in the process of interaction, the quality of the service is a function of three elements: (1) the expectations that involve the clarification that should be provided and their control;(2) the delivery of results expected of professional practice, the standards or behaviours seized or acquired and (3) the perception that involves the control of the service given the client's perception of making the necessary adjustments.

Also Kellogg et al. (1997), on the basis of a conceptual model of the chain of values of the service, show the importance of consumer behaviour, positively or negatively affecting the quality of the service in the various stages of the value chain and the relationship that these behaviours have on the perceived value of the service and the level of satisfaction. Highlighting not only how consumers co-guarantee service quality during the process but also the need to determine and specify what the client feels as costs are incurred. That is, although not always economic costs are entailed, they express themselves through various forms of stress that also contribute to the quality of service received.

4.6.1 Tools Used to Measure Quality

There are a variety of tools to measure quality and customer satisfaction and many of them can be used jointly. However, there are seven tools for measuring the quality (Gerson 1998): evaluation tests, graphs of Pareto, histograms, and diagrams of correlation, and diagrams of cause and effect, control charts and stratification.

There are other measurement techniques that can be used, as for example, brainstorming (this is not as well a measuring technique but a way of generating creative ideas to the continued improvement of the quality), graphs, flow charts, to process, analyse SWOT and benchmarking. After measuring levels of customer

satisfaction, we must analyse the results so that we can implement the improvements suggested by the polls or carry out the follow-up directly with the customers to expose their views.

This analysis and follow-up will also give personal particulars as to the efficiency of its performance, setting references which will make it easier to measure exactly the performance of future services (Gerson 1998; Mowforth and Munt 1998).

4.7 Methodology

This research, exploratory in nature, examines backpacking to define and compare the InterRailers satisfaction with the quality of services in rail use in Italy, Greece and Croatia. For this research we built up, at random, a sample of 70 individuals (36 female and 34 male genders, 51 Portuguese nationals, 19 of other nationalities) who along its route had passed through Italy, Greece and Croatia.

For this research were used two scientific methodologies:

- Direct observation, through the ethnographic work carried out in 11 countries (Italy, Greece, Croatia, Bosnia, Serbia, Bulgaria, Turkey, Romania, Hungary, the Czech Republic and Germany)and 18 cities (Rome, Bari, Ancona, Florence, Igoumenitsa, Corfu, Split, Hvar, Ploce, Sarajevo, Belgrade, Sofia, Istanbul, Bucharest, Timisoara, Budapest, Prague and Munich).
- Inductive method of a quantitative nature based on 70 surveys obtained between December 14, 2009 and March 13, 2010 through InterRailers of different nationalities that, in their journeys had travelled in the above-mentioned countries.

4.8 Results

The word statistics can be attributed to different meanings. In the broadest sense, refers to a discipline whose fundamental objective is the collection, compilation, analysis and interpretation of data. The goal of statistical inference, based on the analysis of a limited set of data (a sample) aims to characterize the whole from which such data was obtained (Pinto Coelho et al. 2008).

4.8.1 Internal Consistency of the Scales Used

The index alpha (α) estimates how uniformly the items contribute to the sum of the weighted instrument, ranging on a scale of zero to one. This property is known as internal consistency of the scale and the alpha (α) may be interpreted to mean coefficient of all the estimates of internal consistency that they would all possible divisions of the scale were made (Cronbach 1951).

In general, an instrument or test is classified as having reliability appropriately when the $\alpha \geq 0, 70$ (Nunnally 1978). That is then followed by the consistency of the scale used. The instrument used to assess the satisfaction of InterRailers on the four tourist activities and consisting of a scale consists of 14 items for the transport, 17 for accommodation, 18 for the restoration and 20 for the tourist attractions in accordance with the methodology proposed by Likert scale consisting of five levels).

4.8.2 Inferential Statistics

The statistical inference (or inductive) is composed of a set of analytical techniques used to identify and characterize relationships between variables. It aims to extrapolate the results (obtained with the descriptive statistics) thereby allowing people to uncover characteristics based on known information about one or more samples drawn from this population. Thus, the statistical inference allows us to draw conclusions and make inferences that go beyond mere description of the information (Pinto Coelho et al. 2008).

Taking into account that dependent variables (tourist activities: transport, accommodation, catering, and tourist attractions) and independent variables (destinations: Italy, Greece and Croatia), we calculated, initially, the average of each sample using the following tests to check if there were significant differences in the averages for the satisfaction of the dependent variables between the three destinations:

4.8.2.1 Transportation

In the descriptive level, the average rating for the satisfaction of InterRailers was 3.4142 for the quality of Italian transportation, 3.0880 for the quality of Greek transportation and 3.1149 for the quality of Croatian transportation (Table 4.1). The highest average value refers went to Italian transportation.

In this case, it is necessary to verify the assumption of normality before executing the parametric test of ANOVA because when the samples have a size greater than 30, this procedure is needless (Maroco & Bispo, 2003).

The output presented below in Table 4.2, is related to the sphericity test by Mauchly (Mauchly's Test of Sphericity), plus an assumption that needs to be verified to be able to use parametric test for more than two matched samples (ANOVA for repeated measurements). The Mauchly sphericity test measures the equality of variances of differences between treatment levels.

In this case, Table 4.3, once the $\text{sig} = 0.147 > \alpha = 0.050$ for the test of sphericity does not reject the H_0. It is then that there is sphericity as soon as we can apply the test for paired samples (ANOVA for repeated measurements).

In this case, once the $\text{sig} = 0.000 < \alpha = 0.050$ rejects the H_0. This means that there are significant differences in the averages for the satisfaction of InterRailers regarding the variable transport between the three destinations.

Table 4.1 Descriptive statistics (transportation)

	Mean	Std. deviation	N
Italian transports	3.41	0.62	70
Greek transports	3.08	0.59	70
Croatian transports	3.11	0.53	70

Table 4.2 Mauchly's test of sphericity (transportation)

Within subjects effect	Mauchly's W	Approx. chi-square	df	Sig.	Epsilon[a]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Factor1	0.994	3.841	2	0.147	0.947	0.974	0.500

[a]May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Table 4.3 Test of within-subjects effects (transportation)

Source		Type III sum of squares	Df	Mean square	F	Sig.
Factor1	Sphericity assumed	5.041	2	2.521	9.979	0.000
	Greenhouse-Geisser	5.041	1.894	2.661	9.979	0.000
	Huynh-Feldt	5.041	1.947	2.589	9.979	0.000
	Lower-bound	5.041	1.000	5.041	9.979	0.002
Error (factor1)	Sphericity assumed	34.353	136	0.253		
	Greenhouse-Geisser	34.353	128.823	0.267		
	Huynh-Feldt	34.353	132.406	0.259		
	Lower-bound	34.353	68.000	0.505		

There are significant differences, it is still necessary to apply a multiple comparison test of averages (Table 4.4) to verify that averages between these differences occur.

In this case, there are significant differences in the satisfaction of InterRailers between the quality of transport in Italy and Greece (sig $= 0.001 < 0.050$) and the quality of transport between Italy and Croatia (sig $= 0.003 < 0.050$).

4.8.2.2 Accommodation

In the descriptive level, the average rating on the satisfaction of InterRailers was 3.6684 for the quality of Italian accommodation, 3.7707 for the quality of Greek accommodation and 3.5874 for the quality of Croatian accommodation (Table 4.5). The highest average value was related to Croatian accommodation.

In this case, it was necessary to verify the assumption of normality before executing the parametric test of ANOVA because when the samples had a size greater than 30, this procedure and needless (Maroco & Bispo, 2003).

The output presented below (Table 4.6), is related to the sphericity test Mauchly (Mauchly's Test of Sphericity), plus an assumption that needs to be verified to be

Table 4.4 Pairwise comparisons (transportation)

					95 % confidence interval for difference[a]	
(I) factor1	(J) factor1	Mean difference (I-J)	Std. error	Sig[a]	Lower bound	Upper bound
1	2	0.344*	0.089	0.001	0.126	0.561
	3	0.317*	0.092	0.003	0.091	0.543
2	1	−0.344*	0.089	0.001	−0.561	−0.126
	3	−0.027	0.075	1.000	−0.211	0.157
3	1	−0.317*	0.092	0.003	−0.543	−0.091
	2	0.027	0.075	1.000	−0.157	0.211

*The mean difference is significant at the 0.05 level.
[a]Adjustment for multiple comparisons: Bonferroni.

Table 4.5 Descriptive statistics (accommodation)

	Mean	Std. deviation	N
Italian accommodation	3.6684	0.62440	70
Greek accommodation	3.7707	0.58980	70
Croatian accommodation	3.5874	0.63109	70

Table 4.6 Mauchly's test of sphericity (accommodation)

					Epsilon[a]		
Within subjects effect	Mauchly's W	Approx. chi-square	df	Sig.	Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Factor1	0.908	6.497	2	0.099	0.915	0.939	0.500

[a]May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

able to use parametric test for more than two matched samples (ANOVA for repeated measurements). The Mauchly sphericity test measures the equality of variances of differences between treatment levels.

In this case, since the sig $= 0.099 > \alpha = 0.050$ for test of sphericity, the H_0 is not rejected. It is said that there is sphericity and then we can apply the test in paired samples (ANOVA for repeated measurements) (Table 4.7).

In this case, once the sig $= 0.089 > \alpha = 0.050$ does not reject the H_0. Does this mean that there are no significant differences in the averages of satisfaction of InterRailers regarding the variable accommodation between the three destinations.

4.8.2.3 Catering

In descriptive levels, the average rating of satisfaction of InterRailers was 3.9689 for the quality of the Italian catering, 4.0484 for the quality of Greek catering and 4.0597 for the quality of Croatian catering (Table 4.8). The highest average value of Catering went to the Croatian Catering.

Table 4.7 Test of within-subjects effects (accommodation)

Source		Type III sum of squares	df	Mean square	F	Sig.
Factor1	Sphericity assumed	1.164	2	0.582	2.467	0.089
	Greenhouse-Geisser	1.164	1.831	0.636	2.467	0.094
	Huynh-Feldt	1.164	1.879	0.620	2.467	0.092
	Lower-bound	1.164	1.000	1.164	2.467	0.121
Error (factor1)	Sphericity assumed	32.086	136	0.236		
	Greenhouse-Geisser	32.086	124.495	0.258		
	Huynh-Feldt	32.086	127.766	0.251		
	Lower-bound	32.086	68.000	0.472		

Table 4.8 Descriptive statics (catering)

	Mean	Std. deviation	N
Italian catering	3.9689	0.57818	70
Greek catering	4.0484	0.49393	70
Croatian catering	4.0597	0.51787	70

Table 4.9 Mauchly's test of sphericity *(*catering)

Within subjects effect	Mauchly's W	Approx. chi-square	df	Sig.	Epsilon[a]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Factor1	0.122	139.057	2	0.200	0.532	0.534	0.500

[a]May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

In this case, it is not necessary to check the assumption of normality before performing parametric test of ANOVA because when samples are larger than 30, this procedure is pointless (Maroco & Bispo, 2003).

The output presented below (Table 4.9), is related to the sphericity test Mauchly (Mauchly's Test of Sphericity), plus an assumption that needs to be verified to be able to use parametric test for more than two matched samples (ANOVA for repeated measurements). The Mauchly sphericity test measures the equality of variances of differences between treatment levels.

In this case, once the sig $= 0.200 > \alpha = 0.050$ for the test of sphericity does not reject the H_0. It is then that there is sphericity as soon as we can apply the test for paired samples (ANOVA for repeated measurements) (Table 4.10).

In this case, once the sig $= 0.162 > \alpha = 0.050$ does not reject the H_0. Does that mean that there are no significant differences in the averages for the satisfaction of InterRailers regarding the variable catering between the three destinations.

Table 4.10 Test of within-subjects effects

Source		Type III sum of squares	df	Mean square	F	Sig.
Factor1	Sphericity assumed	0.333	2	0.167	1.842	0.162
	Greenhouse-Geisser	0.333	1.065	0.313	1.842	0.179
	Huynh-Feldt	0.333	1.068	0.312	1.842	0.179
	Lower-bound	0.333	1.000	0.333	1.842	0.179
Error (factor1)	Sphericity assumed	12.128	134	0.091		
	Greenhouse-Geisser	12.128	71.338	0.170		
	Huynh-Feldt	12.128	71.539	0.170		
	Lower-bound	12.128	67.000	0.181		

Table 4.11 Descriptive statistics (tourism attractions)

	Mean	Std. deviation	N
Italian tourism entertainment	3.9075	0.52838	3.9075
Greek tourism entertainment	3.7910	0.42870	3.7910
Croatian tourism entertainment	3.4410	0.41000	3.4410

Table 4.12 Mauchly's test of sphericity (tourism attractions)

Within subjects effect	Mauchly's W	Approx. chi-square	df	Sig.	Epsilon[a]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Factor1	0.960	2.628	2	0.269	0.962	0.990	0.500

[a]May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

4.8.2.4 Tourist Entertainment

The descriptive level, it appears that the average rating on the satisfaction of InterRailers and 3.9075 for Italian tourist entertainment in Italy, from 3.7910 for Greek tourist entertainment in Greece and 3.4410 for the Croatian tourist entertainment in Croatia (Table 4.11). The highest average value is related to tourist entertainment in Italy.

In this case, it is not necessary to check the assumption of normality before performing parametric test of ANOVA because when samples are larger than 30, this procedure is pointless (Maroco & Bispo, 2003).

The output presented below (Table 4.12), refers to the sphericity test Mauchly (Mauchly's Test of Sphericity), plus an assumption that it needs to be verified to be able to use parametric test for more than two matched samples (ANOVA for repeated measurements). The Mauchly sphericity test measures the equality of variances of differences between treatment levels.

In this case, since the sig $= 0.269 > \alpha = 0.050$ for test of sphericity, the H_0 was not rejected. It is said that there is sphericity and then we can apply the test for paired samples (ANOVA for repeated measurements) (Table 4.13).

Table 4.13 Test of within-subjects effects (tourism attractions)

Source		Type III sum of squares	df	Mean square	F	Sig.
Factor1	Sphericity assumed	7.897	7.897	3.949	25.619	0.000
	Greenhouse-Geisser	7.897	7.897	4.105	25.619	0.000
	Huynh-Feldt	7.897	7.897	3.988	25.619	0.000
	Lower-bound	7.897	7.897	7.897	25.619	0.000
Error (factor1)	Sphericity assumed	20.345	20.345	0.154		
	Greenhouse-Geisser	20.345	20.345	0.160		
	Huynh-Feldt	20.345	20.345	0.156		
	Lower-bound	20.345	20.345	0.308		

Table 4.14 Pairwise comparisons (tourism attractions)

					95 % confidence interval for difference[a]	
(I) Factor1	(J) Factor1	Mean difference (I-J)	Std. error	Sig[a]	Lower bound	Upper bound
1	2	0.116	0.069	0.292	−0.054	0.286
	3	0.466*	0.073	0.000	0.288	0.645
2	1	−0.116	0.069	0.292	−0.286	0.054
	3	0.350*	0.061	0.000	0.200	0.500
3	1	−0.466*	0.073	0.000	−0.645	−0.288
	2	−0.350*	0.061	0.000	−0.500	−0.200

Based on estimated marginal means
*The mean difference is significant at the 0.05 level.
[a]Adjustment for multiple comparisons: Bonferroni.

In this case, since the sig $= 0.000 < \alpha = 0.050$ the H_0 was rejected. This means that there are significant differences in the means for the satisfaction of InterRailers and variable transport between the three destinations.

With significant differences, it is still necessary to apply a multiple comparison test of means (Table 4.14) to verify that averages between these differences occur.

In this case, we can see significant differences in the satisfaction of InterRailers between the quality of tourist attractions offered by Croatia and Italy (sig $= 0.000 < 0.050$) and quality of attractions offered by Croatia and Greece (sig $= 0.000 < 0.050$).

4.9 Conclusions

The world is trying to understand all the changes that have occurred in recent decades. There is unanimity in asserting that these changes were of crucial importance for today's society that lives in a globalized world where all the communication barriers have been filled by information systems technology. Tourism was one of the sectors that most felt these changes. In this research, it is possible to verify that:

- **Transportation**

The average value of satisfaction of InterRailers on the quality of the services provided in rail transportation was 3.4142 for the Italian transportation, 3.0880 for Greek transportation and 3.1149 for Croatian transportation.

Taking into account the scale used to determine the satisfaction of InterRailers (Likert scale composed of 5 points) it was assumed that all the results that show average values equal to or greater than 3 – "Enough" attributed to the InterRailers quality of satisfied.

Assuming the average values presented above, it is possible to verify that they are all above 3 then verifying that InterRailers are sufficiently satisfied with the quality of services in rail use in Italy, Greece and Croatia.

Although satisfied, is to emphasize that there are significant differences in satisfaction InterRailers about the quality of services in rail transport used for all three destinations, InterRailers are more satisfied with the quality of services in rail Italians than with the quality of services in rail Greeks and Croatians. Although positive, the lowest mean value is related to the quality of services in rail Greeks.

The indicators that were used to evaluate the satisfaction of InterRailers about the quality of services in rail use in Italy, one can conclude that the indicators that show a greater satisfaction from InterRailers are the existing environment at stations and rail transportation and security at stations and on rail. In turn, indicators showed less satisfaction from InterRailers in hygiene and cleanliness of rail transport, the personalized service and information and explanations given in railway stations.

The indicators that were used to evaluate the satisfaction of InterRailers about the quality of services in rail used in Greece, one can conclude that the indicators that show a greater satisfaction from InterRailers are punctuality of the trains and in stations and existing environment rail transport. In turn, indicators showing less satisfaction from InterRailers are the frequency of schedules, the capacity of rail transport and cleaning and hygiene in railway transport.

Finally, with respect to indicators that were used to evaluate the satisfaction of InterRailers about the quality of services in rail used in Croatia, one can conclude that the indicators that show a greater satisfaction from InterRailers are punctuality of trains, the environment in existing stations and rail transportation and security at stations and on rail. In turn, the indicators that show lower satisfaction from InterRailers are the location of railway stations, the timing and frequency of cleaning and hygiene in railway transport.

- **Accommodation**

The average value of satisfaction of InterRailers on the quality of the services provided in Accommodation was 3.6684 for the Italian accommodation, 3.7707 for Greek accommodation and 3.5874 for Croatian accommodation.

Taking into account the scale used to determine the satisfaction of InterRailers (Likert scale composed of 5 points) it was assumed that all the results that show average values equal to or greater than 3 – "Enough" attributed to the InterRailers quality of satisfied.

Assuming the average values presented above, it is possible to verify that they are all above 3 then verifying that InterRailers are sufficiently satisfied with the quality of services in accommodation use in Italy, Greece and Croatia.

No differences were significant and positive although it is possible to verify that the average value is higher on the quality of Greek accommodation and the average value is lower on the quality of Croatian accommodation.

For the indicators used to evaluate the satisfaction of InterRailers regarding the quality of services provided within the Italian accommodation, one can conclude that the indicators that showed a greater satisfaction from InterRailers in accessibility to housing, hospitality and times of entry and exit from housing. In turn, indicators showed less satisfaction from InterRailers in the time taken to respond to anomalies, quality and comfort of the bedrooms and en-suite.

For the indicators used to evaluate the satisfaction of InterRailers regarding the quality of services provided within Greek accommodation, it was possible to conclude that the indicators showed a greater satisfaction from InterRailers regarding hospitality, accessibility to housing, the schedules of entry and exit into housing and receptivity on the part of officials. In turn, indicators showed less satisfaction from InterRailers on issues of general hygiene and cleanliness of bathrooms, and bathing quarters.

Finally, with respect to indicators that were used to evaluate the satisfaction of InterRailers in the quality of services provided within the Croatian accommodation, the conclusion was that the indicators that showed a greater satisfaction from InterRailers regarding hospitality, the times of entry and exit the accommodation and value for money. In turn, indicators showed less satisfaction from InterRailers regarding the location of housing, accessibility to housing, the response time anomalies and bathrooms, shower facilities.

- **Catering**

The average value of satisfaction of InterRailers on the quality of the services provided in Catering was 3.9689 for the Italian catering, 4.0484 for Greek catering and 4.0597 for Croatian catering.

Taking into account the scale used to determine the satisfaction of InterRailers (Likert scale composed of 5 points) it was assumed that all the results that show average values equal to or greater than 3 – "Enough" attributed to the InterRailers quality of satisfied.

Assuming the average values presented above, it is possible to verify that they are all above 3 then verifying that InterRailers are sufficiently satisfied with the quality of services in catering use in Italy, Greece and Croatia.

No differences were significant and positive although it is possible to verify that the average value is higher on the quality of Greek catering and the average value is lower on the quality of Croatian catering.

The indicators that were used to evaluate the satisfaction of InterRailers regarding the quality of services provided under the Italian catering, one can conclude that the indicators that showed a greater satisfaction from InterRailers in regards location, hours of operation and quality of food (taste, aroma, texture, presentation). In turn, indicators showed less satisfaction from InterRailers in matters of reliability of service, menu variety and value for money.

The indicators that were used to evaluate the satisfaction of InterRailers in the quality of services provided under the Greek catering, one can conclude that the indicators showed a greater satisfaction for the environment of InterRailers accommodation, dining experience and the relationship between cost and value. In turn, indicators showed less satisfaction from InterRailers regarding waiting times, hygiene and cleanliness and quality of equipment.

The indicators that were used to evaluate the satisfaction of InterRailers in the quality of services provided in Croatian catering, one can conclude that the indicators showed a greater satisfaction from InterRailers in matters pertaining to the number of hours of operation, the environment and the relationship between cost and value. In turn, indicators showed less satisfaction from InterRailers regarding waiting times, hygiene and cleanliness and quality of equipment.

- **Tourist Entertainment**

The average value of satisfaction of InterRailers on the quality of the services provided in tourism entertainment was 3.9075 for the Italian Tourism Entertainment, 3.7910 for Greek Tourism Entertainment and 3.4410 for Croatian Tourism Entertainment.

Taking into account the scale used to determine the satisfaction of InterRailers (Likert scale composed of five points) it was assumed that all the results that show average values equal to or greater than 3 – "Enough" attributed to the InterRailers quality of satisfied.

Assuming the average values presented above, it is possible to verify that they are all above 3 then verifying that InterRailers are sufficiently satisfied with the quality of services Tourism Entertainment in Italy, Greece and Croatia.

Although satisfied, is to emphasize that there are significant differences in satisfaction InterRailers about the quality of services in Tourism Entertainment used for all three destinations, InterRailers are more satisfied with the quality of services in Italian Tourism Entertainment than with the quality of services in Greeks and Croats. Although positive, the lowest mean value is related to the quality of services in Croatian Tourism Entertainment.

The indicators used to assess satisfaction with the quality of InterRailers tourist entertainment in Italy, concluded that there was greater satisfaction from InterRailers regarding the existence of cultural, historical and cultural heritage and diversity of museums. In turn, indicators showed less satisfaction from InterRailers regarding the shortage of equipment for sports activities, retail shopping centers and theme parks.

The indicators that were used to assess satisfaction with the quality of InterRailers of Greek tourist entertainment, it is possible to conclude that the indicators that showed greater satisfaction from InterRailers regarding historical and cultural heritage and nightlife. In turn, indicators showed less satisfaction from InterRailers on music festivals, retail shopping centers and theme parks.

The indicators that were used to assess satisfaction with the quality of InterRailers of Croatian tourist entertainment, it is possible to conclude that indicators showed greater satisfaction from InterRailers on the quality of beaches (river beach), swimming pools, parks, nightlife and gardens. In turn, indicators showed less satisfaction from InterRailers regarding the lack of art galleries and exhibitions, variety of museums, cinema, theatre, entertainment and commercial areas.

Tourism is not just another sector, but rather a constellation of activities different in nature, not always unique to tourism, which converge in the same end: to transport, accommodate, feed and provide services that contribute to a pleasant stay to all those that travel, nationals or foreigners, moving to a different destination from the usual, with intention of stay for a limited period of time. It is a global view.

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Forecasting Tourism Demand for South Africa Using a Single Equation Causal Approach

5

Riëtte Louw and Andrea Saayman

5.1 Introduction

Tourism is the largest industry in the world (Page 1999:4) and is therefore also a very competitive industry. Since the tourism sector is considered a low-skilled labour-intensive employer (Lim 1997b:835), it is particularly helpful for developing countries which have a large proportion of unschooled workers, as it could increase employment opportunities. In addition, increasing the number of tourist arrivals enhance foreign exchange earnings (Lim 1997b:835) and may improve investment as well as the development of infrastructure (De Mello et al. 2002:509).

South Africa has become a very popular tourist destination over the past 20 years. Tourists from around the world travel to South Africa to indulge themselves in the warm weather; to enjoy the beautiful coastline, wildlife and historical attractions such as Robben Island. International tourist arrivals have increased significantly over the past 15 years (Stats SA 2009:1) and the country is now (2009) ranked 26th in terms of international arrivals (SA Tourism 2009:11). South Africa experienced a period of stagnation in international arrivals during the 1980s as seen in Fig. 5.1. This was primarily as a result of sanctions against South Africa due to its political policies. The sanctions were lifted in the early 1990s which led to an increase in international arrivals (Saayman and Saayman 2008:82).

Although arrivals from Africa are South Africa's largest market, they visit South Africa for different reasons than arrivals from other markets. Tourists from neighbouring African countries form the largest portion of arrivals from Africa and they visit South Africa regularly for purposes of shopping, study or employment (Saayman and Saayman 2008:83). Arrivals in South Africa can therefore be

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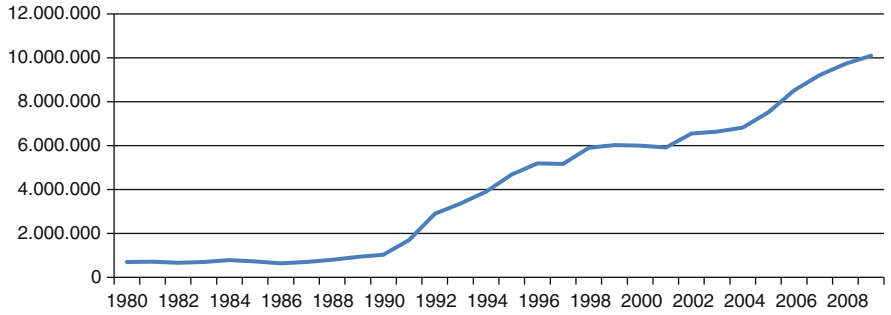

Fig. 5.1 Arrival of foreign travelers in South Africa, 1980–2009 (Source of data: Statistics South Africa)

divided into two groups, namely, arrivals from Africa and intercontinental arrivals (Saayman and Saayman 2008:82).

Du Preez and Witt (2003:436) state that a lack of knowledge of future tourist arrivals may lead to missed opportunities or an overestimation of tourism demand. Overestimating tourism demand may, for example, lead to excessive investment. Therefore, in order to improve resource management, it is important to accurately forecast tourist arrivals.

Although there are a number of studies on forecasting tourist arrivals to other countries, little research is available on forecasting tourism demand in South Africa. Three tourism demand studies have been completed that identified the determinants of tourism demand for Africa and South Africa (see Saayman and Saayman 2008; Naudé and Saayman 2005 and Seetanah et al. 2010). However, none of these studies attempted to forecast tourist arrivals. The only study that forecast tourism arrivals to South Africa as a whole used pure time series techniques (see Saayman and Saayman 2009), which has the disadvantage that it does not provide any policy recommendations. Therefore, the current research aims to expand on forecasting tourism demand for South Africa by using a single equation causal approach with the aim of not only exploring the relationships between arrivals and their determinants, but also of providing forecasts of arrivals based on these determinants. In-sample (*ex post*) forecasts will be performed and forecasting accuracy will be evaluated by determining the Mean Absolute Percentage Error (MAPE), Root Mean Square Percentage Error (RMSPE) and Theil's *U* of each model.

The remainder of this article is structured as follows: A brief overview of the determinants of tourism demand will be given in the following section. This is followed by a review of the data and the methods followed. Section 5.4 focuses on the results obtained as well as assessing forecasting accuracy. This article concludes by providing recommendations.

5.2 Determinants of Tourism Demand

Tourist utility maximisation needs to be considered when determining the factors that may influence a potential tourist's choice of country of destination (Divisekera 2003:33). The choices of potential tourists will be limited by budget constraints as well as time available. Lim (1997b:841) notes that out of 100 empirical studies on tourism the explanatory variables which are the most popular to be included are income (85 out of 100), relative prices (73 out of 100), qualitative factor (60 out of 100) and transport cost (55 out of 100). Naudé and Saayman (2005:369) state that the determinants will not have the same effect on tourism demand of all international tourists, but will differ in accordance with the origin and destination countries involved. Due to measurement difficulties and the occasional unavailability of data, researchers use proxies to determine the effect of certain determinants.

Since tourism is regarded as a luxury (Brakke 2005:15), income (budget constraints) will, to a great extent, influence the choice of the country of destination. In addition, transport cost is considered by Lim and McAleer (2001:4) to have a substantial impact on total travelling cost. Therefore, transport cost may result in substitution between countries nearest to the country of origin and those countries farther away from the origin country of potential tourists.

Price competitiveness also plays a role in the choice of destination. Tourists who visit a destination country for shopping as the main activity may regard price competitiveness important when choosing the country of destination. Tourists may consider the exchange rate of the potential destination country a good indication of the price level in that country (Forsyth and Dwyer 2009:85).

Other variables often included in tourism demand studies are market expenditure and climate. Promotion of the country of destination leads to a greater awareness, which contributes to the competitiveness of that country. Tourists often favour certain holiday activities. Some of these activities may be dependent on a certain climate or weather conditions, especially activities such as skiing, sunbathing and hiking. However, researchers are hard pressed to find an appropriate proxy to capture the effect of marketing expenditure and climate and, for this reason, they often exclude these factors from their models (see Lim 1997b:845 and Berrittella et al. 2004:3).

The general infrastructure of a country of destination contributes to the tourism product offered by that country. In this regard Naudé and Saayman (2005:371) state that infrastructure such as well-developed roads, good accommodation and entertainment may improve the competitiveness of the country of destination. In some cases, dummy variables can capture the effects of determinants that cannot be numerically expressed such as health risks, natural disasters, political instability and cultural ties. Witt and Witt (1995:455) add that lagged dependent variables are also included in research to capture the effect of word-of-mouth information which leads to declining uncertainty with regard to the country of destination.

In terms of the various determinants used in previous research on tourism demand for South Africa, Saayman and Saayman (2008) included the real GDP per capita of the origin country as a proxy for income, the real exchange rate as a proxy for relative

prices, the price of crude oil as a proxy for travel cost, the number of hotel rooms available as a proxy for infrastructure in South Africa as well as the number of sunshine days in Cape Town as a qualitative factor in their time series analysis of tourism demand. Seetanah et al. (2010) included the following determinants in their panel data analysis of tourism demand for South Africa: relative prices, defined as the CPI adjusted by the exchange rate, the real price of competing destinations, GDP per capita of both South Africa and the origin country (development and income proxies), the distance between South Africa and the origin country as a proxy for transport cost, and the number of rooms available in South Africa.

5.3 Method

5.3.1 Data Description

The dependent variable included in most of the tourism demand models is tourist arrivals or departures, tourism receipt or expenditure or length of stay in the country of destination (Lim 1997b:839). This research uses tourist arrivals in South Africa as a dependent variable, since tourist spending and length of stay in South Africa are not available in quarterly or monthly time periods for a sufficient period of time to conduct proper analysis.

According to Witt and Witt (1995), it is better to use quarterly or monthly data rather than annual data because tourism demand is seasonal and annual data does not contain seasonal trends. Therefore, seasonally unadjusted quarterly data for the period 1994–2004 is used to develop the models, except for the European model, where the data extend from 1999 to 2006. The time period differs from that of the other models because the euro has only been in effect since 1999. Forecasting is then done for 3 years, i.e. 2005–2007 in all cases, except for Europe where forecasting spans from 2008 to 2010, and these forecasts are compared to actual arrivals for accuracy. Since it was expected that the financial crisis would influence arrivals abnormally, the above timeframes were chosen to forecast pre-2008, where possible. The explanatory variables used in this study are income, relative prices, transport cost and accommodation as supply-side or infrastructure determinants (see Table 5.1 for a description of each variable). This is in line with previous research on tourism demand for South Africa.

Data for quarters 2 and 3 of 2004 were missing in terms of the number of hotel rooms available. A ratio to moving average estimate of the data was carried out in order to obtain a seasonal index. The quarterly average of 2004 was then multiplied by the respective quarterly index ratio to intrapolate the missing data. The income variable was determined as follows:

$$Income = \left(\frac{\left(\frac{GDP}{Deflator} \right) * 100}{Population} \right) * Constant\ US\$ \tag{5.1}$$

Table 5.1 Variable description

Variable	Proxy	Description	Source
Arrivals	Asia, Australasia, Europe, North America, South America, United Kingdom	Quarterly arrivals from each continent	Stats SA
Income	Gross domestic product (GDP)	Real GDP per capita in each country of origin expressed in national currency terms	IFS
Relative prices	Real exchange rate	South African rand versus currency of origin country	IFS and SARB[a]
Transport cost	Crude oil	The price of crude oil	SARB
Supply-side determinant	Hotel	The number of hotel rooms available	Stats SA

[a]South African Reserve Bank

where *GDP* is the GDP of the origin country nominal in US$, *Deflator* is the deflator with 2005 as the base year, *Population* is the population size of the origin country and *Constant US$* is the 2005 constant US$ exchange rate.

Real exchange rate is used as a proxy for relative prices. The real exchange rate is calculated using the following equation and denominated in local (South African) currency for one unit of foreign currency:

$$Real\ exchange\ rate = \left(\frac{CPI_{origin}}{CPI_{destination}}\right) * Nominal\ exchange\ rate \tag{5.2}$$

Africa is not included in the empirical analysis due to lower average spending patterns by arrivals from Africa (SA Tourism 2009:32), data limitations and the fact that several African countries use the South African rand exchange rate (Saayman and Saayman 2008:85). The United Kingdom, the United States of America, Germany, the Netherlands and France remain the top five markets for intercontinental arrivals to South Africa. Germany, the Netherlands, the United Kingdom and France have colonial ties with South Africa and this contributes towards higher arrival numbers recorded from these countries (see Naudé and Saayman 2005). For the European model, the euro area is therefore used as a proxy and the United Kingdom is modelled separately due to its importance as the main source market.

Arrivals from the United States of America account for 84 % of all arrivals from North America. Therefore, for the North American model, the United States of America is used as a proxy. For South America, tourist arrivals from Brazil form the largest market (56 %), but due to data limitations, Argentina is used as a proxy for South America. Arrivals from Argentina account for 17 % of all arrivals from South America. Australia is used as a proxy for the Australasian model. Tourist arrivals from Australia amount to 82 % of total tourist arrivals from this region. India (30 %) and China (18 %) are the top source markets for Asia followed by Japan (11 %). Japan is chosen as the proxy for Asia due to data limitations on China and India.

5.3.2 Estimation Method

Quantitative methods used in forecasting tourist arrivals can be sub-divided into two groups, namely causal methods and non-causal methods. Causal methods are regression models which are used to forecast tourism demand by estimating the relationship between tourism demand and the explanatory variables used (Chu 2004:210). Historic data is used to estimate the regression. Unlike causal models that estimate the relationship between a dependent variable and explanatory variables, non-causal methods (or time series models) use the dependent variable to forecast itself. Causal methods can further be divided into single equation methods, systems of equation methods and panel data methods. This article focuses on a single equation causal approach to forecasting tourist arrivals in South Africa. Some examples of single equation models often used in tourism forecasting empirical studies are Autoregressive Distributed Lag Models (ADLM), Error Correction Models (ECM), Time Varying Parameter (TVP) models and various combinations of these models (Song and Li 2008:211).

According to Hilaly and El-Shishiny (2008:3) the ECM has the ability to capture the short-run and the long-run dynamics when cointegration occurs. Cointegration occurs when the dependent and independent variables are non-stationary but integrated of the same order, for example I(d), which leads to the error being I($d-b$), with $b > 0$ (Harris and Sollis 2005:79). TVP models are often used when there are structural changes in data or when constant coefficients are too restricted (Li et al. 2006:176). The TVP model accommodates the changing behaviour of tourists, for example, due to economic circumstances whereas fixed-parameter models do not have this ability (Song and Witt 2000:132). When the coefficients are estimated with the TVP, the more recent data have a stronger influence than data further back into the past (Hilaly and El-Shishiny 2008:4).

Salleh et al. (2007:353) state that the ADLM can be used when the time series available is relatively short. This model is therefore suitable in the current research, since the data that will be used in the empirical analysis only extends from 1994 quarter 1 to 2004 quarter 4 (40 observations) and, in the case of the European data, from 1999 quarter 1 to 2006 quarter 4 (32 observations). The ADLM includes a lagged dependent variable, lagged independent variables and contemporaneous independent variables as regressors (Song and Witt 2000:74). The inclusion of too many explanatory variables may result in multicollinearity and as a result, high standard errors which may lead to invalid test statistics (Song and Witt 2000:75). The ADLM benefits from the inclusion of lagged values of the explanatory variables and independent variable because it takes time for certain changes to take effect, and this is taken into consideration with this specification. It is also possible to estimate both long-run relationships as well as short-run relationships if cointegration is present (Divisekera and Kulendran 2006:193–194). In such a case the ADLM is expanded to include an error correction model specification.

According to Lim (1997a: 541), 35 out of 100 tourism empirical studies used 1 independent variable as an explanatory variable followed by 2 independent variables (25 out of 100) and 3 independent variables (19 out of 100). Therefore,

the explanatory variables are examined to determine which variables to include in the ADLM. This research follows the same approach as that by Aresh et al. (2004:201) for Fiji and of Song et al. (2003:443) for Hong Kong.

To recognise and eliminate multicollinearity, the correlation between the variables was first examined.[1] The Asian correlation shows that crude oil correlates highly with GDP and arrivals. Therefore, crude oil is not included in the Asian model. GDP was excluded from the Australasian model due to a high correlation with arrivals and the real exchange rate. Though only crude oil and hotel rooms are correlated with each other in the European correlation table, the only variables included in the European model are arrivals, real exchange rate and hotel, since these variables also show a long-run relationship (see Table 5.3 below). In the North American section of the correlation table, one can see that GDP correlates highly with almost all of the variables, thus GDP is excluded from the North American model. All correlations were low between the South American variables, but the exchange rate was excluded in the model to allow for a long-run relationship to be estimated (see Table 5.3 below). Hotel rooms and crude oil are also not included in the United Kingdom model due to high correlations with other independent variables.

The Augmented Dickey-Fuller test, assuming an intercept but no trend, with lag lengths based on the Akaike information criteria (AIC) is performed on each variable to determine the order of integration. According to Wang (2009:77), the AIC should be used for small samples while the Schwarz information criteria should be used for larger samples. As seen from the Augmented Dickey-Fuller unit root probability results set out in Table 5.2, all variables are non-stationary in levels and stationary in first difference. This test was supplemented by the non-parametric test of Phillips-Perron, which confirms the results of the Augmented Dickey-Fuller test, except for some of the arrival series. Therefore the stationarity results are treated with caution in the subsequent cointegration tests.

According to Pesaran et al. (2001:315), using the Johansen cointegration test or the Engel and Granger test to determine the level of cointegration will provide biased results if there is a combination of variables integrated of order one and variables integrated of order zero in the model (see also Wang 2009:77). Therefore, the bound test approach is followed to determine the existence of cointegration. The bound test results are shown in Table 5.3. Pesaran et al. (2001:300) state that different F-critical values should be used to test the null hypothesis of no cointegration. The null hypothesis put differently is H_0: $\beta_5 = \beta_6 = \beta_7 = \beta_8 = 0$ (this is based on Eq. 5.3). Thus, the Wald statistic of the long-run relationship is determined in order to test the null hypothesis and a rejection thereof indicates towards cointegration. In Table 5.3, the F-statistic values are compared to the Case III F-critical value (see Pesaran et al. 2001:300). It is evident from the table that there is only one co-integrating relationship present in all the regions, and that this relationship is present when arrivals from the regions are the dependent variable.

[1] Results are available from the authors on request.

Table 5.2 Augmented Dickey-Fuller and Phillips-Perron unit root test results (*p*-values)

	Augmented Dickey-Fuller		Phillips-Perron	
Asia				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.2340	<0.0001	0.0820	<0.0001
LGDP	0.6219	<0.0001	0.7270	<0.0001
Lhotel	0.1959	0.0187	0.4491	0.0003
Lreal exchange rate	0.5177	<0.0001	0.6238	<0.0001
Europe				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.9087	0.0006	0.0014	
Lhotel	0.9533	0.0169	0.9757	0.0012
Lreal exchange rate	0.0857	0.0028	0.3812	0.0032
South America				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.5727	<0.0001	0.0008	
Lcrude oil	0.7734	0.0002	0.7292	0.0002
LGDP	0.2550	0.0017	0.2548	0.0016
Lhotel	0.1959	0.0187	0.4491	0.0003
Australasia				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.1621	<0.0001	0.1075	<0.0001
Lcrude oil	0.7734	0.0002	0.7292	0.0002
Lhotel	0.1959	0.0187	0.4491	0.0003
Lreal exchange rate	0.3071	<0.0001	0.3433	<0.0001
North America				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.3680	0.0199	0.1559	<0.0001
Lcrude oil	0.7734	0.0002	0.7292	0.0002
Lhotel	0.1959	0.0187	0.4491	0.0003
Lreal exchange rate	0.6048	0.0006	0.5469	0.0004
United Kingdom				
Variable	*Level*	*First difference*	*Level*	*First difference*
Larrivals	0.1409	<0.0001	0.0060	
LGDP	0.2130	<0.0001	0.2374	<0.0001
Lreal exchange rate	0.4544	<0.0001	0.4444	<0.0001

Since the Bound test requires the error term to be a white noise residual, each of the models was tested for residual normality (Jarque-Bera normality test with null hypothesis of normality), serial correlation (Serial Correlation LM test with null hypothesis of no serial correlation), heteroscedasticity (ARCH Heteroscedasticity test with null hypothesis of no heteroscedasticity), omitted variable test (Ramsey Reset test)

Table 5.3 Bound test results (F-statistic)

Region	Arrivals	GDP	Hotel	Exchange rate	Crude oil
Asia	8.1648***	0.1077	0.0580	0.1395	n/a
Australasia	7.0610***	n/a	1.5818	1.4655	1.3471
Europe	4.1532*	n/a	0.7606	1.3407	n/a
North America	3.6764*	n/a	0.0199	0.0918	0.3996
South America	8.0103***	0.4946	0.0400	n/a	0.2813
United Kingdom	11.4010***	0.7026	n/a	0.1795	n/a

Notes: ***Indicates 1 % significance
*Indicates 10 % significance

Table 5.4 Diagnostic tests

Test type	Asia	Australasia	Europe	North America	South America	United Kingdom
Jarque Bera normality test	0.565788 [0.753600]	3.641352 [0.161916]	1.270067 [0.529918]	3.142065 [0.207831]	0.872217 [0.646547]	0.837632 [0.657825]
Serial correlation LM test	0.837068 [0.5129]	1.705708 [0.1757]	1.579037 [0.2279]	1.437573 [0.2509]	1.454764 [0.2445]	0.544991 [0.7041]
ARCH Heteroscedasticity test	0.012618 [0.9111]	0.000515 [0.9820]	0.753783 [0.3929]	1.144352 [0.2917]	0.005296 [0.9424]	0.277791 [0.6013]
Ramsey Reset test	0.356236 [0.7240]	0.068708 [0.9456]	0.458703 [0.6517]	1.235670 [0.2268]	1.925219 [0.1647]	1.679394 [0.1035]

Note: Values in *brackets* denote probability

and structural breaks (Cusum and Cusum Square test[2]). In addition, centred seasonal dummies were included in the specification to control for seasonality. Table 5.4, show the results of the above-mentioned test of each model – in none of the cases can the null hypotheses be rejected, indicating white noise residuals.

5.4 Results

5.4.1 Estimation Results

Based on the results of the tests conducted above, the estimation equation for Asia (Eq. 5.3), Australasia (Eq. 5.4), Europe (Eq. 5.5), North America (Eq. 5.6), South America (Eq. 5.7) and the United Kingdom (Eq. 5.8) are:

[2] Test results available from the authors on request.

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_2 \Delta lgdp + \beta_3 \Delta lhotel \\ & + \beta_4 \Delta lreal\ exchangerate + \beta_5 larrivals_{t-1} + \beta_6 lgdp_{t-1} \\ & + \beta_7 lhotel_{t-1} + \beta_8 lreal\ exchangerate_{t-1} + e_t \end{aligned} \tag{5.3}$$

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_2 \Delta lreal\ exchangerate + \beta_3 \Delta lhotel_{t-1} \\ & + \beta_4 \Delta lcrudeoil_{t-1} + \beta_5 larrivals_{t-1} + \beta_6 lreal\ exchangerate_{t-1} \\ & + \beta_7 lhotel_{t-1} + \beta_8 lcrudeoil_{t-1} + e_t \end{aligned} \tag{5.4}$$

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_3 \Delta lreal\ exchangerate + \beta_4 \Delta lhotel \\ & + \beta_5 larrivals_{t-1} + \beta_6 lreal\ exchangerate_{t-1} + \beta_7 lhotel_{t-1} \\ & + \beta_8 S_1 + \beta_9 S_2 + \beta_{10} S_3 + e_t \end{aligned} \tag{5.5}$$

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_2 \Delta larrivals_{t-2} + \beta_3 \Delta larrivals_{t-3} \\ & + \beta_4 \Delta lhotel_{t-1} + \beta_5 \Delta lreal\ exchangerate + \beta_6 lcrudeoil_{t-1} \\ & + \beta_7 larrivals_{t-1} + \beta_8 lreal\ exchangerate_{t-1} + \beta_9 lhotel_{t-1} \\ & + \beta_{10} lcrudeoil_{t-1} + e_t \end{aligned} \tag{5.6}$$

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_2 \Delta lcrudeoil_{t-1} + \beta_3 \Delta lgdp \\ & + \beta_4 \Delta lhotel + \beta_5 larrivals_{t-1} + \beta_6 lcrudeoil_{t-1} + \beta_7 lgdp_{t-1} \\ & + \beta_8 lhotel_{t-1} + S_1 + S_2 + S_3 + e_t \end{aligned} \tag{5.7}$$

$$\begin{aligned}\Delta larrivals = {} & \beta_0 + \beta_1 \Delta larrivals_{t-1} + \beta_2 \Delta larrivals_{t-2} + \beta_3 \Delta larrivals_{t-3} \\ & + \beta_4 \Delta lreal\ exchangerate + \beta_5 \Delta lgdp_{t-1} + \beta_6 larrivals_{t-1} \\ & + \beta_7 lreal\ exchangerate_{t-1} + \beta_8 lgdp_{t-1} + e_t \end{aligned} \tag{5.8}$$

with e_t a white noise error term.

The long-run estimates are the lagged logged explanatory variables, for example, β_5 to β_8 in the Asian model equation, while S_1, S_2 and S_3 represent the seasonal dummies. Seasonal dummies (such as in the case of Australasia and South America) are only included in the final models if they were found to be significant. The short-run estimates are the remaining differenced explanatory variables coefficients. A general to specific approach is taken for the short-run relationships and the number of lags tested for inclusion based on the lag length from the AIC criteria. Therefore, variables that are significant or variables that are close to significant are included in the model (Song and Witt 2003). Table 5.5 provides the estimated ADLM results.

5.4.1.1 Short-Run Elasticities

In the short-run, tourist arrivals in the past have had a significant effect on arrivals from Europe, North America and the United Kingdom. This is a negative effect, which might be an indication that word-of-mouth information expressed by tourists who previously visited South Africa does not have the desired effect. This may be improved if more national tourist organisations focusing specifically on marketing

Table 5.5 ADLM estimation results

Variable	Asia	Australasia	Europe	North America	South America	United Kingdom
Constant	−33.7723**	−4.7877	7.787925**	−3.207213	−22.59985**	−12.62966*
$\Delta larrivals_{t-1}$	0.177999	0.2138	−0.284548	−0.513232**	0.143636	0.225291
$\Delta larrivals_{t-2}$	–	–	–	−0.489635***	–	−0.312793**
$\Delta larrivals_{t-3}$	–	–	–	−0.553866***	–	−0.34992***
Δlgdp	2.817158	–	–	–	1.545140*	–
$\Delta lgdp_{t-1}$	–	–	–	–	–	1.881329
Δlhotel	−0.40548	–	−0.499149	–	1.193489	–
$\Delta lhotel_{t-1}$	–	1.6330	–	−0.680983	–	–
Δlcrude oil	–	–	–	–	–	–
$\Delta lcrude\ oil_{t-1}$	–	−0.0505	–	−0.043644	−0.011631	–
Δlreal exchange rate	−0.14271	−0.1213	−0.212382	−0.569261**	–	–0.700141**
$\Delta lreal\ exchange\ rate_{t-1}$	–	–	–	–	–	–
$larrivals_{t-1}$	−0.94426***	−0.8194***	−0.340148**	−0.409029*	−0.85914***	−1.29987***
$lgdp_{t-1}$	4.899448***	–	–	–	1.114224***	2.982656***
$lhotel_{t-1}$	0.002245	0.8867*	−0.391782**	0.638305	1.793006**	–
$lcrude\ oil_{t-1}$	–	0.2978**	–	0.081175	0.320810**	–
$lreal\ exchange\ rate_{t-1}$	0.352646**	0.3836	0.319852***	−0.092316	–	0.133269
S_1	–	–	0.046654	–	0.218151***	–
S_2	–	–	−0.476565***	–	−0.27310***	–
S_3	–	–	0.010575	–	0.119937*	–
R^2	0.529486	0.511418	0.982497	0.693210	0.878074	0.899404
Adjusted-R^2	0.415422	0.392974	0.974621	0.587420	0.833368	0.873444
F-probability	0.000722	0.001226	0.000000	0.000032	0.000000	0.000000
AIC	−1.23243	−0.893145	−2.697749	−1.637104	−0.881657	−1.201385
SIC	−0.86007	−0.520787	−2.230684	−1.172662	−0.385180	−0.821387

Notes: ***Indicates 1 % significance
**Indicates 5 % significance
*Indicates 10 % significance

South Africa as a tourist destination are established in these continents. According to Witt and Witt (1995:455) tour operators tend to promote more than one tourist destination, unlike national tourist organisations. However, the interpretation should be treated with caution as it may only be a result of seasonality effects that are identified by lagged arrival coefficients. An increase in tourist arrivals in the past is not significant in the Asian, Australasian and South American models.

An increase in real income per capita in the present as well as in the past leads to an increase in tourist arrivals in Asia, South America and the United Kingdom, though only the current real income per capita in the South American model is significant. As seen from Table 5.5, all the short-run real income per capita coefficients are elastic which emphasises the fact that tourism is considered a luxury good.

Hotel rooms available is not a significant variable in any model in the short-run and does not have the expected sign in the Asian, Australasian and North American models. This is because many tourists make their travel bookings a long time in advance and the number of hotel rooms available therefore does not have the expected relationship with tourist arrivals.

The price of crude oil in the past does have a negative effect on tourist arrivals in South Africa in the short run. Crude oil and lagged crude oil are not significant variables in any of the models in the short run. An increase in the buying power of the country of origin does not lead to an increase in tourist arrivals in the short run. This is again due to the fact that tourists book their holidays a long time in advance. The current real exchange rate is significant in the case of North America and the United Kingdom.

5.4.1.2 Long-Run Elasticities

The long-run elasticities are shown in Table 5.6. These elasticities are calculated by multiplying the lagged independent variables by a negative sign and dividing each lagged independent variable coefficient by the lagged dependent variable coefficient in the model. Most of the variables in Table 5.6 show the correct sign except the log of crude oil. The reason for this unexpected result may be that arrivals from Australasia, North America and South America have stronger buying power due to a better exchange rate and are not offset by changes in the price of crude oil. As seen from Table 5.6 log arrivals in the long run specification have a negative sign, which indicates the error correction component showing that the change in arrivals increase towards the long-run steady state equilibrium (Asteriou and Hall 2007:312).

The size of the elasticities is also in line with studies carried out by other researchers such as Salleh et al. (2007:356) and Aresh et al. (2004:201). The size of the coefficients in the tourism demand to South Africa study done by Saayman and Saayman (2008:90) are comparable to the long-run results in this study. Saayman and Saayman (2008:90) also find a negative relationship between the number of hotel rooms available and European tourist arrivals in South Africa as well as travel cost and tourist arrivals from Australasia.

A 1 % increase in real income per capita may lead to a 5.19 % increase in tourist arrivals from Asia to South Africa. An increase of 1.30 % and 2.29 % in tourist

Table 5.6 Long-run elasticities

Variable	Asia	Australasia	Europe	North America	South America	United Kingdom
Gdp	5.1887	–	–	–	1.2969	2.2946
Crude oil	–	0.3634	–	0.2256	0.3734	–
Hotel	2.377	1.0821	−1.1518	1.5605	2.0870	–
Real exchange rate	0.3735	0.4681	0.9403	0.1985	–	0.1025

arrivals from South America and the United Kingdom may result because of a 1 % increase in real income per capita. The demand for South Africa as a destination is therefore again confirmed to be elastic.

The number of hotel rooms available also has the expected effect on tourist arrivals, except in the case of Europe which might be due in part to the colonial ties with accommodation. An increase of 1 % in the number of hotel rooms available leads to an increase of 2.38 % of tourist arrivals from Asia, 1.08 % of arrivals from Australasia, 1.56 % of tourist arrivals from North America and 2.09 % of tourist arrivals from South America.

The real exchange rate had the most significant effect on tourist arrivals from Europe. Arrivals from Europe increase by 0.94 % if the real exchange rate increases by 1 %. Arrivals from Asia, Australasia, North America and the United Kingdom might increase by 0.37 %, 0.47 %, 0.20 % and 0.10 % respectively. The sizes of the elasticities are less than one, indicating a relative price inelastic demand.

5.4.2 Forecasting Results

Following research by Song et al. (2003) and Aresh et al. (2004), the forecasts are based on the long-run relationship shown in Table 5.5. *Ex post* forecasting is used to estimate the ADLM forecasting accuracy. The result from Eq. 5.9, taking Asia as an example, is then subsequently added to the lagged log arrivals. The result is anti-logged to obtain actual tourist arrival values.

$$forecast\,\Delta larrivals = -33.7723 - 0.94426 larrivals_{1994} + 4.899448 lgdp_{1994} + 0.002245 lhotel_{1994} + 0.352646 lreal\ exchange\ rate_{1994} \tag{5.9}$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$forecast\,\Delta larrivals = -33.7723 - 0.94426 larrivals_{2007} + 4.899448 lgdp_{2007} + 0.002245 lhotel_{2007} + 0.352646 lreal\ exchange\ rate_{2007} \tag{5.10}$$

The forecasting accuracy was tested by using the MAPE, RMSPE and Theil's *U*. The MAPE measures the mean absolute percentage difference between the actual

tourist arrival values and the forecast tourist arrival values (Chu 2009:744). The closer the MAPE value is to zero, the more accurate the forecasting result is. Equation 5.11 shows how the MAPE values were generated.

$$MAPE = \left[\frac{\sum\left(\frac{e_t}{a_t}\right)}{q}\right] * 100, \tag{5.11}$$

where e = actual tourist arrival value in period t minus forecast tourist arrival value in period t, a = actual tourist arrival value, q = number of quarters.

The RMSE is the sample standard deviation of the forecast errors (Chu 2009:744). The RMSE evaluates the extent to which the forecast errors deviate from the mean actual tourist arrival value, whereas the RMSPE indicates the percentage value of the deviation between the forecast value and the mean actual tourist arrivals value. If the RMSPE is closer to zero, the forecasting result is more accurate. Equation 5.12 shows how the RMSPE is generated.

$$RMSPE = \sqrt{\frac{\sum pe_t^2}{q}}, \tag{5.12}$$

where pe is the percentage deviation between the actual and forecast value and q is as above.

The Theil's U value indicates how accurately the turning points are forecast. If the Theil's U value is close to zero, then the forecast results are accurate. Equation 5.13 shows how the Theil's U was calculated.

$$Theil's\ U = \frac{\sqrt{\frac{\sum e_t^2}{q}}}{\sqrt{\frac{\sum a_t^2}{q}} + \sqrt{\frac{\sum f_t^2}{q}}}, \tag{5.13}$$

where e, a and q are as above, and f = forecast tourist arrival value in period t.

Table 5.7 provides the forecasting accuracy results. A MAPE value with a negative sign indicates that the forecast value is larger than the actual arrival value, and a positive sign means the exact opposite. Goh and Law (2002) indicated that a MAPE of less than 10 % represents a very good forecast, while a MAPE between 10 % and 20 % is good, and between 20 % and 50 % is fair. Forecasting is therefore highly accurate for Asia and the United Kingdom, good for South America and Europe. The 1-year forecasts for North America and Australasia is also good, however, the accuracy decline rapidly as the forecasting horizon increases.

Table 5.7 Forecasting accuracy results

Asia			**Europe**		
Forecast length	*Test type*	*Accuracy*	*Forecast length*	*Test type*	*Accuracy*
3 years ahead	*MAPE*	9.661	*3 years ahead*	*MAPE*	−18.406
2 years ahead	*MAPE*	6.653	*2 years ahead*	*MAPE*	−18.626
1 year ahead	*MAPE*	3.917	*1 year ahead*	*MAPE*	−26.488
3 years ahead	*RMSPE*	12.043	*3 years ahead*	*RMSPE*	31.456
2 years ahead	*RMSPE*	8.419	*2 years ahead*	*RMSPE*	32.957
1 year ahead	*RMSPE*	4.823	*1 year ahead*	*RMSPE*	39.096
3 years ahead	*Theil*	0.073	*3 years ahead*	*Theil*	0.115
2 years ahead	*Theil*	0.050	*2 years ahead*	*Theil*	0.120
1 year ahead	*Theil*	0.026	*1 year ahead*	*Theil*	0.133
Australasia			**North America**		
3 years ahead	*MAPE*	35.538	*3 years ahead*	*MAPE*	32.017
2 years ahead	*MAPE*	26.034	*2 years ahead*	*MAPE*	22.773
1 year ahead	*MAPE*	11.031	*1 year ahead*	*MAPE*	11.772
3 years ahead	*RMSPE*	40.933	*3 years ahead*	*RMSPE*	36.652
2 years ahead	*RMSPE*	32.014	*2 years ahead*	*RMSPE*	26.933
1 year ahead	*RMSPE*	15.047	*1 year ahead*	*RMSPE*	14.801
3 years ahead	*Theil*	0.269	*3 years ahead*	*Theil*	0.237
2 years ahead	*Theil*	0.207	*2 years ahead*	*Theil*	0.164
1 year ahead	*Theil*	0.088	*1 year ahead*	*Theil*	0.084
South America			**United Kingdom**		
3 years ahead	*MAPE*	18.514	*3 years ahead*	*MAPE*	1.828
2 years ahead	*MAPE*	26.028	*2 years ahead*	*MAPE*	7.516
1 year ahead	*MAPE*	16.398	*1 year ahead*	*MAPE*	9.215
3 years ahead	*RMSPE*	30.976	*3 years ahead*	*RMSPE*	21.239
2 years ahead	*RMSPE*	28.192	*2 years ahead*	*RMSPE*	18.571
1 year ahead	*RMSPE*	16.948	*1 year ahead*	*RMSPE*	19.483
3 years ahead	*Theil*	0.174	*3 years ahead*	*Theil*	0.115
2 years ahead	*Theil*	0.174	*2 years ahead*	*Theil*	0.109
1 year ahead	*Theil*	0.095	*1 year ahead*	*Theil*	0.119

European forecasting is not that accurate for the first year forecast. This may be due to the data range that differs from that of the other continents. The European forecasts therefore range from 2007 quarter 1 to 2009 quarter 4. Since the global financial crisis had a negative impact on global tourist arrivals during 2008 and 2009, the poor results for Europe were expected to some extent. National statistics confirms the decline in arrivals from Europe in this period (SA Tourism 2009:17). In general, the forecasting accuracy worsens as the timeframe increase, with 1-year forecasts more accurate than 3-year forecasts.

5.5 Conclusion

This article focused on forecasting tourism demand in South Africa by using an Autoregressive Distributed Lag Model – an ideal method for smaller sample sizes with the inclusion of explanatory variables to determine future arrivals provides for policy recommendations. Intercontinental arrivals from Asia, Australasia, Europe, North America, South America and the United Kingdom were modelled and forecasted. Africa is not included in this study since arrivals from Africa often visit South Africa for reasons other than vacationing in South Africa, while data limitations and other barriers also contributed to the decision to exclude Africa from this study.

Based on the most popular variables included in analyses elsewhere in the world and in previous South African studies, the variables selected for inclusion in the models were chosen and specification tests based on lowering correlation between independent variables influenced the choice of the final specification. The inclusion of an error correction specification made it possible to determine both the short and long run elasticities. The empirical results show that real GDP per capita, real exchange rate and the number of hotel rooms available have an influence on tourism demand in the long run in most of the models.

Three important policy implications stem from the results of this research. Firstly, the demand for South Africa as a tourist destination is income elastic over both the short and long run. This implies that any shocks to world GDP or origin country recessions will have an immediate and long run effect on tourist arrivals in South Africa. Even though this is an aspect that is beyond the control of policy-makers, it still signals important measures that can be taken, such as stimulating domestic tourism in the case of world recessions.

Secondly, infrastructure for tourism in South Africa, as explained by hotel rooms, do not create a significant benefit over the short run, but do add to tourist arrivals in the long run. Policy makers can therefore increase the number of hotel rooms (or general infrastructure) in order to sustain the increase in the number of tourist arrivals in South Africa over the long run.

Thirdly, while price competitiveness remains important, the demand for South Africa as a destination is relatively price inelastic over both the short and the long run. This implies that the significance of exchange rate movements may be over-estimated when analysing international tourism numbers. However, it might still have a spending implication, which could be ascertained by future research. It is also interesting to note that transport cost (as measured by the price of crude oil) has a small effect on arrival numbers.

In terms of the forecasting accuracy, the results are relatively accurate with low percentage errors, especially for the 1-year forecasts. Keeping in mind that the models do not have the exact same explanatory set, the best of these results are the forecasted arrivals from the United Kingdom and Asia. Future research can focus on improving the forecasting accuracy by using longer data sets which may

improve the estimates or by including other destination country-specific factors. Furthermore, the accuracy of the ADLM approach should be tested against other benchmark models, such as naïve and ARIMA models.

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The Importance of ICT for Tourism Demand: A Dynamic Panel Data Analysis

6

Célia M.Q. Ramos and Paulo M.M. Rodrigues

6.1 Introduction

The union between ICT (Information and Communication Technology) and tourism, designated as electronic tourism or etourism, has enabled the strategic management of companies linked to the tourism sector, and has also revolutionized operations within the tourism distribution channel, forcing the re-evaluation of actions and positioning by stakeholders.

According to Buhalis (2003), ICT enable tourism industry to become more flexible by allowing for faster and more efficient responses to requests from customers, while reducing operating costs and enabling more competitive prices. Associated with the development of ICT, the Internet has emerged as an excellent platform for communication and sharing information facilitating instant access and distribution of tourist information, allows for the booking of tourism products, and permits tourism organizations to reposition themselves in the value chain and to reach more tourists than through traditional channels because of the interactive environment in which customers may create their travel according to their wishes and needs (see Buhalis and O'Connor 2005; Garbin Praničević 2006; Pease et al. 2005; WTO 2001).

Electronic distribution in tourism has grown markedly over the last two decades. The potential of technology associated with this activity has been recognized by tourists, intermediaries and producers; and resulted in its adoption by organizations,

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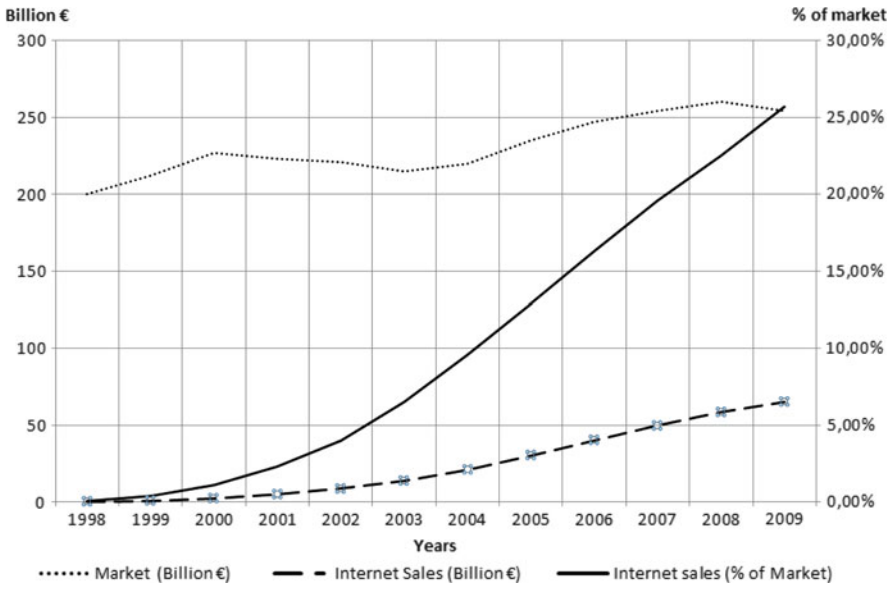

Fig. 6.1 Trends in overall online travel market size in Europe (Source: Marcussen 2009)

professionals and travellers. This is noted by the growing number of online sales (see Marcussen 2009), as presented in Fig. 6.1.

The technology that surrounds tourism activity cannot be ignored in terms of demand, since in addition to information sharing, communication, booking and purchasing of travel products, it also provides a decision support environment that tourists can access prior to or during their trip.

In this sense, the role of technology and its developments in tourism and in society cannot be neglected in the analysis and modelling of tourism demand. In this regard, dynamic panel data models are suitable to model economic relations, such as, e.g. habit persistence and training, that exist within the tourism activity and which are not adequately captured by other models (Verbeek 2004). Panel data models consider variables observed over time and across different units, and can identify and measure effects that simply are not detected through the purely sectional or temporal analysis of data.

This paper is structured as follows. Section 6.2 presents an overview of the potential of tourism distribution through the Internet; Sect. 6.3 provides a characterization of tourism demand as well as the tools needed to set up the panel data model; Sect. 6.4 introduces the dynamic panel data model and discusses inference and estimation associated to this model; Sect. 6.5 presents the results obtained from the dynamic panel data model and finally, Sect. 6.6 presents the main conclusions.

6.2 Tourism Distribution and ICT

Information is vital for tourists since decisions have to be made when purchasing a trip (Xiang and Fesenmaier 2006). In particular, a tourist has to decide, e.g. what destination to choose, at what time of the year to travel, what is the best means of transportation, and what is the best accommodation. According to Sheldon (1989: 589), "Information is the lifeblood of the tourism industry", travellers, travel agents, suppliers and all stakeholders in the tourism distribution chain need information. The use of ICT in tourism, has allowed organizations to improve the flow of information, has facilitated the exchange of information between actors; has improved response times to external requests, a faster and efficient form to answer inquiries from tourists; has increased tourism development in a society increasingly competitive, and introduce more competitive prices (Buhalis and Law 2008).

At the conceptual level, the relationship between ICT and the tourism sector has been under analysis since the early 1990s; see, *inter alia*, Buhalis (2003), Xiang and Fesenmaier (2006), Garbin Praničević (2006), Gretzel et al. (2004), Pease et al. (2005), Poon (1993), O'Connor (1999), Werthner and Klein (1999), and Sheldon (1997). Given that tourism is highly dependent on information, these authors consider that the development of ICT has been the main driver of changes in the development of tourism and related organizations (Ramos et al. 2009).

Organizations can use ICT strategically to increase the differentiation of their products and add value to existing offers (Bazini and Elmazi 2009; Garbin Praničević 2006; Paskaleva 2010). ICT applied to tourism activities has gradually involved the reengineering of the entire range of processes associated with the distribution channels and all players have to re-evaluate their position and core competencies (Buhalis and O'Connor 2005). The role of each player in the distribution channel, within the operational management of tourism, will be critical to appreciate the range and nature of the new emerging technologies. Distribution becomes one of the most critical factors for the competitiveness of destinations and tourism businesses (Buhalis 2003).

Tourism distribution can be defined as the process consisting of all steps through which a consumer good passes, from the moment that it is produced until it becomes available to the consumer (Cunha 2003), creating a tourism distribution channel, i.e. an operational structure (a system of relations or various combinations of organizations), through which a producer sells goods and services or confirms the trip to be purchased.

The main functions of tourism distribution are to provide information, and to combine and organize trips (Buhalis 2003). The development of ICT allowed for the creation of technological platforms which allowed for the establishment of a wide network of information between stakeholders (Pease et al. 2005) and, which today, has become fundamental to the tourism industry and a critical factor of the success of tourism distribution. Tourism distribution implemented through distribution systems over the Internet, or through electronic means, is referred to as Electronic Distribution (Ramos et al. 2009). From Fig. 6.2 it can be observed that Electronic Distribution has profound implications on the satisfaction of tourism

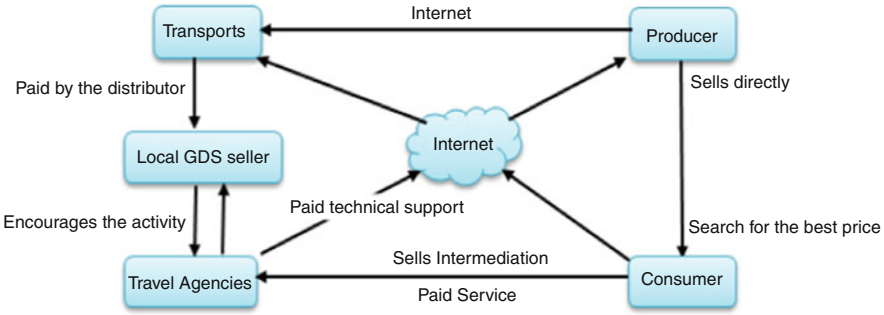

Fig. 6.2 Tourism distribution (Source: Adapted from Cunha 2003: 321)

demand, since it enables the interconnection between consumers, producers and intermediaries, while at the same time providing tools for developing marketing strategies (Buhalis 2003).

According to the World Tourism Organization (WTO 2001) the partnership between the Internet and tourism is ideal, because it allows for instant and intuitive interconnections between the agents involved in tourism distribution. For tourists, it provides access to relevant information on destinations, and allows for a quick and easy reservation process. For tourism businesses and destinations, it enables the development of a reservation system for a wider number of customers at a lower cost, and provides a tool for communication and development of relationships between trading partners, suppliers and intermediaries. These characteristics are of great importance due to the fact that tourism products are complementary in nature, implying the need of being easily and instantly accessible from several points around the globe, and naturally, also require a constant, effective and efficient updating of information by current tourism information systems (TIS).

6.3 Tourism Demand Analysis and Modelling

The analysis of tourism demand and the factors that may affect it has generated great interest among researchers worldwide, see for instance, Brida and Risso (2009), Crouch (1994), Daniel and Rodrigues (2005), Uysal (1998), and Witt and Witt (1995). In tourism demand analysis it is necessary to determine how to measure demand and the factors or determinants that explain it. The list of determinants and variables used in several studies is extensive but because of the difficulty experienced in the relationship between all variables (Uysal 1998) and data limitations (Song and Witt 2000), only a limited set is typically used. In particular, the variables generally considered in the literature are population, income, prices (cost of travel to a destination and cost of living in a destination), substitute prices, exchange rates, and marketing variables; see, for instance, Crouch (1994), Daniel and Rodrigues (2005), Song et al. (2009), Uysal (1998) and Witt and Witt (1995). However, to the best of our knowledge, with the exception to the work

by Fleischer and Felsenstein (2004) and Mavri and Angelis (2009), variables that characterize the technological environment have, so far, not been considered in tourism demand modelling and forecasting.

Based on the discussion of the previous section, analysing tourism demand without regards to the technological environment seems reductive. Hence, it is relevant to identify variables that may be used to help better understand tourism demand in a predominantly technological environment. Variables, such as, for example, the year in which a promotional site of a particular destination appeared, the number of overnight stays booked online, or the year from which on it was possible to make online reservations for a given destination, are potential proxies that may be used.

Estimating future expected tourism demand is critical to the planning of related activities, such as, for example, for investment decisions in infrastructures at the destination (airports, motorways, railways, accommodations, health centres and other support services, etc.), which require planning and long-term investment.

Predictions are of great importance, since the resulting projections may be incorporated into the decision-making process. This importance becomes even more evident if we consider that economic conditions change over time, and that decision-makers must find ways to detect and prevent the impacts of these changes on their business and on the economy.

Panel data models are an ideal tool to analyse tourism demand in this context, since these models allow us to simultaneously consider temporal and sectional characteristics of the data, and to control the individual heterogeneity of each section, present more information, more variability, permit to study the dynamic adjustment arising unexpectedly, and to identify and measure effects that simply are not detected in the data that are purely temporal or sectional. Furthermore, with these models it is possible to produce forecasts which are important for the decision making process and to professionals related to tourism, as a way to prevent from unexpected changes that may occur in the environment that surrounds tourism activity.

6.4 Dynamic Panel Data Models

A simple dynamic panel data model is,

$$Y_{it} = \delta Y_{it-1} + \beta X_{it}{}' + \varepsilon_{it} \tag{6.1}$$

with $i = 1,\ldots, N$, $t = 1,\ldots,T$; and ε_i is iid$(0,\ \sigma_\varepsilon^2)$.

Panel data with a temporal dimension, T, and a crossectional dimension, N, which are moderate to large, are designated as "Data Field" (Quah 1994), "Panel Time Series" (Smith and Fuertes 2010), or "Macro Panel Data" (Baltagi and Kao 2000; Matyas and Sevestre 2008). In these panels the time series properties, such as

nonstationarity, spurious regressions and cointegration need to be taken into consideration (see Verbeek 2004).

6.4.1 Panel Data Unit Root Tests

In macro panel data it is important to test whether the panel is nonstationary, through unit root tests which are based on the following test regression,

$$Y_{it} = \alpha_i + \gamma_i y_{i,t-1} + \varepsilon_{it} \tag{6.2}$$

or alternatively as,

$$\Delta y_{it} = \propto_i + \ \pi_i y_{i,t-1} + \ \varepsilon_{it} \ \text{where} \ \ \pi_i = \ \gamma_i - 1 \tag{6.3}$$

The null hypothesis (H_0) is that all series have a unit root, i.e. $H_0 : \pi_i = 0$ for each country i. The immediate first choice for the alternative hypothesis is that all series are stationary with the same mean reversion parameter, i.e. $H_1 : \pi_i = \pi < 0$ for each country i, as used by Levin and Lin (1992). However, a more general alternative hypothesis which allows for the mean reversion parameter to be different across countries, i.e., $H_1 : \pi_i < 0$ for at least country i, can also be considered, following the procedures by Maddala and Wu (1999), Choi (2001) and Im et al. (2003). Furthermore, additional to the unit root tests already mentioned, the tests by Levin et al. (2002), the ADF (Augmented Dickey-Fuller) test, and the tests by Breitung and Meyer (1994), Harris and Tzavalis (1999) and Holtz-Eakin et al. (1988), can also be considered.

Essentially, panel unit root tests are classified into first and second generation tests (Matyas and Sevestre 2008), where the difference lies in the fact that first generation tests consider that the sections are independent whereas second generation tests allow for dependence between sections (see Hurlin and Mignon 2004, for an overview).

6.4.2 Panel Data Cointegration Tests

According to, *inter alia*, Engle and Granger (1987) and Smith and Fuertes (2010) if there is a linear combination of I(1) variables, which is I(0), then the I(1) variables establish a cointegrating (long-run) relationship. Several procedures have been proposed to test for cointegration in panel data; see, for instance, the Dickey-Fuller (1979) type test applied to residuals proposed by Kao (1999) (also known as Kao test), the LM (Lagrange multiplier) test proposed by McCoskey and Kao (1998), and the tests proposed by Pedroni (2004).

The Kao (1999) test is applied to the residuals of a fixed effects model, to test for the null hypothesis of no cointegration between non-stationary variables (in line with the

work of Engle and Granger 1987); the McCoskey and Kao's (1998) test procedure is based on an LM test applied to the residuals of the long-run regression to test for the null hypothesis of cointegration; and finally, the tests proposed by Pedroni (2004) are used to test the null hypothesis of cointegration in heterogeneous panels.

The existence of cointegration among nonstationary variables ensures the existence of a long-run equilibrium between them, which is defined by a cointegrating vector, that can be estimated by a panel ARDL model as will be discussed next.

6.4.3 The ARDL Model

According to Smith and Fuertes (2010: 27), a widely used time-series model to examine the relationship between economic variables is the Dynamic Linear Regression Model or the ARDL (AutoRegressive Distributed Lag) model.

In the case of a model with two exogenous variables (x_t, z_t) an ARDL(p, q, r) takes the form,

$$y_{it} = \alpha_0 + \sum_{j=1}^{p} \alpha_j y_{it-j} + \sum_{j=0}^{q} \beta_j x_{it-j} + \sum_{j=0}^{r} \gamma_j z_{it-j} + u_{it}. \tag{6.4}$$

The estimation of an ARDL model by OLS is asymptotically biased unless the explanatory variables $(x_{it}, i = 1, \ldots, N)$ are exogenous and the dynamics is homogeneous for all i sections of the panel (Scarpelli 2010). Alternatively, Fully Modified OLS (FMOLS) and Dynamic OLS (DOLS) may present better performance than OLS by correcting for endogeneity and correlation of the regressors.

6.5 Dynamic Modelling of Tourism Demand with Macro Panel Data

Tourism demand analysis is a complex process because the tourism sector encompasses information from different sectors which are complementary to each another. Furthermore, investigating the phenomenon of tourism without considering the technological environment that supports it represents an important constraint.

Currently, the technological environment that surrounds the tourism activity allows travelers to select, book and purchase tourism products through the Internet through Tourism Information Systems based on the Web as, for example, the Amadeus Global Distribution System (www.amadeus.com), Computer Reservations Systems, Expedia (www.expedia.com) and Travelocity Internet Distribution Systems (www.Travelocity.com), among others. In addition to existing ICT this environment also allows for an efficient electronic distribution of tourism products, allows for the reduction of barriers to small but creative enterprises, since it allows for direct sales to customers (Bazini and Elmazi 2009; Bloch and Segev 1997; Buhalis and

O'Connor 2005; Garbin Praničević 2006; Paskaleva 2010; WTO 2001). The aim of this study is to empirically analyse whether ICT has contributed to tourism demand growth in a particular country.

6.5.1 Model Specification

Analysing tourism demand for a particular country means that it is relevant to know what determines the choice for that country. In this sense, it is necessary to identify the determinants of tourism demand, as well as the most appropriate measure of demand, and define the relationship between variables by specifying a demand function.

To identify the determinants that explain tourism demand as well as the variable that enables its measure, it is necessary to identify the places chosen as destinations, the number of temporal periods considered in the sample and other relevant characteristics important to this investigation.

Countries: In 2007, according to Euromonitor International data (World Economic Factbook), the number of international overnight stays was 2.158.743.800, with 43.38 % corresponding to Western Europe, i.e. the region that has captivated more tourism in the world. For the present study 18 Western European countries were considered, namely: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Holland, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Temporal Sample: The sample considered in this study covers the period from 1993 to 2007.

Dependent variable: The dependent variable used was the number of international overnight stays in a particular country.

Determinants: Following the earlier discussion on the determinants of tourism demand, we consider as possible explanatory variables productivity as representative of population (P); GDP (Y), as representative of income; Consumer price index (C), as representative of the price component of cost of living at a destination; Passengers transported (V), as representative of transportation price – component of cost of travel to the destination; Purchasing power parity (E), as representative of exchange rates; Total spending on advertising (A), as representative of marketing; and a dummy variable (M) which considers the beginning of the electronic commerce in 2002.

In order to also assess the influence of technology on tourism demand, and taking into account the difficulty felt at the national and international level to obtain data that represent the technological environment that surrounds this activity, the number of Internet users (I) was chosen to characterize the available technologies in a particular country that support the tourist activity. This variable is considered as an attempt to represent all tourism entities and professionals whose work is the electronic dialog with the tourist or the management of online tourism, such as in the sale of products or the reply to tourist inquiries. The Internet represents

an excellent technological platform that supports tourism, since it enables the sharing, distribution, communication, booking and sale of tourism products.

6.5.2 The Tourism Demand Function

The tourism demand function considered is,

$$D_{it} = \alpha_i P_{it}^{\beta_1} Y_{it}^{\beta_2} C_{it}^{\beta_3} V_{it}^{\beta_4} E_{it}^{\beta_5} A_{it}^{\beta_6} I_{it}^{\beta_7} M_{it}^{\beta_8} \mu_{it} \tag{6.5}$$

where

Di is the number of nights international tourists spent in country i;

P_i is the productivity in country i;

Y_i is the level of income in country i;

$C_i$is the cost of living in destination i;

$V_i$is the cost of travel to destination i;

E_i is the exchange rate in country i;

A_i is the total spend in advertising by country i;

I_i is the number of the Internet users in country i;

M_i is a dummy that considers that the beginning of electronic commerce occurred in 2002.

μ_i is a disturbance term.

In addition, to allow for direct comparison with other studies in tourism, the functional form in (6.5) allows for the identification of the elasticity associated with a particular variable and the consequent impact that this variable has on tourism demand.

6.5.3 Data Collection and Variable Construction

The panel data structure has the configuration of a table, consisting of a number of columns equal to the number of variables to be included in the model and the number of rows equal the number of sections (countries) multiplied by the number of time units (years).

Table 6.1 Characterization of the explanatory variables in tourism demand

Variable	Units	Source
P	People per Km^2	*Trade sources, National statistics*
Y	€ mn (thousands of Euro)	*International Monetary Fund (IMF), International Financial Statistics*
C	€ mn (thousands of Euro)	*Trade sources, National statistics*
V	Thousands of people	*International Civil Aviation Authority, National Statistics*
E	Dollars	*National Statistics*
A	€ mn (thousands of Euro)	*World Association of Newspapers*
I	Thousands of people	*International Telecommunications Union, World Bank, Trade Sources, Euromonitor International*
M	Takes the value 1 if the year >= 2002 And takes the value of 0 if the year < 2002	Eurostat

The variable considered to measure tourism demand was the number of overnight stays by international tourists (D). This variable is expressed in thousands of people and its source was the WTO (World Trade Organization).

The independent variables used to help explain tourism demand for a particular country are as described previously (see Table 6.1 for a summary). The variable M, which represents a dummy variable, will analyse the effect of the e-commerce on tourism demand. Due to gaps and omissions of data, we considered that the e-commerce emerged around 2002. Thus, the dummy variable M will be zero for years before 2002 and one from 2002 onwards. This assumption is made for all countries considered.

6.5.4 Dynamic Modelling and Estimation with Macro Panel Data

The potential of analysis of panel data models have been increasingly evident, due to the characteristics previously mentioned, and together with the technological developments have provided the possibility to collect, store and process data, and to perform complex calculations, leading to the development of panels with a large time dimension, T, and a large number of cross-section units, N.

However, with the increase of the temporal dimension of the panels, concepts relating to time series in panel data where integrated in the modelling exercise in order to investigate the properties of the economic variables. This allows, for instance, to investigate the effects caused by the application of a given policy to a particular sector.

The panel ARDL model considered to characterise tourism demand is,

$$\begin{aligned} lnD_{it} = {} & \alpha_i + \beta_{1i} lnD_{t-1} + \beta_{2i} lnP_{t-1} + \beta_{3i} lnY_{t-1} + \beta_{4i} lnC_{t-1} \\ & + \beta_{5i} lnV_t + \beta_{6i} lnE_t + \beta_{7i} lnA_{t-1} + \beta_{8i} lnI_t + \beta_{9i} M_{it} + u_{it} \end{aligned} \tag{6.6}$$

where $i = 1,2,\ldots, N$ countries and $t = 1, 2, \ldots, T$ time periods.

Table 6.2 Unit root tests results

Tests	Levin, Lin e Chu (LLC)	Im, Pesaran e Shin (IPS)	ADF – Fisher	PP – Fisher	Results: (5 % level of significance)
Null H.: variable	H0: assume a common unit root	H0: assume an individual unit root	H0: assume an individual unit root	H0: assume an individual unit root	H0: the series are not stationary
LnD	−3.17025 (0.0007)	**−2.8240 (0.3888)**	**27.3220 (0.5008)**	79.5889 (0.0000)	H0 accepted by the IPS and ADF tests
					Non stationary
LnP	**2.57855 (0.9950)**		**3.51894 (1.0000)**	**1.89614 (1.0000)**	H0 accepted by all the tests
					Non stationary
LnY	**−0.98888 (0.1615)**	**3.35766 (0.9996)**	**15.1079 (0.9773)**	44.1825 (0.0267)	H0 accepted by LLC, IPS and ADF tests
					Non stationary
LnC	**−0.51405 (0.3036)**		**4.48419 (0.9999)**	41.2267 (0.0035)	H0 accepted by LLC and ADF tests
					Non stationary
LnV	−3.95280 (0.0000)	**0.92241 (0.8218)**	**26.1731 (0.5635)**	47.6740 (0.0116)	H0 accepted by IPS and ADF tests
					Non stationary
LnE	−3.57054 (0.0051)		**16.4733 (0.5596)**	**14.5615 (0.6918)**	H0 accepted by ADF and PP tests
					Non stationary
LnA	−3.04023 (0.0012)	**0.45219 (0.6744)**	**21.8950 (0.7861)**	**27.3474 (0.4994)**	H0 accepted by IPS, ADF and PP tests
LnI	−11.1568 (0.0000)	−6.63803 (0.0000)	96.1714 (0.0000)	210.991 (0.0000)	H0 rejected by all the test
					Stationary

In a panel with a high time dimension, *T*, one concern must be the potential existence of unit roots i.e., whether the panel is stationary or not (Verbeek 2004).

6.5.5 Unit Root Test Results

The stationarity of the series used in this study can be determined from Table 6.2, which presents the results obtained for various panel unit roots test.

Taking into account the results of the tests presented in Table 6.2, it was concluded that all series, with the exception of the number of Internet users (*I*), are non-stationary. However, using Granger Causality tests where the null hypothesis is that a variable does not cause the other, we obtained a *p-value* of 0.0099. Thus, we observe that the null hypothesis was rejected at a 5 % significance level,

Table 6.3 Estimation results of the ARDL macro panel data model

	First estimation		Final model	
	$R^2 = 0.9972$		$R^2 = 0.9972$	
	R^2 adjusted $= 0.9969$		R^2 adjusted $= 0.9969$	
	Coefficient	Probability	Coefficient	Probability
c	5.3290	0.0000	5.3189	0.0000
LnD_{it-1}	0.6801	0.0000	0.6887	0.0000
LnP_{it-1}	0.0033	0.9025		
LnY_{it-1}	−0.0578	0.0000	−0.0676	0.0000
LnC_{it-1}	0.0851	0.0000	0.0802	0.0000
LnV_{it}	0.0461	0.0390	0.0399	0.0321
LnE_{it}	−0.0364	0.0000	−0.0384	0.0000
LnA_{it-1}	−0.0187	0.3032		
LnI_{it}	0.0134	0.0297	0.0077	0.0359
M_{it}	−0.0173	0.1510		

which implies that the variable *LnI* will continue to be included in the model. Given the nonstationarity of several variables it is also important to know whether there is cointegration.

6.5.6 Cointegration Tests

From the application of panel cointegration tests to the variables used in this study we obtained a test result of 5.7210 for the Kao test (*p-value* of 0.00). Thus, the null hypothesis was rejected at all usual significant levels, i.e., 10 %, 5 % and 1 %, and it can therefore be concluded that there is evidence of cointegration between the variables of the model, i.e., although the variables are non-stationary, they establish a stationary long-run equilibrium relationship.

The existence of cointegration among the nonstationary variables ensures the existence of a long-run equilibrium between them, which is defined by a cointegrating vector. The estimation of this vector can be done using the panel ARDL model in (6.6). The estimation results are presented in Table 6.3. In the first estimation, the quality of adjustment was 99.72 %, however, it showed non-significant variables (at a 5 % significance level) which were excluded from the model.

In the final model we removed the variables whose *p-value* exceeded 0.05, i.e., the variables related to population, marketing and electronic commerce. In this model, the determinants which affect tourism demand in the countries under analysis are: the lag of overnight stays, the lag of income, the lag of the cost of living at the destination, the current cost of travel to the destination, the current purchasing power and the environment provided by ICT.

Furthermore, according to the results of Table 6.3 it can be concluded that the number of Internet users positively affects tourism demand with an elasticity of 0.0077.

6.6 Conclusion

Panel data models are suitable for dynamic modelling of economic relations. In the present study based on the modelling and estimation of the cointegration vector it was concluded that it is important to include the variables that define the current tourism behaviour. In addition, estimates show a good specification and allow us to conclude for the existence of a long-term relationship between variables.

We also conclude that the number of Internet users, as representative of the technological environment provided by current and emerging technologies, contributes to an increase of tourism demand for a given country.

The panel ARDL model presented in this study deserves further analysis as it is the basis for the development of other models, such as, for example, panel error correction models which allow for the short and long-run dynamics between variables to be explicitly considered.

In future work we will investigate tourism demand in a group of homogeneous countries, or the countries will be grouped in groups of homogeneous nature. Furthermore, it will be interesting to look at other variables that may represent the environment provided by ICT in tourism demand, such as: "the number of tourist organizations with sites in the Internet" or "the number of overnights stays that was reserved online".

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Migration and Tourism Flows to New Zealand

7

Murat Genç

7.1 Introduction

Tourism is an important sector in many countries as a source of foreign exchange earnings. In the case of New Zealand, for example, the contribution of international tourism in the year ended March 2011 is $9.7 billion (in New Zealand dollars), which amounts to 16.8 % of New Zealand's total exports of goods (Statistics New Zealand 2011). Only the dairy industry in New Zealand has more export earnings than tourism. Not surprisingly, agencies such as the UN World Tourism Organization (WTO) and the World Trade Organization have been treating tourism processes as an equivalent to actual goods exports.

Understanding the factors that affect the flows of international tourism has been an important issue in empirical research in tourism. There are hundreds of empirical studies on tourism demand. Reviews of most of these studies are provided by Uysal and Crompton (1985), Crouch (1994a, b), Witt and Witt (1995), Lim (1997), Li et al. (2005), Song et al. (2008), and Song and Li (2008). These studies and the papers they review focus on tourism demand modelling, dealing with typical influential factors of international tourism such as exchange or interest rate, price, income, leisure time, and other psychological factors. Although Guthrie (1961), one of the earliest works in the field of tourism demand, found the amount of emigration from the tourist receiving countries to be one of the three determinants of a country's tourism revenue, the immigration-tourism linkage does not feature in any of these reviews. Seetaram and Dwyer (2009) confirm the lack of empirical research on this link in the field of tourism economics by stating that only three papers have explored the relationship between immigration and tourism. The main purpose of this study is to explore empirically the relationship between immigration and tourism using data on New Zealand.

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One of the methodologies used in empirical analysis of tourism demand is based on estimating a gravity model. Gravity models have also been used in empirical studies in the area of international trade. Although the gravity model was first used both in tourism and international trade studies about the same time (Crampon (1966) in tourism, Tinbergen (1962), and Pöyhönen (1963) in international trade), the popularity of the model has not been the same in these fields. Witt and Witt (1995), for example, state that recent studies of tourism demand have not used the gravity model since mid-1970s, and gravity models are not even mentioned in more recent reviews of tourism demand studies such as Li et al. (2005) and Song and Li (2008). Gravity models in international trade on the other hand have enjoyed a significant revival in the last two decades largely due to the strengthening of its theoretical foundations after the explanation proposed by Anderson (1979).[1] Given these developments and the view that tourism flows are a special form of trade flows, it is not surprising that there is renewed interest in using gravity models to investigate the determinants of tourism flows. (See, for example, Garín-Muñoz and Amaral (2000), Gil-Pareja et al. (2007), Zhang and Jensen (2007), Durbarry (2008), Khadaroo and Seetanah (2008), Law et al. (2009), Keum (2010), Eryiğit et al. (2010), Leitão (2010), Yang et al. (2010), Chang and Lai (2011), and Vietze (2012).)

Consistent with this revival, this paper uses the most common specification in empirical trade research, the gravity equation, to establish the determinants of tourism flows to New Zealand. It estimates a gravity model by using an unbalanced panel data set consisting of more than 190 countries with whom New Zealand has traded between the years 1981 and 2006. The estimation technique employed is a count panel data model. This is the first study of which I am aware in which a count data model is used in estimating tourism flows by using a gravity model. This paper tests whether, all else equal, tourism flows to New Zealand from countries with larger stocks of migrants are larger. The gravity model used controls for standard determinants of trade that might be confounded with migration, such as the size of the economy or the distance to New Zealand. By applying panel data techniques, unobserved permanent characteristics of countries and global trends that might stimulate both migration and trade are also controlled for.

7.2 Literature Review

Although Williams and Hall (2000) say that many forms of migration generate tourism flows, the immigration-tourism linkage has not received much attention in empirical tourism research. According to Gheasi et al. (2011) this lack of attention

[1] Anderson and van Wincoop (2004), for example, have shown that any trade model will give a gravity-like structure provided that the allocation of trade across countries is assumed to be separable from the allocation of production and consumption within countries. Thus, the gravity model can be derived from Heckscher-Ohlin, as well as increasing returns to scale, Ricardian models, and so on (Bergeijk and Brakman 2010).

may be due to the lack of appropriate data and the absence of a solid theoretical framework. Seetaram (2012), however, identifies seven mechanisms through which immigration can influence international tourism flows. These include mechanisms that influence not only the number of tourists visiting friends and relatives (VFR) but also the number of business travellers and tourists who travel for leisure purposes. Apart from the mechanisms related to VFR tourism, immigrants who visit their origin of country, for example, may promote their adopted country of residence, stimulating short-term visits. Immigration can also enrich a destination's cultural life making it more interesting and diverse, and therefore, making it a more attractive place to visit. Awareness that compatriots have settled there may be a contributing factor even for tourists who do not have friends or relatives in a destination. Immigrants who retain business links with their country of origin may contribute to the expansion of that destination's international trade and stimulate business travel.

Following Gould (1994), it has also been widely accepted in international trade literature that through their ability to speak languages, navigate legal systems, and draw on social and commercial networks in their countries of origin, immigrants can potentially reduce barriers to international trade. Unlike the tourism literature, there are numerous studies in international trade that have examined the effects of immigration on trade flows. Almost all of these studies have found a positive relationship between immigration and trade regardless of the different samples, specifications, and estimation methods used in them. They have almost exclusively used gravity models. The estimated immigration elasticities of trade vary with the choice of covariates, the nature of data (cross-section or panel), the country of study, and the estimation technique. Genç et al. (2012) provide a meta-analysis of 48 studies and find that an increase in the number of immigrants by 10 % is expected to increase the volume of trade on average by about 1.5 %.

There are only a few empirical studies in tourism literature that have investigated the impact of immigrants on tourism flows. However, they all find that the impact of immigrants on tourism demand is significant both statistically and economically. Smith and Toms (1978) estimated a travel demand model using panel data for the period 1964–1977 for Australia and found that the immigration elasticity of demand for inbound leisure demand was 0.27. Hollander (1982) used a time series approach and estimated immigration elasticities for demand for tourism to Australia from different countries (New Zealand, UK, USA, Japan, Canada, Germany, and Italy), and obtained immigration elasticities that exceed unity for the number of arrivals from UK and New Zealand. Dwyer et al. (1993) also studied the arrivals to Australia. After estimating regression equations using a double log form and data for arrivals from twenty-nine countries, they found that an increase in immigration by 10 % implied a 5.5 % increase in arrivals for VFR purposes. However, they did not find a statistically significant impact on other types of tourism. Qiu and Zhang (1995) estimated a travel demand model separately for arrivals to Canada from

USA, UK, France, West Germany, and Japan using annual time series data for the period 1979–1990. They found the coefficient of immigration to be positive and statistically significant for the United Kingdom, France, and Japan.

The number of more recent empirical tourism studies about the impact of immigration is also limited to a scant few. Seetaram and Dwyer (2009) estimated a tourism demand model using a panel data set from 1992 to 2006 for nine of the main markets of Australia (New Zealand, UK, USA, Japan, China, Hong Kong, Singapore, Malaysia, and South Korea). Their results strongly support the hypothesis that when the number of Australian residents born in a particular country rises, the number of arrivals from that country increases. The estimated immigrant elasticity of tourism demand in their study is 3.2. Gheasi et al. (2011) analyzed the relationship between VFR visits and migration by estimating a gravity model using panel data for the period 2001–2006 from the UK. The estimated immigration elasticity in their study is 0.69 for inbound flows and 0.46 for outbound flows. (They are slightly lower, 0.37 for both inbound and outbound flows, when time and country effects are included in the regressions.) Leitão and Shahbaz (2012) investigated the relationship between immigration and Portuguese tourism demand using panel data for the period 1995–2008. They used a gravity model, and obtained an estimated immigration elasticity of 0.49. Seetaram (2012) estimated a dynamic tourism demand model using data from 1980 to 2008 for the 15 main markets of Australia. She estimated short-run and long-run immigration elasticities of 0.03 and 0.09 respectively. Although their main focus was not tourism exports, Law et al. (2009) estimated an immigration elasticity of 0.23 for New Zealand's tourism exports.

All the studies on the impact of immigrants on tourist arrivals use the logarithm of arrivals as the dependent variable. The approach taken in this present study is based on estimating a gravity model with a count dependent variable.

7.2.1 The Gravity Model

The gravity model has long been one of the most successful empirical models in economics, particularly in explaining the variance in bilateral trade volumes.[2] The gravity model in international trade literature was first introduced by Tinbergen (1962) and Pöyhönen (1963) as a statistical model to explain the variation in bilateral trade flows. Although it was widely criticized in its early days for not having an economic theoretical foundation, there have been many micro foundations provided since Anderson (1979). Anderson and van Wincoop (2004), for example, have shown that any trade model will give a gravity-like structure

[2] Excellent reviews of gravity models can be found in Anderson (2011) and Bergstrand and Egger (2011).

provided that the allocation of trade across countries is assumed to be separable from the allocation of production and consumption within countries. So, the theoretical foundation of the gravity model is more than justified in the current state of the literature. Consequently, the gravity model remains the most popular model to analyze the determinants of international trade flows. Although most studies have traditionally focused on trade in commodities, the use of gravity model in the analysis of bilateral trade in services (such as tourism) is gaining popularity as more data on trade in services are becoming available. In one such study, Kimura and Lee (2006) have found that services trade is better predicted by gravity equations than goods trade. Walsh (2008) also found that the gravity model fitted services trade flows in a similar manner to trade in goods.

The basic idea behind the gravity model comes from the gravity theory in physics. Newton's law of universal gravitation states the gravitational attraction between two bodies is proportional to the product of their masses and inversely proportional to the square of the distance between them. In trade models, the physical bodies are the exporting and importing countries, and their "mass" is their economic mass. In other words, the idea is that the bigger the sizes of the economies, the bigger the trade, and the greater the distance, the lower the trade. Thus, the basic gravity model can be written as

$$m_{ij} = G\left(\frac{E_i E_j}{D_{ij}^2}\right), \tag{7.1}$$

where m_{ij} is the level of trade (exports, imports, or total trade) between countries i and j, E_i is the economic mass of country i, D_{ij} is the distance between i and j, and G is the gravitational constant. A more generalized form of this can be expressed in logarithmic form as

$$\ln m_{ij} = \beta_0 + \beta_1 \ln E_i + \beta_2 \ln E_j + \beta_3 \ln D_{ij}, \quad \beta_1, \beta_2 > 0, \beta_3 < 0. \tag{7.2}$$

From an econometric point of view, this is a very simple specification where each slope parameter is an elasticity. In empirical trade models, the economic mass is typically proxied by the GDP (or some function of it) of the countries. It is also most common to extend the basic equation by including a number of factors that potentially facilitate or inhibit trade, such as cultural, geographical, and political characteristics. Such extended models are referred to as the 'augmented' gravity models. It is common to further augment the model by including specific variables depending upon the focus of analysis. For example, White and Tadesse (2008) are interested in measuring the effect of 'cultural distance,' so they include a variable that measures cultural distance. On the other hand, Jungmittag and Welfens (2009)

are interested in the effect of liberalization of telecommunications, so they include a variable that measures the telephone minutes from country *i* to country *j*. Gil-Pareja et al. (2007) include the number of embassies and general consulates in their study of tourist flows. Naturally, in studies about the effect of immigrants, the typical variable included is the immigrant stock from trading-partner countries.

7.2.2 Issues in Estimation

The standard approach to estimating the gravity model is to use the log-linear model in (7.2). Although this is very simple to implement, there are two potential econometric problems in doing the estimation.[3] The first problem is due to the possibility of observing zero trade values. Because the proportion of observations with zero trade is often quite significant, the way these zeros are handled is important. There are various ways of overcoming this problem with various degrees of success such as discarding such observations, adding a constant factor to the volume of trade before taking its logarithm, and using a Tobit or Heckman type estimation method. The second problem is more fundamental, and is based on the fact that $E(\ln m) \neq \ln E(m)$ as implied by Jensen's inequality. As argued by Silva and Tenreyro (2006), the standard practice of interpreting the coefficients in a log-linearized model estimated by OLS as elasticities can be highly misleading in the presence of heteroskedasticity.

Accordingly, Silva and Tenreyro (2006) suggest estimating the gravity equation multiplicatively, without taking the logarithm of m, and allowing for heteroskedasticity. Their proposed method of estimation is a simple Poisson regression, equivalent to the Poisson pseudo-maximum likelihood estimator (PPML).[4] As with the log-linearized model, this model also yields the elasticities if the independent variables are in logs. Furthermore, it also represents a natural way to deal with zero trade values and gives consistent estimators even when the variance function is misspecified.

All the studies mentioned in the Introduction have used the log-linearized model where the dependent variable is defined as the logarithm of the number of tourist arrivals (logarithm of the number of nights spent in hotels in Garín-Muňoz and Amaral (2000)). None have used PPML as suggested by Silva and Tenreyro (2006). It is interesting that the tendency is to convert a count variable to a continuous variable by taking the logarithm of it and to apply standard OLS/panel techniques when one can apply PPML or a standard count data model. There is no need to take

[3] See Gómez-Herrera (2012) for more details and comparisons of different estimation methods.

[4] See also Winkelmann (2008), pages 97–98, for more details about consistency of PPML estimators with nonnegative continuous dependent variables.

the logarithm of a count variable when one is able to estimate a count model. This is the approach taken in this study.

7.3 Methodology

7.3.1 Empirical Specification

The dependent variable in this study is the number of visitors arriving to New Zealand. Thus, our measure of tourism flows is a count variable. This means that the gravity model can be estimated in its multiplicative form by a count data model.

Let t_{it} denote the number of tourists arriving in New Zealand from country i in time t. Let $\mathbf{x}'_{it}$ represent the explanatory variables. A Poisson panel model is given by

$$P(t_{it}|\mathbf{x}'_{it}) = \frac{e^{-\mu_{it}}\mu_{it}^{y_{it}}}{y_{it}!}, \text{ where } y_{it} = 0, 1, 2, ...; i = 1, ..., N; t = 1, ..., T, \tag{7.3}$$

with the exponential conditional mean

$$E(y_{it}|\mathbf{x}'_{it}) = \mu_{it} = \exp(\mathbf{x}'_{it}\boldsymbol{\beta}). \tag{7.4}$$

The model can be estimated in different ways where the possibilities range from pooled Poisson estimator to random effects Poisson estimator. All these estimators are quite robust in the sense that they are consistent even if the data are not Poisson distributed, provided that the conditional mean in (7.4) is correctly specified. (See Cameron and Trivedi 2010.) However, the model has the property that the conditional variance is equal to the conditional mean, which is known as the equidispersion property. This presents a problem, since count data are often overdispersed, making way to more general specifications such as the negative binomial (NB) model, which is the standard choice in the literature. (Greene (2009).) As the data used in this study displays overdispersion, the econometric specification is based on a negative binomial model.

The negative binomial model can be obtained by assuming that $\mu_{it}|\delta_i \sim gamma(\mu_{it}, \delta_i)$ where δ_i is the (individual specific) dispersion parameter. This yields the model

$$P(t_{it}|\mathbf{x}'_{it}, \delta_i) = \frac{\Gamma(\mu_{it} + y_{it})}{\Gamma(\mu_{it})\Gamma(y_{it} + 1)}\left(\frac{1}{1+\delta_i}\right)^{\mu_{it}}\left(\frac{\delta_i}{1+\delta_i}\right)^{y_{it}}, \tag{7.5}$$

with the conditional mean

Table 7.1 Explanatory variables used in the model

Variable name	Definition
lnmig	Log of the number of migrants in New Zealand from a given country
lnnzgdp	Log of New Zealand's GDP (in 2006 $NZ)
lngdp	Log of foreign country's GDP (in 2006 $NZ)
lnwgdp	Log of world GDP (in 2006 $NZ)
lndist	Log of the distance between the foreign country's capital and Wellington
dlan	A dummy variable taking a value of one if English is not widely spoken in the foreign country
lnrer	Log of the real exchange rate. Expressed so that an increase in this variable is associated with an appreciation of the New Zealand dollar
dmig	Dummy variable taking a value of one if there are no migrants from the country

$$E(y_{it}|\mathbf{x}'_{it}, \delta_i) = \mu_{it} = \exp(\mathbf{x}'_{it}\boldsymbol{\beta} + \delta_i). \tag{7.6}$$

Note that this implies that dispersion (variance divided by the mean) is $1 + \delta_i$, i.e., constant (time-invariant) dispersion within group. If it is assumed that this constant dispersion varies randomly from group to group, the resulting model is called the random-effects model. Alternatively, the model can be estimated by a fixed-effects estimator where the dispersion parameter in a group can take on any value.[5]

This paper estimates $\boldsymbol{\beta}$ in (7.6) by using both fixed-effect and random-effects negative binomial panel estimators. The standard gravity model is augmented by including the real exchange rate, a language dummy variable, and the number of immigrants from the tourist-sending country:

$$\mathbf{x}'_{it} = (1, \ln nzgdp_t, \ln gdp_{it}, \ln wgdp_t, \ln mig_{it}, dmig_{it}, \ln dist_i, dlan_i, \ln rer_{it}).$$

The real exchange rate acts as a proxy for travel and tourism service prices. Sharing a common language is thought to reduce transaction costs, and has been found to be statistically significant in both international trade and tourism literature (for example, Eilat and Einav (2004), Walsh (2008), Chang and Lai (2011), and Vietze (2012)). The number of immigrants, migrant stock, is the main variable of interest in this study. (See Table 7.1 for precise definitions of the variables.) The dependent variable is the number of overseas short term visitors from each country in the sample. Estimated coefficients of the logged variables represent the elasticity of tourism arrivals with respect to the corresponding variable.

[5] Note that "random effects" and "fixed effects" apply to the distribution of the dispersion parameter, not to the $\mathbf{x}\boldsymbol{\beta}$ term in the model. Thus, this conditional negative binomial model is not a true fixed-effects method. This is why it is possible to estimate the coefficients of time-invariant regressors in addition to time-varying regressors. See Stata (2009), Cameron and Trivedi (2010), and Allison and Waterman (2002) for more details.

Table 7.2 Tourism exports (number of short term visitors), 1981–2006

	FE	RE
	Coefficient	Coefficient
Variable	(s.e)	(s.e)
lnmig	0.2052***	0.2102**
	(0.0352)	(0.0347)
lnnzgdp	1.8075**	1.793**
	(0.1394)	(0.1418)
lngdp	0.2339**	0.2735**
	(0.0438)	(0.0421)
lnwgdp	0.0505	0.0451
	(0.0667)	(0.0677)
lndist	−1.2451**	−1.3172
	(0.2303)	(0.2522)
dlan	−0.252	−0.2778
	(0.1998)	(0.1957)
lnrer	−0.0923**	−0.0899**
	(0.0270)	(0.0293)
dmig	−0.2579	−0.3529
	(0.2512)	(0.2723)
Log likelihood	−25560.09	−27592.16
Observations	4,954	5,025
Countries	201	205

Notes – For definitions of the variables refer to Table 7.1. Cluster-robust standard errors are in *parenthesis*. *Two stars* (**) indicates that the coefficient is significantly different from zero at the 1 % significance level, and *one star* (*) indicates that it is significant at the 5 % level

7.3.2 Data

The data set is the same one used in Law et al. (2009). It contains data for a large panel of more than 190 countries on average for the years 1981–2006. Estimates of the foreign-born population in New Zealand come from Statistics New Zealand and are based on data from the 1981, 1986, 1991, 1996, 2001 and 2006 Censuses. To calculate exact values for the inter-censal years it would be necessary to have data on deaths and international movements by place of birth, which are not available. Therefore, migrant numbers in inter-censal years have been interpolated. Data on short term visitor flows by country (the proxy for tourism exports) are also available from Statistics New Zealand and can be disaggregated by reason for visit. These data are annual.

Data on language, and distance from New Zealand come from the Research Center in International Economics.[6] GDP data are obtained from either the IMF or the UN. Table 7.1 summarises the explanatory variables.

[6] http://www.cepii.fr/anglaisgraph/bdd/distances.htm

7.4 Results

The estimations are carried out by computing the cluster-robust standard errors with 400 bootstrap resamples. Results are presented in Table 7.2. It appears that migrants have a strong positive effect on tourism exports.

The results are almost identical between the two models in terms of magnitude and statistical significance of the coefficient estimates. The estimated coefficient on Distance is negative and statistically significant indicating that, all else equal, there will be fewer visitors from countries that are further away. The coefficient estimates on *log* variables are elasticities, so, the coefficient estimate on *lndist* implies that a 1 % increase in distance leads to about 1.3 % decrease on the number of visitors, all else being the same. This is consistent with previous findings in the studies that used gravity models to analyse trade flows. Disdier and Head (2008) found in their meta-analysis of 1,467 estimates that the mean distance elasticity was about −0.9 with 90 % of the estimates lying between −0.28 and −1.55. The distance elasticity estimates obtained in recent tourism studies with gravity models range between −0.1 (Khadaroo and Seetanah 2008) and −1.99 (Keum 2010). Law et al. (2009) estimated the distance elasticity as −2.02 using the same data set but a different estimation method and model.

The coefficient estimates of the GDP variables are all statistically significant, except world GDP, and they have the expected signs. Their coefficients are also interpreted as elasticities. A 1 % increase in New Zealand's GDP is expected to increase, on average, the tourist arrivals by 1.8 %, all else being the same. The magnitudes of all the estimated coefficients suggest that changes in New Zealand's GDP have the biggest impact on the tourist arrivals in New Zealand, compared to changes in other variables included in the model. The estimated elasticity with respect to the GDP of the visitors' home country is about 0.25. Thus, a 10 % increase in the origin country's GDP is expected to increase tourists from that country by 2.5 % on average, all else equal. These results can be interpreted as the GDP of a country being more important as a pull factor than a push factor.

The coefficient of the language dummy variable is not statistically significant. Although this is in contrast to the finding in Law et al. (2009), Chang and Lai (2011) also found a statistically insignificant effect of common language in analysing tourism patterns (except for North American tourism exports). The exclusion of this variable from regression equations in most of the tourism studies with gravity models also suggests that having a common official language may not be as important in tourism exports as in goods trade.

The coefficient of the exchange rate variable is found to be statistically significant. Its magnitude suggests that a 10 % appreciation of the New Zealand causes about 0.9 % decrease in the number of tourist arrivals, all else equal. This is consistent with the finding in Law et al. (2009) with the same data set. Of the recent tourism studies with gravity models, Garín-Muňoz and Amaral (2000), Yang et al. (2010), and Chang and Lai (2011) have also included the real exchange rate as a regresssor in their models and found similar results.

The variable *lnmig* is the main variable this study is concerned with. The coefficient estimate on *lnmig* is statistically significant at the 1 % significance level. Its magnitude implies that a 1 % increase in immigrants from a country leads to a 0.21 % increase in the number of visitors from that country, all else equal. This is consistent with the finding in Law et al. (2009) with the same data, showing a good degree of robustness of the result as the two studies employ very different estimation methods for essentially the same model. This estimate is not as high as the immigrant elasticity in Seetaram and Dwyer (2009) (which was 3.2) for Australian data, but it is closer to estimates in Gheasi et al. (2011) for UK data and in Leitão and Shahbaz (2012) for Portuguese data.

7.5 Summary and Conclusions

The gravity model is the most popular method used in empirical studies of the determinants of trade. This paper uses the gravity model to explain the determinants of trade in a particular group of services traded, namely, tourism. The nature of the data is such that it allows the use of count data models. Consequently, a negative binomial panel model is used to estimate an augmented gravity model in order to explain the determinants of the number of tourists arriving in New Zealand from over 200 countries between the years 1981 and 2006. It is found that the GDP of both New Zealand and of other countries, the distance between New Zealand and the other countries, the exchange rate of the New Zealand dollar, and the stock of immigrants in New Zealand from other countries affect the number of tourism arrivals in New Zealand. In particular, the results suggest that a 10 % increase in the stock of immigrants from a particular country leads to a 2.1 % increase in the number of tourists from that country, all else equal. This is in line with the findings in previous studies that investigated the immigration-tourism link for other countries.

This is an important finding. Tourism is a vital industry for New Zealand. In the year ended March 2011, 2.5 million overseas visitors came to New Zealand (over half the resident population), spending $NZ9.7 billion. New Zealand has one of the highest populations of foreign born residents in the world. In 2006, 22.9 % of people in New Zealand (879,543 people) were born overseas (2006 Census: QuickStats About Culture and Identity, Statistics New Zealand). New Zealand has had, on average, a net gain of 39,000 immigrants (4.4 % of the immigrant population in 2006) from other countries per year in the last 10 years.[7] There is, therefore, a source of constant growth for New Zealand's tourism exports. This is quite advantageous for tourism in New Zealand.

The finding in this study presents a policy instrument for the New Zealand government. Governments can implement higher target levels for residency

[7] Author's own calculations based on Table 9 in Statistics New Zealand (2012).

approvals to boost New Zealand's tourism exports. The immigrant stock variable in the estimated model is the only policy variable that is directly under government control.

The airline industry may also benefit from this finding. The international tourism sector in New Zealand is dependent on long-haul inbound markets, except for Australia. There may be benefits for the airlines if they focus their marketing and scheduling strategies on countries from which New Zealand gains most immigrants. Areas from which overseas-born people originate from are changing. For example, in 2001, 32.3 % of immigrants were born in the United Kingdom and Ireland, but by 2006, the proportion from this area dropped to 28.6 %. On the other hand, the proportion of immigrants from Asia increased from 23.7 % in 2001 to 28.6 % in 2006. The number of immigrants from China and India has increased by more than 100 % between 2001 and 2006.[8]

There are some aspects of the present analysis that can be improved in future research. The immigration elasticity, the key parameter of the study, is assumed to be constant. An extension of the analysis would be to allow it to depend on its level and/or on income. Similarly, the impact of immigrants may vary depending on the country in which the immigrants are born. Furthermore, the dependent variable in this study is the number of all short term visitors to New Zealand. The impact of immigrants may be different for different types of visits. A more detailed analysis based on travel purpose (such as visiting friends and relatives, holidays, education, etc.) may be possible depending on data availability.

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[8] All these figures are from 2006 Census: QuickStats About Culture and Identity, Statistics New Zealand.

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Part II

Supply of Tourist Amenities

How to Create a New Holiday Destination? An Evaluation of Local Public Investment for Supporting Tourism Industry

8

Martin T.W. Rosenfeld and Albrecht Kauffmann

8.1 Introduction

In many cities and regions in Europe and around the world globalization and increased interregional competition have resulted in a collapse of old traditional industries and caused major economic development problems. Policymakers in some of these cities and regions are trying to change their path of development by attracting businesses from the tourism industry, in many cases using the support of grants from the state or national governments (see e.g. Costa 2011: 2; Stabler et al. 2010: 187; with regard to developing countries: Sinclair 1998). The reasoning behind this strategy is that tourism – compared to other economic sectors – has several advantages for local economic development. A high share of the total value added is generated within the municipality (or within its neighboring areas) where tourism businesses are located. As the relevant inputs mainly have the character of a service, the proportion of input from other locations or regions is relatively small, unlike the situation in many other industries. In addition, tourism may produce externalities which are relevant for local development. Although tourists only stay for a relatively limited period of time within a certain municipality, their presence may have an important social impact on the local community, supporting a tendency towards cosmopolitanism and openness to foreign customs. When impressed by local amenities, tourists may communicate their impressions to friends and relatives, thus contributing to the improvement of the "image" of the city or region where they stayed. The longer the tourists stay within a certain municipality, the higher the described effects are; therefore, local policy is always trying different measures to entice tourists to prolong their visits.

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This paper reports on an empirical study for the German state of Saxony, one of the states situated east of the former "Iron Curtain". In many parts of Saxony a strong de-industrialization took place following the German reunification in 1990. Unemployment rates are still relatively high in most regions. Saxony's state government and its municipalities have pursued several strategies to overcome their economic development problems. One strategy has been to focus on the tourism industry. Therefore new local infrastructure for tourism has gradually been created and developed in Saxony since the 1990s, as in other East German states, and great store has been set by the publicly supported development of tourism (see Schulz 1999). The new tourist infrastructure is aimed at supporting tourist activities in traditional recreational areas as well as in regions and municipalities which had never been tourist destinations in the past. Examples of such "newcomer" tourist regions are areas with abandoned open-cast mining, where the mining industry had formerly been the main source of income. In these regions, local policymakers began to transform the former open-cast mines into lakes, creating new artificial lake districts, and to build infrastructure like waterways, landing places etc. Millions of Euros have been spent on constructing completely new local tourist attractions.

Has this newly-built tourist infrastructure been able to change the path of economic development in those municipalities where the investment has occurred? Is it possible to activate the tourism industry with the help of public investment at completely new tourist locations which haven't had any tradition in this area of the economy? Which local factors have supported or impeded the economic impact of such public measures for stimulating tourist activities? In tourism economics there is a broad discussion on analyzing the overall impact of the tourism sector on the development of cities and regions (see e.g. Reece 2010:50–57; Hefner et al. 2001; Wanhill 1983). A lot of research had been done on the competitiveness of tourist destinations and on the relevance of different characteristics of a destination or a tourism product for attracting demand (see e.g. Cracolic and Nijkamp 2008; Mangion et al. 2005; Crouch and Ritchie 1999; Kozak and Rimmington 1999). With regard to the above-mentioned research questions, we have to state that there is much less literature on the impact of newly-built public *tourist* infrastructure (as one concrete category of government intervention) for the local and regional economy (see e. g. Metzler 2007; Riedel and Scharr 1999), although there is abundant research on the local economic impact of infrastructure *in general*. There is also a lack of studies on the interactions between new publicly-built tourist infrastructure and the already existing local factors relevant to tourism, like climate, ecology or historical architecture. Finally, there is also a lack of research on the conditions for creating completely new tourist destinations in regions without a tradition of tourism.

To answer our research questions, Sect. 8.2 will have a theoretical look at the specific location factors or features of a location (in addition to tourist infrastructure) which are relevant to the tourism industry. Hypotheses on the impact of local public infrastructure on tourism will be developed. Then, Sect. 8.3 will give an overview of the present state and the development of the tourist industry in Saxony

and an overview on public investment in infrastructure to support this sector. Section 8.4 evaluates the impact of public investment for supporting the tourist industry in different parts of Saxony. This is based on quantitative data, a telephone survey and interviews with local businesses, administrations and experts in the area of tourism development. Finally, there will be some conclusions for public policy and for future research (Sect. 8.5).

8.2 Definition of the Tourism Industry and the Relevant Location Factors for the Local Tourism Industry

8.2.1 What Is Local Tourism Industry?

Local tourism industry (or: local hospitality industry) in a broader sense includes all private firms within a local unit which are involved in providing goods and services for tourists. Such goods and services may be provided by several categories of industry. Therefore, for our empirical investigation, we concentrated on those businesses which may be regarded as "core" local tourism businesses (and on the corresponding categories of statistical data). These "core" local tourism businesses include hotels, restaurants, bars, taverns etc. although many of them may also profit from the residents of the municipality. Supraregional tourism businesses in areas like transportation and travel agencies are not included in the group of "core" local tourism businesses; their connection to the local tourist infrastructure is only weak. Moreover, firms providing goods and services which are mainly directed at local residents are not included in the "core" local tourism industry, although they may profit directly from tourists, e.g. firms from the retail industry or local public transport.

From another perspective, a distinction can be made between two fields of tourism: business travel and holiday trips ("leisure travel" which is divided into "recreational tourism" [for more than 1 day] and "day-trip tourism"). Although in practice (and with regard to the existing statistical data) it is not easy to distinguish between these fields, we will concentrate our arguments below on holiday trips. Tourist infrastructure like hiking trails, museums or bike paths are mainly used for recreational purposes and by people on a holiday trip, although people on a business trip will always have some time for leisure and then may use such infrastructure as well. Some other categories of infrastructure like signs indicating different tourist amenities within a municipality may have the same direct effect on people on holiday trips as on business travelers.

In the following, only hotels with more than eight beds are included into the empirical research due to the restrictions of data from Germany's office of national statistics. With regard to the employment statistics of the German Federal

Employment Agency ("Bundesagentur für Arbeit"), the data encompasses all employees from the branch labeled "Accommodation and Food Services".[1]

There are several local and regional public authorities that have the task of supporting private tourism, e.g. with marketing activities for regions or cities. These activities are necessary for the successful development of tourism and therefore could be classified as belonging to the tourism industry. But in the context of this paper, such public activities are regarded as belonging to the category of location factors for explaining the rise of the tourism industry.

8.2.2 Relevant Location Factors for Tourism Businesses and Hypotheses on the Impact of Local Public Infrastructure on Tourism

A lot of location factors which are relevant for all categories of industry are also important for the economic success of local tourism businesses, e.g. the level of local taxation or a municipality's general accessibility from other places in the world by car, train or airplane. Other commonly discussed location factors play no important role in local tourism businesses. One example of such location factors is the existence of local research units such as universities or specialized research institutes. Following approaches from the New Growth Theory, such local research units are often regarded as some of the most effective "motors" for technical innovation processes in local industries (see e.g. Rosenfeld et al. 2005). Knowledge spillovers from local research units are much more relevant for the manufacturing industry where sector-specific knowledge is necessary for the technical improvement of products and processes and as a permanent function for entrepreneurial success. Short distances between research units and manufacturing businesses (this means: low transaction costs) are generally regarded as beneficial for the success of such knowledge spillovers. For tourism businesses, such knowledge spillovers are much less relevant, although, of course, tourism businesses must keep an eye on innovation as well.

There are several categories of location factors which are probably more relevant for the tourism industry than for other sectors of the economy and have to be included when analyzing the local economic success of tourism businesses. Following Laws (1995), we may differentiate between a holiday destination's "primary features" and "secondary features".

Primary features include all factors which are not specifically introduced to promote tourism such as climate, the location's natural beauty, a beautiful existing townscape with a lot of variety, the general "image" of a local unit or region and the "historical story" behind it, excellent natural attractions (e.g. lakes, seashores, sandy beaches, nature parks), opportunities for sports and recreation (e.g. hiking,

[1] The German "WZ-Number" for this branch is "No. 55".

biking, sailing), entertainment and culture (e.g. facilities for children, museums, opera houses, theaters, historical buildings or monuments), public parks and green spaces, public swimming pools, water parks, sports facilities, infrastructure for general accessibility to a city or region (by road, rail or air) and the cleanness of the streets and buildings.

Secondary features of a holiday destination are those factors which are strategically directed at supporting the touristic attractiveness of a city or region. Examples of such factors in the private sector of the economy are hotels, the qualifications and number of employees working in private tourist facilities, including hospitality and the employees' service-oriented mentality. With regard to publicly-built infrastructure, all the categories of infrastructure which were already mentioned as primary features of a location may be expanded upon or improved, e.g. new hiking trails may be built to attract tourist hikers, new opera houses may be built or public parks may become more diversified than before. On the other hand, some categories of infrastructure like guidance and advisory services by a central local agency and/or by local signage systems indicating relevant tourist amenities are tourist-specific infrastructure and are not built in a city or municipality which is not at all interested in tourists. Additionally, the cooperation between adjacent localities in cases where the tourist attractions of a single local unit are relatively small, is a tourist-specific local public measure. Also the creation of a network of hiking trails or bike paths (connecting the trails and paths between adjacent local units) have the primary goal of serving tourists.

This short discussion on the differentiation between primary and secondary features of a destination will have made it clear that it could be useful to introduce three additional criteria. Firstly, within the category of primary features, there are some factors that can be changed by human intervention, while others (like the availability of sunshine) have to be accepted as unalterable. Secondly, changes within the category of primary features and the introduction of new secondary features could be managed either by the private sector of the economy or by the public sector. And thirdly, voluntary changes in the features of a destination could be broken down into infrastructure-related measures and measures relating to institutions and organization. Figure 8.1 summarizes this differentiation between different categories of locational factors in the field of tourism. This paper focuses on the impact that investment has on local public infrastructure as a measure for improving the touristic quality of a city or municipality (printed in bold in Fig. 8.1).

Using this categorization of location tourism factors enables us to sort all of our municipalities into different groups according to the types of location factors that they can offer from the different categories. We can distinguish between at least two main groups of municipalities: (1) traditional resorts which have developed relevant secondary features over time and all of the skills which are required in the field of tourism, and (2) a second group of municipalities which had no major activities in the field of tourism in the past and had developed no relevant secondary features up until the 1990s. We may call the first group *"skilled tourist localities"* (= tourist resorts with a high existing propensity for tourism), the second group is

		The primary features of a destination	The secondary features of a destination
Features that cannot be voluntarily changed		e. g. sandy beaches, climate	–
Features that may be changed through private sector activities	Private infrastructure	e. g. restaurants	e. g. hotels; additional restaurants
	Private institutions, organizational aspects	e. g. general tendency of businesses to collaborate	e. g. hospitality, service-oriented mentality
Features that may be changed through public sector activities	Public infrastructure	e. g. opera houses, museums, green areas, hiking trails	**e. g. local systems with signposting of tourist amenities; additional hiking trails**
	Public institutions, organizational aspects	e. g. general propensity to cooperate with adjacent municipalities	e. g. inter-municipal cooperation to promote tourism

Fig. 8.1 Local public infrastructure as a location factor in the area of tourism (Source: Designed by the authors)

called *"newcomer localities"* (= tourist resorts with a low propensity for tourism up until now). Some regions are dominated by one of these groups; in other regions we find both types. There are, of course, several hybrid forms of municipalities with features from both types.

In terms of investment in additional local public tourist infrastructure, our hypotheses on the impact of these measures on local tourism industry employment are as follows:

(a) The impact of new tourist infrastructure on local employment will vary in the two categories of municipalities. We expect that the skilled tourist localities are in general well-equipped with the primary features of a destination. In a market economy, these primary features are the dominating factors for the development of a destination and may not easily be substituted by new infrastructure projects.

(b) In order to circumvent the drawbacks caused by a lack of primary features, new local public infrastructure can only have a positive impact if the infrastructure is deemed to be a "mega investment project" which would be as attractive for tourists as the primary features of the traditional tourist resorts.

(c) Although the skilled tourist localities are already well-equipped with both primary and secondary features of a destination, in the special context of East Germany, additional local public infrastructure within these municipalities could very well have a positive impact on local employment. This is due to the overall deficits of East German destinations resulting from a lack of re-investment under the communist regime when compared to destinations in

West Germany. Furthermore, while the population of East Germany was always well-informed about the amenities found at West German destinations, the opposite is true for the population in the West. There is still a lack of knowledge in the West about possible tourist activities in the East. This means that there is still a great number of tourists in the West who could potentially visit the skilled tourist localities in the East.

8.3 The Present State of the Tourism Industry in Saxony: A Cluster Analysis of Local Units with and Without a Special Propensity for Tourism

One could expect that a locality's propensity for tourism plays an important role in the impact of additional local investment in the field of tourist infrastructure. The theory is that additional infrastructure will, in most cases, be more efficient in a skilled tourist locality than in a newcomer locality (see Sect. 8.2.2). Therefore, we attempted to categorize the existing local units in Saxony according to their propensity for tourism.

8.3.1 Overview on the Empirical Set of Data for the Cluster Analysis

An operationalization of the two cases is necessary to empirically identify the two "polar cases" of local units as described above, and those localities which are situated somewhere between the two poles. For regions with a high percentage of localities that are attractive to tourists (i.e. with a high propensity for tourism), one could expect the mean size, the time of stay and the capacity utilization of businesses providing accommodation to be above average in these regions, and the density of hotels and guesthouses, the number of beds in hotels and guesthouses, tourist arrivals and guest nights (number per 1,000 inhabitants) to be comparatively high. The Statistical Office of the Free State of Saxony provides annual data on tourism in Saxony that can be used for distinguishing between groups of regions with a varying propensity for tourism. This data refers to the regional units of counties and independent cities.[2] The delineation of these units remained nearly unchanged between 1998 and 2007. The regional level of counties (and of independent cities, respectively) may be regarded as highly aggregated, however data for the complete set of municipalities were not yet available for our analysis. The Statistical Office of the Free State of Saxony publishes data on

- The number of hotels and guesthouses which are open during July of each year
- The number of beds on offer at the end of July each year

[2] In Germany, independent cities ("Kreisfreie Städte") are cities which are not belonging to a county and have the competencies of both a municipality and a county.

Table 8.1 Data included in the cluster analysis of tourism in Saxon regions (unweighted means for the counties and independent cities)

	1998–2000		2005–2007	
	Arithmetic mean	Coef. of variation	Arithmetic mean	Coef. of variation
Hotels and guesthouses per 1,000 inhabitants	0.51	0.62	0.54	0.61
Beds on offer per 1,000 inhabitants	24.30	0.60	25.30	0.61
Guest arrivals per inhabitant	0.92	0.63	1.10	0.65
Overnight stays per inhabitant	2.81	0.82	3.23	0.81
Mean size of hotels and guesthouses	52.20	0.43	51.30	0.42
Mean time of stay	2.89	0.34	2.78	0.33
Mean overnight stays per beds on offer	105	0.24	117	0.28

Data source: State Statistical Office of the Free State of Saxony (2009), calculations by the authors

- The number of guest arrivals per year
- The number of overnight guest stays per year

Depending on the number of a county's inhabitants, these figures can be used for the construction of densities or stocks. The mean hotel size is the ratio of the number of beds on offer to the number of hotels and guesthouses. Likewise, the mean time of stay for guests is the ratio between the number of overnight stays to the number of guest arrivals, and the mean capacity utilization is calculated as the ratio of overnight stays per beds on offer. We have calculated all of these ratios for the beginning and for the end of the period between 2000 and 2007. For the sake of consolidation, in terms of outliers, averages for 3 years (1998–2000 and 2005–2007) were used. To eliminate size effects, the data for tourism was related to the population of the regional units. The results were seven attributes for all 26 counties and three independent cities in Saxony. With these attributes and the help of a cluster analysis, we have classified the counties and independent cities according to their existing propensity for tourism. Table 8.1 gives an overview of the data vectors.

A comparison of the two periods shows an increase in the mean overnight stays per beds on offer; this ratio can be interpreted as the mean utilization of the capacity of beds. A rise in the time of stay of guests per inhabitant could be regarded as a positive development from the standpoint of Saxony's hospitality industry. However, this development is in fact the result of a decrease in population in almost all counties and major cities in Saxony (only the cities of Dresden and Leipzig have experienced slight population growth figures). Moreover, we have to consider that the figures in Table 8.1 are (unweighted) means of the attributes provided for the counties and independent cities of Saxony. They do not equal the mean values for the state of Saxony! For example, in the state of Saxony, the number of overnight stays has risen by 13.6 % during the periods under consideration, the population has shrunk by 4.7 %, and the number of guest overnight stays per inhabitant has risen by 19.2 %.

8.3.2 The Results: Four Clusters with Different Degrees of Propensity for Tourism

Using an agglomerating partitioning method with Euclidean distance measurement,[3] four clusters of regions with similar propensity for tourism could be detected. Due to their position in space spanned by the first two principal components[4] the four groups (categories) can be identified as

- Large cities with (on average) large hotels and guesthouses, high capacity utilization and short stay time (*"metropolitan tourism"*)
- Counties[5] with small to medium-sized hotels and guesthouses, short stay times and lower capacity utilization; they are referred to as *"regions with weak recreational tourism"*
- Counties with small to medium-sized hotels and guesthouses, longer stay times and lower or medium capacity utilization; they are referred to as *"regions with ordinary recreational tourism"*
- Counties with hotels and guesthouses in all size classes, long stay times and medium to high capacity utilization (*"regions with strong recreational tourism"*).

Figure 8.2 shows the clusters detected for both periods, depicted in a diagram whose axes span the first two principal components. The counties and smaller urban municipalities differ primarily with respect to their tourism density attributes, while the special position of large independent cities is more the result of the size of their accommodation businesses.

Table 8.2 presents the names of regional units belonging to each of the four categories. When interpreting it, it should be noted that all attributes included in the cluster analysis are aggregated values for each county and are not representative for each municipality. Undoubtedly, in each county of Saxony one can find local units with attractions for tourists and good tourist services. For example, the fact that a certain municipality belongs to a county in Cluster 2 of our analysis is no indication of the quality of tourist services offered in that municipality! Additionally, our analysis so far is restricted to data representing supply, demand and size structure of accommodation. Apart from the large cities, the remaining three categories represent only the propensity for *recreational tourism*, while day-trip

[3] See e.g. *Fahrmeier/Hamerle* (1984) ch. 9, Struyf et al. (1996), and Pison et al. (1999).

[4] The correlation between standardized data vectors and principal components (PC) is significantly different for the periods 1998–2000 and 2005–2007. Between 1998 and 2000 the second PC only corresponds to the mean size of hotels and guesthouses; the first PC corresponds to all other attributes. Between 2005 and 2007 the first PC primarily corresponds to the attributes "Overnight stays of guests per inhabitant", "Arrivals of guests per inhabitant", "Beds on offer per inhabitant" and "Number of hotels and guest houses per inhabitant", while the second PC more strongly represents the spread of the attributes "Mean size of hotels and guesthouses", "Mean stay time" and "Mean overnight stays per beds on offer".

[5] Additionally, the following groups can also contain independent cities.

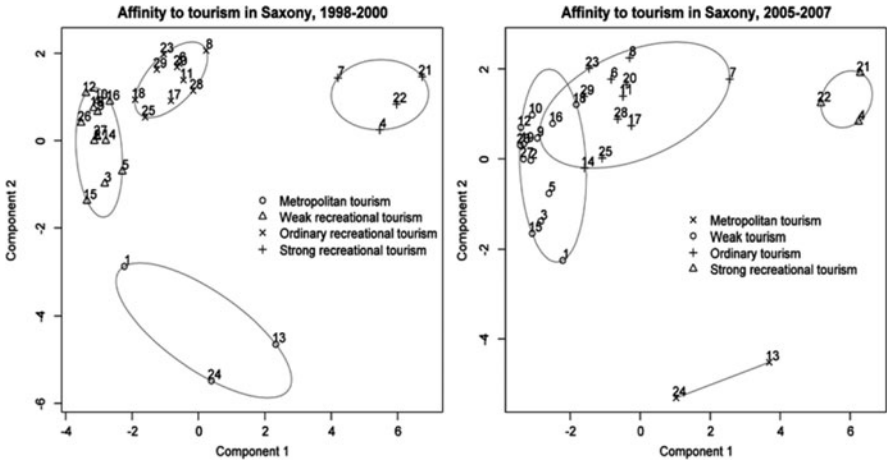

Fig. 8.2 Propensity of counties and independent cities in Saxony towards tourism, 1998–2000 and 2005–2007: clusters displayed in the diagram of principal components (Source: State Statistical Office of the Free State of Saxony (2009), calculations by the authors)

tourism is not taken into account. Thus, medium-sized cities like Görlitz[6] or Zwickau[7] that have a lot of attractions fall into the category of regions with weak recreational tourism.

8.4 Empirical Findings on the Impact of Local Public Investment on Employment in the Local Tourism Industry

8.4.1 The Structure of Local Public Investment for Tourist Infrastructure

This paper looks at investment in local tourist infrastructure which was supported by grants from the federal government and the state government of Saxony within the framework of the "Intergovernmental Program for the Improvement of Regional Economic Structures" ("Gemeinschaftsaufgabe zur Verbesserung der Regionalen Wirtschaftsstruktur", "GRW") in the time period from 1990 to 2007. One may argue that much of the local investment in tourist infrastructure was supported by grants from other programs, e.g. grants from the program "Integrierte Ländliche Entwicklungskonzepte – ILEK".[8] Also, the reclamation of surface mining landscapes was publicly funded in accordance with Sect. 8.4 of the German

[6] An old clothier town with a famous historic city center.

[7] The birthplace of the composer Robert Schumann and a traditional center of automotive manufacturing.

[8] In English "Concepts for Integrated Rural Development".

Table 8.2 Counties and independent cities in Saxony and their propensity for recreational tourism, 1998–2000 and 2005–2007

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
	"Metropolitan tourism"	"Weak recreational tourism"	"Ordinary recreational tourism"	"Strong recreational tourism"
1998–2000	1 City of Chemnitz	2 City of Plauen (Vogtl.)	6 Freiberg	4 Annaberg
			8 Mittlerer Erzgebirgskreis	7 Vogtlandkreis
	13 City of Dresden	3 City of Zwickau	11 Aue-Schwarzenberg	21 Sächsische Schweiz
		5 Chemnitz county		
	24 City of Leipzig	9 Mittweida	17 Meißen	22 Weißeritzkreis
		10 Stollberg	18 Niederschlesischer Oberlausitzkreis	
		12 Zwickauer land	20 Zittau-Löbau	
		14 City of Görlitz	23 Kamenz	
		15 City of Hoyerswerda	25 Delitzsch	
		16 Bautzen	28 Muldentalkreis	
		19 Riesa-Großenhain	29Torgau-Oschatz	
		26 Döbeln		
		27 Leipziger land		
2005–2007	13 City of Dresden	1 City of Chemnitz	6 Freiberg	4 Annaberg
		2 City of Plauen (Vogtl.)	7 Vogtlandkreis	21 Sächsische Schweiz
	24 City of Leipzig	3 City of Zwickau	8 Mittlerer Erzgebirgskreis	22 Weißeritzkreis
		5 Chemnitz county	11 Aue-Schwarzenberg	
		9 Mittweida	14 City of Görlitz	
		10 Stollberg	17 Meißen	
		12 Zwickauer land	20 Zittau-Löbau	
		15 City of Hoyerswerda	23 Kamenz	
		16 Bautzen	25 Delitzsch	
		18 Niederschlesischer Oberlausitzkreis	28 Muldentalkreis	
		19 Riesa-Großenhain	29 Torgau-Oschatz	
		26 Döbeln		
		27 Leipziger land		

Source: State Statistical Office of the Free State of Saxony (2009), calculations by the authors

"Second Supplementary Administrative Agreement" ("Zweites Ergänzendes Verwaltungsabkommen") for lignite remediation. However, the proportion of local investment relevant to tourist infrastructure that was supported by the GRW program can be regarded as being very large. From 1990 to 2007, 1,382 local investment projects in the area of tourist infrastructure were supported by grants stemming from this program.

Table 8.3 Number and volume (in million Euros) of investment within the GRW program in different categories of tourist infrastructure in Saxony, 1990–1999 and 2000–2007

Category of infrastructure	1990–1999		2000–2007		1990–2007	
	Number	Volume	Number	Volume	Number	Volume
A: Development of location for tourism	137	64.0	43	54.8	180	118.7
B: Bike paths and hiking trails	426	127.4	99	24.9	525	152.3
C: Guesthouses, tourist offices, tourist information systems	128	103.3	26	5.3	154	108.6
D: Museums, museum mines and factories	30	24.6	8	3.8	38	28.3
E: Sports and leisure facilities (excluding swimming pools)	66	86.4	46	15.5	112	102
F: Construction and extension of swimming pools	157	502.5	12	5.8	169	508.3
G: Health resorts	8	71.5	8	8.7	16	80.2
H: Other public tourism facilities	145	98.5	43	76.7	188	175.2

Source: State Ministry for Economy and Labor of the Free State of Saxony calculation by the authors.

The strategic plan of the State of Saxony for the GRW program supports different categories of tourist infrastructure. Table 8.3 shows the number of investment projects, as well as their total volume of investment for each category of infrastructure and for the periods 1990–1999 and 2000–2007 respectively. A comparison of the two periods shows considerable differences. The most striking change took place for investment in public swimming pools and water parks; such projects were supported frequently during the 1990s, but only in a few cases after 1999. Also a substantial part of Saxony's supra-regional bike path program was implemented in the first period, supported by grants from the GRW. The strong decrease in the number (but not in the volume) of tourist site development projects is the consequence of the dominance of a few large-scale projects. This also applies to supported projects in the category of "other public tourism facilities", e.g. the "Gondwanaland-World of Tropical Experience" at the Leipzig Zoo. Investment in health resorts that were very large-scale projects in the first period decreased in volume (but not in number). Investment projects in all other kinds of tourist infrastructure also decreased considerably in number as well as in volume during the second period.

Because of the weak investment in the Eastern part of Germany during the period of socialist planning, massive investment in tourist infrastructure in skilled tourist localities was probably necessary in order to strengthen these localities against their competitors in the West in the first years after German reunification. The high tendency for investment in public swimming pools and water parks had perhaps not only the function of creating new attractions for tourists, but also the function of improving overall living conditions (for the inhabitants) in the East, in comparison to those in the western part of Germany. However, the inability of

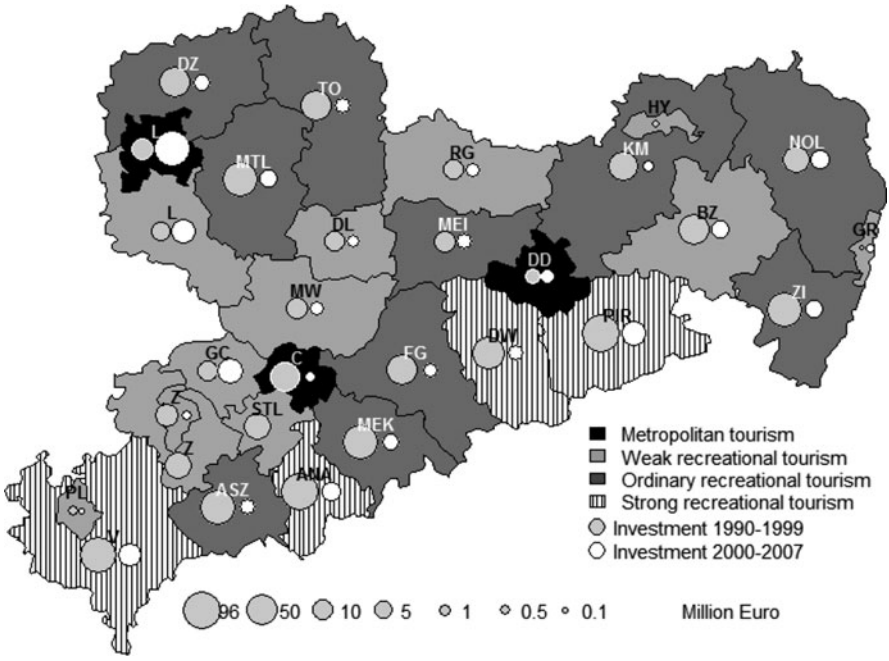

Fig. 8.3 Regional distribution of investment in tourist infrastructure 1990–1999 and 2000–2007, and propensity for tourism, 1998–2000 (Data source: EuroGeographics, own calculations based on data from the Statistical Office of the Free State of Saxony (2009) and the Ministry for Economy, Technology and Transportation of the Free State of Saxony)

many municipalities to bear the follow-up costs from these investments was already apparent at the end of the 1990s.

8.4.2 Spatial Pattern of Local Public Investment

There are also strong differences in the spatial pattern of public investment in tourist infrastructure in the periods from 1990 to 1999 and 2000–2007. In Fig. 8.3 this investment per capita is diagrammed as bubbles for the regional units of counties and independent cities for both periods (scaled by the fourth root of investment per capita), while the affiliation of counties in categories of propensity for (recreational) tourism detected for the period 1998–2000 is indicated in background color and hatchures.

In the first period, the regional centers of investment were the counties in the south of Saxony (4, 7, 21, 22),[9] where the traditional centers of tourism are located. The metropolitan areas of Dresden and Leipzig and the medium-sized independent

[9] See the assignment of numbers to regions in Table 8.2.

cities only had little and low investment which was supported by the GRW program. Likewise, the municipalities belonging to counties in the north of Saxony only invested slightly (on average) in tourist infrastructure compared to the regions in the south. In the second period, investment declined in almost all counties and independent cities. The only exceptions were the regions of Chemnitz and Leipzig where large-scale projects that are able to attract masses of tourists were implemented. These included the new "Sachsenring" ("Saxony Ring", a famous race-track combined with a center for road safety) near Chemnitz, and the "Gondwanaland" project in Leipzig that was mentioned above. As in the first period, the volumes of investment in the second period corresponded weakly to the counties' propensity for tourism.

8.4.3 Econometric Analysis

What was the impact on the local economy of local public investment? The data on employment in accommodation and food service sectors (= economic activity number "55" from the Classification of Economic Activities ["WZ 1993" and "WZ 2003"] by the German Federal Statistical Office), which are available at municipal level, can be used as an easily measurable indicator of the local economic activity in tourism because (as explained in Sect. 8.2.1) these branches will primarily benefit from local tourism.[10] Unfortunately, the number of people employed in the sectors of accommodation and food service are reported together by the statistics of German Federal Employment Agency. We assume that the local demand for these services is determined by the income in the region to which the municipality belongs, by the local tourist attractions and by the regional propensity for tourism. Additionally, the local demand for food service activities should be positively affected by the income of the local population. The mean available income of the region tests the demand of accommodation and food services by the population in the same region. Touristic attractiveness has a local and a regional component as well. The category of propensity for tourism serves as a proxy for this regional component. We regard investment in tourist infrastructure which is supported by the GRW program as a local component of touristic attractiveness.

The number of employees[11] working in the accommodation and food service industries in 2002 or 2008 and its change between the two periods (labeled: L_{02}^{S}, L_{08}^{S}, ΔL^{S}) are the endogenous variables in the three following one-equation regression models. The data are provided by the German Federal Employment Agency. Because data on local income is not available, the number of employees

[10] This also applies to other economic activities (e.g. production and sales of souvenirs or food), but it is impossible to identify them by the first two digits of the "WZ" classification of industrial branches.

[11] All employment figures only include employees that are subject to paying social insurance contributions.

working in the municipality (L_{02}, $L_{08,}$ ΔL) is used as a proxy for local income.[12] The available income of the region (Y_{02}, Y_{08}, ΔY) stems from the SNA data published by the German Federal Statistical Office. Other variables are the vectors $\mathbf{I}_0$ and $\mathbf{I}_1$ for the investment in tourist infrastructure 1990–1999 and 2000–2007, for all kind of that infrastructure (e.g. $I_{0,all}$), and for special categories of infrastructure (e.g. $I_{1,A}$ for the development of sites for tourism 2000–2007, see Table 8.1), and the vectors $\mathbf{A}_0$ and $\mathbf{A}_1$ for the category of regional propensity for tourism. Because the large cities of Dresden, Leipzig and Chemnitz are not included in the regression (their data would be strong outliers), we can only include two dummy variables for regional propensity for tourism (because of the strong linear dependence of the remaining three): $A_{2,0}$ stands for the county's belonging to the category of weak recreational tourism detected by data for 1998–2000, $A_{4,0}$ for the county's belonging to the category of strong recreational tourism indicated by data for the same period, and likewise $A_{2,1}$ and $A_{4,1}$ indicated by data for the period 2005–2007.

The regression equations to be estimated are

$$L_{02}{}^{S} = \beta_0 + \beta_1 L_{02} + \beta_2 Y_{02} + \boldsymbol{\gamma}_0 \mathbf{I}_0 + \boldsymbol{\delta} \mathbf{A}_0 + \varepsilon, \tag{8.1}$$

$$L_{08}{}^{S} = \beta_0 + \beta_1 L_{08} + \beta_2 Y_{08} + \boldsymbol{\gamma}_0 \mathbf{I}_0 + \boldsymbol{\gamma}_1 \mathbf{I}_1 + \boldsymbol{\delta} \mathbf{A}_1 + \varepsilon, \tag{8.2}$$

$$\Delta L^{S} = \beta_0 + \beta_1 \Delta L + \beta_2 \Delta Y + \boldsymbol{\gamma}_0 \mathbf{I}_0 + \boldsymbol{\gamma}_1 \mathbf{I}_1 + \boldsymbol{\delta} \mathbf{A}_1 + \varepsilon \tag{8.3}$$

The regression models are estimated using the OLS method. The results for the regression on the employment in accommodation and food services in municipalities in Saxony in 2002 corresponding to Eq. 8.1 are summarized for three specifications (1-1 to 1-3) in Table 8.4.

Infrastructure variables are omitted in specification (1-1). The sign of estimated coefficients appears in accordance with our expectations: The restaurant service industry benefits from local employment in all sectors. The negative sign of the coefficient of Y may be caused by the high incomes in municipalities near large cities that are located within the administrative borders of adjacent counties. These incomes partially flow to restaurants and other food service suppliers located in the metropolitan area that does not belong to the counties adjacent to it. The coefficients of $A_{2,0}$ and $A_{4,0}$ display the expected signs as well.

The signs of these coefficients remain stable in all estimated regressions corresponding to Eq. 8.2, also for the second period. In regression (1-2) (see Table 8.4), the sum of investment volume for all types of infrastructure is introduced as an exogenous variable. The positive sign indicates that the investment was made (on average) in municipalities with higher tourist activity. In specification (1-3), investment in specific categories of infrastructure are introduced. For the majority of these categories of infrastructure, the sign of the coefficient is positive.

[12] The number of employees based on their location of residence is unfortunately not available.

Table 8.4 OLS estimation results of Eq. 8.1

	1-1		1-2		1-3	
Constant	159.9*	(1.97)	140.2	(1.80)	102.0	(1.38)
L_{02}	0.025*	(36.26)	0.025*	(36.1)	0.024*	(37.34)
Y_{02}	−0.012*	(−2.06)	−0,011	(−1.95)	−0.0085	(−1.57)
$A_{2,0}$	−7.32	(−1.50)	−3.80	(−0.81)	−2.90	(−0.65)
$A_{4,0}$	24.3*	(4.28)	21.6*	(3.96)	17.0*	(3.26)
$I_{0,\ all}$			2.54e-06*	(6.62)		
$I_{0,A}$[a]					1.20e-06	(0.37)
$I_{0,B}$					1.01e-05*	(3.38)
$I_{0,C}$					1.62e-05*	(5.64)
$I_{0,D}$					1.79e-06*	(2.42)
$I_{0,E}$					6.94e-06*	(3.68)
$I_{0,F}$					−4.9e-08	(−0.08)
$I_{0,G}$					4.24e-06*	(3.02)
$I_{0,H}$					1.83e-06	(0.71)
R^2	0.730		0.753		0.785	

Source: German Federal Employment Agency (2008), State Statistical Office of the Free State of Saxony (2009), State Ministry of Economy and Labor of the Free State of Saxony; calculation by the authors

t-values in parentheses.

*Significance level 95 %.

[a]Categories of infrastructure see Table 8.3.

One exception is the case of swimming pools that do not display any relation to employment in the accommodation or food service sectors. This is not surprising as swimming pools are often locally focused and usually include their own food services (which is not recorded statistically as a food service). The regression coefficients of investment in tourist site development and in other tourist facilities are insignificant in regression (1-3), however, singly included, they have a significant positive sign. Apparently, multi-collinearity generates unexpected results of estimation.

Table 8.5 shows the estimation results for the regression on the employment in accommodation and food services in 2008. In regression (2-2), investment in tourist infrastructure is introduced for both periods. Their coefficients are significantly positive for both time periods. This is interesting, as we saw in Fig. 8.2 only a weak correlation between the volume of investment and the propensity for tourism *on the regional level of counties*. However, the regression on employment in hotels and restaurants on the *regional level of municipalities* shows that, on average, investment in tourism also took place at locations with strong tourist activities after 1999. Investment projects have been implemented in "newcomer localities", among them some large-scale projects, but the majority of projects were located in municipalities with a strong tradition of tourism and well-qualified employees in the accommodation and food service sectors. Differences between the results

Table 8.5 OLS estimation results of Eq. 8.2

	2-1		2-2		2-3	
Constant	122.8	(1.49)	81.9	(1.06)	40.5	(0.56)
L_{08}	0.026*	(32.0)	0.025*	(37.74)	0.026*	(34.86)
Y_{07}	−0.0087	(−1.58)	−0.0063	(−1.21)	−0.0037	(−0.75)
$A_{2,1}$	−9.80	(−2.14)	−7.17	(−1.64)	−5.21	(−1.29)
$A_{4,1}$	30.5*	(4.40)	23.6*	(3.56)	15.1*	(2.40)
$I_{0,\ all}$			2.34e-06*	(5.64)		
$I_{1,\ all}$			6.54e-06*	(4.34)		
$I_{0,A}$					−3.40e-06	(−0.98)
$I_{0,B}$					6.41e-06*	(2.02)
$I_{0,C}$					1.30e-05*	(4.28)
$I_{0,D}$					1.13e-06	(1.45)
$I_{0,E}$					4.44e-06*	(2.23)
$I_{0,F}$					−2,88e-07	(−0,44)
$I_{0,G}$					5,46e-06*	(2,98)
$I_{0,H}$					2,07e-06	(0,75)
$I_{1,A}$					1,47e-06	(0,81)
$I_{1,B}$					−8,55e-06	(−0,82)
$I_{1,C}$					2,37e-05	(1,22)
$I_{1,D}$					−9,21e-06	(−0,39)
$I_{1,E}$					3,49e-08*	(5,81)
$I_{1,F}$					−4,85e-05*	(−2,51)
$I_{1,G}$					3,55e-05*	(2,80)
$I_{1,H}$					3,51e-05*	(3,20)
R^2	0.684		0,719		0,773	

Source: German Federal Employment Agency (2009), State Statistical Office of Saxony (2009), State Ministry of Economy and Labor of the Free State of Saxony; calculation by the authors
t-values in *parentheses*.
*Significance level 95 %.

displayed in Tables 8.5 and 8.4 correspond particularly to investment in bike paths (B) and in museums, museum mines and museum factories.

In terms of bike paths, one reason may be that the largest part of the bike path networks in Saxony was built before 2000. The investment made in the second period under consideration was often intended as gap closures; all municipalities can benefit from them, but not necessarily the municipality that has applied for the investment funding. At all on-site discussions with experts, the discussion partners emphasized the importance of bike paths for tourism. However, in some cases, problems surrounding a lack of cooperation between adjacent municipalities in terms of the bike path routes were mentioned. With regard to museum-like investment, we must consider that these establishments ordinarily supply their own food service (like swimming pools). Additionally, public funding of such projects may be aimed at the survival of the establishment, even though some tourist demand is not expected in the short term.

Table 8.6 OLS estimation results of Eq. 8.3

	3-1		3-2		3-3	
Constant	−7.56	(−0.95)	−6.90	(−0.89)	−4.61	(−0.60)
ΔL	0.0064*	(3.96)	0.0068*	(4.30)	0.0055*	(3.52)
ΔY	0.0080	(0.83)	0.0064	(0.68)	0.0054	(0.58)
$A_{2,1}$	1.91	(0.82)	1.34	(0.58)	0.25	(0.11)
$A_{4,1}$	−0.37	(−0.10)	−1.75	(−0.51)	−1.51	(−0.44)
$I_{0,\ insges}$			−5.31e-09	(−0.02)		
$I_{1,\ insges}$			4.29e-06*	(5.47)		
$I_{0,A}$					−1.43e-06	(−0.74)
$I_{0,B}$					−1.58e-06	(−0.91)
$I_{0,C}$					−1.94e-06	(−1.17)
$I_{0,D}$					−7.43e-06	(−1.73)
$I_{0,E}$					−4.20e-07	(−0.38)
$I_{0,F}$					−1.55e-07	(−0.43)
$I_{0,G}$					2.37e-06*	(2.33)
$I_{0,H}$					−2.83e-07	(−0.18)
$I_{1,A}$					4.85e-06*	(4.89)
$I_{1,B}$					−7.51e-07	(−0.13)
$I_{1,C}$					1.29e-05	(1.20)
$I_{1,D}$					−1.23e-05	(−0.95)
$I_{1,E}$					1.04e-06	(0.31)
$I_{1,F}$					−2.30e-05*	(−2.15)
$I_{1,G}$					1.70e-05*	(2.42)
$I_{1,H}$					3.86e-06	(0.64)
R^2	0.033		0.090		0.175	

Source: German Federal Employment Agency (2009), State Statistical Office of Saxony (2009), State Ministry of Economy and Labor of the Free State of Saxony; calculations by the authors
t-values in *parentheses*.
*Significance level 95 %.

Common to both periods is the significant positive relation between investment in health resorts (G) and employment in accommodation and food services. Because the localities where these investments have taken place have, in most cases, a long tradition of tourism, a strong impact of these investments on employment has to be expected.

The results of estimated regressions on the change of employment in accommodation and food services from 2002 to 2008 are summarized in Table 8.6. Like in regressions (1-1) and (2-1), investment in tourist infrastructure in regression (3-1) is not included. The significant positive effect of change in overall local employment underlines the significance of local demand, particularly for food services (but, this should be put into perspective of the very small coefficient of determination). Interestingly, the signs of the coefficients of the dummies for the categories of propensity for tourism have now changed. This implies that the employment in accommodation and food services has (on average) increased in counties (as well as

in independent cities) with weak recreational tourism; at the same time, employment in this sector has (on average) decreased in counties with strong recreational tourism. For example, in the city of Görlitz employment in the accommodation and food service sectors has strongly increased. Another reason for the change in sign of $A_{2,1}$ and $A_{4,1}$ could be that a weak process of harmonization of employment in the accommodation and food service sectors between regions with weak and strong recreational tourism has taken place in Saxony. Indeed, the variance of employment in this sector in the saxonian municipalities has decreased slightly from 2002 to 2008.

The positive sign of the change of income ΔY in regression (3-1) indicates that employment in the accommodation and food service sectors is positively related to the mean income of the county.

A striking result in estimation (3-2) is the insignificant effect of investment in tourist infrastructure 1990–1999, while the effect of such investment in the years from 2000 to 2007 is significantly positive. This is not the result of multicollinearity. One reason for the lack of impact of investment in the former period may be that this investment had effects that had already manifested before 2002. The significant positive effect of investment from 2000 onwards indicates, at least, an increase in employment in the accommodation and food service sectors in municipalities where investment in tourist infrastructure has taken place.

Looking at estimation (3-3), only investment in health resorts displays significant positive coefficients in both periods. Of course, one cannot say whether the increase in employment in the accommodation and food service sectors in localities that contain health resorts would have appeared without this public investment, nor can we say anything about the possible effects of these funds if they were applied for other projects in other sectors or locations. However, this result clearly indicates that investment in tourist infrastructure should be made in places where tourism already has a long tradition, because they are equipped with the complementary factors that are required to produce tourist services.

After 1999, the effects of newly developed sites for tourism appear significantly positive as well. This investment included projects that attract a wide audience from Germany and other European countries, e.g. the "Lausitzer Findlingspark Nochten" (a geological outdoor museum) and the above-mentioned newly-built "Sachsenring".

8.4.4 Results from a Telephone Survey of Private Businesses and Interviews with Local Officials

New infrastructure projects in the area of tourism will primarily result in positive effects for those companies in the tourism industry (especially: hotels, restaurants) which are located near the specific infrastructure project. Based on this idea, we carried out a telephone survey of 44 tourist businesses in municipalities where tourist infrastructure projects were implemented in the period of 2000–2007. The companies were directly asked about the impact of a certain infrastructure project that had been built in their vicinity between 2000 and 2007.

Table 8.7 Percentages of companies belonging to the local tourism industry which stated that the new local infrastructure project located nearby (built between 2000 and 2007)

	Answer			
	"Yes"	"No"	"I don't know"	No answer
. . . is at least sufficiently considered in municipal sales promotion activities in the area of tourism	48.8	31.7	14.6	4.9
. . . has led to more guests for our hotel/restaurant	38.2	47.1	14.7	0
. . . has led to a prolonged season for our hotel/restaurant	26.5	61.8	11.7	0
. . . has led to an expansion of our business (private investment, more employees)	11.8	82.4	5.8	0

Source: IWH survey on tourism firms in Saxony 2009; calculation by the authors

Interestingly, and not quite in accordance with our econometric results, most of the companies taking part in the survey reported that there were only slight positive effects for them as a result of the newly-built infrastructure (see Table 8.7).

For the majority of businesses in the tourism industry, the sales promotion activities of their municipality have considered at least "sufficiently" (or more than "sufficiently") the newly built infrastructure within their vicinity (48.8 %). Incorporating a certain infrastructure project within the sales promotion activities of a local unit may be interpreted as a positive impact of the project which could stimulate local tourism activities. But only 38.2 % of the firms stated that there had also been positive effects from the new infrastructure on the number of visitors. The new infrastructure led to a prolonged tourist season for only 26.5 % of the companies. Furthermore. the new infrastructure led to new private investment or to more employment for only 11.8 % of the firms. Interpreting these results, one could assume that – as we had expected – the economic impact of local infrastructure in the area of tourism depends on several situational factors and on the characteristics of the newly built infrastructure.

With regard to the newcomer localities in regions with weak recreational tourism, several interviews with officials at the local level made it clear that – as had been mentioned before – newly created attractions like the "Lausitzer Findlingspark Nochten" or the newly-built "Sachsenring" are actually able to attract large numbers of visitors from other regions. But this does not always lead to a positive impact on local employment. The newcomer localities often suffer from a lack of complementary factors which are necessary for economic success in tourism. One relevant factor is human capital. As Table 8.8 indicates, in skilled tourist localities (in regions with strong recreational tourism), a supply of qualified workers is valued much higher than in the newcomer localities.[13] Most likely, a region with companies that highly value qualified workers (as necessary complementary factors for tourist activities) will be more successful in the field of tourism

[13] As no data for the municipal level was available, all municipalities which are located in counties which belong to Clusters 3 and 4 (see Table 8.2) were interpreted as "skilled tourist localities". The cities of cluster 1 are not considered here.

Table 8.8 Valuation of the importance of the "supply of qualified workers" for businesses from the local tourism industry in different categories of municipalities, in percent

	Very important	Important	Not so important	Totally unimportant
Skilled tourist localities in regions with strong recreational tourism[a]	36.2	25.0	19.4	19.4
Newcomer localities in regions with weak recreational tourism	0.0	0.0	42.9	57.1

Source: IWH survey on tourism firms in Saxony 2009; calculation by the authors
[a]See footnote 13.

than other regions (for the relevance of human capital for competitiveness in tourism see e. g. Sanchez-Canizares et al. 2011).

8.5 Conclusions

In skilled tourist localities, there are other needs for investment in tourist infrastructure than in newcomer localities. With regard to the attraction of tourists, it may be that in some of the newcomer localities, national and state grants at the local level have been spent on infrastructure which is mainly used by the local population, not by tourists.

In accordance with our Hypotheses (a) and (c), additional infrastructure in the area of tourism will only have major positive effects on regional development if a region is already well-equipped with relevant complementary factors, e.g. a population with a service-oriented mentality and qualified workers. This indicates that a local tradition in the area of tourism is one major condition for economic success – an example of path-dependency in local economic development. Policymakers at all levels of government should be aware that some municipalities will probably never have the chance of being transformed into a holiday destination.

As had been suggested by Hypothesis (b), for those newcomer localities where infrastructure in the form of a "mega project" had been built, it was possible to overcome the lack of primary features of a destination to a certain extent. Of course, it must be admitted that even the traditional tourist locations had begun, at some point in time, to develop their skills. Therefore, some of the newcomer localities which are equipped with some relevant primary destination features could have the opportunity, given time, to become a holiday destination. From the perspective of the higher levels of government, a spatial concentration of grants may be the best strategy. The grants could be concentrated on the traditional resorts and on those of the newcomer localities which have some outstanding primary destination features (which have the potential of being developed and becoming much more attractive). Local policymakers should be aware that – as indicated in Fig. 8.1 – tourism policy is more than just building new infrastructure. Investment in public institutions and organizational aspects could also be used to achieve better local performance in the area of tourism. For example, in terms of the deficits of the newcomer localities

presented in Sect. 8.4, more investment should be made in the future, in local service mentality and in qualified workers.

Of course, the empirical evidence presented in this paper was based solely on a case study for only one German state over a limited period of time. Especially in terms of "mega projects" in some municipalities, more light could be shed on their impact by looking at a longer period of time. This will only be possible in future or by looking at "mega projects" in other regions and countries where such projects were completed several years ago. Future research could expand the empirical study to other East German states. Furthermore cases from other countries should be evaluated where policymakers have tried to develop completely new tourist locations in places without relevant primary destination features.

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The Economic Impact of Health Tourism Programmes

9

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9.1 Introduction

Although tourism is one of the largest world industries and the right to leisure and holidays is considered a human right (United Nations 1948), many people do not have access to tourism yet. Seniors are one of the groups with relatively less access to tourism, frequently due to economic and health constraints (Fleischer and Pizam 2002). In this context, social tourism programmes play an important role in making tourism accessible to all. The literature highlights several benefits of this kind of tourism offer both for tourists and for hosts (McCabe 2009; McGehee and Santos 2005; Minnaert et al. 2009). Additionally, international organizations, like the Bureau International du Tourism Social (BITS 2011) or the European Commission (EC 2011), recognize social tourism as an important activity worldwide.

Despite this, studies on the economic impacts of social tourism programmes are hardly found (McCabe 2009; Minnaert et al. 2009). The present chapter aims at helping to overcome this gap by evaluating the total economic benefits of a Portuguese social tourism programme directed to the senior market in the health domain. The here presented empirical research was undertaken by the authors in the scope of a study carried out in collaboration with the National Institute for Workers' Leisure Time Occupation (INATEL Foundation) in Portugal. In this study, two models were developed. One was designed to estimate the tourist expenditures based on a visitor survey and the expenditures of the entity that promoted the programme. The other – a make and use input-output model – was developed to quantify the tourism multipliers – output, employment, household income and value-added.

This chapter begins with a discussion on the importance of social tourism, the specificity of the senior market potentially benefiting from social tourism

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programmes, and the benefits associated with health tourism to the senior population. Additionally, the assessment of economic impacts of social tourism is discussed. The second part of the chapter, regarding the empirical research undertaken to evaluate the economic impacts of the mentioned Health Tourism Programme for Seniors, begins with a characterization of that Programme. Then, the results of the empirical research concerning the total expenditures made in the scope of the Programme, the multiplier effects generated and the estimation of primary and secondary impacts are presented and discussed. Finally, conclusions of the empirical research and implications for developing social tourism policies and strategies are provided.

9.2 Literature Review

9.2.1 Social Tourism and the Senior Tourist Market

Social tourism can be considered as "all of the relationships and phenomena resulting from participation in tourism, and in particular from the participation of social strata with modest incomes" (BITS 2003). However, according to the European Economic and Social Committee (EESC 2006), social tourism may have a broader scope, including all the activities developed by organisations to help those, for several reasons (e.g. low incomes, disability, personal or family isolation, reduced mobility, geographical difficulties) totally or partially inhibited to fully exercise the right to tourism, in overcoming these constraints and participating in tourism.

The Global Code of Ethics for Tourism suggested by the World Tourism Organization (UNWTO 2011, article 7) emphasises the right to tourism and also recommends the development of social tourism by public authorities. However, historically, and as Hjalager (2005) refers, holiday legislation has not become an important subject until the 20th International Conference of the International Labour Organisation held in Geneva in 1936. As the International Organisation of Social Tourism (OITS) remarks, the right to holidays was referred again in the Universal Declaration of Human Rights in 1948 (OITS 2011).

The period after the Second World War was also very important for the development of social tourism, due to the movements of workers and the involvement of public authorities in favour of this kind of tourism (EESC 2006). However, differences may be noticed in the level of support given to social tourism, with some countries actively boosting the development of social tourism, while others adopting a non-interventionist approach (McCabe 2009; Minnaert et al. 2009). As reported by the EESC (2006), the 1950s and 1960s were marked by the emergence of many organisations related to social tourism, one of them being BITS, created in 1963, which plays a crucial role in social tourism nowadays, particularly in supporting and coordinating several organisations in the development of social tourism initiatives. BITS distinguishes four major markets of social tourism: families, young people, seniors and persons with disabilities or reduced mobility.

Among all the organisations that are committed to promote social tourism, some develop specific initiatives to increase the seniors' access to tourism. In this context, organisations such as INATEL, in Portugal, and the Institute for Older Persons and Social Services (IMSERSO), in Spain, develop tourism trips designed for seniors. Considering the relevance of health in motivating or constraining seniors' travel, and the potential benefits of tourism for seniors' health conditions, some organizations have developed trips specifically designed to improve the seniors' health. This is the case of IMSERSO (2011), in Spain, which has a Social Thermalism Programme, in which seniors may enjoy holidays that include treatments in thermal baths. In Portugal, INATEL (2011) also offers seniors the opportunity to participate in this kind of trips through the Health Tourism Programme for Seniors.

Europe faces in the near future a number of challenges associated with an ageing society, which is, according to Eurostat (2010, p. 149), due to three main factors: "persistently low fertility rates, increasing life expectancy, and a baby-boom generation that will soon start to reach retirement age". More specifically, "persons aged 65 or over will account for 30.0 % of the EU-27's population by 2060, compared with a 17.0 % share in 2008" (Eurostat 2010, p. 162). These tendencies are also visible in Portugal where, according to INE (2010a, p. 16), "the weight of the elderly population continues to follow an upward trend, as a consequence of a decline in fertility and an increase in longevity". This is reflected in an ageing ratio that went up from 102.2 (aged 65 and over) per 100 youth, in 2000, to 117.6 in 2009 (INE 2010a).

Given this trend of an ageing modern society, the senior population is becoming an increasingly attractive tourist market, also due to its frequently high purchasing power, its increasing travel propensity and its relatively fewer limitations on timing of travel and duration of stay (Nimrod and Rotem 2010). However, the term "senior tourism" is still not consensual, being defined by diverse authors as travel of a population group, beginning "anywhere from 50 up to 65 years of age" (González et al. 2009, p.179). Some authors actually suggest that cognitive, perceived or felt age is more relevant for the understanding of the senior tourist market than chronological age (Cleaver and Muller 2002; González et al. 2009).

Many studies undertaken all over the world in the last decade on senior tourists (Cleaver and Muller 2002; Dann 2001; Fleischer and Pizam 2002; González et al. 2009; Horneman et al. 2002; Lohmann and Danielsson 2004; Hsua et al. 2007; Nimrod 2008; Nimrod and Rotem 2010; Shoemaker 2000) reveal heterogeneity in their travellers' profile, motivations and behaviour, although some similarities are also observable. The senior tourists' most frequent travel motivations are: to get away from daily routine, to rest and relax, to socialize (get to know other people and socialize with relatives), to get culturally enriched (widen horizons, get to know other places, live new experiences) and to undertake physical activities (mainly outdoor activities). Nimrod and Rotem (2010) identified a benefits continuum ranging from relaxation to excitement, with particular benefits sought (excitement, social bonding, meeting role expectations, general enjoyment, relaxation) attainable through distinct combinations of activities. Globally, there is a trend of motivations

increasingly implying some intellectual, social and/or physical activities in contrast to mere relaxation (Cleaver and Muller 2002; Lohmann and Danielsson 2004; Nimrod and Rotem 2010). The educational level is, in this context, a relevant condition for choosing activities (Nimrod 2008).

The main factors conditioning tourism practice, as identified in several studies (Fleischer and Pizam 2002), are income and health conditions, being both inhibitors and facilitators of participation in tourism. Regarding income, the elderly in Portugal may be characterized as an economically fragile population segment. According to INE (2010b), in 2008 the average of annual available income by "equivalent adult" was 10,390 Euros (about 866 Euros/month), but when the household is composed of one adult aged 65 and over the annual available income drops to 7,772 (about 643 Euros/month). It is therefore not surprising that the persons aged 65 and over are one of the most vulnerable groups regarding the risk of poverty (INE 2010a).

Apart from economic constraints, for the elderly group health is the most relevant and differentiating condition, especially as age increases. The variable "age" itself is, in this group, an important determinant for travel frequency and the type of activities sought (Nimrod 2008), partly due to age-related health conditions. That is why health tourism practices are particularly attractive for the senior population, traditionally in a curative perspective, but increasingly as a preventive measure and also in a more holistic sense providing wellness.

Several studies on health tourism show the relevance of natural resources (particularly mineral waters) and landscape features for successful spa resorts (Ogorlec and Snoj 1998; Ramos 2005), with additionally cultural resources and entertainment, recreation and sports increasingly sought (Deng 2008; Fontanari and Kern 2003; Kapczyńskia and Szromek 2008; Ogorlec and Snoj 1998; Ramos 2005). Portugal is a country with abundant thermal resources in the North and Central Regions, where both the (dominant) traditional curative and the more holistic wellness tourism approach are offered (ATP 2008).

Given the importance of social tourism in general, and of social tourism providing health benefits for seniors in particular, it is crucial to measure the several impacts of this kind of initiatives. The next section presents a discussion on the economic impacts of social tourism and on a potential methodology for assessing them.

9.2.2 Economic Impacts of Social Tourism Programmes

There is a growing awareness about the potential benefits of social tourism regarding the opportunity of holiday participation. Visiting new places, doing other activities and living broadening experiences, are some of the potential benefits of social tourism already identified (Hazel 2005; McCabe 2009; McCabe et al. 2010). Participating in social tourism is also a good opportunity to relax and break the routine (McCabe 2009), something that is highly valued by some participants in this kind of trips. It is also recognised that social tourism offers important benefits

regarding socialisation (Hazel 2005; McCabe et al. 2010; Minnaert et al. 2009), namely enhancing social interaction and social capital. However, as EESC (2006) remarks, social tourism should provide benefits not only to those who participate in trips, but also to the local communities living in the destinations visited. EESC (2006) emphasises that, in the future, tourism will be "one of the greatest contributors to employment, development, wealth and quality of life" (p. 318) and that social tourism will have a crucial contribution in this context, given the increasingly recognized importance of non-strictly economic criteria. In the opinion of this Committee, social tourism should help combat seasonality and create stable and high quality employment. This idea that tourism, as a social force, should contribute to deliver benefits to a larger community, is also advocated by Higgins-Desbiolles (2006).

Besides the important role social tourism may play, there is a lack of research and empirical evidence about its potential benefits (McCabe 2009; Minnaert et al. 2009). As far as impacts of social tourism are concerned, most research focuses on the benefits of this type of tourism to low income families. Some examples are the studies undertaken by McCabe (2009), McCabe et al. (2010), and Minnaert et al. (2009) that reveal the benefits obtained with holiday participation, namely in terms of social and family capital, subjective well-being and quality of life.

One study about employment in the Social Tourism sector in Europe, carried out in 2009, under the auspices of EFTA (European Free Trade Association) and BITS (ULB-IGEAT-LITOteS 2009), is one of the few studies published where some economic impacts of social tourism on host communities are analysed, even if only in a limited way. In this research, the percentage of employment in the social tourism sector in relation to the employment in the commercial tourism sector in several European countries was estimated. The results show that, for example, in Austria, employment in the social tourism sector is likely to amount up to 5 % of global employment in the country. Spain is one example of good practices in terms of social tourism programmes for the senior market. In 1985, the Holiday Programme for seniors that is organised by IMSERSO was created. In recent years IMSERSO has carried out several studies for estimating the economic impact of this programme, mainly in terms of employment generated. For example, during the season 2005–2006, the impact of this Programme on employment, in accommodation facilities alone, was about 6,800 jobs (ULB-IGEAT-LITOteS 2009). Despite the relevance of the studies mentioned above, there is a considerable gap in the quantification of the total economic impact of social tourism worldwide, particularly concerning secondary impacts. It is, indeed, complex to quantify the total economic impact of a social tourism programme, because it implies the estimation of the direct, indirect and induced effects. The direct effects of a change in final demand in the scope of a social tourism programme refer to the first round effects. The indirect effects generated by the programme are a consequence of the need of an industry to make purchases from other industries within an economy in order to produce its output. Finally, the induced effects are the changes in economic activity resulting from household expenditures of income earned directly and indirectly as a result of expenditures carried out in the scope of the social tourism

programme. According to Archer (1995), the induced effects of a tourism activity can be considerable and in some destinations, tourism has generated induced income effects up to three times higher than the direct effects alone.

In the absence of economic impact studies on social tourism programmes published in the literature, the methodologies more frequently used to quantify the total economic impact of tourism were analysed to select the most adequate methodology to adopt in this research. A literature review of tourism's economic impact studies published in the last four decades shows that input-output models have been the most frequently used (e.g. Archer 1995; Archer and Fletcher 1996; Bonn and Harrington 2008; Braun 1992; Daniels et al. 2004; Dwyer et al. 2005; Eusébio 2006; Frechtling and Horváth 1999; Hjerpe and Kim 2007; Lee and Kwon 1997; Leeuwen et al. 2009; Leones et al. 1998; Lichty and Steines 1982; Mayen et al. 2010; Porter and Fletcher 2008; Zhou et al. 1997). However, no studies that use input-output models to quantify the total economic benefits of social tourism programmes are known. This model makes possible to obtain, in a rigorous and clear form, the primary (direct effects) and secondary (indirect plus induced) effects. In addition, this model also enables evaluating the impact on each sector separately. The relevance of this type of model to estimate the economic impact of tourism is highlighted by several authors (e.g. Frechtling and Horváth 1999; Flectcher 1989; Archer 1995). Baaijens et al. (1998) reinforce this idea suggesting that input-output models provide very detailed and relevant information on the consequences of tourist expenditures on destination economies.

9.3 The Economic Impacts of a Portuguese Health Tourism Programme for the Senior Market

9.3.1 Characterization of the Programme

The Health Tourism Programme for the Senior Market is a conjoint initiative of the Ministry of Health and the Ministry of Labour and Social Solidarity, financially subsidized by the PAII – Integrated Programme for Assistance to the Elderly. The involvement of the Ministry of Health is due to the therapeutic scope of this Programme, since the thermal treatments are subsidised by the National Health Service, and also justified by the benefits obtained from this initiative, as it contributes to an improvement of the seniors' health conditions and to a decrease in health related expenditures, both for seniors and the State (INATEL 2007a). The entire development process of the Programme, as well as its commercialization, implementation and evaluation, is carried out by the INATEL Foundation, which is tutored by the Ministry of Labour and Social Solidarity (Decree-law no. 106/2008).

The Health Tourism Programme for the Senior Market started in 1997, following a similar programme denominated Programme for Health and Thermalism which, in turn, had been initiated in 1995, in an auto-holiday regime, not being exclusive to senior travellers. Its main objectives at a social level are (1) to satisfy the health and

well-being needs of the senior market and (2) to facilitate senior citizens with lower income levels access to tourism. In this context, the initiative has a strong social character, by providing senior citizens with lower income the opportunity to travel, contributing to a decrease of their isolation and an increase of social interaction, not only with other senior participants, but also with residents at the visited destinations (INATEL 2007a).

The programme is directed to Portuguese citizens aged 60 years or older, who may be accompanied by their spouses, independently of their age and requirements of thermal treatments, or by another Portuguese citizen, aged over 18, if assistance is needed. Medical prescription is also required (INATEL 2007b). The trips included in this Programme have a duration of 15 days (14 nights) and include obligatory thermal treatments during that period (the price of the treatments is not included in the amount paid by the seniors for the package) (INATEL 2007b). Although the thermal treatments occupy most part of the seniors' stay and typically lead to fatigue of the elderly, the Programme integrates in all trips a period of leisure time dedicated to learning and cultural enrichment as well to other entertaining activities. It also incorporates transportation, lodging in half pension, and permanent monitoring by a recreational assistant and insurance against personal accidents (INATEL 2007b). The destinations are located exclusively in Portugal.

At an economic level, the Programme aims at contributing to the development of economic activities connected with tourism, namely those delivering goods and services directly to the senior visitors (lodging, thermal treatments, food services, transportation, entertainment and commerce), and at stimulating other activities, through the multiplier effect of the expenditures undertaken in the scope of the Programme. These economic effects – direct, indirect and induced – contribute to local, regional and national development.

Beyond stimulating the use of the establishments providing thermal services and promoting their economic development, the Programme contributes to the maintenance of jobs and to the increase of occupancy rates in lodging units, to the maintenance of diverse activities directly or indirectly dependent on tourism and to reduce of the seasonality at several destinations, given that its temporal scope coincides, in large, with the off-season of tourism supply.

As this Programme is subsidised by the Ministry of Health and the Ministry of Labour and Social Solidarity, with one of its main objectives being to promote the access of seniors with less income to travel, the prices charged for the trips vary according to the seniors' income. The price charged to a senior belonging to the fourth level (the maximum level of income) is about four times the price paid by a senior belonging to the first level (the minimum level of income), which in 2007 was 120.00 Euros. The State funding allocated to the Programme has been decreasing in the last years, being, in 2007, about 1,215,000 Euros (approximately 47 % of the total costs of the Programme) (INATEL 2007a).

In 2007, 127 trips were registered in the context of the Health Tourism Programme for the Senior Market (INATEL 2007a), which represented an increase of about 150 %, compared to those registered in 1997 (INATEL 1997).

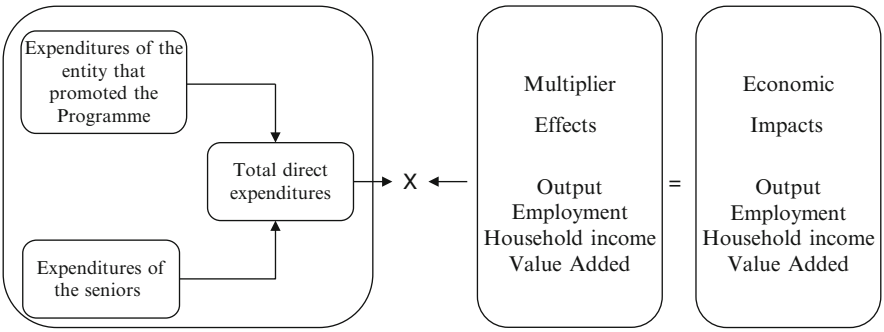

Fig. 9.1 Model used to quantify the total economic impacts of the Health Tourism Programme for the Senior Market

As far as the participants in the Programme are concerned, it can be noted that from 2000 to 2007, the number of annual participants was always higher than 4,000 being, in 2007, about 4,800. In the time period under analysis in this study, a significant increase of the number of participating entities in the Programme was observed, mainly in terms of points of sale (from 234 to 482) and hot springs (from 8 to 16). As far as accommodation and entertainment companies are concerned, it can be noted that, in 2007, there were 18 accommodation units and 85 entertainment companies participating in the Programme. In the same year, there were 18 road transportation companies participating in the Programme (INATEL 2000, 2007a).

9.3.2 Methodology

The development of social tourism programmes, like the Health Tourism Programme for the Senior Market, implies the consumption of tourism products. Consequently, the consumption of these products will stimulate the economic development of tourism destinations. In order to quantify the total economic benefits (direct, indirect and induced) of this Portuguese Social Tourism Programme focused on health tourism, two sets of data are required. The first refers to the final demand of this Programme broken down into products categories, and the second is a set of multipliers corresponding to these expenditure categories (see Fig. 9.1).

9.3.2.1 Methods to Estimate Total Direct Expenditures

The total direct expenditures generated by the Programme for the Portuguese economy result from: (1) expenditures made to implement the Programme and (2) expenditures carried out by seniors outside the package.

First, the expenditures to implement the Programme undertaken by INATEL were estimated based on the Execution Report of the Programme for the year 2007 (INATEL 2007a). To create package tours integrated in this Programme, the INATEL Foundation purchases several tourism products from diverse economic activities (e.g. accommodation, food and beverage, transportation, cultural,

entertainment and sport activities and insurance). Additionally, to organize and market the package tours, INATEL also makes expenditures in travel agencies, financial institutions and advertising companies. To finance these expenditures the INATEL foundation uses public funds and the payments undertaken by seniors to acquire the package tour.

In a second phase, and in order to better characterize the participants in the Programme and to estimate the expenditures carried out by seniors outside the package, a visitor survey was conducted. For this study, 384 seniors who had participated in the Health Tourism Programme for the Senior Market, during 2007, were asked to participate in a survey. A stratified sampling approach based on gender, age and place of residence was used to select the respondents. The sample was obtained using a database provided by INATEL which included information about seniors who participated in the Programme in 2007 (a total of 4,809 seniors).

To determine the sample size the following formula was used (Kim et al. 2010):

$$N = (P) \times (1 - P) \times \left(\frac{Z^2}{E^2}\right) = (0.5) \times (1 - 0.5) \times \left(\frac{1.88^2}{0.06^2}\right) = 384$$

where:

N = Sample size;

Z = Number of units of standard error associated with chosen level of confidence (1.88);

E = Sampling error defined (± 6 %);

P = Estimated binomial proportion that maximizes the amount of variability in the population (50 %), which is widely used in social sciences research.

A total of 260 interviews were fully carried out, yielding a total response rate of 74 %. Non-response error was examined and no significant statistical difference between respondents and non-respondents was observed.

Data for this study was collected during December of 2008 and January of 2009 through telephone interviews. A telephone survey was adopted given the characteristics of the population in study (seniors), because it is considered by some researchers (e.g. Fesenmair and Lonnie 1989) efficient in terms of cost per interview, and because personal communication allows greater control over the quantity and quality of the responses. In addition, the telephone interviews were carried out by professional interviewers with knowledge in tourism and gerontology. The interview included several questions about the participation of the seniors in the social tourism programme analysed in this research and about their expenditure patterns. The seniors were asked about their expenditures per person and per trip before and during the trip. These expenditures excluded the amount paid to the INATEL Foundation to acquire the package tour (data were provided by INATEL). Regarding expenditures undertaken during the trip, the seniors were asked to indicate how much they spent in travel in the following items: hot spring products; transportation; food and beverage; cultural, entertaining and sport activities;

shopping and other services (e.g. personal services and phone). This information was then extended to cover the whole target population and the total research period.

The sample of seniors interviewed in this research was characterized in terms of age, gender, marital status, occupation, and academic qualifications. It can be noted that the majority of the respondents were in the age range between 60 and 75 (about 60 %). Most respondents were female (53.5 %), married (84.0 %) and retired from work (97.7 %), possessing the first level or primary education (58.1 %). However, a significant number of senior participants had also completed a higher educational level (8.5 % had attended high school and 12.0 % possessed a university/college degree).

9.3.2.2 Input-Output Model

The study presented in this chapter uses a national make and use input-output model developed for this specific study to quantify multiplier effects of expenditures carried out by INATEL and by seniors in the Health Tourism Programme for the Senior Market. Initially, it was intended to use a substantial disaggregation of the main industries where expenditures are made under the Social Tourism Programme in study. However, the data of National Accounts available did not make possible such a disaggregation. Consequently, a make and use input-output matrix (31 industries by 31 products) was applied. This matrix was built based on make and use matrixes published by the National Statistical Institute of Portugal (INE 2007). Based on this matrix, an open input-output model was developed in order to quantify direct and indirect effects of this Programme. In addition, a closed input-output model with respect to households was used in order to estimate induced effects. Based on these two models output multipliers, household income multipliers, value added multipliers and employment multipliers (in physical terms) were calculated. According to Miller and Blair (1985) these are the most frequently used multipliers in economic impact studies. Although the multiplier concept is a familiar one, as suggested by Archer (1982) and Liu and Var (1983), confusion regarding its estimation still exists, since the concept has been defined and interpreted differently in the literature. In some studies the ratio multipliers are used and interpreted as Keynesian multipliers. However, in the present study Keynesian multipliers (simple and total) and ratio multipliers (Type I and Type II) were calculated.

9.3.3 Results: The Economic Benefits of the Health Tourism Programme for the Senior Market

9.3.3.1 Direct Expenditures

The final demand of the Health Tourism Programme for Seniors was estimated into two groups: (1) expenditures made to implement the Programme and (2) expenditures carried out by seniors outside the package.

1. Expenditures made to implement the Programme

Hotels and restaurants were the economic activities that obtained most direct benefits from the implementation of this Programme. More than 73 % of all

expenditures resulting from its implementation were made in accommodation, food and beverage services. The expenditures in transportation services and in travel agencies correspond to about 20 % of all expenditures (see Table 9.1).

2. Expenditures carried out by seniors outside the package

In order to participate in the Programme, beyond the purchase of the package tour, seniors undertake some additional expenses, both to prepare the trip and during the trip itself. In order to approximately assess these expenditures, first the results from the survey directed to the senior participants in 2007 were used to estimate average expenditures per participant in a trip per type of goods and services purchased. Second, to estimate the total expenditures extra-package per type of good and service carried out by the seniors who participated in this Social Tourism Programme in 2007 the following equation was used:

$$EEPS = \sum_{i=1}^{n} NS \times AEPS_i$$

where:

EEPS – total expenditures extra-package carried out by seniors;

$i = 1 \ldots n$ – type of goods and services

NS – number of seniors that in 2007 participated in the Programme

AEPS – average expenditure extra-package per senior and per type of goods and services.

More than 80 % of all expenditures carried out extra-package by seniors were undertaken to acquire hot spring services. The relevance of this type of product is directly related with the nature of this Social Tourism Programme. This Programme intends to contribute positively to the seniors' well-being and to the improvement of their health condition, integrating as a core element thermal treatments. In addition, this Programme also has an important role for the local commerce. Shopping represents almost 10 % of all expenditures carried out extra-package by seniors (Table 9.1).

3. Total expenditures

Based on these assumptions, the total of expenditures generated in the Portuguese economy as a consequence of this Social Tourism Programme was estimated for 2007, to account for 3,730,121 Euros (Table 9.3). Of this total, expenditures carried out extra-package by seniors correspond to about 47 %. In a descending order, the most benefited economic activities were: accommodation, food and beverage services (42.4 % of total expenditures), other community, social and personal services (cultural, entertaining and sport activities, hot spring products/services and personal services) (40.12 %), transportation services (10.6 %) and wholesale and retail trade (4.28 %) (Table 9.1).

This initial round of expenditures will increase the amount of transactions, resulting in an increase of the production level and vice-versa. This increase of the production level, by organisations already existing in the market or by new organisations, will imply an increase of intermediary consumptions and primary

Table 9.1 Total expenditures of the Programme, according to economic activities and type of goods

Portuguese classification of economic activities (revision 2.1)	Types of goods	A		B		Total	
		(€)	(%)	(€)	(%)	(€)	(%)
G - Wholesale and retail trade; repair of motor vehicles, motorcycles personal and household goods	Shopping			159,695	9.06	159,695	4.28
H - Hotels and restaurants	Accommodation, food and beverage services	1,440,776	73.20	140,808	7.99	1,581,584	42.40
I - Transport, storage and comunication	Passenger transportation	294,298	14.95	1,844	0.10	296,142	7.94
	Services of travel and tourism agencies	99,261	5.04			99,261	2.66
J - Financial intermediation	Financial services	1,707	0.09			1,707	0.05
	Insurance services	5,982	0.30			5,982	0.16
K - Renting and business activities	Advertising	29,803	1.51			29,803	0.80
L - Public administration and defence; compulsory social security	Tourism related services (INATEL)	59,338	3.01			59,338	1.59
O - Other community, and personal services activities	Cultural, entertaining and sport activities	37,063	1.88	5,150	0.29	42,213	1.13
	Personal services			31,419	1.78	31,419	0.84
	Hot spring products			1,422,977	80.76	1,422,977	38.15
Total		1,968,228	100.00	1,761,893	100.00	3,730,121	100.00

Source: Senior's survey and INATEL (2007) Execution Report of the *Health Tourism Programme for Senior Market*

Legend: A – total expenditures resulting from the implementation of the Programme, according to economic activity and type of goods purchases; B – extra-package expenditures carried out by seniors, according to economic activities and type of goods purchases

inputs. This procedure will globally contribute to an increase of the organisations' revenues, of overall employment, of household income and of value added. These effects are denominated as direct effects, as a result of the expenditures made both

by the seniors and by INATEL in the scope of the Programme. Consequently, related with direct effects, indirect economic benefits will occur through the expenses carried out by the organisations that provide goods and services to INATEL and to the seniors participating in the Programme. These benefits result from the acquisitions made by the diverse companies to satisfy the increase of demand of their goods and/or services. Additionally, the supplier entities also had to increase their acquisitions to satisfy this increasing demand and so consecutively. All these sectorial interdependencies will generate increases, for example of the general production level, of employment and revenues of organisations and workers, household income and value added. The increase of household income, directly and indirectly, as a consequence of the implementation of this Programme, also contributes to generate more consumption of goods and services provided by Portuguese companies. This will also contribute to an increase of the companies' revenues, of employment and of value added (induced effects). In order to quantify the above mentioned economic benefits in the next section the multiplier effects of this Social Tourism Programme will be presented.

9.3.3.2 Multiplier Effects

Based on national input-output models developed in this research, the output, employment, household income and valued added multipliers were calculated. Table 9.2 presents, respectively, the simple and total Keynesian multipliers (output, household income, value added and employment) and type I and type II ratio multipliers (output and employment). All these multipliers were calculated respectively for each type of good and services consumed in the scope of this Programme. The last column shows the total multiplier effects of the Programme.

The output multiplier value shows that each Euro of expenses made by INATEL and by seniors in this Programme generated directly and indirectly 1.654 Euros of output. Adding to these effects the induced effects, the total output multiplier was estimated as 4.137. The results of this study also indicate that the largest output multiplier occurs in the domain of accommodation, food and beverage services (H). Additionally, it is worthwhile noting that the output multiplier of expenditures carried out by INATEL is higher than the output multiplier of expenditures carried out by seniors' extra-package expenses (Table 9.2).

As far as the household income multipliers are concerned, it was observed that for each thousand Euros of expenditures carried out in this Programme 1.094 Euros of household income (in direct, indirect and induced terms) were generated. Moreover, the household income multipliers of trade (1.141), hotels and restaurants (1.115), renting business activities (1.147), public administration (1.300) and other community, social and personal services activities (1.121) are greater than the average multiplier of the Programme (1.094) (Table 9.2).

Regarding value added multipliers, for 1 Euro of total expenditures in this Programme 1.466 Euro were generated. The results presented in Table 9.2 also show that the total value added multiplier generated by expenditures carried out by seniors' extra package is higher than the total value added multiplier generated by expenditures resulting from the implementation of the Programme.

Table 9.2 Multiplier effects of the Health Tourism Programme for the Senior Market

Multipliers			Type of goods and services							Total		
			G	H	I	J	K	L	O	A*	B*	C*
Keynesian	Output	Simple	1.566	1.815	1.560	1.405	1.511	1.270	1.539	1.749	1.564	1.654
		Total	4.156	4.346	3.301	3.257	4.115	4.210	4.083	4.165	4.110	4.137
	Household income	Simple	0.637	0.623	0.428	0.456	0.640	0.720	0.626	0.594	0.626	0.611
		Total	1.141	1.115	0.767	0.816	1.147	1.300	1.121	1.065	1.122	1.094
	Value added (VA)	Simple	0.840	0.759	0.768	0.888	0.861	0.920	0.806	0.768	0.805	0.787
		Total	1.529	1.432	1.231	1.380	1.553	1.700	1.482	1.410	1.482	1.446
	Employment	Simple	0.035	0.045	0.018	0.016	0.024	0.030	0.037	0.039	0.037	0.038
		Total	0.065	0.074	0.038	0.037	0.054	0.070	0.066	0.067	0.067	0.067
Ratio	Output	Type I	1.621	1.891	1.678	1.443	1.571	1.270	1.606	1.829	1.630	1.727
		Type II	4.302	4.527	3.552	3.348	4.278	4.210	4.260	4.356	4.285	4.319
	Employment	Type I	1.327	1.625	1.830	1.670	1.708	1.000	1.267	1.614	1.300	1.441
		Type II	2.449	2.683	3.871	3.927	3.841	2.333	2.275	2.757	2.321	2.517

Legend: G – wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods; H –hotels and restaurants; I – transport, storage and communication; J – financial intermediations; K – renting and business activities; L – public administration and defence, compulsory social security; O – other community, social and personal services activities; A – resulting from expenditures due to Programme implementation; B – resulting from seniors' extra-package expenditures; C – resulting from the totality of expenditures; * – weighted mean of the multipliers products consumed in the scope of the Programme according to the expenditure pattern

The employment multiplier generated by the consumption of products related with the Programme shows that for each thousand of Euros in expenditures, the direct and indirect employment increased by 0.038 jobs (simple multiplier) and the total employment increased by 0.067 jobs (total multiplier). The results of employment multipliers in each sector show that hotels and restaurants have the highest employment multipliers (Table 9.2). In addition, the results of the employment ratio multipliers show that for one job generated in the Portuguese economy directly by the Programme 1.517 jobs are generated in terms of indirect and induced effect. However, this ratio is higher in the hotels and restaurants sector (1.683), transports (2.871), financial institutions (2.927) and in the renting and business activities (2.841). These results show that the Social Programme that is analysed in this chapter has both important primary (directs effects) and secondary benefits (indirect plus induced effects) for the national economy.

In order to quantify separately primary and secondary benefits of this Programme Table 9.3 presents a disaggregation of multipliers effects (direct, indirect and induced effects). These results show that secondary effects of this Programme are higher than primary effects, which corroborates the results obtained in other studies where the secondary effects of tourism outweigh the primary effects (e.g. Archer 1995; Lee and Kwon 1995).

9.3.3.3 Total Economic Benefits

In this study, the economic impacts of the Health Tourism Programme for the Senior Market were estimated by multiplying the expenditures carried out

Table 9.3 Disaggregation of multiplier effects (direct, indirect and induced effects) of the Health Tourism Programme for Senior Market

Multiplier disaggregation		Type of goods and services							Total		
		G	H	I	J	K	L	O	A*	B*	C*
Output	Direct	0.966	0.960	0.929	0.973	0.962	1.000	0.958	0.956	0.959	0.958
	Indirect	0.600	0.855	0.631	0.432	0.549	0.270	0.581	0.793	0.604	0.697
	Induced	2.590	2.531	1.741	1.853	2.604	2.940	2.544	2.416	2.546	2.482
Household income	Direct	0.449	0.359	0.246	0.299	0.461	0.630	0.440	0.351	0.434	0.393
	Indirect	0.187	0.264	0.183	0.157	0.180	0.090	0.186	0.243	0.192	0.217
	Induced	0.504	0.493	0.339	0.361	0.507	0.580	0.495	0.471	0.496	0.483
Value added (VA)	Direct	0.564	0.383	0.499	0.668	0.606	0.790	0.533	0.419	0.524	0.473
	Indirect	0.276	0.376	0.269	0.219	0.255	0.130	0.272	0.349	0.281	0.314
	Induced	0.688	0.673	0.463	0.492	0.692	0.780	0.676	0.642	0.677	0.660
Employment	Direct	0.027	0.028	0.010	0.009	0.014	0.030	0.029	0.024	0.029	0.027
	Indirect	0.009	0.017	0.008	0.006	0.010	0.000	0.008	0.015	0.009	0.012
	Induced	0.030	0.029	0.020	0.021	0.030	0.040	0.029	0.028	0.029	0.029

Legend: G – wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods; H –hotels and restaurants; I – transport, storage and communication; J – financial intermediations; K – renting and business activities; L – public administration and defence, compulsory social security; O – other community, social and personal services activities; A – resulting from expenditures due to Programme implementation; B – resulting from seniors' extra-package expenditures; C – resulting from the totality of expenditures; * – weighted mean of the multipliers products consumed in the scope of the Programme according to the expenditure pattern

in the scope of this Programme in the Portuguese economy by total multipliers (total output, total household income, total employment and total value added multipliers).

Correspondingly, in 2007, the Health Tourism Programme for the Senior Market generated 3,569,792 Euros as direct output, and more than 15 millions of Euro of total output in the Portuguese economy. Of this total, about 47 % of output was generated by expenditures carried out extra-package by the seniors. In terms of employment levels, 247 jobs were generated in the Portuguese economy in the scope of this Programme (direct plus indirect plus induced), being only 39 % generated directly. Significant benefits were also registered for household income and value added; the Programme has generated a direct increase of value added estimated by 1,761,177 Euros, an indirect increase of 1,169,861 Euros and an induced increase of 2,439,144 Euros. Globally, the Programme contributed to the national value added with 5,370,181 Euros, an amount that is approximately four times higher than the State funding allocated to it (1,215,000 Euros) (see Table 9.4). These results confirm that the Health Tourism Programme for the Senior Market plays an important role for the economic revitalization of the visited destinations, consequently contributing to the economic growth of the country.

Table 9.4 Total economic benefits of the Health Tourism Programme for the Senior Market (2007)

Total Benefits		Resulting from expenditures due to programme implementation	Resulting from seniors' extra package expenditures	Resulting from the totality of expenditures
Output (€)	Direct	1,879,823	1,689,968	3,569,792
	Indirect	1,537,273	1,065,043	2,602,315
	Induced	4,692,635	4,485,806	9,178,441
	Total	8,109,731	7,240,817	15,350,548
Household income (€)	Direct	683,137	764,509	1,447,646
	Indirect	470,829	338,806	809,635
	Induced	914,135	873,419	1,787,554
	Total	2,068,101	1,976,734	4,044,834
Value added (VA) (€)	Direct	837,625	923,552	1,761,177
	Indirect	675,084	494,777	1,169,861
	Induced	1,247,012	1,192,131	2,439,144
	Total	2,759,721	2,610,460	5,370,181
Employment (N)	Direct	47	51	98
	Indirect	29	15	44
	Induced	54	52	106
	Total	130	117	247

9.4 Conclusion and Contributions

The results of this study reveal the relevance of social tourism programmes directed at the senior market and integrating a health component. Due to the discussed constraints of this market and the importance of tourism for the population's well-being, several countries, all over the world, have included in their social policies, tourism stimulating initiatives. The here analysed program (Health Tourism Programme for the senior market provided by INATEL - Portugal) is one of the initiatives offered to the senior market yielding the improvement of well-being of its participants as well as a contribution to economic development of the destinations, where the various editions of the programme take place. The destinations included in this Programme are thermal spas, mainly located in the hinterland of the country's North and Central Regions of Portugal, that still present low levels of economic and tourism development, which might also be recognized as a contribution to more sustainable development within the country. It is, in our view, crucial to undertake studies that quantify the economic impact of this kind of programmes. Results may become fundamental inputs both for the definition of social policies in the tourism domain, eventually justifying the public investment (or even suggesting its increment), and for the improvement of these programmes. Despite the relevance of studies that quantify the total economic impact of social tourism, the literature review about this topic clearly shows a lack of these studies.

On the other hand, as far as the application of input-output models is concerned, there are very few input-output based studies of the macroeconomic effects of Social Tourism Programmes. In this sense, the methodology presented in this chapter and the results obtained from the evaluation of the total economic impact of the Portuguese Social Tourism Programme are a relevant contribution for the development of research in this field.

Results of the presented study reveal that the economic impacts of the Social Tourism Programme offered by the Portuguese INATEL Foundation to the senior population are substantial, considering direct, indirect and induced effects. More specifically, the Programme generated, in 2007, in the Portuguese economy, a total of 15,350, 548 Euros of output, 4,044,834 Euros of household income, 5,370,181 Euros of value added and 247 jobs. It is interesting to note that the overall demand generated by the Programme in the national economy is both due to the expenditures with the implementation of the Programme and the expenditures undertaken by its participants outside the package acquired, with the amount of the latter nearly corresponding to the amount of the first. This reflects the important stimulating effects of the Programme's implementation on additional demand generated by its participants.

As far as multiplier effects of the Social Tourism Programme analysed in this article are concerned, it is clearly observable that the secondary effects (indirect and induced) in terms of output, household income, value added and employment are much higher than the primary direct effects. These results corroborate other studies in the field of tourism, revealing similar results (e.g. Archer 1995; Lee and Kwon 1997). Apart from this, results also show that it was the category of expenditures undertaken for implementing the programme that generated most significant multiplier effects in terms of output. In terms of income (household income and value added), it was the category of expenditures undertaken by seniors outside the acquired package that generated the largest multiplier effects. As far as sector effects are concerned, the largest multiplier effects for output and employment occurred in the field of hotels and restaurants (H); in terms of household income the largest multiplier effects occurred in the domain of renting and business activities (K); and in terms of value added the most important multiplier effect occurred in the activity branch "public administration and defence, compulsory social security" (L).

The results obtained in this study clearly corroborate the hypothesis that the social tourism programmes, apart from their important role for the (non-quantifiable) well-being of the social groups involved, which otherwise might not have the possibility of engaging in tourism, constitute an important economic development tool for the tourism destinations where they are implemented. In the case of the Programme studied, the total effect generated in terms of value added for the Portuguese economy, in 2007, was about four times higher than the amount invested by the state to finance it.

However, despite the social and economic relevance of the Programme, it is important to note that it still presents a very reduced penetration rate in the Portuguese senior population. In 2007, only about 4,800 senior residents in Portugal (0.2 % of total population) participated in the programme. These data clearly reveal

that there is still a large growth potential of these programmes in the country. For this reason, it seems advisable to increase the supply of this kind of programmes, which might permit the access to tourism to an increased group of Portuguese seniors, while simultaneously increasing the economic benefits produced by the programme, both to the Portuguese economy and to the tourism and economic development of the destinations included in the programme. The last mentioned aspect reveals the programme's contribution for enhancing economic dynamism in marginalized regions (where most of the thermal spas included in the programme are located), which, together with the reduction of seasonality also achieved with the programme (taking place in the low season), contribute to a more balanced and thereby sustainable tourism in Portugal.

Although the methodology developed in this study is considered adequate for quantifying the economic impacts of tourism, given the nature of the phenomenon and the type of data available, some of the assumptions of input-output models must be pointed out as limitations for the suggested model, namely: constant returns to the scale production function, no input substitution and no supply constraints. For overcoming these assumptions, some studies on economic impacts of tourism that have been published recently use General Equilibrium Models (e.g. Blake 2009; Kumar 2004; Pratt 2011; Schubert and Brida 2009). Despite the relevance of these models, the statistical data available in Portugal in terms of National Accounts does not yet make their use possible for quantifying the total economic impact of the social tourism programme analysed. However, the authors intend to apply General Equilibrium Models to quantify the economic impacts of Social Tourism Programmes in the future.

It would further be interesting to develop studies that quantify the impacts of this Programme for the regional economies, due to its implementation in specific regions with low economic development levels, as well as studies that allow the evaluation of the impacts of the Programme, both for the national and the regional economies, in diverse time periods, as well as its evolution over time.

The outcome of the analysis will furthermore enable social policy makers in Portugal to take well justified decisions about the allocation of scarce resources, when considering alternative programmes. As far as the here analysed Programme is concerned, it can be said that it has proved to be a very interesting means of furthering both social and economic goals yielding sustainable development.

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Cultural Festivals and Regional Economic Development: Perceptions of Key Interest Groups

10

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10.1 Introduction

Worldwide, national governments and local authorities are increasingly using cultural festivals and special events as key elements within regional development strategies, since these provide opportunities for tourism promotion, commercial outcomes and increased inward investment in host regions (Getz 2007; Van de Wagen 2005) and also help recreate the image of a place and contribute to the extension of the tourism season (Huang et al. 2010; Boo and Busser 2006; Kotler et al. 1993; Mehmetoglu and Ellingsen 2005). Moreover, small events require minimal capital development and thus, have the potential of generating substantial returns on small financial investments (Kim et al. 2010; Gursoy et al. 2004).

While an extensive literature on the various social, cultural and economic elements of festivals does now exist (see Getz 2008; Waitt 2008 for comprehensive reviews), festival research was mainly focused upon mega-events and other hallmark events leaving regional and small community cultural events rather underexplored (Bres and Davis 2001). Though rural and nonmetropolitan festivals have gained increasing attention academically (Higham and Ritchie 2001; Chhabra et al. 2003; Gorman-Murray et al. 2008), the majority of festival studies were focused on urban centers (Gibson et al. 2010).

However, support for festivals and special events is thought to make a much more important difference in peripheral regions and small communities. As regional inequalities in economic and social conditions remain a high priority in regional planning, local governments tend to confront some of these problems by

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developing effective and appropriate regional event policies (Whitford 2009). As a result, the use of cultural festivals and special events as an instrument for local economic and tourism development has gained worldwide momentum in recent years (Moscardo 2007; Small et al. 2005; Alves et al. 2010; Thrane 2002). Festivals and special events are being encouraged by public sector bodies as a positive form of community development, and thus, the need for a deeper understanding of events' contribution to regional development, place marketing and place-identity has emerged (O'Sullivan et al. 2009).

Much of the relevant literature focuses on evaluating economic or other impacts, by use of some form of impact analysis. In most cases, the analysis involves estimating an aggregate measure of income and employment change attributable to the festival and ends with the estimation of local multiplier effects, hence without further questioning how these translate into local economic development (Kim et al. 1998; Felsenstein and Fleischer 2003). One of the specific areas that has not received much attention in festival research literature is the examination of the perceptions of key interest groups, like festival organizers, local authorities or local tourism agents, about the impacts of festivals and special events on local communities. However, as Gursoy et al. (2004) stress out, understanding the perceptions of local key interest groups about the impacts of the event on local communities is of vital importance for the success of any festival.

In this chapter we discuss one example of the link between cultural events and economic development and more specifically film festivals in regional urban centers in Greece. The chapter explores the perceptions of local key interest groups and seeks to analyze how far the activities generated by film festivals contribute to local economic and tourism development. The chapter first provides an overview of the background literature on cultural festivals and their role as regional development stimulants. Thereafter, the "Delphi" method used in the research is presented and the context of the film festivals examined is outlined, introducing a GIS tool to illustrate the proposed methodology. Next, a descriptive analysis of the research results is presented and discussed. Finally, the chapter presents concluding remarks along with policy recommendations and identification of areas for future research.

10.2 Cultural Festivals and Local Development

Cultural festivals are considered as simultaneously "cultural" and "economic" phenomena (cf. Gibson and Kong 2005; McCann 2002) since they have audiences, use buildings, facilities, and equipment, and entail some kind of service or entertainment provision. Literature suggests that the critical advantages of festivals to localities are based around opportunities for generating income, supporting existing businesses and encouraging new start-ups, as well as generating revenue for governments (Huang et al. 2010; Dwyer et al. 2005). However, the positive impacts of cultural festivals extend beyond income generation and include strengthening rural communities and enriching the quality of small towns' life (O'Sullivan and Jackson 2002). In small regional towns, where there is not much outstanding

cultural activity, a cultural festival can mobilize local cultural forces and resources, stimulating creative interventions and planning activities that can affect local development and regeneration processes (Klaic et al. 2004).

Even though they may be more or less profitable in terms of monetary gains, cultural festivals cumulatively diversify local economies, often shape employment policies, and improve management philosophies of local networks. This applies particularly in nonmetropolitan areas, where the involvement of local people in the management and staging of cultural festivals position local actors rather central to economic activities, than marginal or ignored (Gibson et al. 2010).

In addition to the economic and social impacts, examples of environmental improvements may also be found at festival locations, often generated by community projects such as restoring historic buildings or renovating old theatres. While festivals and special events may create negative environmental impacts, mainly from a transport and crowd management perspective, they are unlikely to generate considerable environmental pressure to the community due to their temporal character (O'Sullivan and Jackson 2002).

In recent years, festivals and special events became one of the fastest growing types of tourism attractions. As a result, the number of relevant conceptual and empirical studies has been increasing rapidly (see the seminal paper of Getz (2008) for an extensive review of the literature on event tourism). Most of the research that examined festivals and special events' contribution to local development focused on economic impact analysis (Dwyer et al. 2005; Crompton et al. 2001; Kim et al. 1998; Thrane 2002). Empirical studies of small, provincial cultural festivals all point to economic benefits, usually concerned with short-term impacts and direct, tangible outcomes such as extra jobs, hotel rooms and business revenues (Formica and Uysal 1996). However, as identified by Getz (2007) researchers should be critical and position studies within broad social, economic and environmental discourses. Therefore, examining the contribution of a festival to local development calls for the assessment of impacts in a variety of spheres, economic, physical-environmental, social and cultural (Felsenstein and Fleischer 2003).

Festivals range from mega, hallmark, key and regional/local events: mega-events are designed to reach a global audience and thus make a positive impact upon the national economy of the host country, whereas community events are primarily designed to deliver benefits to local stakeholders. Another festival typology introduced by O'Sullivan and Jackson (2002) p. 331 identified three types of festivals: from the small scale, rural or semi-rural 'home-grown' festival, to the medium size, urban 'tourist-tempter' festival, up to the large, urban 'big-bang' festival promoting numerous related activities over a large geographical area. As O'Sullivan et al. (2009) p. 24 suggest, the variety of festival typologies underline the need for different evaluation approaches and account of festival typology to be taken at the most basic level of evaluation design. This chapter deals with regional film festivals in nonmetropolitan centers of Greece. The aim of the chapter is to assess if and how small scale festivals act as mechanisms to encourage regional economic development. The chapter explores the perceptions of local key interest groups about the economic and tourism impacts of festivals on host communities.

10.3 Methodology

The research methodology in this chapter is based upon the "Delphi" method, a widely known systematic process of recording views and perceptions of specialists and key informants on certain issues. It utilizes series of questionnaires or interviews and leads to the enlightening of problematic situations through the synthesis of opinions. The "Delphi" method, originated from the RAND Corporation in California, was introduced with the seminal papers by Dalkey and Helmer (1963) and Brown (1968). It was used in the USA in the early 1970s mainly for technological and military forecasting purposes. Since then, the method has been utilized in a multitude of cases of applied research. A critical review of early applications of the method was initially carried out by Linstone and Turroff (1975). Subsequently, Preble (1984) gave an extensive review of its use in strategic planning, whereas Rowe and Wright (1999) reviewed issues on the capabilities of the method as an analytical and forecasting tool. Recently, an updated review was presented by Gordon (2010) of the Millenium Project. In event tourism literature, the Delphi method was used by Carlsen et al. (2000) in a research conducted in Australia to investigate practitioner perspectives of event evaluation criteria at both pre and post-event stages.

The "Delphi" method utilizes a looping process of questionnaire-based research. The first band of questionnaires is analyzed and a second better approach band is then issued. This way both researchers and experts questioned formulate a better approach to the issue. On another application mode of the method, instead of questionnaires, selected "key-informants" are interviewed with a structured form of interview. Informants usually belong to an interest group, e.g. a public or private agency, trade union, local government etc. Another option, this of free interviews, is often applied when the informers are politicians, high ranking executives etc., where strategy and vision rather than specific detail is sought. In all cases the systematic repetition of the procedure is of vital importance.

In the research presented in this chapter the option of key informants was opted. Key informants include three groups of respondents: (1) organizers of film festivals held in regional urban centers in Greece, that is except festivals located in the two metropolitan centers of Athens and Thessaloniki; (2) representatives of local political actors (Local Governments Authorities, Chambers of Commerce) hosting these festivals; and (3) representatives of local hoteliers. The method selected entailed two approaches to the key-informants: First, a questionnaire containing specific questions about the festivals and their impact upon local economies and societies. Second, a set of structured interviews entailing specific issues concerning the present attainments and the foreseeable needs for the festivals to blossom and fruit. The research was undertaken in three phases:

First phase: Following the research process proposed by Gibson et al. (2010), the formulation of a database of Greek regional film festivals was initially introduced, including information on the festival's location, history, frequency, aims, organizational structure, marketing material. Only film festivals held in non-metropolitan Greek urban centers were included in this study in order to analyse the effect on peripheral regions.

Festivals were mainly identified by using internet search engines and calendars of events, as well as print media, journals, magazines, brochures and flyers. A total of 15 regional film festivals were identified, from which 12 were included in the database, as the remaining three appeared to be inactive. Following this step, database entries for each festival were geocoded, enabling results to be mapped visually in a Geographic Information System (GIS). The GIS formulation of the database enables observation of the spatial extent and patterns of festivals and comparative analysis, to include: geographical variables such as distance of the host city from metropolitan centers or sea and air transport hubs; demographic variables such as local population volume, synthesis and density; and economic variables such as regional GDP and employment rates. This is expected to provide added value to the database, enabling analysis of the extent of festivals to be interrogated at different geographical scales.

Second phase: A three-page self-administered survey instrument was sent by e-mail in early December 2010, to key interest groups: festival organizers, representatives of local authorities, chambers of commerce and hoteliers in host areas. An explanation cover letter was included, explaining the aims of the research, presenting the research team and requesting that the survey be completed online. Reminder e-mail messages were sent and follow-up telephone calls to non-respondents were undertaken after 2 weeks.

The survey took the form of a structured questionnaire including closed questions to enable statistical analysis. The survey instrument consisted of three sections: (a) general information about the respondent (age, gender, education); (b) the perceptions of the respondent about the key characteristics of the host community (environment, transport, tourism, social and cultural infrastructure) and the policy options to support local development (transport networks, alternative forms of tourism, cultural events); and (c) the perceived quality and socio-economic importance of the film festivals for the 'holistic' development (economic, social, cultural) of the host community.

The survey instrument was developed through analysis of literature review (Pasanen et al. 2009; Gibson et al. 2010; Alves et al. 2010; Gursoy et al. 2004; O'Sullivan et al. 2009; Maughan and Bianchini 2004) that generated a total of 72 socio-economic impact items, classified into two main groups: evaluation of local infrastructures and activities and evaluation of the film-festivals' socio-economic importance. Informants (festival organizers, local authorities, chambers of commerce, hoteliers) were asked to rate 30 perceived key development characteristics and policy options items, and 42 perceived festival characteristics, socio-economic impact and event tourism strategies items on a six-point Likert type scale with the value 'very important' or 'very good' at the high end and the value 'negative' at the low end, also giving the 'do not know/not answer' option. The recorded answers by the members of the sample are used in the analysis of the results using percentages of the Likert-type scale. Besides though, there was need for comparable Cartesian measure of intensity of opinion on each subject, to be used as an analytical tool in perceptional issues. Thus fixed values of intensity were assigned for each point of the Likert-type scale. The assignment of importance marks to the six points of the

Likert-scale was made as follows: point 1 "very good" was assigned 4 marks; point 2 "good" 3 marks; point 3 "average" 2 marks; point 4 "inadequate" 1 mark; point 5 "negative" -2 marks; point 6 "no opinion" 0 marks. These were then transformed to a single dimensional percentage scale of satisfaction. The single-dimensional scaling of the intensity of perceptions was used for the graphical presentation and facilitated the comparative analysis of the discussion of the results.

Third phase: A series of qualitative, semi-structured focus group interviews were held with festival organizers, local policy actors and hoteliers. The focus group, organized in three distinct groups for the respective key-informant categories, was designed to supplement data by use of open questions regarding local development problems and initiatives, to enable further depth of responses.

10.4 Results

10.4.1 Database of Greek Regional Film Festivals

Results from our database demonstrate that regional film festivals throughout nonmetropolitan Greece are relatively limited. There appear to be 12 active regional film festivals, some of which have been only recently introduced, while others have a long history. As shown in Map 10.1, regional film festivals show great spatial dispersion and are scattered in almost all over the Greek territory. Detailed information about the identity of the 12 active Greek regional film festivals are summarized in Table 10.1 that includes data about the location, organizers, starting year, edition of the festivals for 2010. Various geographical patterns were revealed (Map 10.1): the majority of mainland host cities are located in regions not reliant on tourism and in considerable distance from metropolitan centers: only two cities (Drama, Naoussa) are within 2 h driving distance from Thessaloniki and two (Chalkida, Corinthos) from Athens.

The next step is the development of a multi-use web GIS tool, called 'Regional Film Festivals'. The tool is introduced to provide geographically organized information about film festivals and is addressed to a wide range of people: tourists, decision-makers, people involved in arts and culture, cinephil, researchers etc. It includes three main categories of information: data about regional film festivals (information about the organizers, data statistics etc.), tourism information for the areas where festivals take place (local tourism attractions, accommodation, transport facilities etc.), as well as demographic and socio-economic characteristics of the host communities. Detailed structure of this tool, still under construction, is shown in Fig. 10.1 below.

10.4.2 Descriptive Survey Results

To facilitate the expression of respondents' opinions to measurable collective perception on certain issues, the possible alternative answers were structured in a

Map 10.1 Greek regional film festivals

Likert-type scale of intensity. The answers were then graded and treated in order to produce a solid measurement of collectively perceived value, finally expressed by means of a 'percentage', where the 100 % represents the 'excellence'. The percentage scores show the precise evaluation and are constantly used throughout the presentation of the results. For facilitating the analysis though, scores between 80 % and 100 % may be considered as very important or very good, scores between 60 % and 80 % as important or good, scores between 40 % and 60 % as medium or less important, and scores below 40 % as inadequate or indifferent.

Our survey initially targeted the 12 active regional film festivals, 24 representatives of local authorities and local Chambers of Commerce (two for each host area), and 24 local hoteliers (again two for each host area). The strategy to choose a sample size as regards the regional films festival was quite straight forward. An exhaustive research, that is, a census was practically carried out, to the extent replies were sent back. As regards the local actors and hoteliers, there was a wide approach to such key informants, in several phases, as described, according to our methodology.

A total of 17 useable questionnaires, 10 from festival organizers, 4 from local agencies and 3 from local hoteliers were obtained (Map 10.2). The total response rate was approximately 35 %. However, the response rate of festival organizers was high (83.3 %), whereas the response rates of local agencies and local hoteliers were

Table 10.1 Greek regional film festivals

Festival profile	Host city	
Name (Number on map)/ website/starting year/edition 2010/visitors 2010/organizer	Name/population/ administrative data/economic data	Festival detailed information
Short Film Festival in Drama **(1)**	Drama	First held on the initiative of the Drama Film Club. The response of filmmakers, as well as of the public, was enthusiastic from the very beginning. A few years later, the Festival was adopted by the Municipality of Drama and then, in the mid-eighties, by the Greek State. The Festival is a vital entity, ever evolving. The International Festival was first added to the National Festival a few years ago. It consists of an international competition section, as well as tributes to filmmakers from all over the world. Today, both the Greek and International Short Film Festival evolved into a cultural institution of a national and international scope
www.dramafilmfestival.gr	42.501 inhabitants	
Starting year: 1978	Capital of the local Prefecture	
Edition 2010: 29th	The city has long experienced an intense economic decline, due to recession in agriculture, which is the base of local economy. During the past few years tourism is gradually developing	
Visitors 2010 (approx.): 5.000		
Municipal Enterprise Short Film Festival in Drama		
Naoussa International Film Festival **(2)**	Naoussa	Organized every spring, the festival is a pioneering and innovative cultural event as well as constantly adopting new digital technology
www.niff.gr	22.288 inhabitants	
Starting year: 2004 – Edition 2010:7th	The second largest city of the local Prefecture, experienced an intense economic decline in recent years, due to recession in the local textile industry	The festival is considered as an important institution for the city, with international recognition, which contributes significantly to local economic and social development
Visitors 2010 (approx.): 13.000		
Non-profit Organization of Art and Culture 'ARTION' under the aegis of local authorities (Municipality and Prefecture)		
Mediterranean Festival of New Filmmakers **(3)**	Larissa	International festival, addressed to new filmmakers, takes place every year in March. Today, the Festival constitutes an institution for the city of Larissa and is an important factor for the promotion of the city abroad. It is supported by the Cultural Organization of the Municipality of Larissa
culture.larissa-dimos.gr	124.786 inhabitants	

(continued)

Table 10.1 (continued)

Festival profile	Host city	
Name (Number on map)/ website/starting year/edition 2010/visitors 2010/organizer	Name/population/ administrative data/economic data	Festival detailed information
Starting year: 1993 – Edition 2010:13th	The forth bigger city in Greece, capital of the Region of Thessaly, economic centre of Central Greece	The festival is the host of short length films and it has two different competitive parts: the "International" and the "Mediterranean"
Cultural Organization of the Municipality of Larissa, supported by the Ministry of Culture, the General Secretariat of New Generation and National Media		
Olympia International Film Festival for children and young people **(7)**	Pyrgos	The Youth Plan is the result of a collaboration between the Ministry of Culture, the Prefecture of Ilia and the Local Union of Municipalities of Ilia. The number of visitors of the Festival increases every year
www.olympiafestival.gr	23.791 inhabitants	
Starting year: 1997 – Edition 2010:14th	A city of West Peloponnese, capital of the local Prefecture	
Visitors 2010 (approx.): 12.500		
Non-profit Organization 'Youth Plan'		
Video Art Festival Miden **(8)**	Kalamata	The first Greek video art festival presented in open public space. It is an annual video art & new media cultural event, an independent initiative, founded, organised and curated by a team of contemporary Greek artists, who are all linked with Kalamata since their childhood
www.festivalmiden.gr	57.620 inhabitants	
Starting year: 2005 – Edition 2010:6th	Capital of the Prefecture of Messinia, economic centre of a wider area	
Non-profit Organisation 'Sea Level', supported by Kalamata's Historic Centre Organization, Messinia Chamber of Commerce and Kalamata Municipality	The most important economic center in southwest Greece	The main purpose of the festival is the free presentation, promotion and development of Greek and international video art and new media art, creating new, alternative, peripheral meeting points for emerging and established video and media artists from Greece and all over the world
Halkida Greek Documentary Festival **(4)**	Halkida	Organized for 5 days every year the Festival has two sections: the panorama and the competition section in which participate selected long and short documentaries
(www.docfest.gr	55.264 inhabitants	
Starting year: 2007 – Edition 2010:4th	The capital of Prefecture of Evia	
Prefecture of Evia and non-profit Organization 'Porthmos'		

(continued)

Table 10.1 (continued)

Festival profile	Host city	
Name (Number on map)/ website/starting year/edition 2010/visitors 2010/organizer	Name/population/ administrative data/economic data	Festival detailed information
Patras International Festival of Film and Culture **(6)** www.independent.gr	Patras	The festival is open to people from the whole world to show their work, express themselves and communicate their thoughts and feelings. Most of them have very low budgets, and strive to do the best they can. This festival can be their first step to present their work in public. It is organized mostly by young people and mainly targets to young people
	202.757 inhabitants	
Starting year: 1998 – Edition 2010:13th	Capital of the Region of West Greece and the Prefecture of Achaia	
Visitors 2010 (approx.): 4.000		
Non-profit Organization "International Panorama of Independent Filmmakers" with the support of the local authority of the city of Patras	The fourth bigger city of Greece. One of the most important Greek ports, connecting Greece with Italy	Today, Patras International Festival of Film and Culture is an important cultural event of the city
International Films and Visual Arts Festival Ecofilms **(9)**	Rhodes	Takes place on the third week of June. The Ecofilm Festival is a thematic festival, in which participate filmmakers with films –fiction and documentaries-, shorts and features, encouraging issues related with the natural, human and build environment, water and wetlands
www.ecofilms.gr	53.709 inhabitants	
Starting year: 2003 – Edition 2010:8th	The biggest city of Rhodes island, capital of Dodecanese Prefecture, the most important tourism destination of Greece	There are four competition sections: feature length films, medium length films, short length films, audience awards
Visitors 2010 (approx.): 8.600		
Rodos Cultural Organisation, Non-profit Organization 'Image and Environment Society', support by Dodecanese Prefecture Culture Organization, Rodos Cinema Society and Greek Film Centre		
The Turkish Film Festival in Komotini **(12)**	Komotini	Special feature of the city of Komotini is the multiculturalism, as there is Muslim minority. The Turkish Film Festival has been organized twice and has as main aim to promote the Turkish culture and language
www.btaytd.com	40.141 inhabitants	
Starting year: 2009 – Edition 2010:2nd	Capital of the East Macedonia and Thrace region	
Association of Scientists Minority of Western Thrace with the support of the Turkish Consulate in Komotini	Economic centre of the wider area	

(continued)

Table 10.1 (continued)

Festival profile	Host city	
Name (Number on map)/ website/starting year/edition 2010/visitors 2010/organizer	Name/population/ administrative data/economic data	Festival detailed information
Corinthian International Film Festival "Bridges" **(5)**	Korinthos	Annual international film festival with a competition section, including interesting satellite events in the area. CIFF in Corinthos is joint-festival with Cyprus film festival
www.corinthianfilmfestival.org	29.787 inhabitants	
Starting year: 2008 – Edition 2010:3rd	Capital of the local Prefecture, is now within the metropolitan area of Athens	Both festivals are internationally oriented to offer new and upcoming directors the opportunity to showcase their talent in front of a jury of internationally acclaimed cinema experts, directors and actors
Cultural Centre of Municipality of Corinthos and the Petra Terzi Company city of Corinthos		
International Health Film Festival **(10)**	Kos	It is a thematic festival focusing on health issues. It lasts 5 days and presents films which are about health and human issues from all over the world. The festival is a new cultural event but is endeavoured to turn into a long-term cultural institution
www.healthfilmfestival.gr	17.890 inhabitants	
Starting year: 2009 – Edition 2010: 2nd	Capital of the island of Kos	
Kos Cultural Municipal Organization	Major tourism destination	
Moving Frames Festival **(11)**	Mytilini	The Moving Frames Festival is not a festival organized by a public body – organization or company sponsor for the residents of Mytilini. It is a festival organized and created by the citizens for the citizens
www.movingframes.gr	36.196 inhabitants	
Starting year: 2009 – Edition 2010:2nd	Capital of the Region of North Aegean	
'ALT + CTRL + DEL' Team		

much lower (16.7 % and 12.5 % respectively). Out of 17 respondents, 8 were female (47 %) and 9 male (53 %), whereas, the vast majority were under 50 years old: 5 were 18–29 years old, 4 were 30–39 years old, 6 were 40–49, and only 1 was 50–59 and 1 over 60 years old. Regarding their level of education, it is worth noticing that 15 out of 17 respondents had a University degree: 8 holding a Bachelor and 7 a postgraduate Master diploma.

The answers of the key informants have been grouped and are presented as follows:

(a) Evaluation of infrastructures and activities

In the first group of questions the perceived condition of tourism, cultural and civil infrastructure is assessed, together with certain activities in the areas hosting film festivals. The emphasis and the scope of these questions focus on cultural and

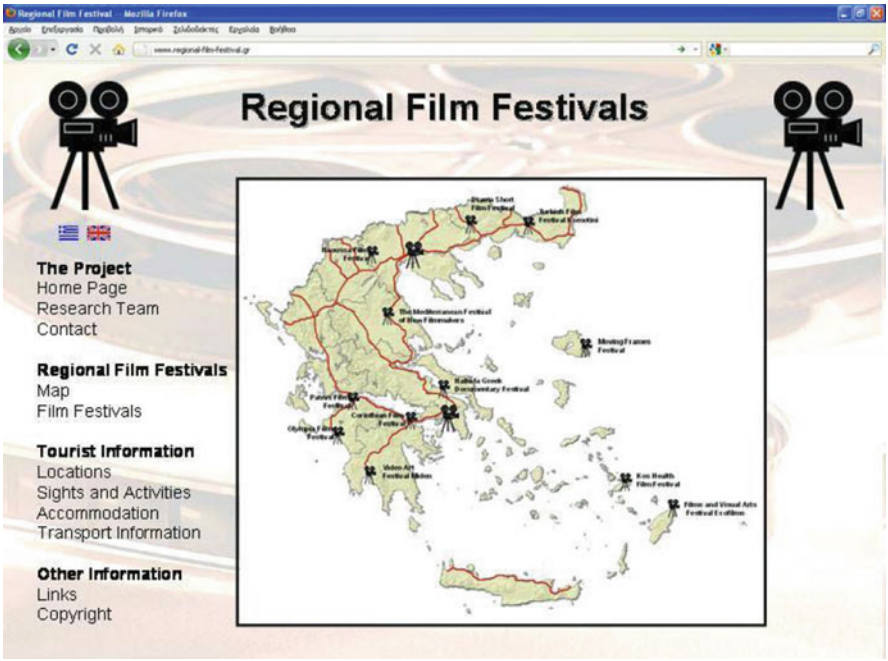
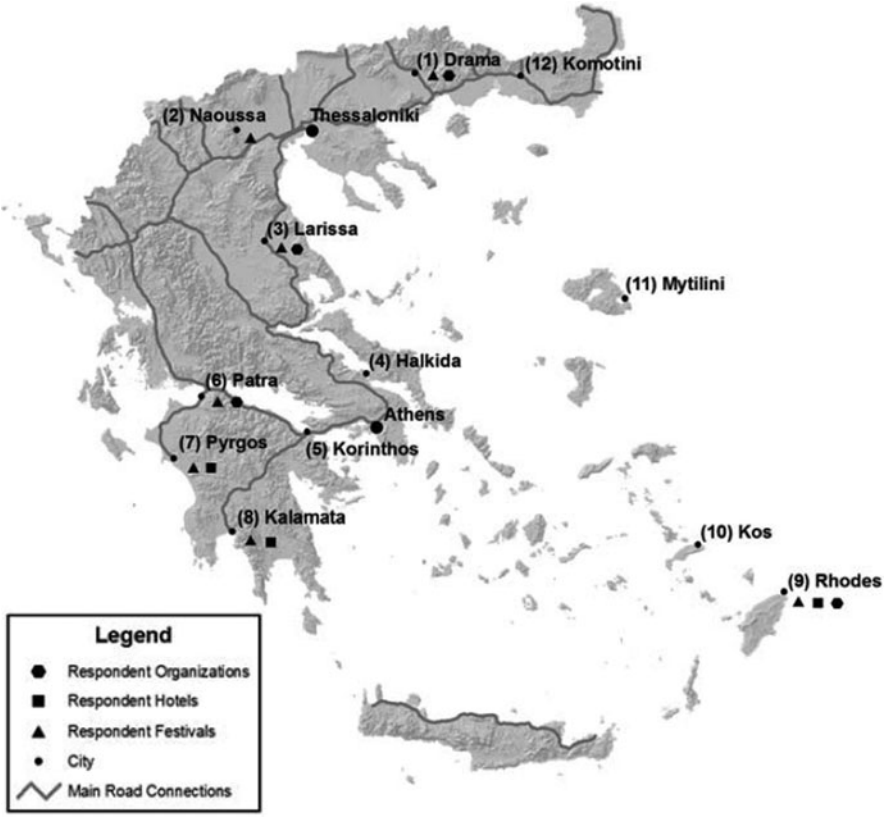


Fig. 10.1 Multi-use GIS tool

tourist development. Initially, the quality of the environment of host communities is evaluated in relation to its attractiveness to tourists. More specifically, the natural environment is evaluated as 'very good' (80 %), while the built environment (e.g. historical settlements) seems to be less attractive (66 %) and the social environment (e.g. local traditions) is somewhat better (at 70 %). Next, the condition of transport infrastructure is evaluated. Data analysis, reveals that road transport is evaluated to be not quite good, at (32 %), whereas rail, sea and air transport (were available) are evaluated as clearly 'inadequate' at least as regards the facilitation of the specific film festivals accessibility needs, with a rate of satisfaction of 10–15 %.

The condition of the cultural infrastructure is then evaluated as variable quality (Fig. 10.2). A profound differentiation has been identified between monuments and museums evaluated as 'good' at 70 %, in comparison with theaters and cinema-venues evaluated considerably lower at 37 %, while concert and exhibition halls were evaluated as 'inadequate' (20 %). Regarding cultural events (Fig. 10.2), festivals were evaluated considerably higher, at (69 %), followed by other local cultural activities (60 %) and concerts (54 %). Exhibitions were evaluated only as low as 'average to inadequate' (40 %).

Descriptive results about tourism infrastructure show that, local food and beverage leisure industries are considered to be rather good. More specifically, restaurants and cafeterias are evaluated as being of a 'very good' quality level (82 %) and hotels of a 'good' quality level (72 %). On the other hand, tourism



Map 10.2 Spatial distribution of the questionnaires

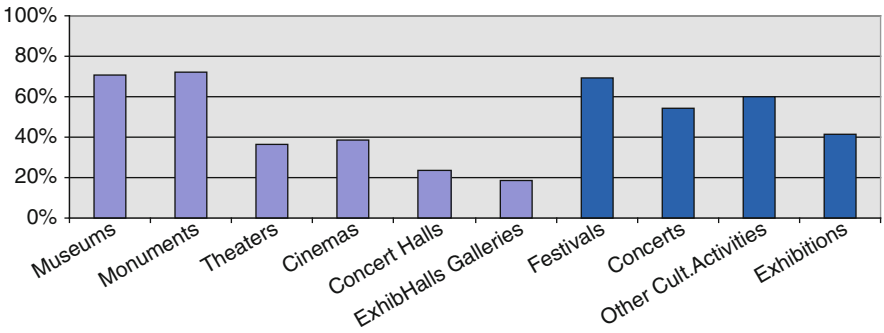


Fig. 10.2 Evaluation of the condition of cultural infrastructure and events

services like promotion programmes and sightseeing tours, are evaluated as rather low (40 %) and 'inadequate' (8 %) respectively. The social services infrastructure in the host regions was evaluated as 'average' to 'good' (56–58 %) regarding public

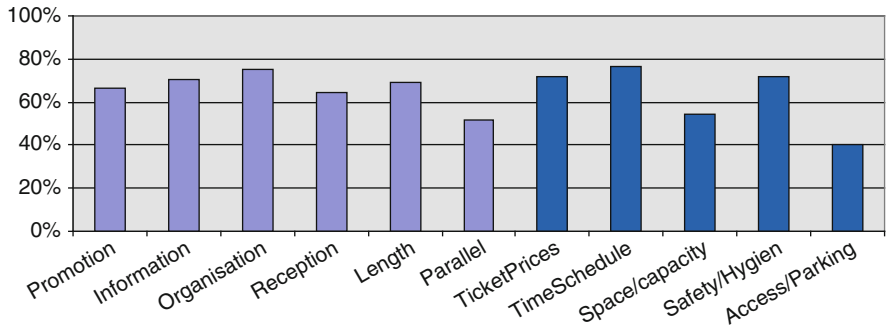


Fig. 10.3 Evaluation of festivals' organisational and technical characteristics

health services and security, whereas the necessary infrastructure for sports were evaluated some lower, as 'average' (48 %).

In a second group of questions an assessment of the perceived importance of the role of tourism, cultural and other infrastructure in relation to their contribution to the tourism development of the region is attempted. The input consists of relevant estimations made by the key informants regarding each type of infrastructure. More specifically, the importance attributed to the development of tourism infrastructure is estimated as 'very high' (90 %), along with the importance of cultural infrastructure, cultural events and the relevant promotion, at 88 %, 92 % and 94 % respectively, whereas infrastructure related to alternative forms of tourism is evaluated a bit lower, at 67 %.

(b) Evaluation of the film-festivals

The group of questions for the evaluation of the various characteristics of regional film-festivals refer to their organizational and technical attributes as well as to their contribution to local development. In more detail, the following issues are examined:

The evaluation of characteristics regarding the organizational structure of regional film-festivals by key-informers showed that the organization is valued as 'good' at 76 %, while the performance as regards the promotion of the festival, the information provision, the reception and the length of the event are valued somewhat lower, as 'good', at 65–71 % (Fig. 10.3). The parallel activities of the festivals are evaluated as modestly successful and of 'medium' quality at 52 %. The specific technical infrastructure of film festivals has also received rather 'good' – but not excellent –evaluation scores by the key informers. In more detail, ticket pricing, time scheduling and safety and hygiene facilities collected good marks, from 68 % to 75 % of the scale-range as shown in Fig. 10.3. The evaluation of facets like accessibility to the festival venues and parking availability revealed some problems and collected 50 % and 40 % respectively.

Another group of questions, of high importance for the analysis, refers to the extent to which film festivals promote and support the local economic activity,

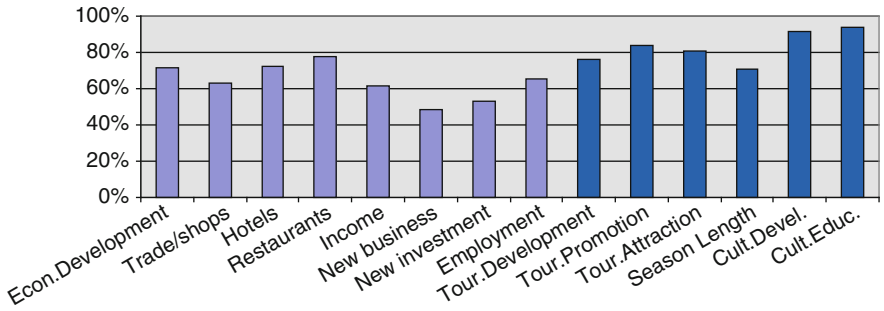


Fig. 10.4 Evaluation of festivals' effects on local economic and tourism development

regarding commercial and tourism issues. The following descriptive results came up from the analysis:

Film-festival's contribution to the economic development of the host city is estimated as generally being rather important (72 %) (Fig. 10.4). This, in detail, regards an important boost in turnover of restaurants and cafeterias (78 %) and quite so also (72 %) of hotels. The support to local trade and the boost in local income is estimated as considerably important, at 62 %. Rather of medium importance, but still at a considerable rate, appear the effects on creation of local entrepreneurial opportunities and inward investment activities (50 %). Considering the contribution to tourism development in host regions stemming from local film-festivals, results clearly show (Fig. 10.4) that there is an important (77 %) effect in support of local tourism development. More specifically it is assessed that the tourism promotion of the region is influenced 'very much' (84 %) and almost equally so is the tourist attraction (80 %). 'Good' effects are credited to the lengthening of the 'tourist season' (70 %) and a bit less to the support to local employment (65 %). In parallel to the economic and tourism development, very high scores are attributed to the cultural development of the region (92 %) and even higher to the cultural education (94 %) which seem to act as strong social benefits.

The evaluation continued to one more set of questions regarding social parameters like social life and identity. From this group, the most important effect seems to be the promotion of new ideas (90 %). Other positive scores were given to quality of life and creation or conservation of local collective identity (e.g. volunteerism) and community cohesion (all 82 %). It is worth noting that negative impacts like air and water pollution, transport congestion or pressure to public health systems, are considered to be rather insignificant.

The last group of questions focuses on the importance of the cooperation or synergies between film-festivals and public entities and agents, regarding activities aiming to promote cultural festivals and regional development. More specifically, as shown in Fig. 10.5, cooperation with entities like Local Government, local or nationwide media, local business (e.g. Chambers of Commerce) and tourism market (e.g. travel agencies, hotels), cultural organizations and other local, national or international festivals, were all evaluated as 'very important' with high scores

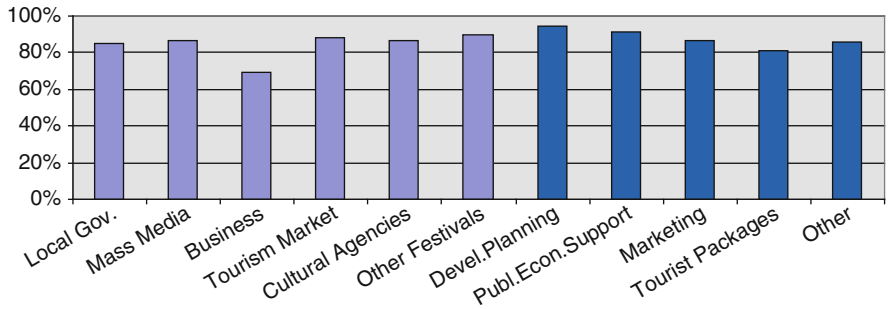


Fig. 10.5 Perceived importance of festivals' local synergies and participation in regional planning

ranging from 84 % to 90 %, whereas cooperation with trade unions, chambers of commerce and business is considered rather important (68 %). As regards participation in regional planning, the integration of the festival in the formulation of local/regional strategic development plans and its financial support by local and state government were considered of major importance (94 % and 92 %) (Fig. 10.5). Also, the undertaking of joint marketing initiatives and campaigns, the inclusion of the festivals in local tourist packages and other relevant networking procedures were also considered as very important, with scores of 80–90 %.

10.4.3 Interviews Qualitative Results

Respondents were then interviewed and asked open questions on their perceptions about development problems and tourism importance for the host area, and key obstacles for festival development. According to the views of festival organizers, local authorities and hoteliers, the most important development problems in host areas are transport infrastructure and related accessibility. Inadequate local road networks and connectivity with major transport hubs have been stressed out for festivals located in mainland areas (Naoussa International Film Festival, Drama Chamber of Commerce, Olympia hotelier), whereas for festivals located on islands, interest focused upon maritime connections and air transport infrastructure (Rhodes' hotelier and local Chamber of Commerce).

Other development problems that were referred include: high local unemployment rates, mainly in areas with declining local economies like Naoussa and Drama; lack of availability of qualified staff; lack of an integrated local development policy; lack of incorporation of festival activities in regional development planning; lack of promotion and advertisement of festival tourism production. The representative of Naoussa Festival emphasized "the need for long-term local development vision, entrepreneurial education and integrated regional planning to include cultural events". The lack of "a specific local tourism identity" was underlined by the representative of Patras Festival. The organizers of Video Art

Festival Miden concluded that "it is essential to identify tourism comparative advantages of the host area, and try to improve inadequate and fragmented local development policy, in order to promote better local cultural events". The organizers of Olympia Festival argued that 'the protection and promotion of local cultural heritage monuments, as well as the creation of infrastructure for congress and event tourism, are necessary to support the development of cultural tourism against tourism seasonality". The Local Chamber of Commerce of the highly touristic island of Rhodes further suggested that "a Local Destination Management Organization including a Festival Bureau should be created for the preparation of a marketing plan to promote local cultural events by use of internet portals and social media".

In addition, all key interest groups, festival organizers, local authorities and hoteliers, recognized the importance of tourism to local economy. The importance of tourism was recognized both in areas where tourism is already developed (e.g. islands of Rhodes, Kos) and in areas where is not so developed (e.g. cities of Drama, Naoussa, Larissa). In both cases, "the need for the development of alternative modes of tourism" (Chamber of Commerce at Rhodes) and "the need for a sustainable tourism development perception based upon product quality and differentiation" (Naoussa International Film Festival) were stressed out.

Finally, according to the views of festival organizers, the most important problems that film festivals usually face, are: lack of financial resources, referred by all festival organizers as the crucial obstacle affecting festival planning and activities; lack of appropriate venues to host festival activities and parallel events; lack of adequate technical infrastructure and necessary electronic equipment; and lack of qualified staff. In some cases (e.g. Video Art Festival Miden at Kalamata) festival operation is based only on volunteerism by festival club members and friends, whereas in other cases (e.g. Mediterranean Festival of New Film makers at Larissa) the vast majority of the local population is rather indifferent towards festival cultural activities. Furthermore, festival organizers underlined the need for deepening the cooperation with local authorities and local media (e.g. Naoussa Festival) or local hoteliers (e.g. Festival at Rhodes island) for the organization and promotion of the event.

Of particular relevance to this research is the information on the organizational structure and links between festivals and local authorities and their development problems. Most of the festivals were run by non-profit organizations in collaboration with local authorities or local Chambers of Commerce and Cultural Organizations, whereas only two were run exclusively by non-profit organizations (Moving Frames Festival at Lesvos island, Olympia International Film Festival for Children and Young People). Festivals on the whole recorded small funding bases, limited turnovers, and frequently only just broke even or made very modest profits. Results indicate that the vast majority of film festivals are local events targeted mainly at local audiences: on average, 5–15 % of attendees across the small festivals surveyed were from elsewhere in the country, whereas the percentage is larger up to 20–35 % for bigger festivals.

10.5 Discussion and Concluding Remarks

This chapter examined the perceptions of local interest groups about the potential for regional, small scale festivals to make a positive contribution to regional development. The methodology adopted a 'holistic' approach to regional development, addressing the economic, natural, social and cultural environments and considering the contribution of regional cultural festivals to local economies from more than just a basic 'income generation' perspective.

Even though metropolitan cultural festivals usually create considerable economic benefits, regional cultural festivals, even with low employment and profits, in most cases prove to be important factors in a location's portfolio of tourism products (Ryan 1998). Regional festivals promote the area more widely, while offering the possibility to a group of people to express and celebrate their love for art and culture (Gibson et al. 2010). These issue-oriented pressure groups (Getz 2007) are often the real champions of local development and event policy innovation (Whitford 2009).

Tindall (2005) argues that cultural festivals are lively cells of activity, particularly in small local economies where their relative monetary impact is greater than in urban areas. The results of a survey by Gibson et al. (2010) about cultural festivals in nonmetropolitan Australia provide some depth to this argument. They also show how seemingly insignificant, in monetary terms, festivals can cumulatively generate notable amounts of employment, and catalyze other qualitative benefits for a local economy. Furthermore, even in the most radical, non-commercial cultural festivals, culture and economics combine, since festivals require audiences, support services, staging and audio equipment, thus having both demand and supply-side economic impacts on localities.

The results of this research suggest that regional film festivals examined, though small and often not commercially oriented, have a significant cumulative development impact on host localities through tourism development, employment generation and community networking. Our research results indicate that in most of the cases, film festivals cumulatively create substantial employment, even though often part-time, qualitatively improve local economies and encourage cooperation. According to data made available by six festivals, it is estimated that 30 full-time jobs and 135 part-time jobs are created directly in the planning and operation of festivals: a mean score of 5 full-time jobs plus 22.5 part-time jobs per festival. Furthermore, research findings suggest that while key interest groups do not see festivals as major contributors to the local economy, they strongly believe that local film festivals contribute to community cohesiveness and create social incentives for the local community.

This study aimed to provide useful insights for academia, local government and tourism industry into the debate on the role of cultural festivals as useful mechanisms for regional development. However, due to the small size of the sample, caution should be used in making generalizations based on the results of the empirical analysis. Therefore, further comparative research needs to be undertaken, by use of a larger scale survey that would yield to rather more

representative results and would also allow to identify the significant differences between the perceptions of the various stakeholders involved. Future work might also consider including the perceptions of citizens and looking at different spatial scale of analysis and levels of policy making to promote understanding of cultural festival policy and its utility to facilitate regional development.

Another subject worthy for further research is the economic geography of cultural festivals, questioning on the socio-economic links between festivals and host localities given their population and economy base. In our analysis, some host regional towns with high festival-per-population scores were located in declining agricultural or manufacture areas, with no significant comparative advantage in tourism (e.g. Drama). The investigation of whether these spatial patterns are based on transport accessibility, tourism perspectives or regional creative capacity is an issue that warrants future research.

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Assessing the Spatial and Environmental Characteristics of Rural Tourism Lodging Units Using a Geographical Weighted Regression Model

11

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11.1 Introduction

The development of a tourist destination lays on their specific attractions, which can be classified into the natural, built, social or cultural characteristics of the site. Attractions are necessary for tourism to appear (Vanhove 2011). Focusing on the natural characteristics, factors such as climate, landscape or natural endowments play an essential role in the destination appeal and influence on prices and income generated. Accordingly, resource stewardship, service and marketing, have been identified as key elements in destination management and critical to determine its long-term competitiveness (Crouch and Ritchie 1999, 2006). Therefore, in order to make an effective and successful management and planning, the local stakeholders and public administration need to dispose of trustful information about the main tourist attractions of the destination. This paper aims to help agents and tourism researchers in this point by proposing a new quantitative tool to draw the most relevant environmental and spatial factors and their degree of influence on the tourist market.

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The identification of the attractions of a destination in the real practice of tourism has been one of main problems faced by quantitative tourism researchers, due among other reasons to the absence of suitable methodologies to measure them. In the particular case of physical characteristics, these difficulties can be partially overcome by the use of Geographical Information Systems (GIS). Since tourist activity refers to a specific geographic area, GIS is a convenient tool to analyse the phenomenon. Recent software developments on these systems allow the estimation of many environmental indicators influencing tourism in a particular destination, which were not so accurately measured by using other approaches. Additionally, GIS also allow considering spatial factors, i.e. those related with the geographical location of the site (distance to points of interest, altitude, etc.) as determinants of the tourism market in a particular destination.

Some empirical methodologies in tourism research have included several environmental and spatial variables in their model hypotheses. This is the case of hedonic pricing models, which assume that price (or rental price of an accommodation unit) is determined by a bundle of attributes explicitly and non-explicitly valued by the market (Palmquist 2005). The price-elasticity of every attribute is estimated by means of econometric methods. In the last decade, some applications of hedonic models to tourism research including environmental and spatial factors have appeared in the literature. For example, White and Mulligan (2002) analyses the influence of temperature on the hotel/motel prices in some USA states and Thrane (2005) shows that the distance to the beach in Canary Islands positively influences the market value of the hotel. Hunt et al. (2005) find that distance to other tourism sites is positively valued by fly-in fishing tourism in remote lakes in Canada.

The use of new approaches entails new methodological challenges. In particular, the big amount of GIS-based variables considered in an econometric model makes cumbersome and most likely inefficient the manual selection of significant variables and functional forms of them. Thus, the inclusion of these variables requires the application of an automatic technique for selection of explanatory variables in econometric modelling. Moreover, the particular site where an accommodation unit is found may determine the specific variables influencing price and the degree of its influence, that is, several attributes may be more valued by the market in some areas of the destination than others. However, the traditional econometric models do not take into account the specific location of the individuals and provide a unique value of the coefficient of regressors for all individuals.

The methodology presented in this paper selects the explanatory variables and estimates the coefficient of regressors in econometric models including spatial data. In order to address the issues above, it combines a genetic algorithm to identify the variables and functional forms for an Ordinary Least Squares Model (OLS) with Geographical Weighted Regression (GWR), which allows locally estimating the parameters included in the econometric model. The study case focuses on rural tourism market in the island of La Palma, Spain. A hedonic pricing model was applied to determine attributes influencing on the rental price of the lodging units in the island, which include structural, environmental and spatial variables. Results indicate that some environmental and spatial factors not usually considered in tourism

research, such as diversity index, distance to point of interest and mean temperature, are valued by the market. The application of the methodology may serve to destination managers in designing their promotion policies and future investment.

11.2 Methodology

This section presents a brief explanation of the methodology proposed in the paper. It consists of two stages: (a) The application of GASIC algorithm, which is used to select regressors in a linear model with multiple explanatory variables; (b) The application of GWR to re-estimate the linear regression model by taking into account the spatial location of individuals. The fundamentals of every stage are described below.

11.2.1 GASIC Algorithm

The problem to be faced in any selection procedure of a linear regression model is to find the best submodel of the form:

$$Y = \beta_0 + \beta_1 X_{i_1} + ... + \beta_K X_{i_K} + \varepsilon, \text{ where } \{i_1, i_2...., i_K\} \subseteq \{1, 2, ..., N\}, K \leq N,$$

where N represents all possible explanatory variables and functional expressions built from them included in the regression model. One of the difficulties is the very large number of submodels where the criterion for selecting the best model is applied. For example, if $N = 60$, the number of possible models is higher than 10^{81}. In order to provide a solution to this problem, the heuristic strategy proposed by Hoover and Perez (1999) is followed by searching all the feasible reduction paths when simplifying the general model. In particular, the methodology developed by Acosta-González and Fernández-Rodríguez (2007) is used. This is a procedure for automatic selection of factors in the model, only guided by the data, which is carried out using a genetic algorithm where the lost function is the Schwartz Information Criterion (SIC, henceforth). This methodology avoids the tendency to over-identify models detected in several popular heuristic methods for selecting models (like stepwise, see Lovell 1983) and, by allowing all possible combination of potential regressors, renders results that are robust to any specification.

In summary, starting with a large number of potential explanatory variables which may include linear and non-linear functional forms of regressors, the GASIC algorithm selects the best econometric model in the sense of the SIC. The SIC advises choosing the econometric model which minimizes the expression

$$SIC(m) = \log \hat{\sigma}^2 + c\frac{k}{N}\log(N),$$

where m represents each one of the candidate models to be evaluated, $\hat{\sigma}^2 = \frac{e'e}{N}$ is the variance of the residuals e, N is the sample size, and k is the number of

regressors in the model. The correcting factor c avoids the possibility of over-parameterized models and solves the trade-off between sample goodness of fit and out-of-sample forecasting ability. The higher the value of c, the higher is the penalty for the introduction of more regressors in the model. Further explanation on this technique can be found in Acosta-González and Fernández-Rodríguez (2007) and the references therein.

11.2.2 Geographically Weighted Regression (GWR)

The application of OLS method assumes that data presents homogeneity throughout the study area. That condition implies that residuals must be both independent and identically normal distributed. This assumption may not hold when spatial data is involved in the analysis. Usually, nearby phenomena present nearby values, that is, spatial dependence exists.

By applying GWR, a better explanation of some relationships when data presents spatial dependence is obtained. While OLS method assumes that all parameters associated to regressors are constant throughout the study area, GWR allows modelling the relationship taking into account possible variations in the estimated parameters along the data sample. The method was initially formulated by Brunsdon et al. (1996) and Fotheringham et al. (1996, 1997). An essential summarization can be found in Fotheringham et al. (2002).

Following this method, the parameters for a particular location (u) must be estimated under the assumption that nearby observed data are more influent than those located further away. The estimator for this model is similar to the Weighted Least Squares global model, but considering that weights are associated to the location of the observed values. That is, naming X the matrix of explanatory variables and y the vector of dependent variable, the estimation of the coefficient of regressors β follows

$$\hat{\beta}(u) = \left(X^T W(u) X\right)^{-1} X^T W(u) y,$$

where

$$W(u) = \begin{pmatrix} w_1(u) & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & w_n(u) \end{pmatrix}$$

is a weight matrix where each element $w_i(u)$ in the diagonal represents the weight of the observation i ($i = 1, 2, \ldots, n$) for estimating the parameters in location u.

The specific method for calculating $w_i(u)$ is called kernel. The kernels more frequently used in the applications are based on the Gaussian shape,

$$w_i(u) = e^{-0.5\left(\frac{d_i(u)}{h}\right)^2}$$

and on the Bi-square shape,

$$w_i(u) = \begin{cases} \left(1 - \left(\frac{d_i(u)}{h}\right)^2\right)^2, & \text{if } d_i(u) < h \\ 0, & \text{if } d_i(u) > h \end{cases},$$

where $d_i(u)$ is the Euclidean distance between location u and observation i, and h is the bandwidth (a quantity expressed in the same coordinate units used in the dataset).

While the specific kernel shape does not influence a lot, the choice of the bandwidth may cause significant changes in the estimated parameters. For larger values of h, the weights $w_i(u)$ tend to one and the estimation results would be similar to those using OLS. When the sample is regularly spaced in the study area, a kernel with fixed bandwidth is recommended. If this is not the case, an adaptive bandwidth may be the solution. In the adaptive form, a minimum number of observations or a maximum distance are fixed in order to calculate the weights.

This methodology has been previously applied to analyse prices, mainly house prices (Brunsdon et al. 1999; Fotheringham et al. 2002; Kestens et al. 2006). In the particular case of tourism research, it has been applied to analyse the spatial variations in the investigation of the role of tourism and recreation in changing US rural poverty rates (Deller 2010).

11.3 Study Case

Both methodologies above were combined to analyse the rural tourism market in La Palma, Spain. Rural tourism can be defined as all tourism activity developed in rural areas. However, social researchers consider that this definition does not describe relevant aspects included in the concept of "rural" and that are part of the attractions of rural tourist, such as low population density, small-scale commerce, contact with nature or traditional structures and practices (Roberts and Hall 2001). Thus, empirical analyses should consider these factors when analysing the determinants influencing on rural tourism.

The academic literature does not include many quantitative studies on rural tourism by now. In the particular case of Spain, Molera and Albadalejo (2007) estimated four types of tourist segments according their benefits sought in the rural area, those are, (a) having time with family; (b) looking for nature and tranquillity; (c) looking for outdoor and cultural activities; (d) looking for enjoying rural activities; (e) spending time with friends. These findings agree with other analyses (Barke 2004; Pulido-Fernández 2008), who find that to the traditional motivations for domestic rural tourist in Spain (tranquillity, family reasons or contact with nature) is added in the last decade the interest to practice sport or leisure activities.

The econometric model proposed here includes explanatory variables representing factors above in order to measure the influence of them on the rural

tourism market in La Palma. Additionally, some particularities of the rural tourism in La Palma are also considered. This is one of the richest islands of the Canarian Archipelago in terms of vegetation and forests. Due to its geographic and socioeconomic characteristics, it has specialized mainly in rural tourism, receiving around 110,397 tourists in 2007 (source: Spanish Agency of Air Navigation). Figure 11.1 shows a map of La Palma including some information considered in this paper, such us location of the rural houses, beaches, diving zones, stars viewpoints and the National Park of La Caldera de Taburiente. La Palma is well-known due to its excellent conditions for stellar observation and the local government is nowadays promoting "stars tourism" in the island. In addition, La Caldera de Taburiente is one of its most relevant environmental attractions.

A relatively recent analysis of the rural tourism market in La Palma (Fernández et al. 2008a, b) has found that lodging units are managed by small owners, while the demand comes mainly from Spain (46 %) and Germany (39 %), who look for non-massive destinations, near the nature and isolated. The main activities made by tourist in La Palma are enjoying gastronomy, resting, swimming and having sunbath, while value mainly climate, landscape and tranquillity. Most of these factors are represented by a large number of candidate explanatory variables that will be used to choose the econometric model.

A hedonic price setting was used to study the rural tourism market in the island. The hedonic pricing theory assumes a perfect competitive market where the price of a good p is determined by a bundle of characteristics or attributes, (x_1, x_2, . . ., x_k). The hedonic price equation is

$$p = f(x_1, x_2, ..., x_k).$$

The functional form $f(\cdot)$ and parameters are estimated by means of econometric methods. Data on rental prices and characteristics of rural houses in La Palma was extracted in 2009 from on-line information shown in the web-site of three distributors and reservation agencies of rural houses, those are, Toprural, Ecoturismo, and Acantur. The first two distributors offer rural houses not only from Canary Islands, but also from the rest of Spain and some other countries in Europe, while the third one is limited to the local market. The sample consists of 108 rural houses (triangles in Fig. 11.1) drawn from 205 rural houses censed in 2008 in La Palma (blue points and triangles in Fig. 11.1).

Data associated to the rural houses were geocoded in a cartographic map by using GIS, that is, every rural house was located in the map by indicating its geographic coordinates. Specifically, ArcGis© and SpaceStat© software were used to reference the rural houses in the map and carry out calculations.

Sixty one variables were considered as possible quantitative attributes of the lodging units in La Palma. Table 11.1 describes the data source and information suppliers. Most of the variables included in the analysis were obtained from spatial data provided by GRAFCAN (the official supplier of geographic information in Canary Islands) and IDE-La Palma (official supplier of local geographic information for La Palma). The map with the administrative entities distribution,

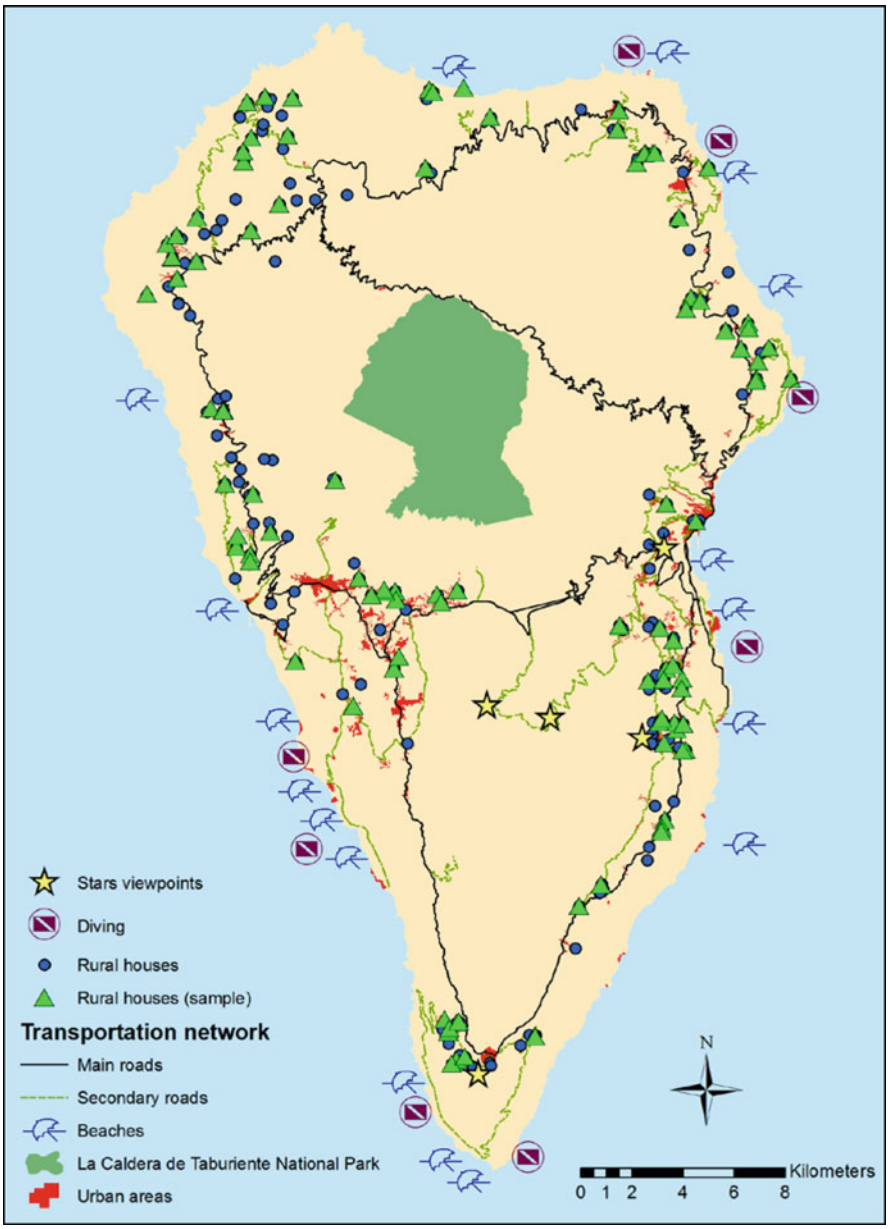

Fig. 11.1 Rural houses and some attractions in the island of La Palma, Spain

corresponding to year 2000, was supplied by the Canarian Institute of Statistic (ISTAC) and the population associated to each unit (2008 census) was provided by the Spanish National Statistics Institute. The 2009 climate information was obtained from the Spanish Meteorology Agency (AEMet).

Table 11.1 Data source and information suppliers

Data source	Format	Supplier	Generated information	
Rural houses address	Excel file	Internet		Rural houses map
Structural characteristics	Excel file	Internet		Structural variables
Land uses	Vector map	GRAFCAN	Diversity index	Environmental variables
Average Temperatures	Excel file	AEMet	Weather variables	
Average rainfalls	Excel file	AEMet		
Elevation data	Raster map	SRTM	Viewsheds related variables	
Environmental items and undesirable facilities	Vector maps	GRAFCAN/ IDE-La Palma		
Administrative units	Vector map	ISTAC		Spatial variables
Houses locations	Vector map	GRAFCAN		
Road network	Vector map	GRAFCAN		
Services/ amenities	Vector maps	GRAFCAN/ IDE-La Palma		

Variables are classified in three groups: structural, environmental and spatial variables. Table 11.2 presents a description of each one of them. As structural variables, the number of rooms, the existence of certain household equipment (barbecue, swimming pool, jacuzzi, safe-deposit box, fireplace, cot or satellite TV) and pets allowance were taken into account. A positive influence of some of these variables on rental price is expected, since they are part of the services given to the tourist. Accordingly, Ohe and Ciani (2011) found that the existence of a swimming pool in agritourism farms in Italy increments significantly the rental price.

A measure of the diversity of land uses in the surrounding of a house was included as environmental variable. Land use diversity was considered as an explanatory variables in hedonic models applied to other markets, such as agricultural land values in USA (Bastian et al. 2002) and recreational sites in the island of Mallorca, Spain (Bujosa-Bestard and Riera-Font 2009), which obtained that this factor exerts a positive influence on the market. The index proposed by Bastian et al. (2002) is used here,

$$DivIndex\_i = 1 - \sum_{h=1}^{m} (\varphi_h)^2,$$

where φ_h indicates the proportion of land use h in a radius of i kilometer from the rural house and m represents the amount of land uses in the island. The higher the value of $DivIndex\_i$, the higher the diversity of land uses in a radius of i kilometer from the house is. Data about average temperatures in 2009 was interpolated using ArcGis tools to obtain the corresponding values for the different rural houses.

Table 11.2 Notation and definition of the variables corresponding to the rural houses in La Palma

Variables	Definition
Price	Price per night for two persons (euros)
Structural	
Capacity	Number of beds in the house
Jacuzzi	Jacuzzi in the house (1 = yes, 0 = no)
Numrooms	Number of rooms in the house
Pool	Swimming pool in the house (1 = yes, 0 = no)
Barbecue	Barbecue in the house (1 = yes, 0 = no)
Safe-deposit	Safe-deposit in the house (1 = yes, 0 = no)
Pets	Pets allowed in the house (1 = yes, 0 = no)
Fireplace	Fireplace in the house (1 = yes, 0 = no)
Cot	Cot may be provided (1 = yes, 0 = no)
WashingM	Washing machine in the house (1 = yes, 0 = no)
TVSatellite	TV satellite in the house (1 = yes, 0 = no)
Environmental	
$PosView_i$	Site with special environmental interest i is visible (1 = yes, 0 = no), $i = 1, \ldots, 15$
$NegView_i$	Site with special negative influence interest i is visible (1 = yes, 0 = no), $i = 1,\ldots,8$
Elevation	Elevation (in meters) of the site where the house is
DivIndex_j	Diversity index within j km (j = 1,2)
AvTemp	2009 Average temperature at house location (°C/10)
AvRain	2009 Average rainfall at house location (mm/10)
Spatial	
Dist2x	Distance (in meters) to the closest facility x, with x in{*Airport, Port, Health, Beach, Diving, Starview*}
Time2x	Transportation time (in minutes) to the closest facility x, with x in{*Airport, Port, Health, Beach, Diving, Starview*}
AvTime2x	Average transportation time (in minutes) to all facilities type x in the island, with x in{*Beach, Diving, Starview*}
Pop_j	Population within j km from the house (j = 2,3)
Popmin_j	Population within j minutes by car from the house (j = 5,10)
FootpathN_2	Number of footpaths within 2 km from the house
FootpathL_j	Total length (in meters) of footpaths within j km from the house (j = 1,2)

To represent landscape characteristics, the viewshed from each rural house was obtained from an elevation map supplied by the Shuttle Radar Topography Mission (SRTM-2008), which is an international project spearheaded by the National Geospatial-Intelligence Agency (NGA) and the National Aeronautics and Space Administration (NASA). These viewsheds were employed to build some 0/1 variables reflecting which items could be seen from the house. Among these items both positive (sites with special environmental interest) and negative ones (rubbish dumps, large industrial infrastructures as the airport or the sea port, for example) were considered.

To estimate the spatial variables, the road map of La Palma was used. The information was classified according to the road type (main, secondary, local). An average speed by car was associated with every road type to estimate the time to drive between two points in the road network. Time-by-car to some of the nearest points of interest, such as airport, health centre, beach, diving zone, star viewpoint, was calculated for each rural house. For some points, such us beaches, diving zones or star viewpoints, the average transportation time was also calculated. Time-by-car to the nearest facility is associated to customers that exclusively visit one facility. Nevertheless, average time is associated to customers that prefer to visit diverse facilities.

Tranquillity and isolation were represented by the population density in the surroundings of the rural house. The variable was calculated sharing the population of each administrative entity among all houses in it. So, population within 2 and 3 Km (using Euclidean distance), or at 5 or 10 min (using time-by-car) from the rural houses was calculated.

IDE-La Palma provided a map containing the 2008 footpaths network of La Palma. Using this layer, different indicators for analysing the possible influence on the rental price of nearby hiking activities were proposed. The number of footpaths closer than 2,000 m and the total length of footpaths within 1,000 and 2,000 m were calculated for each rural house.

11.4 Results

Table 11.3 presents the variables and functional forms obtained after applying the GASIC algorithm to the hedonic pricing model and the values of the coefficients obtained by applying OLS. Eleven variables out of the sixty one were found relevant. The structural selected variables are *TVSatelite, Pool,* and *Numrooms,* the environmental selected variables are *AvTemp, DivIndex_1,* and *DivIndex_2,* and the spatial selected variables are *Dist2Beach, FootpathL_2, Time2Starview, Time2Port,* and *AvTime2Starview*.

The interpretation of the results is restricted to the most significant selected variables, that is, those with the lowest p-values. They are the interaction between *Pool* and the square of *DivIndex_1 (Pool*DivInd_1*^{2}), the variables *AvTemp*, *Time2Starview* and the square value of *NumRooms*.

The structural variable *Pool*, together with the diversity index *DivIndex_1*, are some of the most influencing factors on the rental price of rural lodgings in La Palma. The joint effect of both variables is illustrated in Fig. 11.2 when the swimming pool is available. The vertical axis in the figure represents the estimated variation in the rental price of the rural house over infinitesimal variations of the diversity index. The higher the Diversity Index in the surroundings of a house with a swimming pool, the higher the price variation is, especially for highly priced rural houses. This effect is nonlinear, so the current values of price and Diversity Index determine the final variation of rental prices. Figure 11.3 presents the same effect when the swimming pool is not available in the house. The general pattern is

Table 11.3 OLS and GWR estimation results for the study case

	OLS		GWR		
	Coefficient	Mean	Std. Dev.	#significant[a]	Area[b]
Constant	−8.5849**	−11.4921	15.7892		
Numrooms^2	0.0220***	0.0232	0.0052	85	All
TVSatellite	0.0644***	0.1514	0.0260	35	NW
*Pool*DivIndex_1*^{2}	0.8044***	1.0536	0.1916	71	N
DivIndex_1^2	0.6407***	0.9784	0.2142	27	E
Log(*DivIndex_2*)	−0.5677***	−1.1290	0.4336	53	E
AvTemp	0.1201***			0	
AvTemp^2	−0.0003***			0	
Time2Starview	−0.0133***	−0.0033	0.0098	47	E
1/*Dist2Beach*	189.9624***	973.9128	622.1310	49	N
FootpathL_1	−1.35E-05**	−3.8E-05	2.3E-05	13	N
Time2Port^2	0.0002***	0.0016	0.0011	20	E
Log(*Time2Starview*)	0.3375**	2.1001	0.8372	28	W–E[c]
D68[d]	0.4703***	−0.3829	0.1422	5	
D70	−0.4804***	0.4992	0.0833	18	
D79	0.6826***	0.8774	0.1080	28	
Local R^2		0.8740	0.0250		
Sum of residual squares	1.3838	0.4915			
R^2	0.7874	0.9247			
R^2 adjusted	0.7527	0.9124			

***, ** denote significance at 1 %, and 5 %, respectively

[a]Number of elements in the sample with a significant coefficient (threshold *p*-value at 10 %) for the specific variable

[b]*N* North, *E* East, *W* West, *S* South, *NW* Northwest

[c]Central part of the island going from the West to the East

[d]D68, D70, and D79 represent dummy variables for rural houses 68, 70, and 79, which correspond to outliers

similar to Fig. 11.2 but the rental price variations are lower. These results show that the combination of swimming pool and Diversity Index is significantly valued by the market. To illustrate the common effect of these variables, Table 11.4 shows the increase in the marginal contribution of the diversity index when the rural house includes a swimming pool. An example is given to understand the numbers in this table. Assume a rural house with a current rental price of €50 and a diversity index of 0.85. Based on the estimated coefficients in Table 11.3, an increase of 0.1 in the diversity index will produce an increase of €12.29 on the rental price when a swimming pool is available and an increase of €5.45 when it is not. The subtraction of these figures is €6.84, corresponding to the figure shown in Table 11.4 (68.38 × 0.1). Note that the increase in the rental price is more than doubled (around 125 %) when the rural house has a swimming pool in its equipment. This result can be extended to other values of current rental price and diversity index.

A concave function represents the effect of the average temperature on the rental prices. Table 11.5 shows the marginal contribution of the 2009 average temperature

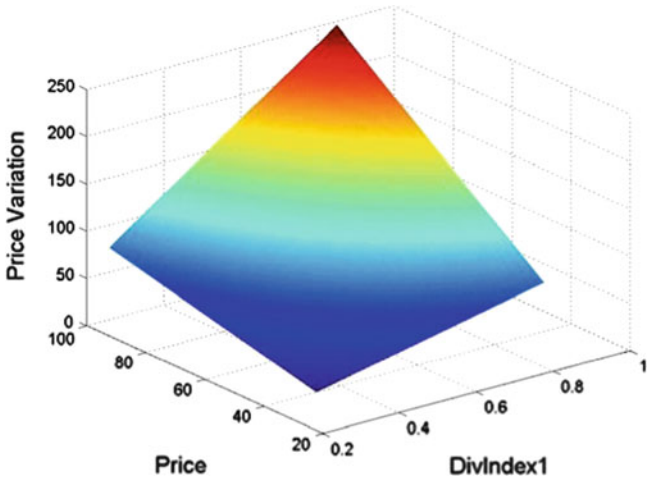

Fig. 11.2 Effect of the diversity index within 1 km on the rental price of a rural house when a swimming pool is available

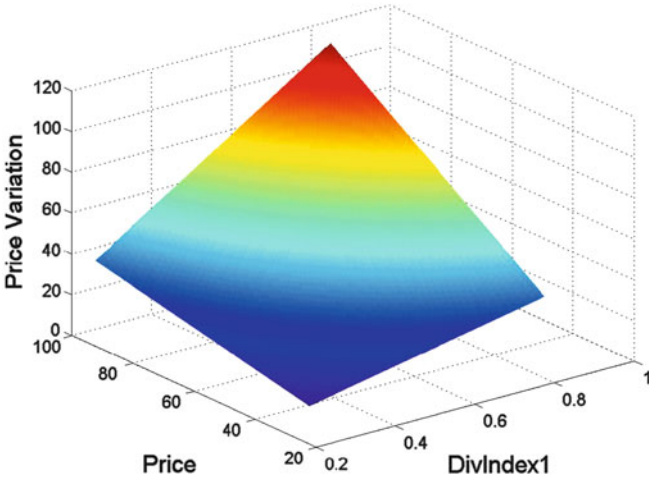

Fig. 11.3 Effect of the diversity index within 1 km on the rental price of a rural house when a swimming pool is not available

in the surrounding of the house. The price increases with positive temperature variations up to a temperature close to 18.5 °C, but the relationship between both factors turns to be negative for higher degrees. Thus, for example, assuming a rural house with rental price around €50 and average temperature of 14.5 °C, an increase of 1° in the temperature produces an increase €12.06 on the rental price. On the contrary, when the average temperature is 20.5°, an increase of 1° originates a decrease of €7.80 in the rental price.

Table 11.4 Increment of the marginal contribution of the diversity index when the rural house includes a swimming pool

	Diversity index within 1 km						
Initial price (€)	0.26 (€)	0.36 (€)	0.46 (€)	0.56 (€)	0.66 (€)	0.76 (€)	0.85 (€)
30	12.55	17.38	22.20	27.03	31.86	36.68	41.03
35	14.64	20.27	25.90	31.54	37.17	42.80	47.87
40	16.73	23.17	29.60	36.04	42.48	48.91	54.70
45	18.82	26.07	33.31	40.55	47.79	55.03	61.54
50	20.92	28.96	37.01	45.05	53.10	61.14	**68.38**
55	23.01	31.86	40.71	49.56	58.40	67.25	75.22
60	25.10	34.75	44.41	54.06	63.71	73.37	82.06
65	27.19	37.65	48.11	58.57	69.02	79.48	88.89
70	29.28	40.55	51.81	63.07	74.33	85.60	95.73
75	31.37	43.44	55.51	67.58	79.64	91.71	102.57
80	33.47	46.34	59.21	72.08	84.95	97.82	109.41
85	35.56	49.23	62.91	76.59	90.26	103.94	116.25
90	37.65	52.13	66.61	81.09	95.57	110.05	123.08
95	39.74	55.03	70.31	85.60	100.88	116.17	129.92
100	41.83	57.92	74.01	90.10	106.19	122.28	136.76

Table 11.5 Marginal contribution of the temperature

Initial	2009 Average temperature at house location						
price (€)	14.5 °C (€)	15.5 °C (€)	16.5 °C (€)	17.5 °C (€)	18.5 °C (€)	19.5 °C (€)	20.5 °C (€)
30	7.24	5.25	3.27	1.28	−0.71	−2.69	−4.68
35	8.45	6.13	3.81	1.49	−0.82	−3.14	−5.46
40	9.65	7.00	4.36	1.71	−0.94	−3.59	−6.24
45	10.86	7.88	4.90	1.92	−1.06	−4.04	−7.02
50	12.06	8.75	5.44	2.13	−1.18	−4.49	−7.80
55	13.27	9.63	5.99	2.35	−1.29	−4.93	−8.58
60	14.48	10.51	6.53	2.56	−1.41	−5.38	−9.35
65	15.68	11.38	7.08	2.77	−1.53	−5.83	−10.13
70	16.89	12.26	7.62	2.99	−1.65	−6.28	−10.91
75	18.10	13.13	8.17	3.20	−1.76	−6.73	−11.69
80	19.30	14.01	8.71	3.42	−1.88	−7.18	−12.47
85	20.51	14.88	9.26	3.63	−2.00	−7.63	−13.25
90	21.72	15.76	9.80	3.84	−2.12	−8.07	−14.03
95	22.92	16.63	10.34	4.06	−2.23	−8.52	−14.81
100	24.13	17.51	10.89	4.27	−2.35	−8.97	−15.59

Figure 11.4 shows the effect of the number of rooms. As expected, the rental price is positively dependent on this factor. Finally, the rental price increases when the accessibility to the closest starview point improves. For example, the rental

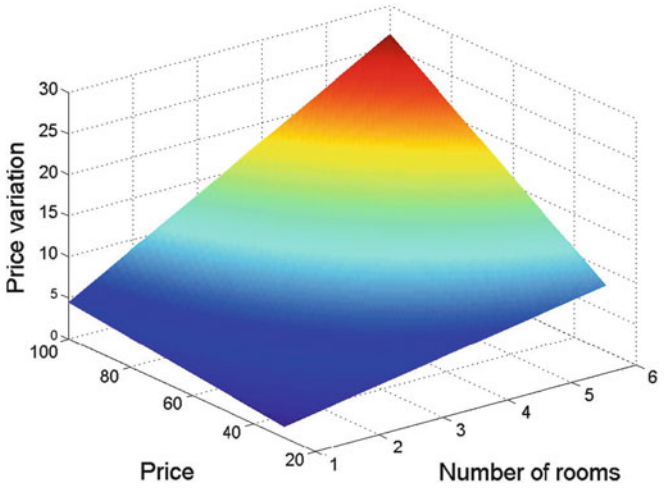

Fig. 11.4 Effect of the number of rooms on the rental price of a rural house

price of a house initially valued with €60 would change to €83.92 if it were located 30 min closer to the nearest starview point ($60 \times (1 + 0.013289 \times 30)$).

Starting from the selection of variables obtained with GASIC, a GWR analysis was carried out in order to estimate the spatial dependence of the parameters. The estimations were performed using SpaceStat tools and considering a Bi-square adaptive kernel. For selecting the bandwidth associated to each rural house, the 30 nearest neighbours were considered.

The last four columns of Table 11.3 show the results of applying GWR to the data. By using this methodology, every individual adopts its specific coefficients for every regressor. SpaceStat obtains a p-value for each coefficient and rural house. Thus, the fifth column in Table 11.3 presents the number of sample elements where the corresponding coefficient is significant (at 10 %) and the last column shows the area where these elements are located. The third and fourth columns in Table 11.3 present the mean value and the standard deviation of the estimated coefficients for the significant elements, respectively. As it can be observed, the use of GWR extends the information given by the exclusive application of OLS. In particular, the global R^2 coefficient changes from 0.7874 to 0.9247 when using a local regression method instead of a global one.

The sign of the coefficients coincides when using both OLS and GWR, so the interpretation given above is maintained here. Nevertheless, GWR provides new information of the local effect of some factors which cannot be extracted by using the classical OLS. As shown in Table 11.3, the number of sample elements where the different coefficients are significant varies from 5 to 85. To illustrate the implication of this result, Fig. 11.5 presents two maps of La Palma indicating the geographical points where variables *TVSatellite* and *Pool*DivIndex_1*[2] are significant. These maps show that these points are not randomly distributed, but grouped in zones. For example, the existence of a satellite TV in the house is only significant

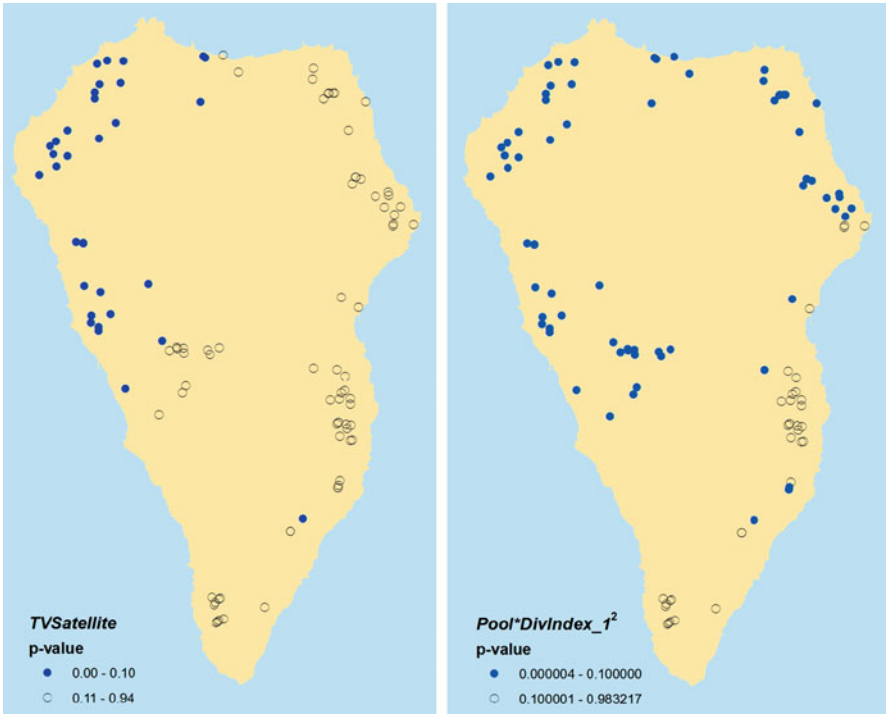

Fig. 11.5 Location of the elements in the sample with a significant and not significant estimated coefficient (threshold *p*-value is 10 %) of *TVSatellite* (*left*) and *Pool*DivIndex_1*^{2} (*right*) using GWR

for rural houses located at the north western part of the island and the variable *Pool*DivIndex_1*^{2} is only significant in the northern half of the island.

Other additional results are also obtained with GWR. In particular, *Numrooms*^{2} is the most influencing variable throughout the whole island. This variable is significant for 78.7 % of the sample, that is, the whole island excepting a group of houses at the east. Unlike to results obtained with OLS, the temperature related variables, *AvTemp* and *AvTemp*^{2}, are not significant for any house. The reason is that these variables only present relevant variations for large distances (the sample used by OLS covers the entire island) but not when the sample used to estimate the model is concentrated in a reduced area (the GWR estimations take into account only the 30 nearest neighbours).

11.5 Conclusions

The application of GIS in tourism research has brought about the incorporation of multiple measures of relevant characteristics of the market. These new variables have opened up the possibilities of obtaining finer quantitative analyses, but it is

also accompanied by new tractability problems. The big amount of explanatory variables derived from GIS is one of them. In addition, the spatial location of individuals may reduce the reliability of the standard econometric estimations. This paper presents a methodology dealing with both problems, those are, the selection of regressors and the spatial reference of the data. By applying this methodology, firstly, an automatic optimal selection of explanatory variables in an OLS model based on a heuristic strategy is obtained, and secondly, the coefficients of regressors are estimated by taking into account the geographic location of individuals.

The methodology was applied to estimate a hedonic pricing model to assess the environmental and spatial attributes in the rural tourism market in the island of La Palma (Spain). Initially, some non-linear relationships between regressors in the set of optimal explanatory variables are obtained. Some of the selected attributes of the tourist product were expected a priori, such as the existence of a swimming pool, the number of rooms in the lodging unit and the land use diversity. The results derived from the application of GWR show that the effect of the different regressors over the rental price is not homogeneous throughout the island. The methodology allows differentiating the areas where each variable is significant and estimating the effect of each variable on the rental price of the rural houses located in those areas.

The study case illustrates the possibilities of this methodology to help destination managers and stakeholders to design promotion and investment policies. In particular, the results indicate that houses located at the northwest offering satellite TV and a swimming pool are significantly valued by the market. On the contrary, these facilities are not valued by the market for the rural houses located at the south of the island. Investors can take into account these findings before equipping rural houses for renting. Northwest region is the most isolated area of La Palma in terms of time distance to the main urban facilities. Therefore, the results show that remoteness determine the influence of some attributes of the rural tourism lodging units in the island. This information can be used by managers in order to design promotional strategies, for example, by differentiating zones in the island.

The methodology proposed in this paper may be refined in several aspects. An interpolation process can be applied in order to obtain a map of estimated coefficients covering the whole space, not only the areas where the current rural houses are located. These maps can be used to estimate the rental price of new potential rural houses in the island. In addition, a mixed GWR method, which allows including local and global variables, can be considered. By doing so, local multicollinearity may be dealt and all the selected regressors coming from the first step of the method may be significant in GWR estimations. Our next steps in this line of research will be directed to this objective.

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Data Sources

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Canarian Institute of Statistic (ISTAC): http://www.gobiernodecanarias.org/istac/
Cartográfica de Canarias, S.A. (GRAFCAN): http://www.grafcan.es/index.php
Ecoturismo: http://www.ecoturismo.com/
IDE-La Palma: http://www.siglapalma.es/
Shuttle Radar Topography Mission (SRTM): http://www2.jpl.nasa.gov/srtm/index.html
Spanish Meteorology Agency (AEMet): http://www.aemet.es/es/portada
Spanish National Statistics Institute (INE): http://www.ine.es/
Toprural: http://www.toprural.com/

Yield Revenue Management in the Hotel Sector: An Empirical Analysis of Its Application and Results in Madrid, Spain

12

Pilar Talón-Ballestero and Lydia González-Serrano

12.1 Introduction

Although yield management (YM) has been applied in the United States and other European countries for over 20 years, in Spain it is a recent phenomenon as there has been a delay of almost a decade in this process in Spanish hotels (Gómez et al. 2006).

In fact, the first citations in Spanish which the researchers are aware of, are in Aranda (1994), who makes a brief mention in his manual on the technical-economic management of hotels. We would also have to mention an article by González and Sule (1994) on the expectations of Yield Management in tourism companies in Castilla y León. Since 2000, some Spanish researchers have started to explore this matter (e.g. González and Talón 2002; Chávez and Ruiz 2002, 2005; Figueroa et al. 2004, 2008; Guadix et al. 2004, 2008; Gómez et al. 2006; Talón 2009, etc.) but they are still far from having established a scientific framework in this area.

On the other hand, the complex and multidimensional nature of the implementation of YM has been discussed in numerous studies (Okumus 2004). This is due to the multitude of factors that must be considered and controlled simultaneously when applying YM: the market segments, the costs of production and sales, demand cycles, the forecasting patterns, the knowledge of prices and competition, the relationship between hotel and customer, the training and motivation of managers and employees, etc. (Griffin 1995; Kimes 2000; Lieberman 1993; McMahon-Beattie and Donaghy 2000; Schwartz 1998; Upchurch et al. 2002).

However, there is no single model of YM commonly accepted by industry and researchers as the basis for its implementation because there aren't any precise or generally adopted procedures (Griffin 1996; Jarvis et al. 1997). Therefore, it was essential for our study that the proposal of a model would also allow us to perform

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DOI 10.1007/978-3-7908-2879-5_12,

an empirical estimation which would prove the degree of implementation and development in YM hotels.

12.2 Methodology

In the literature of the field, we can find different models (linear and sequential or systemic) that seek to establish the correct implementation of YM. Among the most important ones we should note: Jones and Hamilton (1992), Donaghy and McMahon (1995), Jones and Kevin (1997), Yeoman and Watson (1997) and Emeksiz et al. (2006). From the contributions of these authors and the information provided by various professionals designing an initial model, we can define an optimal level for YM development. This model is structured into eight blocks, or general categories: culture, forecasting, budgeting, benchmarking, segmentation, pricing and calculating, updating and monitoring the boundaries of reservations and sales and evaluation daily monitoring YM strategies.

To contrast this model, in our research, we used a qualitative methodology gained through the Delphi Technique. This technique turned out to be most appropriate for our purposes as it allowed us to discuss with qualified experts in the field to obtain a reliable consensus on the activities needed to meet and achieve an optimal level of development in YM. The process was carried out as follows:

We selected the panelists according to criteria of accessibility but also heterogeneity. It was considered necessary to include different professional profiles in the sample, both business and academic experts. Therefore, the final sample was composed of 11 panelists. All of them recognized national and international professionals in YM (consultants, revenue managers and academics).

From the proposed model, the experts should consider first, the importance of including each general category in the ideal archetype of YM development and, secondly, they should estimate the inclusion of questions in each broad category, for example they should decide the appropriateness of their approach as to its capacity to measure and evaluate the category it belongs to.

With this determination, panelists should place in hierarchical order each general category according to its significance in the ideal pattern of development, deployment and application of YM in hotels, for example, deciding the order within broad categories according to their relevance in the YM development of a hotel.

After a detailed analysis of the results of the Delphi study conducted by the panelists, we concluded that the order of importance of different blocks and categories that made up the ideal model was the following: culture, forecasting segmentation, pricing, analysis of distribution channels, competitive analysis, calculation and updating of the boundaries of reservations and sales, evaluation and budgeting. We must highlight the fact that we added a variable which was the analysis of distribution channels.

Once having defined the model, the next objective was to assess the degree of implementation of YM in 3, 4 and 5 star hotels in the capital of Spain (Table 12.1).

Table 12.1 Proposed implementation YM model

Strategic level
1. Developing a culture of YM
1.1. Culture
Management support and property
Establish and communicate strategies and goals for YM
Match business goals with those of YM
Staff training
Inform and understand the concept among all staff
Staff report daily results and forecasts
Informing customers about fare conditions with the objective that these policies are perceived positively
Recognition of employees
Total YM implementation (in all hotel)
Adequacy of human and financial resources
1.2. Previous steps
Join a YM team
Designate a team manager or coordinator
Assign responsibilities
Use databases
Determine what information is necessary for the proper application of YM
Adapting technology for the information needs
2. Forecasting
Analyzing historical data of real demand or unconstrained demand
Browse historical data competition
Identify patterns and reserve sources
Recognize the determinants of demand
Analyze the external or environmental factors
Tracking bookings
Following up on cancellations, denials, declines and no-shows, etc.
Update forecasts
3. Competitive analysis
Identify competitors and local market characteristics
Analyze the market share, the MPI (Market penetration index), the ARI (Average rate index) and the RGI (Revenue generation index)
Examine the marketing strategies and price competition
Consider the competitive advantages
4. Demand segmentation
Identify segments
Analyze the type, source and purchase behavior segments
Know the contribution of each segment to benefit
Determine the segments from the distribution channels
Choose the most profitable segments (total profit and customer value)
Know the customer satisfaction with the implementation of YM

Tactical Level

(continued)

Table 12.1 (continued)

5. Budgeting
Consider the revenue management department forecast
Periodically review and compare with expectations
Take account of market segments
6. Fixing rate structure or pricing
Determine prices for each segment according to the company (and benefit costs) and market (demand elasticity, the consumer, competition and distribution channels)
Differentiate rates by restrictions and limitations to the application of discounts
Differentiate rates based on product differentiation (use of physical attributes and service packs)
Determine the rate structure established skill levels for each of the segments rate
Tactical level
7. Calculating, updating and monitoring the boundaries of reservations and sales
Review the allocation of rooms at various segments in line with fluctuations in demand and as they are making reservations, making adjustments and necessary updates (closed or open rates, etc.)
Regularly analyze competitors' prices
Regularly evaluate distribution channels, pricing and positioning with respect to competition
Calculate displacement (avoid displacing more profitable business)
Apply policies upselling and cross-selling
8. Evaluation and daily monitoring YM strategies
Quantitatively assess YM RevPar, ADR, occupancy and profit
Qualitatively assess YM (customer satisfaction)
Transmits information to work staff
Correct deviations

Source: authors' own calculations

It was part of an exploration design as there was no previous research on the implementation of YM in hotels in Madrid. Not even studies were based on measurement through the application of an ideal model of development. Therefore, research was transversal and descriptive as it allowed a barometer on the state of implementation of YM in hotels in Madrid at a particular time. Our methodology also had a quantitative phase which consisted in conducting a telephone survey of all 3, 4 and 5 star hotels in Madrid. The survey was distributed through Madrid Hotel Association and the Association of Hotel Managers.

The questionnaire was sent to the staff members responsible for YM at the hotels. It is for this reason that we chose a mixed online and telephone survey, due to the complicated agenda of those responsible for this area. Field work was conducted from February to June, 2009. As a previous phase to the recollection of data, we carried out a pretest of the questionnaire with hardly any modifications done to it.

The data collection was done through a close ended structured questionnaire which did not include any open questions. This feedback form was derived from the

Table 12.2 Study sheet

Group	180 three, four and five star hotels within Madrid
Sample	142 hotels
Confidence level	Confidence level of 95 % (two sigma) and in the worst case (p = q = 50 %)
Margin of error	±3.87 for the whole sample, assuming simple random sampling
Sampling	Census sampling by hotel category
Field work	February 23 to June 15, 2009
Type of survey	Phone survey

Source: authors' own calculations

proposed model with regard to question format, categories and issues. The study sheet is shown below in Table 12.2.

As we have previously mentioned, the object of our research was made up of 180 three, four and five star hotel establishments in Madrid. We rejected the inclusion of lower category hotels as they gave evidence of poor implementation of YM in their establishments. On the other hand, the decision to focus our investigation on Madrid capital was because of the fact that this city is a bounded universe where we could find a high concentration of hotels of intentional category which were going through an increasing momentum in YM, and this, of course, was extremely important for our study. What is more, we have to say that urban hotels have lately been helping to further develop the philosophy of YM due to their large number of market segments. This is not the case of the resorts where there is virtually no differentiation of segments and, therefore marketing occurs through tour operators with fixed prices although it is true that this trend is beginning to change with the introduction of online distribution channels.

12.3 Results on the Degree of Implementation of YM in Madrid Hotels

12.3.1 Overview of the Implementation of YM

The study begins by analyzing the basic demographic characteristics that establish the overall situation of the Madrid hotels that were surveyed. More than half of the hotels that have taken part in the survey are rated as 4 star hotels, followed by those rated as 3 star and 5 star hotels respectively.

Almost all of the 3, 4 and 5 star hotels in Madrid say they apply YM (96.47 %). The 3.5 % that declare don't apply YM tend to be independent 3 star hotels and generally have less than 100 rooms.

In other studies (Chávez and Ruiz 2005; Figueroa et al 2009; McMahon-Beattie and Donaghy 2000) there was a significant relationship between membership in a hotel chain and dimension to the application of YM. This last point has not been confirmed in this part of our study (Fig. 12.1).

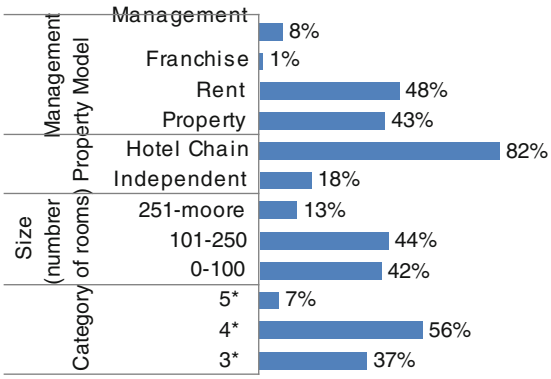

Fig. 12.1 Basic features of the hotels surveyed (Source: authors' own calculations)

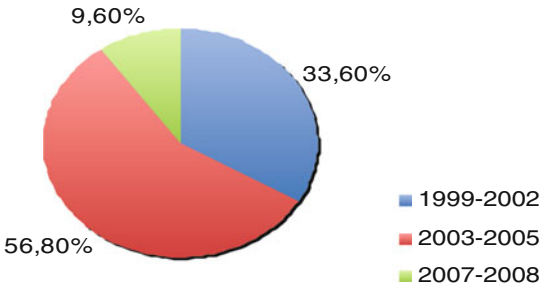

Fig. 12.2 Date of application of YM (Source: authors' own calculations)

Nearly 60 % of hotels that claim to apply YM implemented it in the period between 2003 and 2006 and only 9.6 % did so in the period 2007–2009. This decrease in the period 2007–2009 may be due to the fact that YM was already in place in most of the hotels in Madrid. However, one would expect that these years of experience would have meant a higher and better level of implementation, there is no relationship between the degree of excellence achieved and the date of application (Fig. 12.2).

With regard to the management of YM, it can be developed entirely in the hotel, through the center of the hotel chain and jointly between the hotel and the headquarters of the hotel chain. Figure 12.3 shows that, in most hotels, this management is combined (41 %) or centralized in the hotel chain (37 %). In 21 % of cases, the management is centralized only in the hotel. This seems to reflect the little importance that is given to the figure of the revenue manager at the hotel. The revenue manager normally doesn't exercise his/her duties in one place. As a result, the vision he/she possesses is more general and not adapted to the specific characteristics of the hotel.

From an organizational perspective, management of YM in hotels can be made by the hotel manager, the housing director, commercial director, the head of

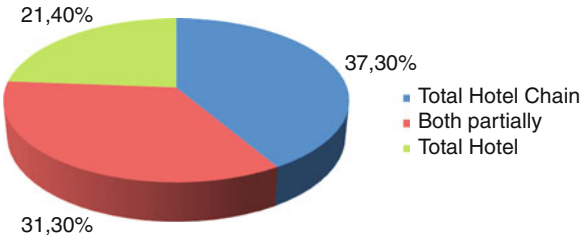

Fig. 12.3 YM form of management (Source: authors' own calculations)

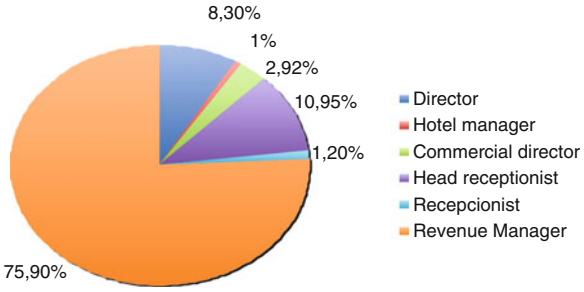

Fig. 12.4 Managers of YM in the hotel (Source: authors' own calculations)

reception, the receptionist at the establishment or hotel or hotel chain revenue manager.

In general, in 76 % of Madrid 3, 4 and 5 star hotels this activity is undertaken by the hotel or the hotel chain revenue manager. The fact is that there is no clear definition of the position and functions of the revenue manager. However, as discussed below, in most of the cases this position is not exclusive and, when present, the revenue manager generally manages several hotels (Fig. 12.4).

12.3.2 Culture

According to our research (see Fig. 12.5), the perception of those responsible (84 %) for YM is that the hotel staff are well informed and feel involved in the development of YM. 48.5 % of those responsible for YM think the housing, commercial and direction staff are acquainted with and fully share the objectives of YM and 36 % believe that they know it and share it fairly.

Most revenue managers think that the price changes are properly justified to the customer. 40.4 % considered that the desk and reservations staff justifies correctly to the client the price changes and 34 % feel that they do it totally. However, 76.5 % of managers considered that the customer perceives little or just regular price changes. There is therefore a mismatch in the fact that staff properly justify these variations, however, customer perception is different. We believe first, that the

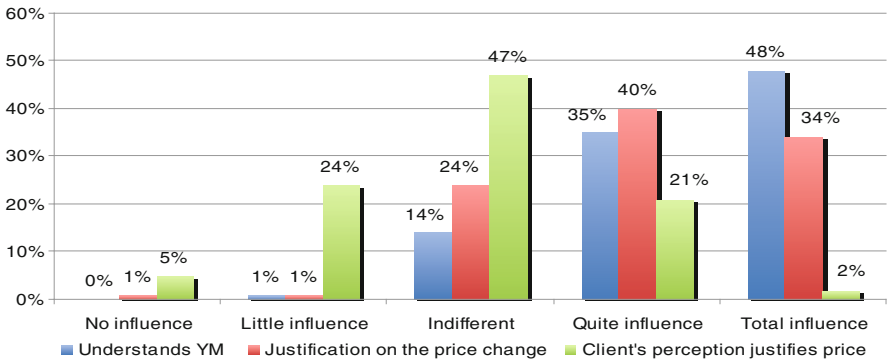

Fig. 12.5 YM knowledge by housing, commercial and direction staff (Source: authors' own calculations)

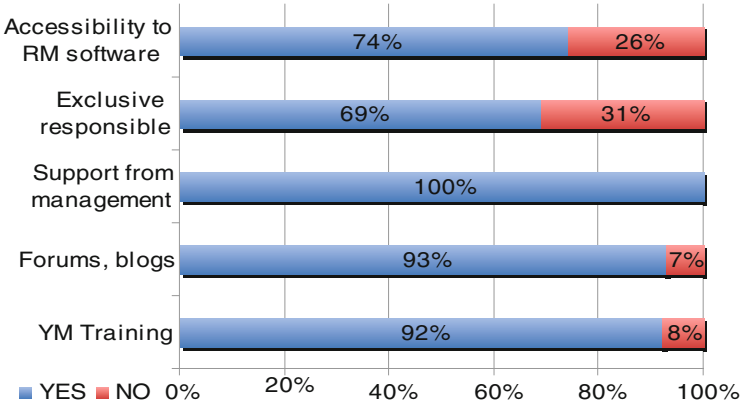

Fig. 12.6 Culture-related variables (Source: authors' own calculations)

client is not properly informed about the rates and conditions and, secondly, in many cases price discrimination is not based on a logic rate structure.

With respect to resources (see Fig. 12.6), only 26 % say they have a specific application software of YM and 69 % are in charge of YM-time exclusively. However, this last figure is quite high, and that would include the revenue of the hotel chains that generally devoted exclusively to the management of several YM hotels. There are few hotels which have specific software due to its high cost. Moreover, the possession of specific software help YM management in implementing all strategies and activities, except in the treatment of real demand because, from our point of view, these programs are ready to replace that information with the application of mathematical models.

Hundred percent of those responsible for YM claim to have the support of management and/or property for the development of YM strategies and 92 % said that the team has received training in YM.

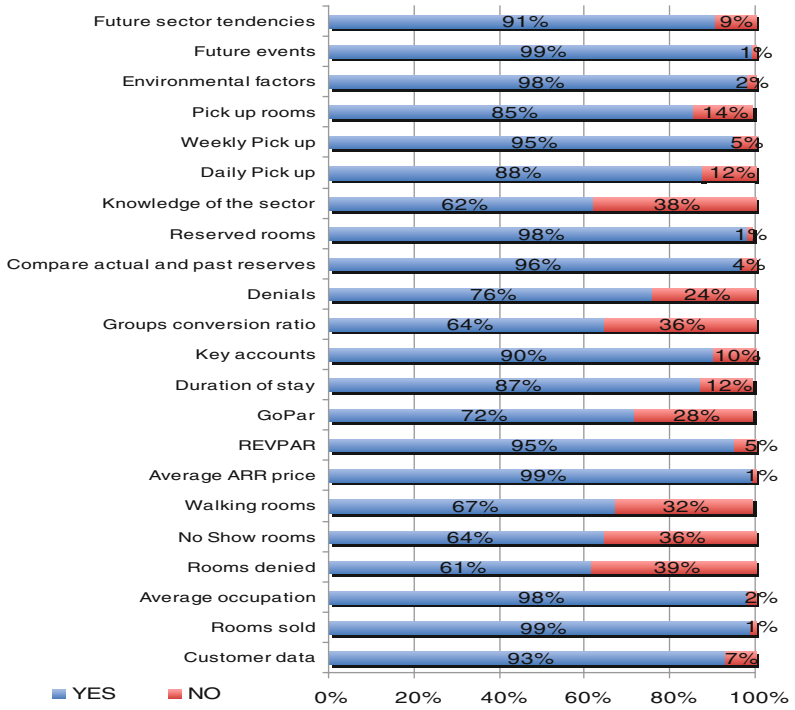

Fig. 12.7 Variables related to the performance forecasts (Source: authors' own calculations)

12.3.3 Forecasting

As can be seen in Fig. 12.7, about 90 % of managers claim to have in mind the historical data on: the type of customer, and OR (Average Occupancy Rooms Sold), ADR (Average Daily Price), RevPAR (Revenue Per Available Room) and length of stay. This is consistent with the fact that we are dealing with data related to the fixed demand of the hotel. In the case of rooms for walk-in (step in clients without reservation) the percentage falls to 68 % because it is not an important fact since the hotels have less and less of this type of customer.

However, these values dropped when analyzing real demand or "unconstrained demand" since only about 60 % claimed to count on data about denials rooms and no shows. With regard to the latter, we agree with the findings of Chávez and Ruiz (2005), Upchurch et al. (2002) and McMahon-Beattie and Donaghy (2000) indicating that the data for the latent demand are not recorded by all hotels.

This fact is important because as it only bears in mind the fixed capacity of the hotel, it does not consider, for example, no shows or clients that get rejected because the hotel is full. This is why it cannot be considered real data.

The percentage of those with historical data on GopPar (Gross Operating Profit Per Available Room) decreases to 72 % because some hotels are still using only RevPar, for example, still looking at the revenue instead of profit as a measure of profitability.

This fact reflects the initial situation in the development of YM in Spain. In other countries, what is taken into account is more the profit than the revenue per room generated in situ. In this sense, the greatest development of YM comes determined from the consideration of the value a customer gives it over a long period of time.

Ninety percent of respondent hotels have historical data by segment and key accounts for 76 % of group denials and cancellations, the percentage drops to 62 % when it comes to conversion ratio of groups. This suggests the importance of groups in the hotel demand since the real demand analysis is more comprehensive in this case.

The percentages are high (96 % and 99 %) when it comes to comparing the evolution of current reservations to past and take account reserved rooms at present for a given future date (OTB, On the Books). It is strange that 4 % of the hotels do not compare the evolution of current and past reservations as this is central to the development of YM.

The percentage drops to 62 % when it comes to determining the time at which each segment makes each reservation, which seems to support the idea that the behavior of market segments has not yet been discussed in depth. This result agrees with data from studies of Chávez and Ruiz (2005) and McMahon-Beattie and Donaghy (2000).

The weekly pick-up is that it is more common (95 %) followed by the daily pick-up (88 %) and the pick-up by total rooms (86 %).

In carrying out the provisions, Madrid hotels are very sensitive to external analysis, since 99 % discussed future events (sports, cultural, etc.), 98 % take into account environmental factors and 91 % future trends.

Noted that many of the hotels do not take into account the actual or latent demand, nor the behavior of the segments with respect to the "booking pace" or lapse of time between booking and arrival, although this analysis is more exhaustive in the case of groups. Furthermore, it should be noted that there is great regularity in the forecast (at least once a week) and that is mindful of the environment and trends.

12.3.4 Benchmarking

Almost all hotels (99 %) claim to identify their competition. The percentages are high when it comes to determining the positioning of short-term hotel and distribution channels (96 %) compared to its competition. However, the percentage drops to 89 % when it comes to determining their position in search engines and decreased significantly (34 %) in the positioning of long-term hotel. This seems to emphasize the tactical approach of YM in Madrid hotels where, in our view, the strategic approach is essential. It is also true that the speed of the changes imposed by the current online and economic environment may increase the difficulty of a long-term position. But only 68 % discussed the strategies for distribution channels of competition. Eighty-three percent use technology tools to study the pricing strategies of competition (see Fig. 12.8).

From our point of view, the competitive analysis is not performed correctly even in many hotels in Madrid because it does not take into account the variables that

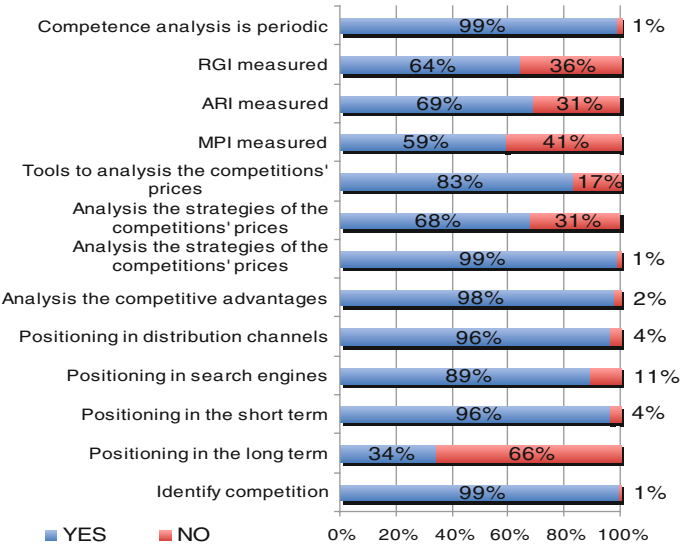

Fig. 12.8 Variables related to competition analysis (Source: authors' own calculations)

measure the penetration of the hotel with respect to sales and income. Furthermore, in our analysis we found some inconsistencies and that 64 % said that they measured the RGI (Revenue Generation Index) while 69 % measured the ARI (Average Rate Index) and only 59 % monitor the MPI (Market Penetration Index). Given that the RGI is the product of the MPI and the ARI, it seems unlikely that the share of the MPI is less than the RGI. The ARI is the variable that is measured because it is easier to obtain from data from hotels, while the rest (sales and revenues) is usually necessary to hire the services of companies that specialize in Benchmarking. Finally, note that 97 % of managers make a regular analysis of the competition.

12.3.5 Segmentation

Ninety-two percent accounted for more than four market segments. This percentage is not very high if one considers that it is urban hotels in the city of Madrid where it seems appropriate to distinguish, at least for business customers (individual and groups) and leisure (individual and groups) (Fig. 12.9).

The segment type is the most widely discussed in the hotels (97 %), followed by the contribution of each segment to benefit (85 %) and the segment type provided by each distribution channel (79 %). Seventy-five percent knows the origin of the segments and only 72 % of their buying behavior. This data may support the view that in many cases, taking the segment's own distribution channel, they are cannibalizing each other for lack of knowledge about customers to provide for these channels.

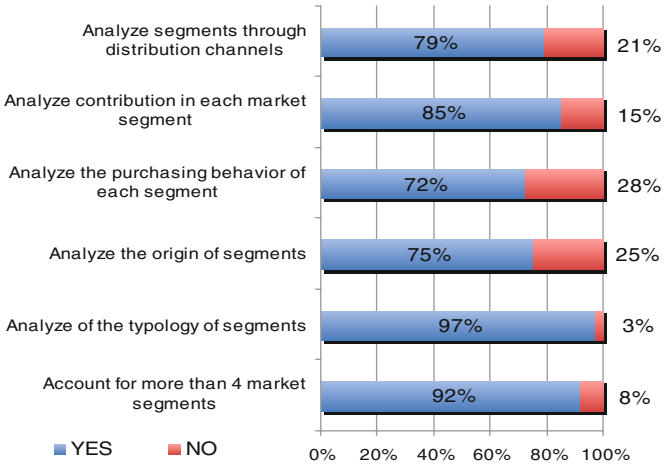

Fig. 12.9 Variables related to the segmentation implementation (Source: authors' own calculations)

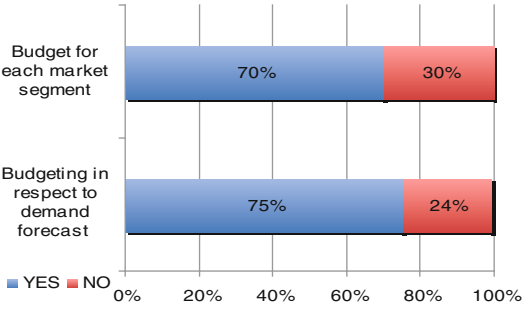

Fig. 12.10 Variables related to the budgeting implementation (Source: authors' own calculations)

12.3.6 Budgeting

Seventy-six percent of managers report having to take into account the budget demand for the RM forecasts. This percentage seems low to us as it seems to involve only the operational function of YM and its lack of inclusion in strategic financial decisions. Even lower is the percentage of those doing the budget market segments (70 %). This fact is surprising when you consider that over 85 % claim to know the contribution of each segment to benefit (Fig. 12.10).

Therefore, one should note that there is a low rate of hotels that do budgeting market segments. Although it is more a function of the financial department than of the YM. Hence, it seems advisable that there is a closer relationship between the two departments with the objective of analyzing this information, fundamental in the development of YM.

12.3.7 Pricing

As can be seen in Fig. 12.11, the percentages obtained are quite high. Thus, 91 % of managers said that the sales and RM departments are responsible for setting prices, 96 % use differential pricing and 99 % use the BAR (Best Available Rate) model and information has the highest rate/low applied. Similarly, 100 % revised tariffs taking into account the influence of local events.

However, the percentages drop when it comes to considering more complex aspects. Thus, the 80 % rate applies various types depending on different market segments, 82 % difference with rooms by adding attributes that do not pose a significant cost increase, 85 % have restrictive criteria or barriers to the application of lower rates and 91 % offers priced packages (room with other services).

It is significant that only 88 % set prices are taking into account the costs, demand, competition and distribution channel. We understand that the rest use only one of these criteria, or simply extrapolate past price. Only 65 % can change the rates in the contracts negotiated with tour operators and corporate accounts. These contracts, which are usually negotiated annually, are difficult to alter according to demand. This percentage seems to reflect the weight loss of these contracts and the trend towards open contracts to permit amendment to the charges. Eighty-four percent maintain price parity across all distribution channels. The hotels seem to believe in this policy but, in our view, this somewhat contradicts the philosophy of YM as limiting the freedom of prices, even to its "commoditization" and eliminates the competitive advantage of direct channels. On the other hand, we believe that while claiming to maintain parity prices, in many cases it is impossible, since they do not have the necessary technology.

The study by Chávez and Ruiz (2005) does not include the implementation of strategies such as price parity and the implementation of the BAR. This reflects the rapid assimilation that certain policies have had on the sector and have expanded significantly. Our research coincides in highlighting the high rates reported in the items "information on the highest and lowest rate applied" and "the tariff revision in the light of local events." Moreover, the data recorded that at least the results of that study are for the assertions that "we have defined the rate of the last minute" and "the enforcement of prerequisites for the implementation of promotions", also coinciding with our results. According to the authors, the latter causes that "there are deficiencies in the process of segmentation of demand as one of the activities to develop, by defining the different market segments is the identification of those features that allow customers the distinction between the groups created"(Chávez and Ruiz 2005, pp. 103).

12.3.8 Analysis of Distribution Channels

As mentioned previously, this item was included in the survey following the criteria that the experts expressed in the Delphi study as in the online environment benefit management is closely linked to the management of distribution channels. Anyway,

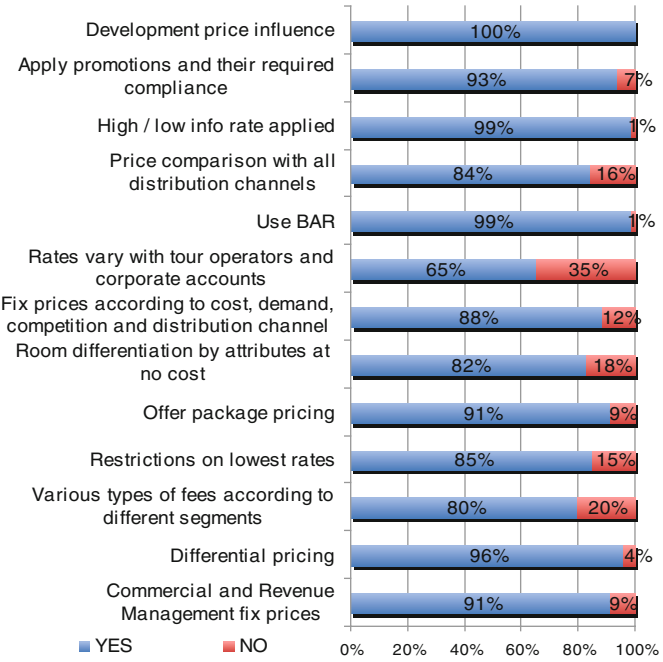

Fig. 12.11 Variables related to the implementation of pricing (Source: authors' own calculations)

as this new way of marketing the hotel product is very new, it is understandable that there are still no clear strategies in this regard and that it is customary to be present in all possible channels (intensive policy).

The questions asked the YM respondents responsible for their concern of technological and policy choice of distribution channels. The disposition or possession of a channel manager is contemplated in the following section, as it is more related to the updating of rates (Fig. 12.12).

The survey results show very high percentages. Thus, 99 % allow online reservations from the hotel website, 93 % selected the most profitable channels and 93.4 % discussed the positioning of the various distribution channels. The latter is of vital importance and prior to the selection of channels, since in many cases the position may be the only or best way to access the segment.

Making reservations online is now a reality as most hotels have a booking engine owned or leased. This rapid growth is found to contrast with the data from previous studies. Thus, research conducted by Figueroa et al. (2009) shows the percentage of hotels that could make online reservations was 95.5 %. The difference is even greater if compared with a previous study by Figueroa and Fuentes in 2004 to hotel chains whose share was only 67 %. This demonstrates the important efforts being made by hotels to promote direct marketing of their products.

Furthermore, although most respondents indicate choosing more profitable distribution channels, we believe that it is not entirely true since, as noted, the

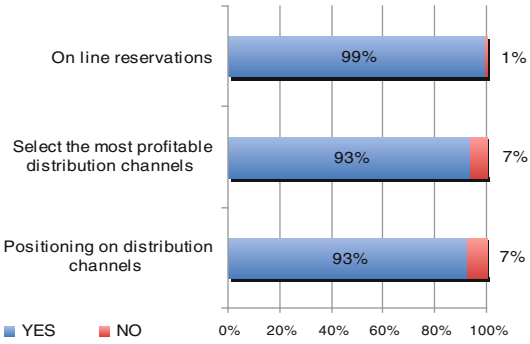

Fig. 12.12 Variables related to the analysis of distribution channels (Source: authors' own calculations)

industry trend in Madrid is the realization of an intensive policy in this area (a presence in all possible channels). We think that the industry believes this is the most appropriate and cost-effective strategy. However, from our point of view it is not so, as it losses exclusivity and, possibly, it is cannibalizing demand. One of the reasons for the application of this policy is the lack of requirements and conditions by facilitating the needed distributors. Although this situation is changing dramatically some online travel agencies (OTAs) have to impose conditions increasingly abusive to hotel companies.

12.3.9 Updated Limits and Selling Stocks or Optimization

At the operational level, these functions are critical because of the immediacy of making decisions on price. It is clear that the management of capacity and the price has two levels: strategic has already been analyzed and the operational level determined by the updating of the boundaries of the reserve or optimization. Finally, the sale would be the climax that should lead to the allocation of the right room to the right customer.

The questions asked to the responsible YM respondents deal with how to update these limits and the techniques used in the sale.

From this point of view, the percentages are not as high as in the past (see Fig. 12.13), except that 100 % have updated information on the number of rooms available and 96 % have open and close rates based on forecasts demand.

Eighty-three percent developed policies for overbooking and 80 % applied upselling and crosselling techniques (see Fig. 12.13). Although the percentages are not very high, for upselling techniques and crosseling highlight, it is a novelty in the application in Spanish hotels. In the case of overbooking, these policies are needed less because of the significant decline in the no-shows because of the possibility of securing reservations.

In the study by Chávez and Ruiz (2005), they observed that the implementation of these policies is much lower, as compared to overbooking, approximately 67 % were in complete agreement with its application, significantly reducing (by about

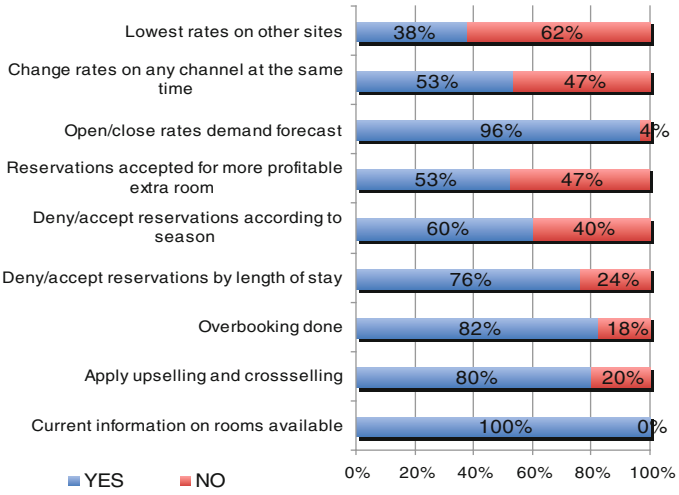

Fig. 12.13 Variables related to the completion of renovation reserve limits (Source: authors' own calculations)

10 %) when asked by the policies of upselling. This latest data further confirms the fact of the gradual implementation of these techniques.

From the point of view of acceptance and denial of reservations, the most widely used criteria is the volume (82 %), length of stay (78 %) and, finally, the season (61 %). We emphasize the low percentage (57 %) securing accepted reservations based on the benefit they produce is greater than the benefit they generate to have an extra room. Given that this is the fundamental principle of YM, we believe that the question was not understood and that it is giving priority to volume versus profitability.

With regard to the possibility of changing rates on all channels at the same time and if you can find cheaper rates on other sites other than the hotel, it is curious that the percentages (53 % and 38 % respectively) are much lower than parity (84 %), and that to achieve the latter it is required to observe these two statements.

12.3.10 Evaluation

Assessment is in last place, which does not mean it to be the end of the process, but it is advisable to do it periodically to correct any deviations in time.

The survey asked the managers about the data evaluating, when and if they do encourage staff to apply techniques for upselling and crosselling (see Fig. 12.14).

With regard to the frequency of analysis, 98 % evaluate the benefits of YM, although the percentage drops to 81 % when the evaluation is done daily.

On the other hand, it is surprising that the percentage of those who point to compare the real with the budget (89 %) is less than the percentage that analyze the

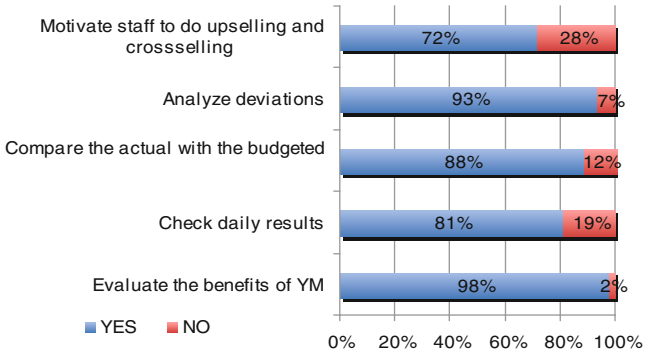

Fig. 12.14 Variables related to the conduct evaluation (Source: authors' own calculations)

deviations (93 %), as we understand it should be higher than the previous figure. This may be because the budget has a strategic character, and now because of the economic crisis, budgets have lost some strength as a reference. Seventy-two percent encourages reservations and counter staff to apply techniques of upselling and crosselling.

12.4 Conclusions

Although most hotels claimed to implement YM (96 %), according to the proposed model, many did not develop it in a correct way. This would confirm that YM is at an early stage of development. There is no recognized culture of YM and although hotels have a better understanding on the subject and do accomplish some activities and create applications, they still do not have a clear strategy in this respect.

Therefore, the most common errors we have found made by many of the Madrid hotels concerning YM management are (1) the main goal is not customer satisfaction, (2) they do not consider the data on real demand, (3) they do not use the GopPar measure of profitability, (4) the demand is not properly segmented, (5) they do not analyze the behavior of market segments, (6) they do not consider the segments from the channels distribution, (7) they are not positioned for the long term, (8) they do not know the strategies of competition in distribution channels, (9) they do not calculate the MPI, ARI and GIR (10) they do not do budget the market segments (11) they do not take into account the MRI department forecast to achieve them, (12) they cannot change the rates on all channels simultaneously, (13) clients can find cheaper rates on other sites not including the ones from the hotel (14) they cannot vary the rates on price lists negotiated by contracts or accounts and (15) they do not take into account the benefit of acceptance or rejection of reservations.

From our point of view, the main causes of these deficiencies include the lack of resources, poor staff training and the lack of a strategic approach in YM by hotels in Madrid. Therefore, we believe there is a misunderstanding of the concept which

leads to an ineffective implementation of YM in a company. Many hoteliers believe YM can be applied only when developing some of their activities, especially when making price discrimination. As we can see, YM is a highly complex strategy which aims to make the best decisions to achieve maximum profit in the long term. However, we believe that progress has been made in management in recent years, especially in pricing, competitive analysis, distribution channels and evaluation. Other functions that are still pending are culture, forecasting, segmentation; budget and currency reserve and sell limits in many of the hotels in Madrid.

Finally, we can say that hotel management has evolved significantly in recent years in Madrid. Many hotels, especially those run by chains, have moved beyond the traditional focus on management and operational levels, are concerned about volume and are currently developing a strategic management and analytical system where profitability is the target. Still, much remains to be done and there are areas not yet fully developed so it is advisable to: promote training in YM, to implement accounting market segments, to select the client based on the value generated in the long term and not benefit in situ, to select dealers in terms of the profitability they generate, to promote sector cooperation and institutional support so as to facilitate access to environmental information, to invest on market and technology, and finally, to manage YM in a comprehensive manner, involving all departments and hotel staff for their main objective which should be to seek the maximum benefit for the company and the highest customer satisfaction.

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Part III

Macro and Sustainability Issues

Tourism Growth Versus Economic Development: An Analysis by Multivariate Techniques

13

Marcelino Sánchez-Rivero, Juan Ignacio Pulido-Fernández, and Pablo Juan Cárdenas-García

13.1 Introduction

Many institutions have highlighted the importance of tourism as a driver of social transformation and economic development (OECD 2009; United Nations World Tourism Organization – UNWTO 2005; WTTC 2005). Its growth potential is such that it is expected that, at a horizon of no more than 10 years, tourism will generate 11.3 % of world GDP and 8.3 % of employment (WTTC 2005). The economic literature agrees with this view. Many contributions recognize the potential of tourism as an instrument of economic development, from the role of international tourism in the provision of foreign exchange or its contribution to balancing trade deficits, to its capacity to generate employment and to increase tax revenues and hence the possibilities of public intervention to improve the welfare of citizens (among others, see Cooper et al. 2007; Cortés-Jiménez and Artís 2005; Goded 2002; Lanza and Pigliaru 1994; Lanza et al. 2003; Lickorish and Jenkins 2000; Pearce 1989; Sinclair 1998; Sinclair and Stabler 1997; Tribe 2005; Vanhove 2005).

This has been the dominant doctrinal position, which has largely gone unchallenged until recent years, and indeed has been endorsed by major international organizations. Among them, the United Nations World Tourism Organization (UNWTO) has worked towards implementing such programs as the ST-EP

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Á. Matias et al. (eds.), *Quantitative Methods in Tourism Economics*,
DOI 10.1007/978-3-7908-2879-5_13,

(Sustainable Tourism Eliminating Poverty),[1] and has published a series of documents designed to show the benefits of tourism as a tool to combat poverty.[2] Among these documents, *Tourism and the Millennium Development Goals* (UNWTO 2010) is of particular interest as it supports the contribution of tourism to economic development. In this paper, once the main economic impacts of tourism are stated, tourism is recognised as a strategic tool for achieving the Millennium Development Goals (MDG), in particular MDG 1 – End poverty, MDG 3 – Gender Equality, MDG 7 – Environmental Sustainability and MDG 8 – Global Partnership. In this scenario, Corporate Social Responsibility (CSR) plays a key role as a vital means to ensure the achievement of these objectives by developing a framework that enables the development of a greener tourism industry, more competitive and responsible.

Also, UNCTAD has shown its concern for these issues with the adoption (March 2001) of the Canary Islands Declaration on Tourism in LDCs.[3] To these must be added the countless initiatives taken by international agencies of development cooperation (such as the SNV Netherlands Development Organisation, the Spanish Agency for International Development Cooperation AECID, and SwissContact), and the financing of rural tourism projects through micro-credits on the part of USAID or FONDEP, for example (UNWTO 2005).

However, there have begun to appear studies presenting solid arguments questioning the potential of tourism as a development tool. Their basis is that the implementation of tourism has certain prerequisites (physical, economic, and sociocultural) that not all countries can comply with. This is therefore a substantial issue in the study of tourism as an economic activity. Consequently, the relationship between economic growth as a result of tourism[4] and the economic development of territories led our working hypothesis for the present study: the potential of tourism as an instrument of economic development is not a direct consequence of tourism's capacity to influence the growth of an economy, but rather of the existence of a set

[1] The ST-EP program aims to "reorient and encourage sustainable tourism socially, economically, and ecologically to convert it into a basic tool for eliminating poverty in the poorest countries in the world, and particularly in LDCs, providing development opportunities and employment to all those who live on less than $1 a day". More information about this program can be found at www.unwto.org/step (accessed 15 June 2010).

[2] The first publication, of 2002, entitled "Tourism and alleviation of poverty", is a general analysis based on examples from four countries on the contribution of tourism in the struggle against poverty in underdeveloped countries and the least developed countries (LDCs). The second publication, of 2004, was entitled "Tourism and alleviation of poverty: Recommendations for action". In 2005, the third was published, entitled "Tourism, microcredits, and reduction of poverty". A fourth publication appeared in 2006, under the title "Reduction of poverty through tourism: A compilation of best practices".

[3] See UNCTAD (2007).

[4] What is really measured is a country's economic growth generated by tourism, which is what we term in the present article "tourism growth".

of factors that facilitate the transformation of that growth into a flow of effective welfare for the local population.

In sum, the aim of this paper is twofold. On the one hand, it is to determine whether there exists a relationship between the growth of tourism in a country and its level of economic development, and if so, with which sign, and on the other, to identify the factors that favour or hinder this relationship.

To achieve both goals, this study used the World Travel and Tourism Council (WTTC) database, since it is the only source from which it has been possible to obtain homogeneous variables to measure the economic impact of tourism. The methodology for data collection is based on the Tourism Satellite Accounts (TSAs). However, as pointed out by Dwyer et al. (2004: 314), apart from multipliers and input–output analysis, which provide incomplete information, there are alternative analysis techniques, such as the Computable General Equilibrium (CGE) analysis. The latter is much more rigorous when estimating economic impacts, although the results obtained with it do not often meet users' expectations. In any case, these authors acknowledge that "if similar assumptions have been used in developing the CGE model in the TSA, the resulting TSA will be consistent" Dwyer et al. (2004: 314).

The analysis was performed at a country scale using canonical correspondence analysis. This technique allows one to determine whether or not there is a relationship (and in which sense) between two multidimensional variables – in this case, the growth of tourism and economic development. The data used to quantify these two variables were obtained from the World Travel and Tourism Council (WTTC), from the Human Development Report 2009 (UNDP 2009) and from the World Development Indicators (published by the DECDG under the auspices of the World Bank), respectively.

13.2 Theoretical Framework

The concepts of economic growth and economic development, while diametrically opposed, are nevertheless closely linked. Indeed, there is an extensive literature on this relationship, explaining development as a consequence of growth and vice versa (Ranis et al. 2000).

The origins of the theories of economic growth and economic development have different time horizons. In the first half of the twentieth century, researchers focused their interest on the causes of economic growth, leaving aside the concept of economic development. From the 1929 crisis onwards, there arose several models based on Keynesian thinking which revolved around the central idea that the free play of the market generates unemployment and exacerbates economic inequality, and various authors (Jones 1975) centred their work on analyzing the role of savings and investment as drivers or constraints in economic growth.

The beginning of the boom period of the neoclassical models of growth, in which growth rates are mainly determined by supply and factor efficiency, is identified by the appearance of the article "A contribution of the theory of economic growth" (Solow 1956), which in essence argues that the free play of market forces is

conducive to economic convergence. It was not until the late twentieth century that there appeared the new classical theories of endogenous growth (Arrous 1999; Lucas 1997; Sala-i-Martin 1994). In these, the basic assumption is that the play of market forces does not ensure economic convergence, and that long-term growth depends on the accumulation of physical, human, and knowledge capital, explained endogenously in terms of expected gains.

With respect to studies on economic development, it was not until after the Second World War that, because of the low standard of living in different countries of Latin America, Africa, Asia, and Eastern Europe, there began to appear studies seeking to understand, among other things, how economic and social development could be attained as quickly as possible. Indeed, the process of economic growth and development that has occurred in Western Europe, USA, and Japan had not spread to other countries – a process that previously had been thought would happen "naturally" (Reyes 2002). The orientation of researchers from this time onwards (Abramovitz 1952; Arrow 1962; Kuznets 1966; Lewis 1954; Solow 1956) has been to conceptualize economic development as a process which has as its ultimate goal to meet the needs and demands of the population and to improve their standard of living. In the 1980s, the "Grand Theory of Development", a term coined by Krugman to refer to the theory developed by Schumpeter in which the entrepreneur and innovation are the drivers of economic development, re-surfaced with force.

In recent decades, among the approaches that have arisen to study economic development, there has been a new orientation known as endogenous development (Vazquez-Barquero 2005). This new case-study based perspective views development as a process anchored in any given territory that results from the efficiency of the policies developed by local agents (Arocena 1995; Aydalot 1985; Boisier 2003; Easterly 2000; Fuà 1994). In an attempt to explain economic development in terms of economic growth, it takes as a fundamental premise that an economy's growth rate translates into job creation, not forgetting how this affects the distribution of income among the population (Ranis et al. 2000; Benito 2008). Obviously, if there is considerable sustained long-term growth of the economy with equitable income distribution among the entire population, this phenomenon will result in the population's improved social conditions in the medium and long terms, and this should be made a central goal in the definition of any economic policy.

In recent years therefore, human development has become the priority goal for most countries, and this has meant a major reorientation of public policies to improve their population's social conditions. Gradually – if it has not occurred already – the goal of economic growth is being replaced by one of economic development in practically all the public administrations of developed countries.

Theories of economic development based on the concept of endogenous economic growth today define innovation and capital accumulation as key variables in the processes of development. According to Vázquez-Barquero (2005: 23): "The cornerstone of the explanation of long-term development lies in the forces which, in interacting, generate multiplier effects on investment; i.e., in those mechanisms, hidden in the 'black box' of development, which transform the impulses of investment into sustained income and employment growth."

Part of this hidden mechanism may come from tourism as a component of a given country's economic activity. In general, it is assumed that tourism generates a range of benefits as long as it is planned and managed so as to minimize social and environmental impacts – benefits that contribute to economic growth (Sharpley and Telfer 2002; Sáez 2008).

In this regard, as shown by Crompton et al. (2001), a destination with a particular resource or attraction with sufficient capacity to attract tourists gets a number of economic benefits (income or employment) that contribute to the economic growth in that territory. These authors analyze the case of Springfest with the aim of proposing a generalizable model for undertaking studies on the economic impact of tourism. The model identifies four core principles – exclusion of local residents, exclusion of "time-switchers" and "casuals," use of income rather than sales output measures of economic impact, and correct interpretation of employment multipliers – to be considered in order to guarantee the quality of economic impact studies and to ensure maximum contribution of tourism to the economic growth.

Authors such as Britton (1982), Brohman (1996), Carter (1987), Diagne (2004), Forsyth (1995), Kingsbury (2005), Pérez-Ducy (2001), Sahli (2007) and Sinclair and Tsegaye (1990) have questioned the role of tourism as a motive force in certain countries. Among others, they use arguments such as loss of control over local resources, and the limited coordination with other economic sectors of the interior – especially with agriculture – which results in low multiplier effects, and therefore significant leakage of potential gains. Another group of arguments relates to the fluctuations in tourism revenues due to the vulnerability of some countries to global recessions, abrupt climate variations, and the seasonal nature of tourism itself. A third group of arguments centres on the impact of the development of tourism in reinforcing patterns of socio-economic and spatial inequality, it having been observed that, in some areas, not only has the core-periphery structure of the traditional economic model been maintained but even made more acute. And finally, there is a whole battery of arguments about the environmental impact of tourism (with loss of non-renewable resources, pollution, and other environmental damage) and the increasing detriment to the local population due to such problems as increased crime, overcrowding, infrastructure overload, and the residents' perceived loss of cultural identity.

In principle, it is clear that in order to consolidate tourism as a powerful tool for job and wealth creation in a territory, contributing to improving the welfare of its citizens, this territory has to be attractive so as to generate a dynamic of tourism demand that will contribute to an increased flow of locally produced goods and services. This will favour economic growth, and hence have the potential to increase the population's welfare (a potential which will result in effective welfare and therefore economic development, if there is a genuine policy of income distribution that promotes prosperity) (Figuerola 1990; Lickorish and Jenkins 2000; Martín and Sáez 2006; Mochón 2004; Tribe 2005).

13.3 Data Collection

Although there is some unanimity in defining economic growth as the increase in value of the end goods and services produced by an economy, there is no such consensus on the concept of economic development. There is, however, widespread agreement on its linkage with the improvement of the population's social conditions.

The complexity therefore arises in defining the parameters to measure these social conditions. The Human Development Index elaborated by the United Nations Program for Development is designed to be a measure of social conditions, and hence of economic development. It is an index based on three parameters: a long healthy life, education, and a decent standard of living. Defined as measures of economic development, these parameters have been used extensively in various research studies on the topic. Nevertheless, an analysis of this type requires from the outset that both economic development and tourism growth should be measured not by a single variable alone, but by the use of multiple variables given the multidimensional nature of the two concepts.

Our approach to the measurement of tourism growth has been to use the data on the economic impact of tourism provided by the World Travel and Tourism Council,[5] computing for each variable its rate of change between 1999 and 2008. In particular, we considered a total of 6 variables of the tourism economy (represented in a vector $\mathbf{x}$):

1. TTGDP: Travel and Tourism Economy GDP. This records the activity of traditional Travel and Tourism providers (e.g. lodging, transportation, etc.), plus tourism-related investment, public spending, and export of goods. It includes both the direct effects and the indirect effects via the supply chain of Travel and Tourism spending.
2. TTEMP: Travel and Tourism Economy Employment. This covers the jobs generated by Travel and Tourism Economy GDP. It is the broadest measure of Travel and Tourism's employment impact.
3. TTDEM: Travel and Tourism Demand. The aggregate of all Travel and Tourism spending within the economy (i.e., the sum of personal, business, government, investment, visitor export, and other export Travel and Tourism spending). Travel and Tourism Demand *less* the value of imported Travel and Tourism goods and services (essentially residents' and firms' spending on travel abroad and passenger transport provided by foreign firms) *equals* Travel and Tourism Economy GDP.
4. CAPINV: Capital Investment. This includes fixed investment expenditure by Travel and Tourism service providers and government agencies to provide facilities, capital equipment, and infrastructure for visitors.
5. INTVIS: International Visitor Arrivals. Includes all non-resident visitors – overnight, same-day, and cruise passengers staying overnight on ships in ports.

[5] http://www.wttc.org/eng/Tourism_Research/Tourism_Impact_Data_and_Forecast_Tool/index.php (accessed 15 June 2010).

6. OVERVIS: Overnight Visitor Arrivals. Only includes those international visitors who stay at least one night (i.e., same-day and cruise passengers are excluded).

As a measure of economic development, the data used in the present study were obtained from two different sources due to the complementarity of their information systems. Six variables were taken from the Human Development Report 2009, elaborated by the United Nations Development Program (UNDP 2009), and two variables were from the World Development Indicators developed by the Data on Economic Development Management Group (DECDG) of the World Bank.[6] As was done for the vector **x**, in all cases we considered the rate of change in these variables between 1999 and 2008. In particular, the economic development variables used in the present work are as follows (represented in a vector **y**).

Human Development Report

1. HDI: Human development index. A composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, access to knowledge, and a decent standard of living (value between 0 and 1).
2. LEB: Life expectancy at birth. The number of years a newborn infant could expect to live if prevailing patterns of age specific mortality rates at the time of birth were to stay the same throughout the child's life (years).
3. LRA: Literacy rate, adult. The proportion of the adult population aged 15 years and older which is literate, expressed as a percentage of the corresponding population in a given country, territory, or geographic area, at a specific point in time, usually mid-year. For statistical purposes, a person is literate who can, with understanding, both read and write a short simple statement on their everyday life (% population over 15 years).
4. ERGC: Enrolment ratio, gross combined, for primary, secondary, and tertiary education. The number of students enrolled in primary, secondary, and tertiary levels of education, regardless of age, expressed as a percentage of the population of theoretical school age for the three levels (%).
5. GDP: Per capita GDP. Gross domestic product, in purchasing power parity terms in US dollars, divided by mid-year population (PPP US$). PPP – purchasing power parity – is a rate of exchange that accounts for price differences across countries, allowing international comparisons of real output and incomes. At the PPP US$ rate (as used in the Report), PPP US$1 has the same purchasing power in the domestic economy as US$1 has in the United States.
6. PAB: Probability at birth of not surviving to a specified age. Calculated as 100 minus the probability (expressed as a percentage) of surviving to a specified age for a given cohort (%).

[6] http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,contentMDK:20535285~menuPK:1192694~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html (accessed 15 June 2010).

World Development Indicators

7. MCS: Mobile cellular subscriptions. Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service using cellular technology which provide access to the public switched telephone network. Post-paid and prepaid subscriptions are included (per 100 people).
8. IU: Internet users. Internet users are people with access to the worldwide network (per 100 people).

In the study of the relationships of dependency between tourism growth (vector **x**) and economic development (vector **y**) to be discussed in the following section, we considered data from 117 countries, this being the number of countries for which data were available for all 14 variables.

13.4 Results and Discussion

To determine whether there is a relationship between the vectors **x** and **y**, we used the technique of canonical correspondence analysis. This defines a set of new variables, called canonical variables, as linear combinations of the vectors **x** and **y**, i.e., $W = \boldsymbol{\beta}' \mathbf{x}$ and $Z = \boldsymbol{\alpha}' \mathbf{y}$, where the vectors $\boldsymbol{\beta}$ and $\boldsymbol{\alpha}$ are known as canonical loadings. The canonical variables W and Z are not unique since one can consider multiple linear combinations of the vectors **x** and **y**, i.e., one can consider the canonical variables $W_1, W_2, W_3, \ldots$ and $Z_1, Z_2, Z_3, \ldots$. The maximum number of canonical variables is $t = \min(s; q)$, with s and q being the dimensions of the vectors **x** and **y**, respectively. However, in most cases one only considers the first pairs of variables, since they are the ones that maximize the correlation between the vectors **x** and **y**.

These new canonical variables can be used to test the hypothesis of independence between the vectors **x** and **y**, since, if this hypothesis were true, the correlation between all the pairs of canonical variables $(Z_j; W_j)$ for $j = 1, 2, \ldots, t$ would be zero. On the contrary, if at least one pair of canonical variables are correlated, one may conclude that the vectors **x** and **y** are as well. To test this independence hypothesis, one uses an F statistic, calculated through Wilk's lambda. These calculations were performed using SPSS (version 19.0). The results of the test of the independence hypothesis are presented in Table 13.1.

As one observes, the hypothesis of independence between the random vectors **x** and **y** can not be rejected at a 5 % significance level. Accordingly, for the set of countries studied, tourism growth does not appear to be related to economic development. This overall analysis may, however, be masking relations of dependency between the two vectors for certain countries. That is, the fact that overall (for the 117 countries analyzed) no association was found between tourism growth and economic development does not mean that in specific countries the economic growth due to tourism may not contribute to their economic development. In this sense, the question arises as to whether this theory of economic development induced by tourism effectively holds in practice in some countries.

Table 13.1 Test of the hypothesis of independence between economic development (**y**) and tourism growth (**x**)

Test	Value	*F*	d.f. hypothesis	d.f. error	Signif. *F*
Wilk's lambda	0.5688	1.2931	48	510.87	0.096

Source: The authors

To seek an answer to this question, we classified the 117 countries surveyed into three equal-size groups according to the value of an overall index measuring the evolution of their level of economic development in a 10-year period (1999–2008) – the reference period for the present study. To calculate this overall index, we normalized all the variables of the vector **y**, obtaining a composite indicator of economic development from the sum of these normalized values:

$$DI_j = \sum_{i=1}^{11} z_i \text{ for } j = 1,\ 2,\ \ldots,\ 117$$

Since this composite indicator of economic development can take both positive and negative values, it was rescaled to take values between 1 and 100 as follows:

$$S_j = f(DI_j) = \begin{cases} 1 + \dfrac{100-1}{2} \exp(DI_j) & \text{if } DI_j < 0 \\ 100 - \dfrac{100-1}{2} \exp(-DI_j) & \text{if } DI_j \geq 0. \end{cases}$$

Thus, the 39 countries with the highest values of this index S_j are those with the most positive evolution of their level of economic development in the decade under study. They comprise what we term the strong economic development group (Group 1). Analogously, the 39 countries with the lowest values of S_j are part of the group of weak economic development countries (Group 3). Finally, the 39 countries with intermediate values of the index S_j comprise the group of countries with medium economic development (Group 2). The components of each group are listed in Appendix A.

Table 13.2 presents the results of the canonical correspondence analysis study between tourism growth and economic development vectors of these three groups. One sees that in the strong and medium economic growth countries, the hypothesis of independence is confirmed. However, in countries with the least economic development (Group 3), there is a clear canonical correlation between tourism growth and economic development, confirming the existence of economic development driven by tourism at least for the countries which have undergone the lowest levels of development in the last decade.

The above analysis did not establish any causal relationship between the variables of the two random vectors. Thus, after having determined the existence of a canonical correlation in the countries whose economic development has made the least progress in the last decade, the next step in this empirical analysis was to

Table 13.2 Test of the hypothesis of independence between economic development (**y**) and tourism growth (**x**) for each group of countries according to their degree of economic development

	Group 1	Group 2	Group 3
Wilk's lambda	0.19872	0.18955	0.04114
F	1.03253	1.06461	2.41601
d.f. hypothesis	48	48	48
d.f. error	127.07	127.07	127.07
Signif. *F*	0.433	0.383	0.000

Source: The authors

consider the variables of the vector **x** in these 39 countries as explanatory of the vector **y**. The observation of an association between growth and economic development in these countries does not necessarily mean that all variables of the vector **x** affect economic development equally. In other words, one has to perform a causality analysis between the variables of the tourism growth vector (independent or explanatory vector) and the composite index of economic development mentioned above, in order to identify the variables of tourism growth that have most influence on the economic development of these countries.

To this end, we estimated a multiple linear regression model in which the dependent variable was the aforementioned composite index, and the independent variables were the six variables of tourism growth used in this research, i.e.:

$$\begin{aligned} S_j \;=\; & \beta_0 + \beta_1\ \mathrm{TTGDP}_j + \beta_2 \mathrm{TTEMP}_j + \beta_3\ \mathrm{TTDEM}_j \\ & + \beta_4\ \mathrm{CAPINV}_j + \beta_5\ \mathrm{INTVIS}_j + \beta_6\ \mathrm{OVERVIS}_j + \varepsilon_j \end{aligned}$$

Serious problems of collinearity were detected among the independent variables, since they were all highly correlated. Indeed, all the pairs of Pearson correlation coefficients between these variables were statistically significant and positive in sign, with the smallest being 0.515 in value (between TTEMP and OVERVIS). Given this situation, we used a principal component analysis to replace the tourism growth variables by their best (most explanatory) linear combination (Z_1). This first principal component explained 85.2 % of the variance of the variables of the tourism growth vector. Consequently, the regression model proposed is:

$$S_j = \delta_0 + \delta_1 Z_{1j} + \varepsilon_j$$

The estimate of the above model is $\hat{S}_j = 27,401 + 19,212\, Z_{1j}$. The regression coefficient δ_1 was statistically significant at 5 % ($t = 5.627$, $p = 0.000$), which again confirms the statistical association between tourism growth and economic development. Moreover, the coefficient δ_1 is positive, implying that greater rates of tourism growth correspond to greater rates of the evolution of economic development in the 39 countries being analyzed. To examine the effect that each tourism growth variable has on economic development, it was necessary to use an indirect procedure (given the presence of collinearity). This consisted of calculating the

Table 13.3 Linear correlation coefficients between tourism growth variables and the principal component extracted for the 39 weak economic development countries

Variable	Multiple correlation
TTGDP	0.986
TTEMP	0.809
TTDEM	0.982
CAPINV	0.972
INTVIS	0.925
OVERVIS	0.848

Source: The authors

statistical correlation between each of these variables and the principal component that was extracted. The results of this correlation analysis are given in Table 13.3. One observes that all the tourism growth variables are strongly correlated with Z_1, with two of them presenting a nearly perfect correlation – TTGDP (0.986) and TTDEM (0.982). On the contrary, the variables OVERVIS (0.848) and TTEMP (0.809) are those which, although strongly correlated with Z_1, have the lowest degree of correlation. One can hence conclude that TTGDP and TTDEM are the most determinant tourism growth variables in improving the economic development indices used, and that the variables TTEMP and OVERVIS are the least determinant.

To complete this empirical analysis, we shall determine to what extent the degree of economic development of the Group 3 countries corresponds to their level of tourism growth. Although the foregoing analyses have verified that in these countries tourism has become an effective development tool, the fact is that this relationship is probably not the same for all of them in the sense that some may have achieved economic development levels below what would be expected from their degree of tourism growth (tourism inefficient countries). The reverse may also be the case, in that there may exist countries whose economic development is above what would be expected according to their level of tourism growth (tourism efficient countries). While in the latter tourism would seem to be an economic motor of the first order, in the former it would seem to lack the capacity to pull the rest of the economy along with it.

To determine which of the 39 weak economic development countries belong to one of the above two subgroups, we used a discriminant analysis. This multivariate technique constructs one or more canonical discriminant functions with which each country can be classified into one or another group characterized by a given pattern of tourism growth, and to determine whether or not, in terms of it, the country is correctly classified.

The variables used for the classification function of the discriminant analysis were the economic development variables of vector **y**. To define the different patterns of tourism growth, we followed the same method with these 39 countries of Group 3 as was used to classify the original 117 countries according to their levels of economic development. Thus, we built a composite index of tourism

Table 13.4 Results of the discriminant classification of the least economically developed countries

(a) Number of countries					
		Forecast group			
		Strong	Medium	Weak	Total
Original group	Strong	8	3	2	13
	Medium	3	6	4	13
	Weak	0	3	10	13
(b) Percentages of the total					
		Forecast group			**Total**
		Strong	**Medium**	**Weak**	
Original group	Strong	61.5	23.1	15.4	100
	Medium	23.1	46.2	30.8	100
	Weak	0	23.1	76.9	100

Source: The authors

growth from the six variables of vector **x**, then applied the same rescaling function as before to bring the composite index values into the range 1–100, and used the results to bin the countries into three groups: countries with strong tourism growth (the 13 countries with the highest values of the composite index), countries with weak tourism growth (the 13 countries with the lowest values of the composite index), and countries with medium tourism growth (the remaining 13 countries).

In this case, the discriminant analysis defined two discriminant functions (the first explaining 67.2 % of the variance of the variables of the vector, and the second explaining the remaining 37.8 %). The centroids (vectors of the means) of each of the three groups were then calculated, followed by the square of the Mahalanobis distance of each country from these three centroids. This determines whether the country in question had been correctly classified by the previous binning procedure (the distance to the centroid of its group should be lower than the distance to the other two centroids), or conversely had been incorrectly classified (when the distance to the centroid of its group was greater than the distance to at least one of the other two centroids) and are thus countries candidates to be considered either tourism efficient or tourism inefficient.

The result of this analysis is presented in Table 13.4. The countries on the diagonal of the table (24 of the 39 analyzed) are those whose level of economic development corresponds to their level of tourism growth. They account for 61.5 % of this universe of 39 least economically developed countries. In contrast, countries off the diagonal are those for which there is no real correspondence between their tourism growth and economic development. They represent the remaining 38.5 % of this universe.

Countries below the diagonal (6 in total; 15 % of the universe) are those which over the past 10 years analyzed had an economic development lower than expected according to their level of tourism growth. These countries have therefore failed to

adequately exploit their tourism potential to generate economic development. That is, they are inefficient countries from a tourism standpoint.[7]

In contrast, countries above the diagonal (9 in total; 23 % of the universe) are those which have achieved greater economic development than expected according to their level of tourism growth. These countries have therefore used their tourism to generate more wealth than would have been expected from their levels of tourism growth. I.e., they are efficient countries from a tourism standpoint.[8]

13.5 Conclusions

In this paper we have returned to some questions that are evident in any textbook of economics, but seem to have been forgotten in the field of tourism (which, when all is said and done, is an economic activity). In particular, economic growth and economic development are two concepts which are not identical, although they are often used interchangeably. While the former is a *sine qua non* condition for achieving the latter (unless there exists external aid or other contributions), it is possible that, even though there has been growth, this has not led to development if there were no mechanisms to ensure a more equitable distribution of the income generated by that growth.

The present results have shown that the positive correlation between tourism growth and economic development only occurs in one group of the 117 countries surveyed – the third which had the lowest level of economic development in the decade in question. This therefore confirms the hypothesis that the growth of tourism in a country does not necessarily translate into economic development, but that there have to be the appropriate conditions that favour this process.

The study has also shown the interest in determining which are the factors that make the greater growth of tourism of a territory (and hence the economic growth generated by tourism activities) generate economic development. In this case, for the group of countries in which there was shown to be a canonical correlation (those which we called the weak economic growth countries), all the variables used to measure the growth of tourism were strongly correlated with economic development, i.e., they all positively affect the transformation of the growth of tourism into economic development in these countries.

Finally, it was also shown that there are countries that are better able than others to exploit their tourism growth in generating economic development. The last part of the study showed how discriminant analysis allows one to determine which countries have levels of economic development below what would be expected as corresponding to their level of tourism growth (these were defined as tourism

[7] The countries with inefficient tourism are Armenia, Azerbaijan, Dominican Republic, Moldova, Paraguay, and Sri Lanka.

[8] The countries with efficient tourism are Indonesia, Kenya, Republic of Korea, Kyrgyz Republic, Mauritius, Senegal, South Africa, Vietnam, and Zambia.

inefficient countries), and which countries are above that level (defined as tourism efficient countries).

In the context of international economic policies, in which tourism moves a growing volume of economic resources towards developing countries, these findings are of great interest since they show that not all types of intervention in the pursuit of tourism growth are equally effective in promoting a country's economic development. Or, put another way, there are variables of tourism growth which are more strongly related to economic development than others, and therefore action should be addressed primarily towards promoting these variables and not others.

This is a key aspect in, for example, the implementation of development cooperation projects based on the promotion of tourism. The reason is that one might be investing major amounts of resources in aspects that, while they may indeed improve the country's capacity to grow in terms of tourism, have little potential to encourage the country to exploit this growth sufficiently in terms of development. Indeed, the present authors' future research will be oriented in this line.

Appendix A.1 Classification of the countries

Group 1	Group 2	Group 3		
Countries of strong economic development	Countries of medium economic development	Countries of weak economic development		
Luxembourg	Mongolia	Bolivia	**Countries of strong tourism growth**	Cambodia
				China
United Arab Emirates	Belgium	Japan		India
Ireland	Switzerland	Nepal		Indonesia
Norway	Madagascar	Costa Rica		Kazakhstan
Qatar	Malaysia	Mozambique		Korea, Rep.
Saudi Arabia	Brazil	Dominican Republic		Kyrgyz Republic
Greece	Algeria	Ukraine		Nigeria
Czech Republic	Germany	China		Pakistan
Hungary	Barbados	Ecuador		Russian Federation
				South Africa
Italy	Honduras	Burkina Faso		Ukraine
Austria	Uganda	Russian Federation		Vietnam
Netherlands	Bulgaria	Gambia, The		
Kuwait	Libya	Benin		

(continued)

Group 1	Group 2	Group 3		
Countries of strong economic development	Countries of medium economic development	Countries of weak economic development		
Singapore	Tunisia	India	**Countries of medium tourism growth**	Colombia
Estonia	El Salvador	Indonesia		Philippines
				Dominican Republic
Spain	Bangladesh	Pakistan		Costa Rica
Lithuania	Venezuela	Paraguay		Chile
Denmark	Morocco	Guyana		Azerbaijan
Iceland	Albania	Cambodia		Ecuador
Oman	Cyprus	Kazakhstan		Kenya
Turkey	Burundi	Vietnam		Senegal
Latvia	Jamaica	Nigeria		Armenia
				Mauritius
New Zealand	Argentina	Senegal		Namibia
Australia	Egypt	Zambia		Zambia
United Kingdom	Botswana	Namibia		
Poland	Nicaragua	Azerbaijan		
Slovenia	Romania	Armenia	**Countries of weak tourism growth**	Gambia, The
Slovak Republic	Israel	Sri Lanka		Sri Lanka
Bahrain	Tanzania	South Africa		Burkina Faso
United States	Jordan	Kenya		Mali
Finland	Uruguay	Philippines		Benin
Malta	Panama	Suriname		Chad
France	Ethiopia	Moldova		Suriname
Canada	Korea, Rep.	Kyrgyz Republic		Cameroon
Croatia	Thailand	Cameroon		Guyana
Portugal	Peru	Mali		Lesotho
Sweden	Colombia	Lesotho		Moldova
Mexico	Syria	Mauritius		Paraguay
Guatemala	Chile	Chad		Canada

Source: The authors

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Gender, Wages, and Productivity: An Analysis of the Tourism Industry in Northern Portugal

14

Raquel Mendes and Laurentina Cruz Vareiro

14.1 Introduction

In Portugal, tourism is regarded as a major economic activity, with an enormous growth potential in terms of wealth and employment. Tourism reveals its importance not only with regard to the Gross Domestic Product, but also in relation to total employment. A significant proportion of jobs in tourism are occupied by women, since this industry is characterized by a relatively higher percentage of female employees (Santos and Varejão 2006). Women represent on average about 65 % of the total number of employees in each firm (Ministério do Trabalho e da Solidariedade Social 2007).

Over the years, women have made progress with regard to their role in the Portuguese labor market. However, and despite the evidence of progress, gender inequality remains (Mendes 2007). Women are still less likely to be employed than men, and occupational gender segregation continues, with women under-represented in positions that require higher qualifications and overrepresented in jobs that are traditionally labeled as female jobs. Furthermore, women continue to earn less than their male colleagues. This is clearly the case of the Portuguese tourism industry, where statistics reveal a persistent gender wage gap.

The aim of this paper is to offer empirical evidence on the determinants of gender wage inequality in the tourism industry in northern Portugal. An analysis of gender wage disparities in the tourism industry is of particular interest given that the sector emerges with a predominant share of female employees. On the other hand, the paper focuses the particular case of the country's northern region given that it is

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considered the Portuguese tourism destination with one of the best performances in terms of growth and in relation to which the highest growth rates of the entire sector are expected in the near future.

More precisely, the objective is to answer the following questions: Are lower relative wages of female employees justifiable on the grounds that women are less productive than their male colleagues? Or are the gender disparities in wages attributable to the effects of wage discrimination?

Based on the standard human capital wage equation framework, whereby wages are regressed on productivity-related characteristics, previous research on gender wage disparities in Portugal (Kiker and Santos 1991; Mendes 2009; Vieira et al. 2005) indicates substantially large unexplained wage gaps, implying that wage discrimination is a major explanation for the observed wage disparities between men and women. Given the potential limitations of the standard wage equation framework in accurately measuring gender productivity differentials and thus gender wage discrimination, an alternative empirical approach is pursued in this paper.

Wage and productivity differentials between male and female labor are estimated and compared to determine if the observed wage gap reflects gender differences in the levels of productivity rather than wage discrimination against female employees. By directly exploring the relationship between wages and productivity, further insights are gained in relation to the Portuguese gender wage gap. This approach is applied to the tourism industry data[1] gathered in the matched employer-employee data set *Quadros de Pessoal* (Employee Records).

The remaining part of this paper is divided into five sections. Section 14.2 briefly describes the tourism industry in northern Portugal. Sections 14.3 and 14.4 outline the methodological approach used to estimate firm-level wage equations and production functions that yield gender wage and productivity differentials. Section 14.5 presents the firm-level descriptive statistics and discusses the empirical results. Section 14.6 concludes the paper.

14.2 Tourism Industry in Northern Portugal

Tourism is strategically important to the Portuguese economy, given its ability to create wealth and employment. In fact, in recent years, tourism presented an annual revenue growth of 2.5 %, reaching 6,307 million Euros in 2004, equivalent to 11 % of the Gross Domestic Product, and employing 10.2 % of the country's active population (Ministério da Economia e da Inovação 2007). According to Lopes (2010), the tendency is for the importance of tourism to grow in coming years.

Given the importance of the tourism industry, and in order to proceed with the organization of tourism planning with regard to the Portuguese mainland, five

[1] The tourism industry is represented by observations regarding the economic sector "hotels and restaurants", defined by the Portuguese classification of economic activities (Instituto Nacional de Estatística 2003).

regional areas of tourism were defined in 2008. These regions include the entire geographical area covered by each of the five regions defined by a system of statistical regions known as Nomenclature of Territorial Units for Statistics-Level II (NUTS II): North, Centre, Lisbon and Tagus Valley, Alentejo, and Algarve.[2]

These regions have very different characteristics, not only in relation to their tourism resources, but also with regard to their levels of tourism development, namely in terms of accommodation capacity and overnight stays in hotels. These findings have implications on the type of visitors interested in each region, on their purchasing power, and consequently on the tourism revenue created by each region (Comissão de Coordenação e Desenvolvimento Regional do Norte 2008).

The northern region is considered the Portuguese tourism destination with one of the best performances in terms of growth. The emergence of new consumption patterns and motivations together with a demand that privileges diverse experiences and environmental quality and authenticity, lead to the belief that in the near future the northern region will present the highest growth rates of the entire sector (Ministério da Economia e da Inovação 2007).

Many factors may contribute to the northern region's good performance: the vast and rich cultural and archaeological heritage of the region, the supply of high profile wine, the natural heritage, the good accessibility and the popular culture, manifested in the good hospitality, handicrafts and traditional character of events (Comissão de Coordenação e Desenvolvimento Regional do Norte 2008).

The northern region, as well as all other regions, presents some weaknesses with regard to human resources in the tourism industry, which may jeopardize the region's growth. Hence, more attention should be focused on the analysis of employment in this industry.

Àccording to Santos and Varejão (2006), some characteristics of the Portuguese tourism labor market are the relatively higher percentage of female employees, the labor precariousness, the low level of education, low wages and high occupational segregation. In fact, in this segment of the labor market:

- Women have a higher share in all sub-sectors of the tourism industry (e.g., accommodation, catering);
- The average duration of the on-going employment relationships is relatively short in tourism (4.2 years in tourism compared to an average of 7.3 years in the economy as a whole);
- The structure of employment by education levels is clearly dominated by low average schooling (no more than 6 years of education);
- Despite their overall higher share, women are underrepresented in top-level occupations and represent a large majority of workers in laborer positions.

Additionally, statistics reveal a persistent gender wage gap (Mendes 2009). Women continue to earn less than their male co-workers.

[2] In terms of tourism, the North region is known as the Oporto and North region.

14.3 Gender Differentials in Wages and Productivity

The analysis of the wage gap between men and women is typically focused on wage equations that are estimated as a function of individual-level data. One of the most commonly used methods is derived by Oaxaca (1973). Since its formulation, this method has played an important role in decomposing wage differentials by source. Numerous studies apply this conventional approach (e.g., Ashraf and Ashraf 1993; Bertrand and Hallock 2001; Kunze 2008; Monk-Turner and Turner 2001; Neuman and Weisberg 1998; Plasman and Sissoko 2004; Ward 2001). For Portugal, several studies aimed at analyzing the size and composition of the gender wage gap rely on the Oaxaca technique in their empirical analysis (Kiker and Santos 1991; Mendes 2009; Santos and González 2003; Vieira et al. 2005; Vieira and Pereira 1993). The results reported in these studies on the Portuguese gender wage gap suggest that a significant portion of the gap is unexplained by gender differences in endowments and is due to wage discrimination.

In accordance with the Oaxaca (1973) method, wages are regressed on human capital characteristics, such as education and experience, and on other productivity-related traits. These standard wage equations allow researchers to decompose gender wage gaps into explained and unexplained components. The explained component captures the portion of the wage gap that is due to differences in the levels of male and female labor market characteristics, whereas the unexplained component represents the portion of the gap that cannot be accounted for on the basis of those differences. The unexplained component is often interpreted as a measure of wage discrimination, whereby equally productive workers are paid differently.

Caution should be taken, however, when interpreting the unexplained component of the gap as wage discrimination. This residual portion of the gap may be due to wage discrimination, but it may also be a result of unmeasured or unobserved levels of productivity that differ between male and female employees. To be an exact measure of discrimination, all factors that determine wages must be accounted for. If for some reason they are not (e.g., data set limitations), then the unexplained component will reflect these omitted determinants, and the true effect of wage discrimination will be overstated.

The possibility that the failure of these wage equations to explain the entire wage gap is due to omitted productivity-related variables rather than to wage discrimination motivates the search for more accurate measures of labor productivity. In this context, Hellerstein and Neumark (1999) use a different approach in their analysis of gender wage differentials in Israeli manufacturing. Based on direct estimations of labor productivity, this approach represents a departure from the standard individual-level wage equation framework applied in most of the existing studies on wage gaps.

Relying on firm-level wage equations and production functions, the authors estimate and compare gender wage and productivity differentials to test for wage discrimination.[3]

[3] Hellerstein and Neumark (1995) use the same data and empirical framework to compare wage and productivity differentials among workers of different age groups.

In subsequent research, Hellerstein et al. (1999) extend the empirical analysis to data on U.S. manufacturing. Although both studies conclude that female productivity is lower than male productivity, the evidence on wage discrimination is not consensual. Hellerstein and Neumark (1999) find that the gender wage gap corresponds to a gender productivity gap of approximately the same size. They therefore conclude that wage discrimination is not an explanation for wage disparities between male and female employees and that women's lower pay may be explained by their lower levels of productivity. In contrast to these findings, Hellerstein et al. (1999) report that gender wage differentials are larger than the corresponding productivity differentials, indicating that women are subject to wage discrimination in U.S. manufacturing. Hellerstein and Neumark (2007) update previous findings on wage discrimination for U.S. manufacturing based on a new matched employer-employee data set, reporting findings similar to those reported in Hellerstein et al. (1999).

A small body of economic literature builds on the empirical framework applied in the two studies described above, estimating and comparing wage and productivity differentials for other countries: Haegeland and Klette (1999) for Norway, Ilmakunnas and Maliranta (2005) for Finland, and McDevitt et al. (2009) for Canada. As in Hellerstein and Neumark (1999) and Hellerstein et al. (1999), the three studies conclude that women are less productive than their male co-workers. However, while Haegeland and Klette (1999) and Ilmakunnas and Maliranta (2005)[4] find no statistical evidence of gender wage discrimination, McDevitt et al. (2009) conclude that the wage gap between males and females is attributable to this form of labor market discrimination.

Given the standard wage equation framework's potential limitations in accurately measuring gender productivity differentials and therefore gender wage discrimination, this paper applies an empirical strategy similar to that of Hellerstein and Neumark (1999) and Hellerstein et al. (1999). The approach is described in the section that follows.

14.4 Methodological Approach

The novelty of the approach applied in this paper in relation to the standard wage equation methodology used in most studies on gender wage gaps is the direct estimation of labor productivity based on a production function framework. The basic idea of the approach is to estimate and compare wage and productivity differentials between male and female employees in order to conclude whether lower relative wages of female employees are justifiable on the grounds that women are less productive than their male colleagues, or instead relatively lower female wages are attributable to the effects of wage discrimination.

[4] Ilmakunnas and Maliranta (2005) conclude that this result is not robust with regard to fixed effects estimation.

Firm-level production functions are used to estimate gender productivity differentials, whereas the corresponding wage differentials are estimated based on wage equations at the firm-level.[5] The comparison of the estimated wage and productivity differentials is used to test for wage discrimination against female employees. Findings of relatively larger wage differentials, whereby gender differences in the levels of productivity are not sufficiently large enough to fully explain gender differences in wages, are consistent with the discrimination hypothesis.

14.4.1 Firm-Level Wage Equation

The firm-level wage equation is derived as follows.[6] The firm's total wage bill (W) is expressed as:

$$W = w^m M + w^f F \tag{14.1}$$

where M and F represent the firm's total number of male and female employees, respectively, and w^m and w^f are the average paid male and female wages.[7] To simplify derivation, it is assumed that the firm's total labor force (L) is differentiated based on only one demographic characteristic, gender. Given that $M = L - F$, it follows that:

$$W = w^m L + (w^f - w^m)F. \tag{14.2}$$

Dividing both sides of (14.2) by L allows (14.2) to be expressed as:

$$\frac{W}{L} = w^m[1 + (\frac{w^f}{w^m} - 1)\frac{F}{L}]. \tag{14.3}$$

[5] By focusing on firm-level wage equations, it is possible to jointly estimate wage equations and production functions. This joint estimation allows for formal tests on the equality of the coefficients of the wage equations and production functions. Hellerstein et al. (1999) consider that by jointly estimating firm-level wage equations and production functions, potential biases introduced by unobservable effects regarding wages and production will affect the estimations in a similar manner.

[6] As referred earlier on, the current study applies an empirical framework similar to that of Hellerstein and Neumark (1999) and Hellerstein et al. (1999). However, rather than estimating firm-level wage equations and production functions based on non-linear regression methods, this study performs the estimations using linear methods as in McDevitt et al. (2009).

[7] The firm's total wage bill represents the aggregation of the individual-level wage equation over all workers employed at the firm (Hellerstein et al. 1999). The individual-level wage equation is expressed as $W_i = w^m M_i + w^f F_i$, where W_i represents the average wage of employee i, M_i and F_i are dummy variables for male and female employees, respectively, and w^m and w^f are the average paid male and female wages. Summing this equation over all workers employed at the firm yields the firm's total wage bill (14.1).

By letting w stand for the firm's wage bill per employee$(w = W/L)$, by allowing δ^f to represent the relative female-male wage differential $[\delta^f = (w^f/w^m) - 1]$, and by using s^f to denote the female share of the firm's total labor force $(s^f = F/L)$, (14.3) may be written the following way:

$$w = w^m(1 + \delta^f s^f). \tag{14.4}$$

The logarithmic transformation of (14.4) yields:

$$\ln w = \ln w^m + \ln(1 + \delta^f s^f). \tag{14.5}$$

Defining θ as the log wage of the reference group, and assuming the approximation $\ln(1 + \delta^f s^f) \approx \delta^f s^f$, it follows that:

$$\ln w = \theta + \delta^f s^f. \tag{14.6}$$

By controlling for other determinants of the firm's wages besides labor force composition, the estimable firm-level wage equation is defined as:

$$\ln w = \theta + \delta^f s^f + \beta X + \mu \tag{14.7}$$

where X represents a matrix of characteristics that affect the firm's wages other than labor force composition (e.g., firm location, firm size), β is the corresponding vector of coefficients to be estimated, and μ is the error term with mean value equal to zero and constant variance.

As referred earlier on, (14.7) is derived based on the assumption that the firm's labor force is differentiated solely on the basis of gender. By relaxing this assumption, other demographic characteristics of the labor force (e.g., education, age) are included in the firm-level wage equation specification. In the general case, workers have various demographic characteristics $(k = 1,...K)$and are divided into different groups $(j = 1, ...J)$ based on each one of these characteristics. The share of employees in group j in terms of characteristic k is denoted by s^{jk}, whereas δ^{jk} represents the relative wage differential between the reference group and group j in terms of characteristic k.[8] The group $j = 1$ corresponds to the reference group.

[8] As in Hellerstein et al. (1999), it is assumed that wage differentials between two types of employees within one demographic group are equal to the wage differentials between those same two types of employees within another demographic group. For example, the wage differentials between young aged women and young aged men are assumed to be equal to the wage differentials between old aged women and old aged men. Similarly, the wage differentials between young aged women and old aged women are assumed to be equal to the wage differentials between young aged men and old aged men. It is also assumed that the share of employees in a firm defined by one demographic group is constant across all other demographic groups.

Thus, the firm-level wage equation estimated for the empirical analysis undertaken in this study is equal to:

$$\ln w = \theta + \sum_{k=1}^{K} (\delta^{2k} s^{2k} + ... + \delta^{Jk} s^{Jk}) + \beta X + \mu. \tag{14.8}$$

14.4.2 Firm-Level Production Function

Assuming the Cobb-Douglas functional form, the production function can be expressed in logarithms as:

$$\ln Y = \ln A + \alpha_L \ln L^* + \alpha_K \ln K \tag{14.9}$$

where Y is value added, L^* is effective labor input, K is capital input, and A represents determinants of value added other than labor and capital.

The effective labor input term (L^*) allows for quality and quantity dimensions of labor. For simplicity, this term is derived assuming that labor inputs are differentiated exclusively on a gender basis. It is also assumed that different types of labor are perfectly substitutable inputs, but with potentially different marginal productivities. Defining males as the reference group and scaling its marginal productivity equal to 1, it follows that:

$$L^* = M + \frac{p^f}{p^m} F \tag{14.10}$$

where M and F represent the firm's total number of male and female employees, respectively, and $p^f/$it p^m is the relative marginal productivity of females.[9] Given that $M = L - F$, the effective labor input may be further written as:

$$L^* = L\left[1 + \left(\frac{p^f}{p^m} - 1\right)\frac{F}{L}\right] \tag{14.11}$$

Letting the term φ^f represent the relative female-male productivity differential $[\varphi^f = (p^f/p^m) - 1]$, and using s^f to denote the female share of the firm's total labor input (s^f=F/L), it results that:

$$L^* = L(1 + \varphi^f s^f). \tag{14.12}$$

Substituting (14.12) into (14.9) yields:

$$\ln Y = \ln A + \alpha_L \ln L + \alpha_L \ln(1 + \varphi^f s^f) + \alpha_K \ln K. \tag{14.13}$$

[9] In this case, labor input is measured in male equivalent units.

A few additional steps are needed to derive the firm-level production function estimated in this paper. Given that data on capital input is not available in the data set *Quadros de Pessoal*, the corresponding term is dropped. Constant returns to labor are imposed, and it is assumed that $\ln(1+\varphi^f s^f) \approx \varphi^f s^f$. Considering that the term A represents all other determinants of the firm's value added, the production function is further written:

$$\ln Y = \ln L + \varphi^f s^f + \gamma Z + v \tag{14.14}$$

where Z is a matrix of other determinants of value added (e.g., firm location, firm size), γ represents the corresponding vector of coefficients to be estimated, and v is the error term.

In order to make the productivity differential analysis more directly comparable to the wage differential analysis, production is modeled on a per employee basis. Hence, by subtracting the term $\ln L$ from both sides of (14.14), it results that:

$$\ln \frac{Y}{L} = \varphi^f s^f + \gamma Z + v. \tag{14.15}$$

Finally, the assumption that labor inputs are differentiated based on gender alone is relaxed, and other demographic characteristics (e.g., education, age) are taken into account. Hence, employees are divided into different groups $(j = 1, ...J)$ based on each one of the various demographic characteristics $(k = 1, ...K)$. The group $j = 1$ corresponds to the reference group. The estimable firm-level production function applied in the empirical analysis is defined as:

$$\ln y = \sum_{k=1}^{K} \varphi^{2k} s^{2k} + \ldots + \varphi^{Jk} s^{Jk}) + \gamma Z + v \tag{14.16}$$

where y represents the firm's value added per employee, s^{jk} represents the share of employees in group j in terms of characteristic k, and φ^{jk} represents the relative productivity differential between the reference group and group j in terms of characteristic k.

The estimation of (14.8) and (14.16) yields comparable measures of wage and productivity differentials. Given the specific objective of testing for gender wage discrimination, the key parameters to be estimated and compared are the relative female-male wage differentials (δ^f) and the relative female-male productivity differentials (φ^f). Statistical evidence of relatively larger gender wage differentials is consistent with the wage discrimination theory, whereby gender differences in wages cannot be fully accounted for on the basis of gender differences in the levels of productivity.

14.5 Empirical Evidence

14.5.1 Data

The current study relies on micro data from the *Quadros de Pessoal* (Employee Records). The *Quadros de Pessoal* is an extensive data set provided by the Portuguese Ministry of Labor and Social Solidarity. The data set is based on an annual employment survey that each firm in the Portuguese economy with paid personnel is legally obliged to fill in. Excluded from the legal obligation of answering the annual survey are both public administration and employers of domestic related services. For the remaining cases, firms are legally required to answer the employment survey in November of every year, based on information regarding the reference month of October.

The micro data gathered in the *Quadros de Pessoal* cover information at three different levels: the firm level, the establishment level, and the worker level. At the firm level, there is information on each firm's location, legal setting, number of establishments, employment, economic activity, year of constitution, and turnover. At the establishment level, the data cover information on the location, employment, and economic activity of each one of the firm's establishments. Reported data at the worker level include information on each worker's gender, nationality, occupation, professional situation, qualifications, schooling, age, monthly wages (divided into several components), hours worked, and employment duration regime.

Several constraints were imposed on the total number of observations of the original data set. In relation to the worker's professional status, only wage earners were considered. Firm owners, unpaid family members, and active members of cooperatives were, therefore, dropped. Employers engaged in the firm's activities and members of cooperatives were not considered since the distinction between wages and profits may not be sufficiently clear and non-subjective. Given that wage inequality is the main theme of this paper, unpaid family members were also dropped from the original data set. Furthermore, only wage earners aged 15–64 were retained for the analysis undertaken.

Due to their low representation in the data set *Quadros de Pessoal*, observations related to the economic sectors of agriculture, forestry, fishery, mining, public administration, domestic service, and extra-territorial organizations were not included in the analysis. These economic sectors are not adequately covered by the annual survey since either they correspond to economic sectors explicitly excluded from the legal obligation to answer the annual survey, or they correspond to economic sectors that have a very low share of workers in total employment. Finally, and given the problems that the existence of missing values in the data set can bring to the computations to be performed, observations with missing data were also dropped from the original data set.

The current analysis is based on micro data from the *Quadros de Pessoal* for the year 2007. Table 14.1 presents firm-level descriptive statistics with regard to the tourism industry in northern Portugal. The summarized statistics provide

Table 14.1 Firm-level descriptive statistics, 2007

Characteristics (N = 6,366)	Mean	Mean	St. Dev.
Ln wage bill per employee		6.15	0.18
Ln sales per employee		10.68	0.66
Gender (%)			
Male	37.00		
Female	63.00		
Education (%)			
≤4 years	87.44		
6 years	11.28		
9 years	0.17		
12 years	0.33		
≥15 years	0.78		
Age (%)			
≤29 years	30.98		
30–54 years	61.49		
≥55 years	7.53		
Tenure (%)			
≤4 years	70.59		
5–9 years	17.02		
≥10 years	12.39		
Occupation (%)			
Executive civil servants, industrial directors, and executives	6.04		
Professionals and scientists	0.09		
Middle management and technicians	0.91		
Administrative and related workers	5.60		
Service and sales workers	72.19		
Skilled workers, craftsmen, and similar	2.93		
Machine operators and assembly workers	0.23		
Unskilled workers	12.01		

Source: Computations based on Ministério do Trabalho e da Solidariedade Social (2007)

information for several variables used for the estimation of firm-level wage equations and production functions. Among the reported data are statistics for the firm's labor force composition (gender, education, age, tenure, and occupation).

In relation to gender, the statistics reveal that the firm's share of female employees in the tourism industry in northern Portugal is higher than the male share. On average, women represent about 63 % of the total number of employees in each firm. With regard to educational attainment, the vast majority of the firm's employees have low levels of education. A substantial portion of workers have no more than 4 years of schooling. Also, employment in each firm is on average higher for workers aged 30–54, whereas a high share of employees has less than 5 years of tenure. As for occupational distribution, the reported data for the tourism industry reveal that on average the occupation group "service and sales workers" accounts for the vast majority of employment in each firm, whereas the group "professionals and scientists" represents the lowest share of the firm's employees.

14.5.2 Wage and Productivity Differentials Estimation

Table 14.2 presents the OLS joint estimation of the firm-level wage equation (14.8) and firm-level production function (14.16) for the tourism industry in northern Portugal in 2007. The first column (1) displayed represents the wage equation estimates, whereas the second column (2) corresponds to the production function estimates. The dependent variable used for the wage equation is the natural logarithm of the wage bill per employee, whereas the dependent variable for the production function is the natural logarithm of turnover per employee.[10]

In order to ensure the exact comparability of the two sets of estimated coefficients, both specifications include identical independent variables. These variables reflect various demographic characteristics of the firm's labor force, considered determinants of the firm's wage bill and turnover.[11] The Appendix A provides the description of the independent variables. Given the specific aim of testing for gender wage discrimination, the key parameters of interest for the current analysis are the coefficients on the share of female employees.

For the firm-level wage equation, the female coefficient represents the relative female-male wage differential (δ^f). According to the estimated results, this differential is negative. This indicates that female employees are paid less than their male colleagues. The results therefore reveal that firms with relatively higher shares of female employees have lower wage bills per employee. Relying on the female coefficient (-0.042), if the share of female workers increases by 10 % points the firm's wage bill per employee will decrease by about 0.4 %.

With regard to the firm-level production function, the female coefficient corresponds to the relative female-male productivity differential (φ^f). The results reported in Table 14.2 show that the productivity differential is also negative, implying that women are less productive than men. In other words, the results reveal that labor is less productive in firms with relatively higher shares of female employees.

Considering the estimated female coefficient (-0.144), a 10 % point increase in the female share of the firm's labor force will result in a 1.4 % decrease in the firm's turnover per employee.

By directly comparing the estimated gender wage differentials with the gender productivity differentials, it is possible to determine whether the observed gender wage gap is justifiable on the grounds that female employees are relatively less productive than their male counterparts, or if instead the gap is attributable to wage discrimination against women. The cross-sectional estimations suggest that the

[10] Haltiwanger et al. (1999, 2007) also use the variable turnover as a proxy for value added in the production function specification applied in their investigation of the relationship between the firm's productivity levels and labor force composition.

[11] The firm's employees are divided into different groups based on five demographic characteristics: gender, education, age, tenure, and occupation. Hence, the employees are classified into two gender groups, five education groups, three age groups, three tenure groups, and eight occupation groups.

Table 14.2 OLS wage equation and production function estimates, 2007

Independent variable	ln(*W*/*L*) (1)	ln(*T*/*L*) (2)
Constant	6.154**	10.966**
	(508.25)	(226.68)
Gender (Shmale omitted)		
Shfemale	−0.042**	−0.144**
	(−7.40)	(−6.33)
Education (Shed4 omitted)		
Shed6	0.046**	0.058
	(5.66)	(1.82)
Shed9	0.112	0.540*
	(1.93)	(2.32)
Shed12	0.277**	0.579**
	(5.61)	(2.93)
Shed15	0.315**	0.177
	(9.12)	(1.28)
Age (Shyoung omitted)		
Shprime	0.016**	−0.151**
	(2.57)	(−6.13)
Shold	0.048**	−0.326**
	(4.33)	(−7.32)
Tenure (Shorten omitted)		
Shmedten	−0.002	0.037
	(−0.39)	(1.50)
Shlongten	0.031**	−0.044
	(4.35)	(−1.51)
Occupation (Shtopman omitted)		
Shprofscien	0.323**	1.327**
	(3.73)	(3.84)
Shmidmantec	0.027	0.155
	(1.01)	(1.47)
Shadminist	−0.050**	−0.127*
	(−3.47)	(−2.20)
Shservsales	−0.081**	0.036
	(−7.37)	(0.82)
Shskllcrfts	−0.058**	0.030
	(−3.22)	(0.42)
Shmachassem	−0.082	0.161
	(−1.49)	(0.73)
Shunskllwrk	−0.063**	−0.049
	(−4.89)	(−0.95)
Number of observations	6,366	
Adjusted R^2	0.233	0.052

Source: Computations based on Ministério do Trabalho e da Solidariedade Social (2007)
Notes: The values in *parenthesis* are t-statistics derived from standard errors
*Statistically significant at the 0.05 significance level.
**Statistically significant at the 0.01 significance level.

gender wage differential is smaller than the gender productivity differential.[12] These findings are consistent with the no wage discrimination theory, whereby gender differences in earnings are fully accounted for on the basis of gender differences in productivity.

The main findings indicate that female employees in the tourism industry in northern Portugal are less productive than their male colleagues and that these productivity differences fully explain gender differences in wages.

14.6 Conclusion

The aim of this paper was to provide empirical evidence on the determinants of gender wage inequality in the tourism industry in northern Portugal. Given the predominant share of female employees, an analysis of gender wage disparities in the tourism industry is of particular interest. On the other hand, the paper focuses the particular case of the country's northern region given that, when compared to other regions, it presents the greatest weight in tourism.

The specific objective was to infer whether observed gender wage disparities are attributable to relatively lower female productivity, or instead disparities are due to wage discrimination. Based on direct estimations of labor productivity, the methodological approach applied in this paper represents a departure from the standard wage equation methodology applied in most of the studies on gender wage gaps. The potential limitations of the standard wage equation framework in accurately measuring the role of wage discrimination as a determinant of gender wage disparities motivated the application of an alternative methodological approach. This approach was applied to the tourism industry data from the *Quadros de Pessoal*.

Gender wage and productivity differentials were estimated relying on firm-level wage equations and production functions. The estimates were then directly compared in order to determine whether the observed wage gap reflects gender differences in productivity, or instead the gap is attributable to the effects of wage discrimination against female employees.

The main findings of the empirical analysis are twofold. First, the results indicate that female employees are less productive than male employees. Second, the results reveal that gender differences in wages are fully explained by gender differences in productivity levels. The results therefore indicate that women in the tourism industry in northern Portugal earn less than men because they are relatively less productive. Thus, the empirical analysis casts doubts on the relevance of the findings reported in the preceding studies on the Portuguese gender wage gap based on more traditional methodological approaches, whereby wage discrimination is attributed a predominant role in explaining wage disparities in Portugal.

[12] Given the joint estimation of the firm-level wage equation and production function, a formal test on the equality of the female coefficients (that is, a formal test on the equality of gender wage and productivity differentials) is performed. The null hypothesis of equal coefficients is rejected with a p-value of 0.000.

Based on these findings, new research questions arise. Why are women less productive than their male counterparts? Is it because women supply less effort at work? Do women's preferences, related to traditional factors, such as home and childcare responsibilities, explain their relatively lower levels of productivity? Or are gender differences in productivity due to the crowding of women into less productive firms, sectors, or jobs as a result of discriminatory hiring and promotional practices? Future empirical research should be directed at exploring the explanations for women's potentially lower levels of productivity. These explanations are important from a policy point of view because they may address aspects that are undervalued in the quest for gender equality, regarded as a central aspect for economic growth, employment, and social cohesion.

Acknowledgement The authors thank the Portuguese Ministry of Labor and Social Solidarity for the access to the data set used in this paper. The access to the data was provided by the protocol signed between the Ministry and the University of Minho.

14.7 Appendix

Variable	Description
Shmale	Share of male employees
Shfemale	Share of female employees
Shed4	Share of employees with highest completed degree of education $\leq$ 4 years
Shed6	Share of employees with highest completed degree of education = 6 years
Shed9	Share of employees with highest completed degree of education = 9 years
Shed12	Share of employees with highest completed degree of education = 12 years
Shed15	Share of employees with highest completed degree of education $\geq$ 15 years
Shyoung	Share of young aged employees (age $\leq$ 29 years)
Shprime	Share of prime aged employees (30 years $\leq$ age $\leq$ 54 years)
Shold	Share of old aged employees (age $\geq$ 55 years)
Shorten	Share of employees with short tenure (tenure $\leq$ 4 years)
Shmedten	Share of employees with medium tenure (5 years $\leq$ tenure $\leq$ 9 years)
Shlongten	Share of employees with long tenure (tenure $\geq$ 10 years)
Shtopman	Share of executive civil servants, industrial directors, and executives
Shprofscien	Share of professionals and scientists
Shmidmantec	Share of middle managers and technicians
Shadminist	Share of administrative and related workers
Shservsales	Share of service and sales workers
Shskllcrfts	Share of skilled workers, craftsmen, and similar
Shmachassem	Share of machine operators and assembly workers
Shunskllwrk	Share of unskilled workers

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Territorial Differentiation, Competitiveness and Sustainability of Tourism

15

João Romão, João Guerreiro, and Paulo M.M. Rodrigues

15.1 Introduction

Tourism destinations' competitiveness has been investigated over the last two decades and, in recent approaches, the concept of sustainability appears linked to competitiveness, not only in academic research (Ritchie and Crouch 2003; Vanhove 2005; Sharpley 2009) but also in institutional international guidelines (European Commission 2006, 2009; World Economic Forum 2008). It is assumed that the integration of the specific cultural and natural characteristics of each destination into the tourism supply is a condition for their differentiation and contributes to sustain competitiveness in the long run, as long as there is an adequate usage and control of these resources.

Using a panel data model in order to create a regional tourism demand function, this work tries to identify whether the regional natural and cultural resources have a relevant contribution to the competitiveness of tourism destinations of the 67 regions (NUTS 2 – the basic regions for the application of regional policies in the European Union, with more than 800.000 and less than 3.000.000 inhabitants, as defined by Eurostat) from South-western Europe (Portugal, Spain, France and Italy).

According to Eurostat data for 2008, these countries were responsible for almost half 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

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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).

In this analysis, competitiveness is measured taking into consideration the number of nights spent in hotels and similar establishments in each region and the explanatory variables include a set of "traditional" (related to economic conditions, infra-structures or markets) and "new" factors of competitiveness (related to qualifications, innovation and natural or cultural resources), assuming that the integration of these local and specific resources in the tourism supply requires innovative efforts in order to differentiate each destination. The remainder of this paper includes a critical review of the literature on tourism competitiveness and sustainability, the presentation of a tourism demand function using panel-data methods (data, methodology and results) and some conclusions and discussion.

15.2 Competitiveness and Sustainability in Tourism

15.2.1 Competitiveness in Tourism Studies

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 generalise the approach proposed by Michael Porter to this issue (Porter 1985), emphasising the importance of the formation of clusters at the regional level (creating better conditions for innovation), the interactions with suppliers and customers, 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): although competition occurs among service providers (airlines, tour operators, travel agencies, hotels and others), tourists make their choices among alternative destinations, implying large efforts and investments to reinforce their attractiveness (Ritchie and Crouch 2000). Consequently, and considering 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).

Buhalis (2000) also shares the idea that a destination is at the core of tourism competitiveness, applying to destinations generic strategies defined by Porter (1985), the concepts of status and commodity areas proposed by Gilbert (1984) or the idea of flexible specialization and permanent innovation suggested by Poon (1994). Achieving a status area, with differentiated products and services based on permanent innovation should be the strategy to ensure competitiveness in tourism destinations in a sustainable way, preserving the local resources and the destination attractiveness in the lung-run, with benefits for the local communities.

The analysis of tourism competitiveness developed in this work is also focused on "destinations" and their particular characteristics, namely those related to natural

and cultural resources, despite the difficulties to obtain relevant and comparable data at this territorial level. As this difficulty increases with the integration of information related to innovation activities, infrastructures or economic conditions, the territorial unit of analysis is the NUTS 2 regions (NUTS 3 would allow for a more detailed territorial analysis but it was not possible to obtain all the necessary data for the purposes of this study).

Common output indicators for the competitiveness in tourism are the number of nights in local accommodation services (which has been used in this work), the number of arrivals to destinations, market shares, revenues generated by tourism activities or productivity. Hall (2007) suggests complementing the analysis of competitiveness with information regarding the impacts of tourism development on local job creation, agglomeration economies, associative governance or institutional learning, which are extremely important questions but very difficult to quantify and compare among regions.

Regarding the factors influencing competitiveness (the input side), there is a wide range of possibilities considered in the literature. Kozak (1999) suggests a large group of factors and indicators. More recently, other competitiveness measures were developed, with different sets of indicators, by Navickas and Malakauskaite (2009), Tsai et al. (2009), Manzanek et al. (2007), Dwyer et al. (2002) or Dwyer and Chulwon (2003). Hong (2009) considers Domestic and Global Environment Conditions and distinguishes 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 and the World Economic Forum (2008) 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 competitiveness in 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 (Enright and Newton 2004). Although other variables were included in the model, considering the main purpose of the study (the difference between regional tourism competitiveness and the factors that determine tourism sustainability), the explanatory variables taken into consideration are mostly related with specific natural and cultural resources and regional innovative activities.

15.2.2 Sustainability in Tourism Studies

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 local communities (well-being of residents), preservation of local resources (preserving natural capital) and time (future generations).

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) or to 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 very significant increase in the tourism activities, at a global level, and the potential negative impacts of these activities at local and regional levels (Celant 2007).

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 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 tourism supply on sun-and-sea tourism in the south of Europe. These limits are also analyzed in the context of the life cycle of tourism destinations (e.g. Avdimiotis 2009) or considering the carrying capacity of territories (Coccossis 2002).

The idea that competitiveness cannot be sustained without preserving the factors that define the uniqueness of each tourism 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. Kozak and Martin (2012) link the idea of differentiation based on specific resources to the life cycle of tourism destinations, stressing the importance of innovation for the "rejuvenation" of tourism areas.

In this sense, competitiveness is clearly linked to 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). This close connection between competitiveness and sustainability made these authors improve their model of destination competitiveness by explicitly including the idea of sustainability, and suggesting a set of global forces determining competitiveness (Ritchie and Crouch 2003).

A similar approach by Sharpley (2009) considers tourism in the interface between four global factors (technology, environment, economy and politics) and

stresses that, if competitiveness is based on the 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 tourism destinations does not only imply economic benefits, but also a contribution to local social cohesion and preservation of local natural and cultural values. Nevertheless, it is important to mention the criticism proposed by Hall (1998), considering that the idea of sustainability has been used in different contexts with different meanings and implications by a large variety of stakeholders.

Miller and Twining-Ward (2005) develop an important discussion on the complexity, problems and methodologies to analyze the sustainability of tourism, while Jafari (2001) proposes that the idea of sustainability must be applied in all the processes of tourism development, including mass tourism destinations, according to the principles of the "Knowledge-Base Platform". Weaver (2006) defines methodologies to analyze sustainable tourism in all kind of tourism destinations.

This work aims to integrate the concepts of competitiveness and sustainability, considering the local natural and cultural assets that contribute to the uniqueness of each tourism destination (and require an adequate management that ensures their sustainability) as a determinant of regional tourism competitiveness. In this study, due to the difficulties in finding other relevant and comparable information and despite the problems and limitations of this indicator, competitiveness is measured using the number of nights spent in hotels in each region.

15.3 A Panel-Data Approach to Regional Tourism Demand in South-Western European Destinations

The panel data model used in this work allows the consideration of space (differences among regions) and time (evolution during 6 years) (Baltagi 2006; Croissant and Millo 2008; Elhorst 2003). The model systematizes a comprehensive approach to the determinants of regional tourism competitiveness, taking into consideration the availability of comparable information and emphasizing the role of "new" factors of competitiveness that can support the sustainability of tourism development (innovative products and services based on sustainable exploitation of specific natural and cultural resources, which require more qualified workers).

Nevertheless, other "traditional" determinants of competitiveness are included, namely those related to regionally available infrastructures (accommodation and international transport), economic conditions (regional investment in tourism sectors, economic growth in national and international markets or the evolution of demand in Southeastern European countries). Two dummy variables were added to the model, considering the importance of the geographical position regarding tourism development (West Coast, South Coast or Inland) and the different historical processes of tourism development among these regions (position in the Tourism Are Life Cycle: Exploration, Development or Stagnation).

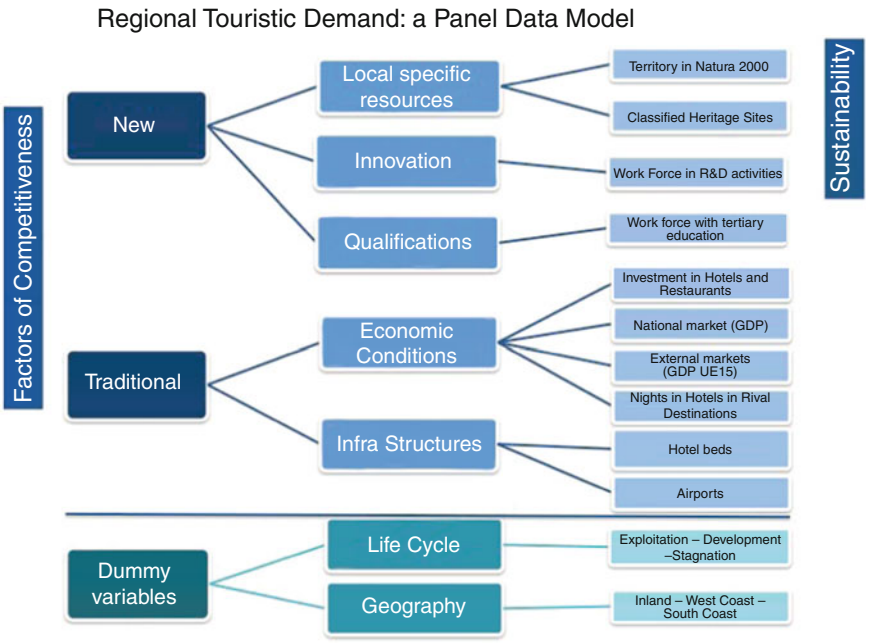

Fig. 15.1 Conceptual model

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 in obtaining comparable data and assuming that these conditions are similar in the regions under analysis.

This model can be systematized in the diagram in Fig. 15.1:

The regions under analysis in this work are of major importance for European tourism, being responsible for 48.5 % of the nights spent in hotels and similar establishments in the continent in 2008 (Eurostat). Due to their geographic and climatic conditions, some of these regions have experienced massive tourism exploitation linked to sun-and-sea holidays. Nevertheless, these regions offer today a wide range of different tourism products, including cultural destinations, city tourism, congresses, winter sports resorts, and ecotourism. In fact, even inside the same NUTS 2 region we can find different tourism products (Andaluzia is a clear example, offering sun-and sea experiences in the coast, winter-sports in Sierra Nevada or cultural tourism in cities like Seville, Cordoba and Granada).

NUTS 2 regions are the unit of analysis in this work, considering the availability of comparable data at this level and the existence of political institutions related to economic development, tourism promotion and cultural and natural resources management. A total of 67 regions were analysed (17 in Spain, 22 in France, 21 in Italy and 7 in Portugal) and statistical information has been collected for the period from 2003 to 2008 (except for the variable "Investment", considered between 2002 and 2007) from official institutions, such as Eurostat; European

Table 15.1 Nights spent in hotels and similar establishments

	Annual growth		%	Acum. %
Açores (PT)	6.6	**Canarias (SP)**	7.8	7.8
Com. de Madrid (SP)	6.6	**Ile de France (FR)**	6.2	14.0
Lisboa (PT)	6.4	**Calatuña (SP)**	5.8	19.7
Lazio (IT)	5.7	**Illes Balears (SP)**	5.5	25.3
Aragón (SP)	5.4	**Veneto (IT)**	5.5	30.8
Castilla-Mancha (SP)	5.3	**Andalucia (SP)**	5	35.8
Piemonte (IT)	5.3	**Toscana (IT)**	3.8	39.6
Extremadura (SP)	5.1	**Emilia-Romagna (IT)**	3.5	43.1
Castilla León (SP)	4.9	**Com. Valenciana (SP)**	3.5	46.6
País Vasco (SP)	4.7	**Prov-Alpes-Côte d'Azur (FR)**	3.2	49.8
Centro (PT)	4.4			
La Rioja (SP)	4.3			
Navarra (SP)	4.1			

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). Maps were produced with ArcGis 9.3.1 for Windows Vista. The panel data models were estimated with R 2.10.1 for Mac OS.

The dependent variable in the model is the number of nights spent by tourists in hotel and similar establishments in each region, which is assumed to be a proxy for regional tourism competitiveness. Table 15.1 shows the main destinations in 2008 (10 regions represent almost 50 % of the overall number of nights spent in hotels and similar establishments in these regions and 5 of these regions are in Spain) as well as the regions with the highest growth rates (13 regions registered an average growth rate above 4 % per year, of which 8 are Spanish). It is also possible to observe that the capital cities of these countries are among the regions with large volume of tourism demand (Paris – Ile de France) or among the regions with highest growth rates in the period taken into consideration (Rome – Lazio; Madrid – Comunidad de Madrid; Lisboa – Lisboa), suggesting the growing importance of urban and cultural tourism.

The map in Fig. 15.2 shows the relation between nights spent in the hotels and similar establishments of each region and the regional population (in 2008), suggesting that some regions are reaching high levels of congestion, in particular the south coastal areas.

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 for the creation of a unique tourism product and the promotion of sustainability. In this sense, qualifications of workers (percentage of the regional work force in the age group 15–74 with tertiary education, according to the Eurostat) and regional efforts on Research and Development (percentage of total labour force in the age group 15–74 that is classified as HRST, i.e. having either

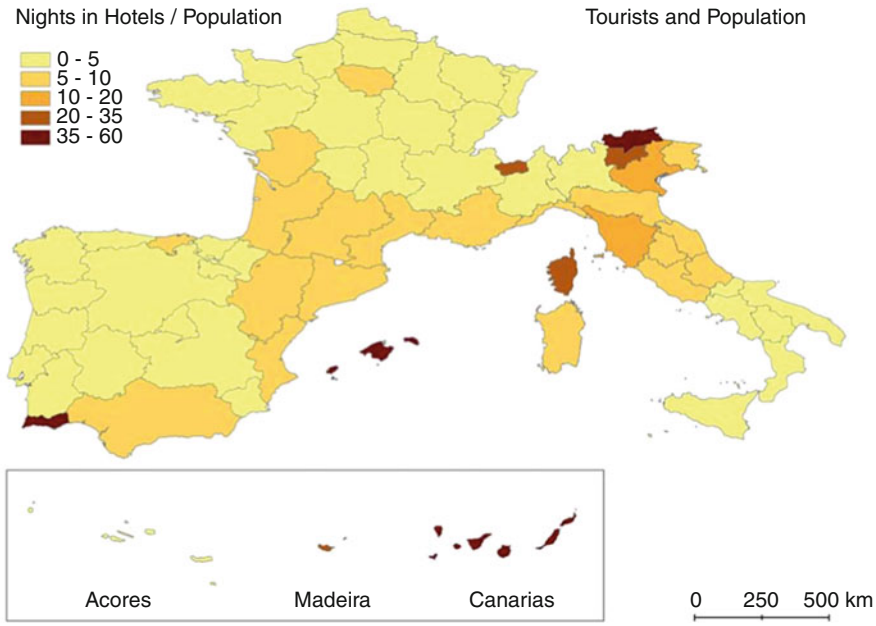

Fig. 15.2 Tourism and population (2008)

successfully completed an education at the third level or employed in an occupation where such an education is normally required, according to the Eurostat) were also included among the "New Factors of Competitiveness", considering that the existence of local specific natural and cultural assets do not guarantee its adequate incorporation in the regional tourism supply, but they require innovative solutions to create new products and services addressed to specific markets.

The number of heritage sites classified by UNESCO measures the cultural assets regionally available, independently of their integration in the local tourism supply. 18 regions have 4 or more classified sites (6 in Italy, 5 in France, 6 in Spain and 1 in Portugal) and 7 regions have no heritage sites recognized by this organization (Algarve, in Portugal, and 6 Italian regions). Other cultural questions could be included in the model (visits to museums, cultural events and others) however, due to the absence of comparable data, this was not possible.

The percentage of the regional territory under ecological protection and included in Natura 2000 is the measure used to evaluate the natural resources regionally available for tourism. Twenty-one regions have more than 25 % of their territory in Natura 2000 (6 in Italy, 2 in France, 11 in Spain and 2 in Portugal). It is important to notice that these resources are not necessarily tourism products or are not necessarily available for visitors. Nevertheless, they represent, at least, a potential regional tourism product (Table 15.2).

Once it is assumed that natural and cultural resources are taken into consideration as a potential determinant, the regional efforts on innovation are also included

Table 15.2 Natural and cultural tourism resources

4 or more heritage sites		>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

in this model, under the assumption that those local specific potentialities require innovative efforts at the regional level in order to be included in the tourism supply, contributing to differentiate the destinations. The data collected for this variable refers to the proportion of overall regional work force involved in R&D activities, which is assumed as a proxy for the regional innovative activities. Table 15.3 represents the situation in 2008 (regions with higher levels on the left and with lower levels on the right). The level of worker qualifications at the regional level has also been taken into consideration but no relevant statistical correlation with competitiveness has been found.

Other "traditional" factors of competitiveness such as economic conditions (investment in hotels and restaurants in the previous year, evolution of GDP in national markets – with relevant statistical relation with competitiveness – and evolution of the GDP at EU15, as the main international market, which was found not statistically significant), infrastructures (accommodation and international airports), or the performance of rival destinations (number of nights in hotels from Turkey, Greece, Croatia and Cyprus, which had no statistical relevance) are also considered. The map in Fig. 15.3 shows the regional supply of accommodation in hotels and similar establishments in 2008 and its evolution between 2003 and 2008, clearly exposing the strong growth of the accommodation supply in the Spanish (and, to a lesser extent, the Italian) regions.

Table 15.3 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**		

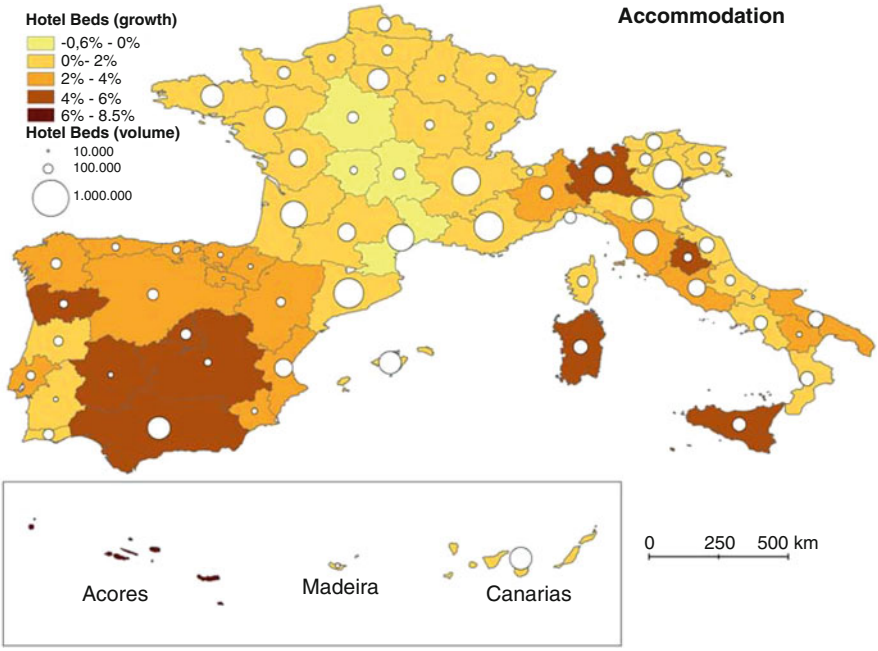

Fig. 15.3 Accommodation

Prices or exchange rates were not taken into consideration, since all these regions use the Euro (as the main markets do, with the exception of Great Britain) and prices are today mostly defined at the international level (nevertheless, this information can be included in further developments of this work). Efforts on promotion, usage of internet and communication technologies, involvement of local stakeholders in the planning process and general institutional and organizational issues were not considered as well, given the difficulties to obtain relevant and comparable data.

The geographical situation of each region and their position in the Tourism Area Life Cycle were taken into consideration using dummy variables:

- Inland (GEO 1), West – Coast (GEO 2) and South – Coast (GEO 3);
- Exploration (TALC 1), Development (TALC 2) and Stagnation (TALC 3);

Fitting different regressions, it was possible to observe that the best results were obtained with a Pooling Effects Model and after the application of logarithms to the variables "Nights" (dependent variable), "Beds" (number of beds in hotels), "Investment" (in Hotels and restaurants of each region), GDP (in each country and at EU15 level) and "Rivals" (number of nights in hotels from Turkey, Greece, Croatia and Cyprus). Logarithms were not applied to the variables "Air" (existence of international airport in the region), "ST" (proportion of work force in R&D activities), "WF" (proportion of the work force with tertiary education), "Natura" (proportion of the territory in Natura 2000) and "Heritage" (number of sites classified by UNESCO).

Estimation results show that the variables "GDP15", the level of the GDP at EU15, "Rivals" and "Education" were not statistically relevant at any of the usual significance levels, i.e., 1 %, 5 % or 10 %. The final model is:

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

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. The total sum of squares is 455.38 and the residual sum of squares is 26.57. The descriptive statistics for the variables included in the final version of the model (not considering the dummy variables) are presented in Table 15.4:

In order to identify possible problems of multicollinearity among the independent variables, a VIF (Variance Inflation Factor) test has been computed. It is commonly accepted that problems of multicollinearity can be relevant when VIF is above 10 (Marquardt 1970; Lin 2008). Nevertheless, O'Brien (2007) points out that even when the VIF is above 10, that does not necessarily imply problems of multicollinearity. In this model, the VIF test presents values below 5 for all the explanatory variables (see Table 15.5).

Table 15.4 Descriptive statistics

	Mean	SD	Min.	Max.
Nights	15,786,059	17,785,695	652,171	86,781,961
Beds	202,555.9	183,847.9	6,350	714,520
GDP	23,953.0	4,359.9	13,300	30,400
Investment	235,840.2	272,602.6	4,433	1,929,681
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

Table 15.5 VIF (Variance Inflation Factor) 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

Table 15.6 Estimators

	Estimate	*p*-value
Intercept	13.827	0
logbeds	0.707	0
air	0.137	0.001
loginvest	0.239	0
logGDPn	−0.934	0
ST	1.124	0
Heritage	0.024	0.001
Natura	0.688	0
Geo1	−0.062	0.1
Geo2	−0.298	0
TALC1	−0.275	0
TALC2	−0.227	0

Table 15.6 presents the coefficient estimates and corresponding p-values.

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. From the inclusion of dummy variables related to history (TALC) and geography (GEO), results can be divided into nine different groups, with different independent terms. The estimates show that the overall impacts of the explanatory factors taken into consideration are higher in the regions in stagnation (TALC 3) from the South Coast (GEO 3) and lower in the regions in Exploration (TALC 1) from Inland territories (GEO 2).

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. The negative relation found between the nights spent in a region and its national GDP suggest that the countries where tourism is more important are economically less developed.

15.4 Discussion and Conclusions

15.4.1 Discussion and Developments

It must be noticed that questions related to the limits of usage of local resources were not considered in this model (namely those related to the degradation of natural resources or excessive commodification of cultural traditions), which opens some opportunities to develop this kind of analysis. Furthermore, questions related to "social sustainability" or the spreading of benefits to local communities were also not taken into consideration. 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.

Further developments of this work can also include information on questions related to markets, prices, institutional conditions or resource management at regional level, in order to obtain a more comprehensive approach of competitiveness in tourism. Effects of external shocks (like catastrophes or the global financial crisis) were not considered in this model and can also be included in future development of this analysis.

However, the good results obtained so far with the model suggest its possible utilization in a wider context: enlarging the period under analysis (and observing the regional effects of the economic crisis after 2008 on tourism activities) and including more countries in the study.

15.4.2 Conclusions

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

A positive correlation between the regional efforts on innovation and tourism competitiveness is also observed, suggesting that the most innovative regions tend to take advantage of this condition to improve their tourism attractiveness. These results suggest that these tourism destinations are using their resources in innovative ways, in order to differentiate their tourism products and services, which create not only an important competitive advantage but represent also an important way to sustain this competitiveness for a long time and stimulate the preservation of these local resources. Nevertheless, it is also important to note that different problems and questions can arise inside the same region, namely if it includes different tourism destinations.

The results of the model also confirmed the expected positive correlation between regional tourism 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). The negative correlation that was 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 (which also means that GDP is not a good indicator for the evolution of the domestic tourism market, an aspect that should be taken into consideration in further developments of this work).

The main relevance of this work is the empirical evidence that the development of innovative tourism products and services based on local natural and cultural resources seems to be an extremely important tool to improve regional tourism competitiveness. Nevertheless, attention must be paid to the adequate management of these resources, considering the risks of excessive use or commodification, which can destroy their authenticity or the sustainability of their utilization.

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Did the Financial Crisis and Policy Deregulation for Chinese Tourists Affect the Efficiency and Output Slacks of Taiwanese Hotels?

16

Chin Yi Fang

16.1 Introduction

Over the past few years, the Chinese economy has begun to gain importance and influence economic developments in other countries. Although the global financial crisis seriously affected the worldwide economy during 2007 and 2008, the Chinese GDP growth rate had increased to 11.93 % and 9 % in 2007 and 2008, respectively. However, Fidrmuc and Korhonen (2010) have indicated that the global economic slowdown may significantly affect the Asian economies, as Asian countries engage in more trade extensions and financial relationships with the U.S. Hong, Lee, and Tang (2010) further noted that previous worldwide financial crises had essential effects on the Asian economies. Taiwan is a small, open Asian economy that borders China. Global financial turbulence would be expected to have a strongly negative effect on the Taiwanese economy. However, deregulation of the tourism policy between Taiwan and China occurred at the same time. This sequence of events provides a good opportunity to investigate the extent of the effects of the global financial crisis and policy deregulation on hotel performance. The two methods of evaluating a firm's performance suffer from limitations: (1) in a ratio analysis, such as an analysis of the ratio of the return rate on capital, the employee productivity index, or the revenue per available room (RevPAR), using a different output index may yield different performance results; and (2) the use of regression models is limited by the need for the chosen model to fit well with the firm that is being evaluated and by the inability of the model to provide suggestions for improvement (Coelli 1995). Therefore, the present study used efficiency scores to integrate a wide range of inputs and outputs simultaneously.

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Although existing studies have examined the effects of environmental variables on efficiency, the majority of these studies have addressed the characteristics of hotels, such as their size, location, and type of ownership (e.g., Assaf and Agbola 2011; Assaf et al. 2010). Studies that focus on the effect of macroeconomic variables and policy factors on efficiency are scarce. In this paper, we contributed to the existing efficiency studies by investigating the effects of macroeconomic variables, policy factors, and hotel characteristics on hotel efficiency using a truncated regression with a bootstrapping procedure (Simar and Wilson 2007), as few studies have employed metafrontier methodology with truncated regressions. Furthermore, the study assessed the hotel efficiency by utilising the CCR-DEA (Charnes et al. 1978) and BCC-DEA (Banker et al. 1984) approaches. The study further assessed the metatechnology ratios (MTRs) of various types of tourist hotels in Taiwan using the metafrontier methodology (O'Donnell et al. 2008).

The structure of this paper is as follows: the next section provides a brief background of Taiwan/China tourism policy deregulation and a survey of the relevant literature. The theoretical model is described in the subsequent section, which briefly introduces the metafrontier approach to data envelopment analysis (MDEA), the data that were collected, and the variables that were used. The following section applies the CCR and BCC-DEA approaches to measure the efficiency of hotels and the MDEA approach to assess the MTRs of heterogeneous tourist hotels. The concluding remarks and directions for future research are presented in the final section.

16.2 Policy Deregulation for Tourism Travel Between Taiwan and China

When Taiwan and China halted institutionalised negotiations in 1999, cross-strait economic and trade exchanges were virtually prohibited. After the new ruling party in Taiwan reopened the dialogue between Taiwan and China on May 20, 2008, Taiwan and China resumed institutionalised negotiations through unofficial organisations. In June 2008, Taiwan and China signed the cross-strait agreement to allow weekend charter flights and Chinese tourists to travel to Taiwan. Mainland China tourists had been allowed to visit Taiwan since July 2008. However, several limitations remained. (1) The number of arrivals: the regulation allowed a maximum of 3,000 persons to travel to Taiwan from China per day. (2) Tour group capacity: Chinese tourists visiting Taiwan were required to follow a tour group, and the group capacity was limited to 40 persons. (3) The length of stay: visitors were allowed to stay for a maximum of 10 days. However, the gradual development of direct cross-strait air transportation links was conductive to increasing the number of Chinese tourists in Taiwan. Furthermore, these developments created links with international flights that have enabled international business people to travel more conveniently and have connected Taiwan with world markets since 2008. Passengers were no longer required to travel to a third destination, such as Hong Kong, in their travels from China to Taiwan. A pre-2008 flight route is illustrated by

Fig. 16.1 An illustration of flight routes between China and Taiwan

a red line in Fig. 16.1. The duration of the original flight from Taipei to Shanghai was 6 h, including plane transfers; after the deregulation, the duration of the direct cross-strait flight was only 84 min. The current flight route is illustrated by a blue line in Fig. 16.1. Mainland China opened 21 flight hubs that operate regular flights. Taiwan opened eight flight points. Two hubs have operated regular flights, and the remaining six hubs have operated charter flights since 2008. The increase in Chinese flight hubs will be favourable to the arrangement and diversification of travel and tourism, could encourage more Chinese travel to Taiwan, and could thus create more business opportunities.

16.3 Background of the Hotel Industry in Taiwan

According to the classification from the Taiwan Tourism Bureau (TTB), tourism hotels are classified into two types: international tourism hotels (ITHs) and standard tourism hotels (STHs). The plum-grading system that was issued by the TTB separates hotel rankings into five tiers. Plum blossom is our national flower in Taiwan, representing our national spirits, and symbolising that our people are resilient, even in a harsh environment. More plums in the hotel rating system stands for better grading. ITHs are graded as having five or four plums if they have a large number of rooms and diversified business, such as food and beverages, club operation, spas, and recreation. STHs are ranked as having two or three plums if they offer accommodations and breakfast features. Although the TTB has provided the star-grading system in association with the standard worldwide rating system since 2010, fewer than 20 hotels have been evaluated by the new grading system to date. The existing literature has addressed performance evaluation for ITHs but has rarely examined that of STHs (e.g., Hu et al. 2009; Yang and Lu 2006; Sun and Lu 2005; Hwang and Chang 2003; Tsaur 2001). However, the less expensive room prices in STHs may attract Chinese tour guides and tourists. Currently, 25 STHs have at least 50 rooms within their facilities, and 62 ITHs have at least 80 rooms. The development plans of tourist hotels need approval from the TTB. Therefore, this paper includes ITHs and STHs in our observational sample.

16.4 Literature Review

The analysis of hotel efficiency has generally been divided into two frontier methods: data envelopment analysis (DEA) and stochastic frontier analysis (SFA). Table 16.1 displays a survey of the current literature.

Previous studies have investigated the effect of hotel operating characteristics on efficiency using multiple regressions and ordinary least squares (OLS) estimation (e.g., Sun and Lu 2005). As the efficiency scores are dependent variables and therefore bounded between 0 and 1, an OLS estimation has been deemed inappropriate for explaining the variation in efficiency scores (Assaf and Matawie 2009). Subsequent researchers have examined the effects of environmental variables on efficiency using Tobit regressions (e.g., Hu et al. 2008, 2009; Assaf and Matawie 2009; Drake et al. 2006). Furthermore, Simar and Wilson (2007) indicated that efficiency scores are serially correlated. The coefficients estimation using Tobit regression in the second stage DEA were inappropriate. To date, few papers have used a truncated regression model to deal with the bias problems in the second stage of the DEA approach. Barros and Dieke (2008) have examined the determinants of efficiency that they obtained using the CCR-DEA approach by assuming that this distribution of efficiency is truncated normally with a mean of zero. Assaf and Agbola (2011) have used the BCC-DEA approach to evaluate Australian hotels and have investigated the determinants of technical efficiency using a truncated regression with a bootstrap procedure. Furthermore, most studies have examined the

Table 16.1 Literature review of DEA models in the hospitality industry since 2003

Authors	Units	Inputs	Outputs	Methods
Assaf and Agbola (2011)	31 Australian hotels during 2004–2007	Room payroll, other payroll, food cost, beverage cost, room expenses, no. of rooms available	Room revenues, F&B revenue	DEA and truncated regression with bootstrap procedure
Assaf et al. (2010)	78 Taiwanese ITHs during the 2004–2008 period	Number of rooms, FTEs from room departments, FTEs from F&B departments, and FTEs from other departments	Room revenue, F&B revenue, other revenue, market share, and employee productivity	Panel data and a bootstrapped metafrontier approach
Assaf and Matawie (2009)	Cost efficiency and allocative efficiency for 89 Australian hospitals using survey method	FTEs, amount of energy, and total square area of the foodservice department, price of labor, price of energy	Annual number of meals produced	Two-stage DEA with Tobit regression
Hu et al. (2009)	Taiwanese ITHs during the 1997–2006 period	Number of rooms, FTEs, and total square feet of F&B	Room revenue, F&B revenue, and other revenue	Two-stage DEA with Tobit regression
Barros and Dieke (2008)	12 Luanda hotels during the 2000–2006 period	Total costs and investment expenditure	RevPar	Cross-sectional data, CRS-DEA, and truncated regression with bootstrapped procedure
Yang and Lu (2006)	56 Taiwanese ITHs in 2002	Operating expenses, total FTEs, number of rooms, and square feet of F&B	Sales revenue, occupancy rates, average room prices, employee performance from F&B, and performance per square feet from F&B	Two-stage DEA with Tobit regression
Hwang and Chang (2003)	45 Taiwanese ITHs during the 1994–1998 period	Operating expenses, total FTEs, number of rooms, and square feet of F&B	Room revenue, F&B revenue, and other revenue	Cross-sectional data and CRS-DEA

Source: Own elaboration

determinants of hotel efficiency by addressing hotel operating characteristics (e.g., market share, size, location, and type of ownership) (e.g., Assaf and Agbola 2011; Assaf et al. 2010; Barros and Dieke 2008). Drake et al. (2006) have examined the effects of macroeconomic variables on banking efficiency. Studies that investigate the effects of macroeconomics and policy regulations on hotel efficiency are scarce. In addition, research that has addressed the heterogeneity of decision-making units (DMU) is also limited.

O'Donnell et al. (2008) have described a metafrontier as the boundary of an unrestricted technology relative to an efficiency measure. Group frontiers are referred to as the boundaries of restricted technology sets in which the restrictions are derived from the absence of an economic infrastructure and/or other characteristics of the production environment. O'Donnell et al. (2008) further assessed the differences between the metatechnology ratios (MTR) of heterogeneous DMUs based on their distance from a homogeneous boundary. Assaf et al. (2010) have used the MDEA approach to investigate differences in technology among hotels based on their size and character. Fang and Hu (2009) assessed the MTR for the heterogeneous securities firms. Moreira and Bravo-Ureta (2010) have used the same method to evaluate the MTRs of dairy farms. However, none of the previous studies has utilised a metafrontier DEA approach and a truncated regression with a bootstrapping procedure to investigate the influences of macroeconomic variables and policy factors on efficiency.

This study assessed the MTRs of heterogeneous tourism hotels, as "increasing the MTR means a decrease in the operator's proficiency gap between the group frontier and the metafrontier" (O'Donnell et al. 2008).

16.5 Methodology

O'Donnell et al. (2008) employed the DEA approach to construct a metafrontier by pooling all observations from all groups and constructed various group frontiers to measure the efficiencies and MTRs for each group frontier relative to the metafrontier. Therefore, the measured efficiency scores for the metafrontier consist of two components. One component is used to measure the distance from an input–output point to the group frontier (the common measure of technical efficiency). The other component measures the distance between the group frontier and the metafrontier, as this distance represents the restrictive nature of the production environment.

16.5.1 Data Collection

The empirical data in this paper were obtained from the annual reports of tourist hotels that are listed in the TTB for the period from 2005 to 2010. The data pertaining to the operations, financial information and tourist arrival information for 80–99 tourist hotels (including 59–72 ITHS and 21–27 STHs) are employed to construct the DEA frontier and estimate the inefficiency of these hotels. The information for the economic variables (including the gross domestic product (GDP) growth rates in America, China, and Taiwan) was collected from the international financial statistics (IFS) of the IMF and Global Insight.

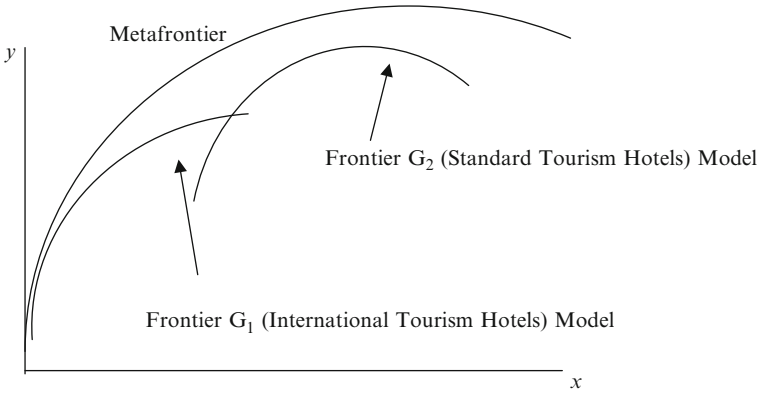

Fig. 16.2 The metafrontier function model

16.5.2 Variables

This study utilises the metafrontier DEA modelling approach to specify three input variables: the number of guest rooms (X1), the number of equivalent full-time employees in the rooms department (X2), and the number of equivalent full-time employees in the food and beverage department (X3). The three output variables were the number of guest rooms sold (Y1), the total room revenue (Y2), and the total food and beverage revenue (Y3). These variables were selected on the basis of the existing literature (Assaf et al. 2010; Hwang and Chang 2003) and data availability. As the data cover 6 years, the output variables are adjusted by the GDP deflator (2005 = 100) to avoid distortions from inflation (Bierlen and Featherstone 1998; Li et al. 2004). The U.S. economy is largely characterised by fluctuations in annual GDP growth. Due to the relatively large proportion of fixed costs, the lodging industry is particularly sensitive to economic dynamics (Graham and Harris 1999). Therefore, selected environmental variables, including the GDP growth rates in the G2 countries (America and China) and Taiwan are used as proxies to reflect the global financial status.

16.5.3 Metafrontier Function Model

This study assessed efficiency by using the MDEA approach and the MTR values to determine the gap between the metafrontier and the group frontier. Figure 16.2 uses a simple example involving one input, x, and one output, y, to illustrate the graph of the metafrontier function model that was adapted from Battese, Rao, and O'Donnell (2004).

In this paper, we follow the TTB classification and separate the hotels into ITHs (group 1) and STHs (group 2), with different group frontiers (Fig. 16.2).

Traditional DEA utilises a linear programming model that identifies an efficient frontier that consists of the efficient DMUs. DMU_i is the object unit that attempts to

minimise its input. The efficiency scores reflect the ability of DMUs to employ a minimal number of inputs when obtaining a given level of outputs (Charnes et al. 1978). All of the DMUs in one period constitute the reference set for constructing the efficiency frontier for each DMU_i. Charnes et al. (1978) developed the constant-return-to-scale (CRS)-DEA model as follows:

$$\theta_i = Max \frac{\sum_{m=1}^{M} u_m y_i^m}{\sum_{k=1}^{K} v_k x_i^k}$$
$$\theta_i, u_1, ..., u_m, v_1, ..., v_k$$

$$s.t. \ \frac{\sum_{m=1}^{M} u_m y_j^m}{\sum_{k=1}^{K} v_k x_j^k} \leq 1, j = 1, ..., N$$
$$u_m, v_k \geq 0, m = 1, ..., M, k = 1, ..., K, \quad (16.1)$$

where θ_i is the efficiency score of DMU_i, x_j^k and $y_j^m > 0$ represents the input and output data, respectively, for the j-th DMU with the ranges for j, k, and m indicated in Eq. 16.1, N is the number of DMUs, x_j^k is the amount of k-th input that is consumed by the j-th DMU, y_j^m is the amount of m-th output that is produced by the j-th DMU, and u_m and v_k are the output and input weights assigned to the m-th output and the k-th input, respectively.

Banker et al. (1984) (who utilised the BCC-DEA model) spread the CRS-DEA model into a variable-return-to-scale (VRS-DEA) model. The dual solution of the traditional output-oriented BCC-DEA approach, which uses the duality condition expressed by Coelli (1995) to measure the efficiency score θ_{ip} for DMU_i, is constructed as follows:

$$\frac{1}{\theta_{ip}} = Max \ \phi_{ip}$$
$$\phi_{ip}, \lambda_1, ..., \lambda_N$$
$$s.t. \ \phi_{ip} y_i^m \leq \sum_{j=1}^{N} \lambda_j y_j^m, m = 1, ..., M,$$
$$x_i^k \geq \sum_{j=1}^{N} \lambda_j x_j^k, k = 1, ..., K,$$
$$\sum_{j=1}^{N} \lambda_j = 1,$$
$$\lambda_1, ..., \lambda_N \geq 0. \quad (16.2)$$

In this equation, ϕ_{ip} represents the inverse of the efficiency score of DMU$_i$, the efficiency score θ_{ip} of DMU$_i$ is $1/\phi_{ip}$, N is the number of DMUs, K and M are the number of inputs and outputs, respectively, x_j^k is the amount of k-th input that is consumed by the j-th DMU, y_j^m is the amount of m-th output that is produced by the j-th DMU, and λ_j is each efficient DMU's individual share in the definition of the target for DMU$_i$. This present study analysed the efficiency scores and MTRs using this DEA model to construct a metafrontier model with all of the pooled observations. The output slacks further were obtained from Eq. 16.2 as the dependent variables of the truncated regression. In addition, this research also measures scale efficiency using Eq. 16.3:

$$\theta_i = \theta_{ip} \times SE_i \tag{16.3}$$

This study utilises an output-orientated DEA model that consists of z groups and observations of L_z units in the z-th group to construct the group frontiers as follows:

$$\begin{aligned}
&1/\theta_{ipL_z} = Max\ \phi_{ipL_z} \\
&\phi_{ipL_z}, \lambda_1, ..., \lambda_{L_z} \\
&s.t.\ \phi_{ipL_z} y_i^m \le \sum_{j=1}^{N} \lambda_j y_j^m, m = 1, ..., M, \\
&x_i^k \ge \sum_{j=1}^{L_z} \lambda_j x_j^k, k = 1, ..., K, \\
&\sum_{j=1}^{L_z} \lambda_j = 1, \\
&\lambda_1, ..., \lambda_{L_z} \ge 0,
\end{aligned} \tag{16.4}$$

In this equation, $N = \sum_z L_z$ and ϕ_{ipL_z} are the reciprocal of the efficiency θ_{ipL_z} with respect to the G_z-th group frontier. To use the definition of output-orientated efficiency, Eq. 16.3 expresses the *MTR* of the i-th DMU as follows:

$$MTR_z = \frac{1}{N} \sum_{i=1}^{N} MTR_{iz} = \frac{1}{N} \sum_{i=1}^{N} \frac{\phi_{ipL_z}}{\phi_{ip}}. \tag{16.5}$$

The paper estimated the G_z-th group's *MTR* for each type of tourist hotel, including both ITHs and STHs.

16.5.4 Truncated Regression Model

Several studies have used multiple regressions with OLS estimations or Tobit regressions to model the effect of environmental variables on efficiency. However, Simar and Wilson (2007) have criticised this approach and stated that the DEA

efficiency scores, which are serially correlated and range from 0 to 1, violate the OLS assumption and thus biased the Tobit regression. Therefore, this paper utilised a truncated regression with a bootstrap procedure to investigate the effects of macro-economic variables on the inverse of hotel efficiency and output slacks, as shown in Eqs. 16.6a and 16.6b:

$$\begin{aligned} \phi &= a + \sum_{l=1}^{L} \delta_l Z_l + \varepsilon,\ \mathrm{l} = 1,...,\mathrm{L} \\ \varepsilon &\geq 1 - a - \sum_{l=1}^{L} \delta_l Z_l \sim N(0, \sigma_\varepsilon^2) \end{aligned}, \tag{16.6a}$$

where ϕ represents the inverse of pure technical efficiency from BCC-DEA under metafrontier.

Due to the fact that the existing literature examined the determinants of efficiency, Fried et al. (1999) and Fried et al. (2002) indicated that utilizing regression analysis could be able to quantify the impact of environmental factors on each slack variables. Total radial and non-radial output slacks are obtained from Eq. 16.2 and separately regressed on a set of factors that are likely to affect the hotel efficiency in Eq. 16.6b:

$$\begin{aligned} OS_i^m &= a_m + \sum_{h=1}^{H} \delta_{hm} Z_{hm} + \varepsilon_m,\ \mathrm{h} = 1,...,\mathrm{H},\ \mathrm{m} = 1,...,\mathrm{M} \\ \varepsilon_m &\geq -a_m - \sum_{h=1}^{H} \delta_{hm} Z_{hm} \sim N(0, \sigma_{\varepsilon_m}^2) \end{aligned} \tag{16.6b}$$

where Z_{ls} refers to the environmental variables, which include the annual GDP growth rates in the G2 countries (America and China) and Taiwan, the number of guest arrivals from China, and the hotel operating characteristics (such as the hotel type and the catering to lodging revenue ratio). Time dummy variables were also included. The total revenue amount of each observed hotel was included as a control variable. δ_{ls} refers to the estimated parameters, and ε_s refers to the error terms. OS_1, OS_2, and OS_3 in this present paper represent the slack value of Y1 (number of rooms sold), Y2 (room revenue), and Y3 (F&B revenue) obtained from the following Eq. 16.7, respectively.

$$\begin{aligned} OS_i^1 &= \sum_{j=1}^{N} \lambda_j y_j^1 - y_i^1, i = 1, ..., N, \\ OS_i^2 &= \sum_{j=1}^{N} \lambda_j y_j^2 - y_i^2, i = 1, ..., N, \\ OS_i^1 &= \sum_{j=1}^{N} \lambda_j y_j^1 - y_i^1, i = 1, ..., N, \end{aligned} \tag{16.7}$$

16.6 Findings and Analysis

Table 16.2 displays the descriptive statistics for the output variables in the model. This table indicates that the number of ITH guest rooms sold decreased from an average of 74,300–68,700 per year; therefore, the number of rooms sold decreased by 7.5 % from 2007 to 2008. The annual room revenue also decreased by 8 % from 2007 to 2010, in contrast to the relatively minor decreasing of 2.8 % in F&B revenue. Especially, there were big drops in 2009 in terms of number of room sold, room revenue, and F&B revenue. This result implies that the financial crisis during 2008–2009 had a greater effect on the room revenue and the number of rooms sold than the food and beverage (F&B) revenue in the ITHs. Table 16.3 describes the input variables in the model; the increase in the number of ITH staff from 2005 to 2007 contrasts with the decrease in the number of employees in 2008. For the STHs, the decrease in the number of employees was greatest in 2008.

Table 16.4 displays the efficiency scores for the ITHs and STHs, which were calculated using both the CCR and BCC-DEA models under the metafrontier and group frontier via Eqs. 16.1 through 16.4. The results demonstrate that the mean hotel efficiency under the CCR-DEA model was 78.6 % in 2010, 74.8 % in 2009, 77.5 % in 2008, compared with 77.2 % in 2007, 76.7 % in 2006, and 81.1 % in 2005. The DEA model that is employed in this paper utilised an output-oriented model that was designed to measure efficiency scores as proportional increases in output generation. As shown in Fig. 16.2, the metafrontier enveloped the individual group frontier and thus provided a homogeneous efficiency comparison. Therefore, the measured efficiency scores related to the metafrontier consist of two components. One component is used to measure the distance from an input–output point to the group frontier. The other component measures the distance between the group frontier and the metafrontier; this distance represents the restrictive nature of the production environment or the technology gap between the group frontier and the metafrontier. During the financial crisis of 2008, ITH inefficiency resulted from technical inefficiency. Table 16.4 illustrates the three levels of returns to scale: increasing returns to scale (IRS), constant returns to scale (CRS), and decreasing returns to scale (DRS).

In terms of the returns to scale, Table 16.4 shows that the IRS status of the ITHs was dominant during 2007 and 2008; however, the DRS status was dominant during 2005 and 2006. By contrast, the IRS status applied to the majority of the STHs from 2005 to 2008. The results suggest that ITHs and STHs may have improved operational efficiency by increasing inputs during 2007 and 2008, due to the favourable effects of Chinese tourism policy deregulation.

The major objective of this paper was to examine the effects of macroeconomic variables and operation characteristics on hotel efficiency and output slacks. Tables 16.5 and 16.6 show the results of the truncated regression with the bootstrap procedure during 2005–2010. Table 16.5 shows the results during 2005–2008 and Table 16.6 shows that results during 2005–2010. The effect of the American GDP growth rate on the inverse efficiency of hotel was positive (unfavourable), however, it is statistically insignificant in Tables 16.5 and 16.6. This result was consistent

Table 16.2 Descriptive statistics for output variables

Output variabiles		Year	Type	Mean	Std. Dev.	Min.	Max.
Number of rooms occupied (in thousands)	Y1	2010	ITH	68.5	43.6	2.2	228.3
			STH	29.7	20.3	1.0	72.5
		2009	ITH	66.5	40.5	7.1	207.4
			STH	24.1	18.6	3.6	71.8
		2008	ITH	68.7	43.5	2.1	213.1
			STH	24.2	19.6	0.2	74.3
		2007	ITH	74.3	43.2	8.6	226.7
			STH	25.0	21.2	1.9	77.5
		2006	ITH	75.6	43.9	8.7	231.3
			STH	25.9	21.2	2.9	79.6
		2005	ITH	80.2	47.4	9.0	243.2
			STH	27.6	22.0	0.2	78.7
Room revenue (in NT$ mn)	Y2	2010	ITH	221.1	206.0	14.3	1184.2
			STH	69.6	48.5	3.9	168.9
		2009	ITH	210.0	193.2	13.3	1,056.9
			STH	53.8	40.6	4.7	168.7
		2008	ITH	232.8	222.6	5.6	1,242.7
			STH	54.0	44.6	0.2	171.6
		2007	ITH	252.8	237.2	32.8	1,375.8
			STH	59.4	50.8	5.6	195.7
		2006	ITH	247.4	223.4	27.7	1,332.5
			STH	58.7	49.0	5.9	203.1
		2005	ITH	249.9	211.0	21.8	1,266.5
			STH	58.4	47.2	0.2	186.8
F&B Revenue (in NT$ mn)	Y3	2010	ITH	242.8	275.0	0.4	1,368.0
			STH	68.2	74.1	0.0	256.6
		2009	ITH	229.9	250.1	7.7	1,200.7
			STH	46.6	59.9	0.0	206.3
		2008	ITH	253.5	271.4	6.2	1,129.1
			STH	43.6	62.9	0.0	236.1
		2007	ITH	260.8	274.5	8.5	1,208.0
			STH	52.0	68.9	0.5	250.9
		2006	ITH	252.3	255.4	5.9	1,127.4
			STH	48.7	61.8	0.0	233.1
		2005	ITH	267.2	252.9	4.5	1,116.0
			STH	45.9	65.3	0.0	234.2

Source: Taiwan Tourism Bureau (http://t-hotel.tbroc.gov.tw/report/List.asp?page=1&page_size=10)

with the findings of Drake et al. (2006) for the banking industry. GDP growth rate had insignificant impact on efficiency. Chinese visitors to Taiwan had a significantly negative impact on the inverse of hotel efficiency, which is favourable effect on hotel efficiency ranging from 2005 to 2010. Especially, the coefficient of

Table 16.3 Descriptive statistics for input variables

Input variables		Year	Type	Mean	Std. Dev.	Min.	Max.
Number of guest rooms	X1	2010	ITH	3,275.5	1,846.0	320.0	10,272.0
			STH	1,491.7	816.0	39.0	2,880.0
		2009	ITH	3,421.0	1,383.0	549.0	10,272.0
			STH	1,419.0	795.6	408.0	2,880.0
		2008	ITH	3,413.0	1,876.0	327.0	10,272.0
			STH	1,369.0	728.0	408.0	2,772.0
		2007	ITH	3,550.0	1,794.0	564.0	10,272.0
			STH	1,397.0	718.0	408.0	2,760.0
		2006	ITH	3,531.0	1,830.0	564.0	10,272.0
			STH	1,382.0	720.0	420.0	2,772.0
		2005	ITH	3,597.0	1,881.0	564.0	10,272.0
			STH	1,416.0	726.0	420.0	2,772.0
FTEs from the room department	*X2*	2010	ITH	980.7	660.5	72.0	2,985.0
			STH	331.5	227.2	36.0	862.0
		2009	ITH	1,022.0	486.9	130.0	2,884.0
			STH	280.0	193.7	34.0	756.0
		2008	ITH	1,037.0	670.0	96.0	2,905.0
			STH	296.0	222.0	36.0	812.0
		2007	ITH	1,084.0	652.0	250.0	2,978.0
			STH	312.0	225.0	45.0	791.0
		2006	ITH	1,063.0	666.0	151.0	2,974.0
			STH	301.0	202.0	36.0	756.0
		2005	ITH	1,059.0	636.0	163.0	2,606.0
			STH	307.0	208.0	36.0	764.0
FTEs from the F&B department	X3	2010	ITH	1,456.9	1,230.9	24.0	5,679.0
			STH	464.0	444.2	3.0	1,585.0
		2009	ITH	1,519.0	839.3	0.0	5,522.0
			STH	356.0	405.0	0.0	1,518.0
		2008	ITH	1,587.0	1,344.0	0.0	5,458.0
			STH	314.0	416.0	0.0	1,586.0
		2007	ITH	1,684.0	1,373.0	132.0	6,236.0
			STH	391.0	457.0	27.0	1,815.0
		2006	ITH	1,673.0	1,363.0	0.0	6,169.0
			STH	345.0	371.0	0.0	1,319.0
		2005	ITH	1,679.0	1,300.0	0.0	5,450.0
			STH	285.0	363.0	0.0	1,292.0

Source: Taiwan Tourism Bureau (http://t-hotel.tbroc.gov.tw/report/List.asp?page=1&page_size=10)

Chinese visitors during 2005–2010 has relatively larger than that during 2005–2008. It shows that the Chinese visitors had brought more benefit on the efficiency of Taiwanese hotels. Furthermore, the paper examined the environmental factors impact on each output slacks. The positive impact of environmental factors

Table 16.4 An analysis of the efficiency of Taiwanese hotels during 2005–2010

			Metafrontier						Group frontier	
Year	Type	N	TE (%)	PTE (%)	SE (%)	%DRS	%CRS	%IRS	PTE (%)	MTR (%)
2005	ITH	59	83.0	85.3	97.3	35.0	16.3	22.5	90.4	94.4
	STH	21	71.1	83.5	86.4	0.0	5.0	20.0	85.0	97.9
	Subtotal	**80**	**81.1**	**85.4**	**95.2**	**35.0**	**21.3**	**42.5**		
2006	ITH	61	80.2	83.7	95.9	34.9	12.8	23.3	88.8	94.0
	STH	25	68.7	79.8	86.2	0.0	3.5	25.6	82.7	96.4
	Subtotal	**86**	**76.8**	**82.6**	**93.0**	**34.9**	**16.3**	**48.8**		
2007	ITH	59	79.4	83.0	95.7	27.4	9.5	33.3	91.0	91.1
	STH	25	71.9	85.0	85.0	0.0	4.8	25.0	88.4	95.9
	Subtotal	**84**	**77.2**	**83.6**	**92.5**	**27.4**	**14.3**	**58.3**		
2008	ITH	61	79.3	84.7	94.0	25.6	10.5	34.9	91.1	92.9
	STH	25	73.2	83.5	87.7	0.0	3.5	25.6	86.6	96.1
	Subtotal	**86**	**77.5**	**84.4**	**92.2**	**25.6**	**14.0**	**60.5**		
2009	ITH	63	76.0	80.5	94.5	4.2	30.2	32.3	83.7	96.0
	STH	27	71.5	83.2	86.2	0.0	4.2	29.2	90.2	92.2
	Subtotal	**90**	**74.8**	**81.2**	**92.2**	**4.2**	**34.4**	**61.5**		
2010	ITH	72	78.1	80.0	97.4	24.2	20.2	28.3	83.6	95.4
	STH	27	79.8	85.5	93.6	0.0	9.1	18.2	92.0	92.8
	Subtotal	**99**	**78.6**	**81.5**	**96.4**	**24.2**	**29.3**	**46.5**		

Note: OTE refers to overall technical efficiency and is assessed by the CCR-DEA model. PTE refers to pure technical efficiency and is assessed by the BCC-DEA model. SE refers to scale efficiency. MTR refers to the metatechnology ratio. %DRS refers to the share of hotels with decreasing returns to scale. %CRS refers to the share of hotels with constant returns to scale. %IRS refers to the share of hotels with increasing returns to scale

on the output slack represents an unfavourable effect on the efficiency because the decision making units need more output to achieve efficient frontier (Fried et al. 2002). The hotel type of ITH experienced a positive (unfavourable) effect on efficiency, output slack of number of room sold, room revenue, and F&B revenue. This result is consistent with the MTR value in Table 16.4. Chinese tourists had a significantly negative (favourable) effect on the slack of number of room sold, however, insignificant negative impact on the slack of room revenue, insignificant positive impact on the slack of F&B revenue. These results represent Chinese visitors to Taiwan had increased the numbers of room sold. However, because of the severe price competition of room and F&B from tour agents, there had been insignificant impact on the hotel revenue during 2005–2010. The results confirmed that the China/Taiwan tourism policy deregulation had a favourable influence on hotel efficiency, but mainly benefited on the occupancy rate, instead of revenue per available room (RevPAR). The other variables, including the ratio of catering revenue to lodging revenue and the total revenue, were found to have different effects on the revenue of room and F&B in hotels.

Table 16.5 The results of truncated regression with bootstrap during 2005–2008

Independent variables	Inverse_Efficiency_VRS	Slack_No_Room_Sold	Slack_Room_Revenue	Slack_F&B_Revenue
GDP%_Taiwan	−0.0412	0.7309	−38.2897	34.2985
	(0.0460)	(2.2937)	(36.1668)	(42.4167)
GDP%_China	0.0746	−0.9754	80.8204	−43.3282
	(0.0726)	(3.5151)	(63.1236)	(66.2589)
GDP%_America	0.0183	2.4498	−25.5471	−78.5998*
	(0.0468)	(2.4571)	(45.3206)	(47.2809)
Cater_Room_Ratio	0.0337	−2.4273	100.6716***	−123.1585***
	(0.0292)	(1.6142)	(34.8133)	(42.7713)
Hotel_Type_ITH	0.0302	21.0278***	288.9429**	470.5415***
	(0.0526)	(3.7200)	(149.2900)	(152.6471)
China_Visitors	−0.0001***	−0.0004***	−0.0034	0.0004
	(0.0001)	(0.0001)	(0.0024)	(0.0017)
Revenue	−0.0001***	−0.0001	0.0001**	0.0001*
	(>0.0000)	(>0.0000)	(>0.0000)	(>0.0000)
Constant	0.6122	−2.034	−1,178.0660*	15.0767
	(0.6841)	(33.384)	(692.4721)	(621.8332)
Sigma	0.3262***	11.705***	123.4387***	125.2743***
	(0.0385)	(0.939)	(28.9109)	(19.9246)

Source: Own elaboration

Notes: 1. The numbers in the *parentheses* are standard deviations.

2. ***, **, and * indicate significance at the 1 %, 5 %, and 10 % levels, respectively.

Table 16.6 The results of truncated regression with bootstrap during 2005–2010

Independent variables	Inverse_Efficiency_VRS	Slack_No_Room_Sold	Slack_Room_Revenue	Slack_F&B_Revenue
GDP%_Taiwan	0.0408	−4.2411***	−7.5002	−6.6271***
	(0.0288)	(1.6118)	(10.3833)	(0.7654)
GDP%_China	−0.0481	6.8779**	22.0273	8.4707***
	(0.0983)	(2.8033)	(28.5623)	(2.7056)
GDP%_America	−0.0373	5.7922***	1.9259	9.3211***
	(0.0569)	(1.9693)	(18.8494)	(1.8505)
Cater_Room_Ratio	0.1462	−1.9502	144.6365**	−7.8127***
	(0.1091)	(1.9058)	(54.4873)	(2.9624)
Hotel_Type_ITH	0.5846**	28.8426***	376.5227*	35.9714***
	(0.2374)	(5.0096)	(198.9518)	(3.8547)
China_Visitors	−0.0043**	−0.0036	0.1712*	0.0039
	(0.0018)	(0.0048)	(0.0870)	(0.0072)
Revenue	−0.0402**	−0.4768***	−4.0882	−0.1339
	(0.0170)	(0.1528)	(3.1424)	(0.1580)
Constant	1.5691	−84.5697***	−977.8033*	−55.3806**
	(1.0075)	(28.1057)	(583.5588)	(27.8505)
Sigma	0.6645***	13.1827***	150.5207***	50.4999***
	(0.1453)	(1.1634)	(34.6089)	(3.1020)

Source: Own elaboration

Notes: 1. The numbers in the *parentheses* are standard deviations.

2. ***, **, and * indicate significance at the 1 %, 5 %, and 10 % levels, respectively.

16.7 Conclusions and Future Research

The financial crisis of 2008 caused the economic recession. The restriction on Chinese travel to Taiwan was relaxed in July of 2008. The questions of whether the financial crisis had a negative effect and the Chinese tourism deregulation had a positive effect on Taiwanese hotel efficiency have been addressed but not empirically studied by practitioners and researchers. The MDEA approach was used in this paper to estimate Taiwanese hotel efficiency and MTRs for the 80–99 international tourist hotels (ITHs) and standard tourist hotels (STHs) in Taiwan during the period from 2005 to 2010. The empirical results showed that the efficiency of ITHs was worse than that of STHs, due to the unfavourable effect on number of room sold, room revenue, and F&B revenue of ITH.

The ITHs that were equipped with banquet halls, clubs and superior service facilities had contrary to generate relatively worse revenue during 2005–2008. During the financial crisis of 2008, the inefficiency of ITHs resulted from technical inefficiency; ITHs enjoyed the benefits of scale efficiency. Moreover, ITHs and STHs may have improved operational efficiency by increasing outputs through leveraging the favourable effects of Chinese tourism policy deregulation based on the output slack analysis from DEA. After 2009, the MTR of ITH had outperformed that of STH. The Chinese visitors had contributed more benefits on the performance of ITH during 2009–2010.

The effect of the global financial crisis on hotel efficiency was negative and not statistically significant. Chinese tourists had a statistically significant positive effect on hotel efficiency. The combination of the improved cross-strait relations and the overall increase in the quality of tourism in Taiwan resulted in a steady growth in the number of international tourists in Taiwan. The growth in the number of Mainland tourists and foreign tourists visiting Taiwan led to a positive revival of Taiwan's tourism environment and promoted the development of related industries. This result also confirms that the economic growth intertwined with the politic policy. The policy makers may strengthen economic growth through the policy change in order to mitigate the risk from the possible Euro zone debt crisis in the upcoming years. Future research could address the employment rates of travel-related enterprises in the transportation, accommodation, restaurant, and retail industries since the deregulation of Chinese tourists to Taiwan. An investigation of whether the more open policy, such as increasing the maximum number of arrivals to Taiwan from China per day, releasing the personal tour and more expansion on the length of stay, will create a significant number of job opportunities for Taiwanese citizens would be a worthwhile research endeavour in the future.

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Institutional Analysis of Environmental Management Practices: Application to Golf Courses

17

Alfonso Vargas-Sánchez and Francisco José Riquel-Ligero

17.1 Introduction

In the last decade the practice of golf has become a tourist resource of great importance, which has encouraged many people to now speak of golf tourism as a major segment of the tourism industry. Tous and Borrero (2003) define it as "a social phenomenon that, motivated by the practice of a sport, gives rise to a series of displacements that generate an important economic activity associated with this activity". Hosteltur states that in 2011 Andalusia was visited by golf tourists who, in total, generated income of €687 million. This implies that more than half of the total income that this tourism product generates in Spain as a whole is accounted for by Andalusia. Significantly, despite the serious economic crisis, the number of tourists of this type visiting this region of the south of Spain has grown by 17 % in the last 5 years. Further, their average daily expenditure is €91; this implies that the tourist of this type spends, on average, €31 more per day than a tourist of the conventional type.

The 'take-off' of this niche of tourist market in Andalusia is directly associated with the considerable growth that has taken place in the number of golf courses in the last years (1997–2011, which has made this the Spanish region with most golf courses). Therefore, we are speaking of a tourism activity that has given rise to a broad-ranging social debate on its sustainability in a Region where the natural environment is also a tourist resource of great importance, since golf is a sport that requires ample natural spaces for its practice. A course of 18 holes needs an area of between 50 and 60 ha (Gómez-Lama et al. 1994) and courses are normally found situated in or close to natural areas of great ecological value.

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In this study we shall use the Institutional Theory to identify the pressures of environmental character that potentially influence the environmental practices applied in the construction and management of installations of this type. For this we will propose a model of environmental behaviour for which the research hypotheses will be tested using the Partial Least Squares technique.

17.2 Theoretical Framework and Research Model

Among the classic institutionalist theorists (Mayer and Rowan 1983; DiMaggio and Powell 1983; Scott 1995; North 1990) there is broad agreement in identifying three mechanisms of pressure that condition organisational routines and practices: coercive pressures, which derive from the legislative capacity of government, at the various levels of public administration; normative pressures, which arise in consequence of the professionalization of organizational management; and mimetic pressures, which emerge in consequence of the existence of 'model' organisations that are considered to be successful within the organizational field or activity under study (and hence worth imitating).

17.2.1 The Coercive Pressure Mechanisms

Every organisation is subject to a regulatory system that explicitly conditions its behaviour (Scott 1995) through laws, rules, controls and sanctions. Many authors, such as North (1990), attribute this role to the State, broadly defined. The influence of coercive pressures on corporate decision-making has been widely studied by authors like Oliver (1991, 1997), who reach the conclusion that a direct relationship exists between coercive pressures and corporate or business decisions. This conclusion is supported by the results obtained in recent studies, including those of Frankenberger (2006), Johnson and Greenwood (2007), Esty and Winston (2006), Murugreson (2007), and Rei and Toffel (2009).

Also worth emphasizing is the work of Henriques and Sardosky (1996), who conclude that the legislative capacity of Government causes organizational changes, in both processes and products, to avoid incurring environmental sanctions. In another study, Dasgupta (2000) states that stricter legal regulation forces companies to seek methods and practices to reduce the environmental contamination for which they may be considered responsible. For Buysse and Verbeke (2003), the ultimate objective is to avoid possible sanctions. Other studies, such as that of Camisón (2010), even introduce the variable of expectation of future environmental regulation, in analyzing the development of practices respectful of the natural environment.

In the particular case of the golf courses of Andalusia, there are numerous legal requirements and standards 'on the statute books' that affect the environmental behaviour of organisations of this type. However, the Regional Government has enacted a specific Decree to regulate the installation and functioning of the golf

courses in this region (Decree 43/2008, modified by Decree 309/2010), through which the environmental sustainability of this type of installation is sought, at this level of government.

Based on in these arguments, we formulate the following research hypothesis:

▶ H.1a: Coercive pressure produced by the laws and other regulations applicable to the activities carried out in golf courses have a positive influence on the adoption of sustainable environmental practices by these organisations.

17.2.2 The Normative Pressure Mechanisms

For DiMaggio and Powell (1983) normative pressures arise as a consequence of the formal education, university specialisation and establishment of professional networks that spread accepted practices throughout a sector of activity. Fernández and Valle (1998) argue that professionalization is the principal cause for the existence of this type of pressure in an organizational context. Zsidisin et al. (2005) consider this type of pressure to be a fundamental means by which organizations seek social legitimacy. For Hefu et al. (2010) and Pasmar and Valle (2011) it is these pressures that have the greatest influence on the adoption of practices in companies. This conclusion regarding the importance of normative pressures in the adoption of good environmental practices is shared by several authors including Ximbiau et al. (2010), Raines (2002), Florida and Davison (2001), King and Lenox (2001), Hoffman (1999), and Jennings and Zandbergen (1995).

For the golf courses of Andalusia, we have identified the following pressures of normative character: the program "Committed to Green" of the European Association of Golf; the "Biosphere Golf System" of the Institute for Responsible Tourism; the "Audubon Cooperative Sanctuary Programme for Golf Courses"; the ISO 14001 and the EMAS ruling, among other standards.

Based on the preceding arguments we can state the next research hypothesis:

▶ H.1b: The acceptance of values and standards that originate from the normative pressures applicable in the context of golf courses have a positive influence on the adoption of sustainable environmental practices by these organizations.

17.2.3 The Mimetic Pressure Mechanisms

For DiMaggio and Powell (1983) mimetic pressures have their origin in the policies of companies that are perceived as successful within a particular branch of activity. The objective that a company seeks in submitting to this type of pressure is the

reduction of uncertainty that any process of innovation or change causes in an organization (John et al. 2001; Heugens and Lander 2009). The primacy of this type of pressure over the previous two types discussed has been argued by authors such as Lu (2002) and Ramus and Steger (2002). For Ottensen and Gronhaug (2002), the importance of this type of pressure rests principally on the desire of every company to obtain legitimacy.

In the particular case of the golf courses of Andalusia, we have identified as mechanisms of mimetic pressure the innovations in environmental management that were represented by the establishment and operation of the first 'ecological golf course' of Spain, situated in the resort of Matalascañas, province of Huelva, and classified by a Website specializing in trips and tourism, www.euroresidentes.com, as one of the best golf courses of Spain in the year 2009.

In summary, the growing influence of a context of environmental character in the development of sustainable products and services can be explained from the Institutional Theory, according to authors such as Hoffman and Ventrisca (2002) and Campbell and Melville (2010).

In accordance with these arguments, the following research hypothesis is stated:

- H.1.c: The imitation of sustainable environmental practices employed by organizations perceived as successful has a positive influence on the adoption of sustainable environmental practices by golf courses.

17.2.4 Social Legitimacy

The search for social legitimacy by organisations stands out as the principal motivation for the environmental behaviour that they display, according to Bansall and Clelland (2004). Social legitimacy can be defined in the terms used by Schuman (1995): that is, social legitimacy is "the generalized perception or assumption that the actions of an entity are desirable, convenient and appropriate within a socially constructed system of standards, values, beliefs and definitions". Authors such as Aldrich and Fiol (1994); Hunt and Aldrich (1996), Alcantara et al. (2006), Tornikoski and Newbell (2007) have demonstrated the direct relationship between gaining or retaining social legitimacy and organizational success or survival. Therefore, environmental behaviour would figure as a factor of success of an organization: when an organization has social legitimacy, this is a good indication that it will have the necessary resources to survive and prosper.

The use of this term has been more evident in theoretical than in empirical research, since it is difficult to measure in an organization (Low and Johnston 2008). Among previous attempts to measure the concept empirically is the work of Deephouse (1996), who proposed that it is possible to measure legitimacy by examining the evaluations or degree of acceptance of an organization by the main social actors, the government and the public in general.

This construct acquires singular significance in the case of Andalusia, for the wide-ranging debate that the topic of golf courses has generated and continues to generate.

From these considerations, we believe it is valid to introduce the following research hypothesis:

▶ H.2a: The implementation of sustainable environmental practices by golf courses is principally motivated by the search for social legitimacy, more than by increased business performance or returns.

17.2.5 Organizational Performance

That a company behaves responsibly in respect of the natural environment implies the institutionalization of various relevant standards that have been disseminated and adopted in the organizational area, or alternatively, it is the outcome of the voluntary responses of the company to the pressures exerted by external groups (Henriques and Sadorsky 1995). For Walley and Whitehead (1994), the acceptance of these practices and standards will condition the most economically appropriate form of undertaking a commercial activity, since these practices will have an influence on the business results of the company. There are numerous authors who have argued along the lines that there is a positive relationship between practices of this type and the performance of the company; among the studies that should be mentioned are those by Williams et al. (1993); Worrell et al. (1995); Cordeiro and Sarkis (1997); Claver and Molina (2000); Del Brio and Junquera (2001); Peris and Marquina (2002); Aragón and Sharma (2003); Al-Tuwaijin (2004); Ann et al. (2006); Garcés et al. (2006); Remmingus et al. (2006); Campbell (2007); García and Armas (2007); Montanbón et al. (2007); and Piñero et al. (2009).

In line with this, we put forward the following research hypothesis:

▶ H.3a: The implementation of sustainable environmental management practices by golf courses has a positive influence on the business performance or returns of these organizations.

The recently published study of Tsai-Ju (2012) establishes a positive relationship between the different types of legitimacy and the financial results. Reiman (2011), for his part, focuses more on the relationship between local legitimacy and performance of the employees. In Jun et al. (2011), a direct relationship between internal legitimacy and organizational performance is also established.

Given all this, we put forward the following hypothesis:

▶ H.3b: A positive direct relationship exists between the social legitimacy sought by golf courses and their business performance or returns.

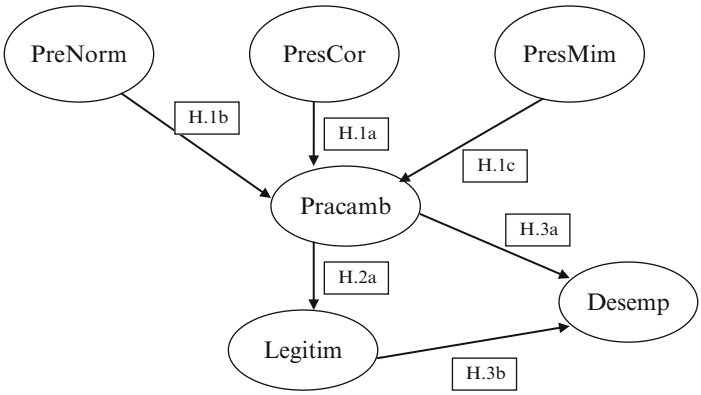

Fig. 17.1 Graphic representation of the research model (Source: Authors' own elaboration)

17.3 Methodology and Sample

As shown in the previous section, the research model proposed is based on the configuration of the institutional context within which golf courses in the Spanish region of Andalusia operate. The model reflecting this line of thinking takes the following form (Fig. 17.1):

PresNorm = Normative Pressure. Prescor = Coercive Pressure. PresMin = Mimetic Pressure. Pracamb = Environmental practices applied. Desemp = Organisational performance/returns. Legitim = Social Legitimacy.

It can be observed that our research aims at measuring the degree of influence that these mechanisms of institutional pressure (Berger and Luckman 1968; DiMaggio and Powell 1983; D'Andrade, 1984; Scott 1995; North 1990) exert on the application of sustainable practices for managing the natural environment by those organizations. An additional aim is to corroborate the propositions of the classic institutionalists (Meyer and Rowan 1977), to the effect that the final objective of practices of this type is more to gain legitimacy and social acceptance than to increase economic efficiency or organizational performance/returns.

The instrument used to obtain the data is a structured questionnaire addressed and mailed to the greenkeepers and/or managers of the golf courses of Andalusia, since these employees are the individuals who should have the most direct information needed to respond to the questions asked.

A preliminary version of the questionnaire was tested by several faculty members with experience in this type of research, and by several managers of golf courses. The object of this test was to ensure the validity of content of this instrument of measurement.

Table 17.1 Technical specifications of the sampling

Research field	Golf courses situated in the autonomous region of Andalusia
Geographic location	Andalusia
Methodology	Structured questionnaire
Universe	96 golf courses in Andalusia
Size of sample	Sample = universe, 96 golf courses
Valid responses	31 (a response rate of 32.29 % of the population)
Sampling error	7.42 %
Level of confidence	95 %, p = q = 0.5; Z = 1.96
Data collection period	Pre-test: September 2008. First mailing: December 2008. First re-mailing: January 2009. Second re-mailing: February 2009. Treatment of data: February and March 2009

Source: Authors' own elaboration

Once we had the definitive questionnaire, it was applied to the population under study, that is, the 96 golf courses in Andalusia that were in active operation during the year 2009. In continuation we present the principal characteristics of the sample (Table 17.1).

The scales utilized to measure the key factors of the research model are Likert scales of five points. For the institutional context and the three mechanisms of pressure argued under the Institutional Theory, we have taken the type of measurement utilized by Kostova and Roth (2002) and Llanas (2005). Concerning the environmental practices applied by golf courses, the basis adopted for the measurement of this construct is the set of indicators designed by Romero (2005) for this type of installation. With regard to the level of social legitimacy, we have backed this measurement in the studies of Deephouse (1996), Fernández (2001) and Llanas (2005). Lastly, we have utilized the scale proposed by Powell and Dent-Micallef (1997) to measure the organizational performance, utilizing the respondents' perceptions of their own organization's performance in comparison with that of its competitors (Table 17.2).

The scales were reviewed utilizing factorial analysis, with the object of determining their uni-dimensionality. In relation to the type of indicator selected, in all cases the indicators have been of the reflective type.

17.4 Analysis of Data Using Partial Least Squares

The Partial Least Squares (PLS) technique has been used for the analysis of the data. This technique can be considered appropriate in our case for two main reasons. The first is because the PLS approach can work with small sample sizes (Barclay et al. 1995). Secondly, the use of PLS is considered appropriate in studies of exploratory type.

Table 17.2 Constructs and their indicators

Constructs (abbreviation)	Indicators (abbreviation)
Coercive pressure (Prescor)	Knowledge of laws (Conoley). Compliance with laws (Cumpley). Regulatory authorities (Orgregul). Existence of agreements (Exacuerd)
Normative pressure (Presnor)	Moral obligation (Obligmor). Congruence with values of the social context (Congrval). Social norms (Normsoci)
Mimetic pressure (Presmim)	Knowledge of others' experience (Conoexp). Models to follow (Modelseg). Imitation practices (Imiprac). Knowledge of others' successful experience (Conoexit)
Environmental management practices (Pracamb)	Number of environmental proposals (Numprop). Proposals put into practice (Propract). Proposals that achieved objectives (Probjet). Cost of environmental actions (Costemed). Number of legal proceedings on environmental matters (Expedmed). Employees in training for environmental activities (Emplefor). Hours of training for environmental activities (Horafor). Suppliers with environmental certification (Provcert). Purchases from suppliers with environmental certification (Compcert). Expenditure on disseminating environmental achievements (Diflogro). Expenditure on campaigns for environmental awareness (Campconc)
Legitimacy (Legitim)	Social recognition (Recosoci). Organizational values (Valorg). Legitimacy, Public Administration (Admolegi). Legitimacy, employees (Emplegi). Legitimacy, citizens (Ciulegi). Legitimacy, communications media (Maslegi). Legitimacy, customers (Clielegi). Legitimacy, suppliers (Provlegi). Legitimacy, associations of ecologists (Asoclegi). Legitimacy, professional associations (Proflegi). Legitimacy, company sector (Sectlegi). Relations with pressure groups (Relagrup)
Business performance/results (Desemp)	Economic conditions 2007 (Condeco). Financial results 2007 (Rtdoeco). Profitability 2007 (Rentbil). Number of green fees 2007 (Numgren). Market share 2007 (Cuotame). Economic conditions 2003–2007 (Condec03). Financial results 2003–2007 (Rtdoec03). Profitability 2003–2007 (Rentb03). Number of green fees 2003–2007 (Num03). Market share 2003–2007 (Cuota03)

Source: Authors' own elaboration

17.4.1 Analysis of the Measurement Models

In this part we determine whether the theoretical concepts are measured correctly by the variables observed; and for this, we study their validity and reliability. In a PLS model the individual reliability of the item, the internal consistency and the convergent and discriminant validity are analyzed (Chin 1998).

The individual reliability of each item for constructs with reflective indicators is evaluated by examining the loading of each indicator with the construct that it is intended to measure. The value of the standardized loadings must be equal to or

Table 17.3 Reliability and validity

Constructs	Standardized loadings	Comp. Rel.	Ave
Prescor	Conoley, 0.658700; Orgregul, 0.801300	0.697582	0.537966
Presnorm	Obligmor, 0.611600; Congrval, 0.865600; Normsoci, 0.785200	0.802031	0.579547
Presmim	Imipac, 0.723500; Conoexit, 0.814400	0.744143	0.593380
Pracamb	Numgrup, 0.777300; Porpact, 0.826600; Costemed, 0.678800; Emplefor, 0.834400; Horafor, 0.757200; Provecert, 0.775300; Compcert, 0.778700; Diflogro, 0.620000	0.915181	0.576204
Legitimi	Recosoci, 0.836900; Valorg, 0.843300; Clielegi, 0.740200; Asoclegi, 0.621100; Realgurp, 0.838800	0.885277	0.609760
Desemp	Rtdeco, 0.709700; Rentabil, 0.674300; Numeren, 0.820400; Cuotamer, 0.683500; Rentb03, 0.703600; Num03, 0.669600; Cuota03, 0.596900	0.867587	0.505700

Source: Authors' own elaboration

greater than 0.5 according to Falker and Miller (1992). In the scales employed most of the indicators present loadings higher than this particular threshold; and after successive clearings we are left with 27 items out of a total of 44 that comprised the initial scale.

The reliability of a construct allows us to check the internal consistency of all the indicators when measuring the concept; in other words, an evaluation is made of how rigorously the manifest variables are measuring the same latent variable. To measure this parameter we must look at the composite reliability, given the advantages that it presents over the Cronbach's Alpha. For this we follow Nunnally (1978), who suggests 0.7 as limit of acceptance in early stages of research. The Table 17.3 gives the values of the composite reliability obtained, for the reflective constructs that comprise the model proposed. It can be observed that all the constructs have a composite reliability exceeding or practically equal to that threshold.

The convergent validity is analyzed by the average variance extracted (AVE), which gives the amount of variance that a construct obtains from its indicators in relation to the amount of variance due to the measurement error. For this, Fornell and Lacker (1981) recommend values higher than 0.5. The following table presents the values of the AVE obtained in the research model proposed. As can be observed, all the constructs of the research model proposed meet the condition recommended by the above mentioned authors; therefore it is accepted that the constructs possess convergent validity.

To evaluate the discriminant validity we check whether the average variance extracted (AVE) of the construct is greater than the square of the correlations between that construct and the rest that make up the research model (Fornell and Lacker 1981), which tells us that one construct is different from any other. Made these calculations, all the constructs meet this condition; therefore we can state that the constructs have discriminant validity.

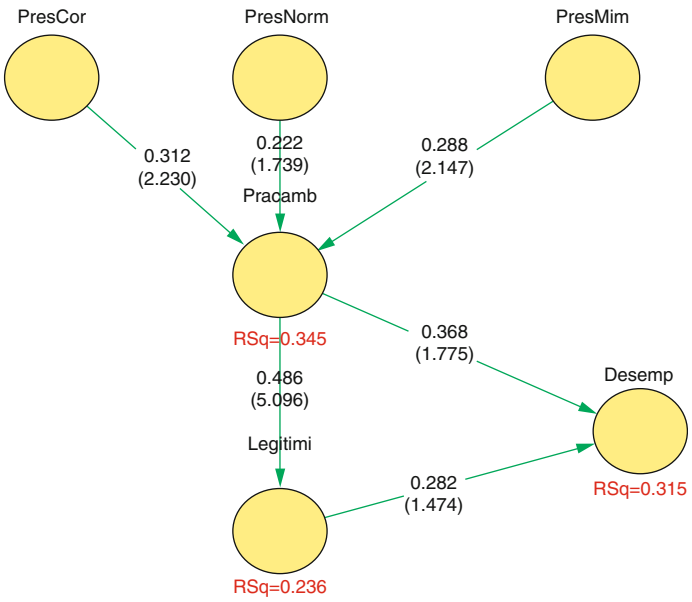

Fig. 17.2 Model with the results of testing of the hypotheses (Source: Authors' own elaboration)

17.4.2 Analysis of the Structural Model

The path coefficients (β) between the various constructs are reflected in the Fig. 17.2. All of them meet the condition argued by Chin (1998): they exceed 0.2.

The predictive power of our model can be analyzed utilizing the value of the variance explained (R^2) for the dependent latent variables (Falk and Miller 1992; Chin 1998). Falk and Miller (1992) stipulate a threshold of 0.1: lower values, even though statistically significant, indicate that the latent variable has a low predictive level; therefore, as reflected in the Fig. 17.2, we can conclude that the model presents an adequate predictive power. However, following Chin (1998) we can say that the values obtained can be considered as moderate; nevertheless, taking into account that environmental practices, legitimacy and financial performance are all measured by only one latent variable, the values obtained can be considered as moderate or substantial (Henseler et al. 2009).

In respect of the stability of the estimations offered, and according to the propositions argued by Barclay et al. (1995), Tenenhaus et al. (2009) and Henseler et al. (2009), we consider appropriate to complement the analysis of the structural model estimated with the PLS technique, by means of the cross-validated redundancy index (Q^2), also known as the Stone-Geisser test (Stone 1974; Geisser 1975). This test gives us a measure of goodness with which the values observed are reconstructed by the model and its parameters (Chin 1998); it is generally accepted that a model has predictive relevance when Q^2 is greater than zero (Henseler et al. 2009; Pinto Jiménez et al. 2006). Q^2 can be measured utilizing procedures of the

blindfolding type (Tenenhaus et al. 2005) and is only applicable to latent variables that are incorporated in a reflective measurement model (Henseler et al. 2009), as in the model presented in this research. In our case all the values of Q^2 are slightly higher than zero (Pracamb, 0.005; Legiitmi, 0.002; Desemp, 0.003); this indicates that the model has some predictive capacity or relevance, albeit weak. In any case, the values presented by Q^2 in our work are not negative, which would have indicated that the model lacked any predictive power (Henseler et al. 2009).

17.5 Testing of the Hypotheses

After the calculation of the regression coefficients (β) and the verification of the strength of the relationships between constructs put forward in the present model (complying with the previously mentioned condition established by Chin 1998), a Bootstrap analysis in PLS was performed, utilizing a Student-T distribution of two tails, with n-1 degrees of freedom (n being the number of subsamples analyzed: 500 in our case), to determine that the relationships (hypotheses) are statistically significant. The following Fig. 17.2 shows both the β coefficients and the Student-T values (in parentheses in the figure) of all the relationships between the constructs:

Equations of the structural model:

- Pracamb = 0.312 PresCor + 0.222 PresNorm + 0.228 PresMim + δ_1
- Legitimi = 0.486 Pracamb + δ_2
- Desemp = 0.368 Pracamb + 0,282 Legitmi + δ_3

The following table gives the different coefficients of regression and the T-Student tests employed to test the hypotheses and determine their level of significance (Table 17.4):

17.6 Estimation of the Structural Model with a Second-Order Construct

It is common in social sciences that we have to deal with constructs of a higher degree of complexity, termed second-order constructs. A second-order model is defined as one that possesses different first order dimensions to identify it correctly (Law et al. 1998). A dimension is understood as a conceptual term that serves to describe distinctive facets of a construct, which is conceptualized as possessing various heterogeneous facets (Bollen and Lennox 1991).

In our case we have considered it appropriate, within the theoretical framework that we have studied in the first part of this paper, to re-specify the research model proposed with the inclusion of a second-order construct formed by the different kind of pressures that comprise the institutional environment (Berger and Luckman 1967; Hawley 1968; Meyer and Rowan 1977; DiMaggio and Powell 1983; D'Andrade 1984; North 1990; Scott 1995; Navarro 1997). In our view, these dimensions that support the concept of isomorphism should be studied not only as isolated

Table 17.4 Testing of the hypotheses

Hypothesis	Relationship	β coefficients	Students-T (bootstrap)	Level of significance and test result
H.1a	PresCoer-> Pracamb	0.3120	2.230**	**Accepted for a level of significance P < 0.05**
H.1b	PresNorm-> Pracamb	0.2220	1.739*	Accepted for a level of significance P < 0.1, rejected for more demanding levels of significance
H.1c	PresMim-> Pracamb	0.2880	2.147**	**Accepted for a level of significance P < 0.05**
H.2a	Pracamb-> Legtimi	0.4860	5.096***	**Accepted for a level of significance P < 0.001**
H.3a	Pracamb-> Desemp	0.3680	1.776*	Accepted for a level of significance P < 0.1, rejected for more demanding levels of significance
H.3b	Legtimi-> Desemp	0.2820	1.474*	Accepted for a level of significance P < 0.1, rejected for more demanding levels of significance

Source: Authors' own elaboration
Levels of significance *P < 0.1; **P < 0.05; ***P < 0.001 (based on $t_{(499)}$ of two tails).

constructs, but also as a second-order construct encompassing all the heterogeneity of facets described by the classic authors of and of Neoinstitutionalism.

The following figure summarizes the composition of the second-order construct that we are going to introduce in our statistical analysis (Fig. 17.3):

Where the hypothesis H.1 is defined as follows:

▶ H.1: The institutional environment of the golf courses has a positive influence on the adoption of sustainable environmental management practices by these organizations.

As can be observed, we have opted for a model of aggregate construct with formative relationships between the latent first and second order variables. This choice was made after employing the Vanishing Tetrad test proposed by Bollen and Ting (2000) as a means for valuing the aggregate latent constructs.[1] Kwok-fait

[1] This test gives us an empirical assessment regarding which measurement model is more suitable - either a common latent construct or an aggregate latent construct. The statistic employed in this test is TX2 = Nt´∑ − 1tt t, where N is the size of the sample, t the vector of the sample of independent tetrads, ∑ − 1tt is the inverse of the matrix of covariances of a limiting distribution of t as N approaches infinity. The resulting statistic TX2 is an $X2$ distributed asymptotically, with degrees of freedom equal to the number of non-redundant tetrads considered (Bollen and Ting 1993 2000). The null hypothesis is that the measurement scale is reflective, that is, TX2 = 0 (Bollen and Kwok-fai 2000). In our context tetrads refer to the difference between the product of one pair of covariances and the product of another pair, among the four measurements or items of a scale (Gudergan 2005).

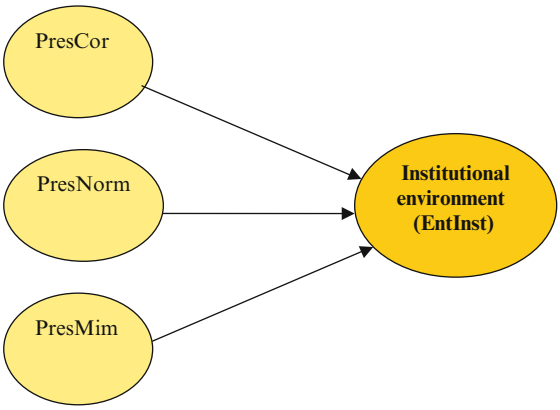

Fig. 17.3 Composition of the second-order construct "Institutional environment" (Source: Authors' own elaboration)

Ting (1995) developed a routine for the SAS statistics program that allows this test to be performed. In our case the T_{X2} statistic gave a value of 8.65, revealing good properties as an element of measurement and confirming the formative character of the construct "Institutional Environment" (Fig. 17.4).

If the first and second order models are compared, that is, comparing both the measurement and the structural models, the results summarized in Table 17.5 are obtained.

In summary:

- In relation to the composite reliability, which helps us to evaluate the reliability of a given construct, we confirmed that the first model, in all its constructs, gave better levels of internal consistency, even though, in almost all cases, the threshold value of 0.7 proposed by Numally (1978) was exceeded in both models.
- In relation to the convergent validity, measured by means of the AVE, it can be seen that, in all the constructs, the first-order model exceeds the limit proposed by Fornell and Lacker (1981), whereas the model with second-order construct does not meet this condition in any of the cases. Consequently, it can be stated that the first-order model has greater convergent validity than the second-order model, since this latter model lacks this property.
- In the case of the discriminant validity, in both models the average variance extracted of a given construct is greater than the square of the correlations between that construct and the rest that comprise the research model. However, this difference is more significant in the case of the first-order model.
- We can conclude, with respect to the measurement model, based on the arguments already presented, that in the case of the first-order model, statistics are obtained that provide better attributes of validity and reliability.

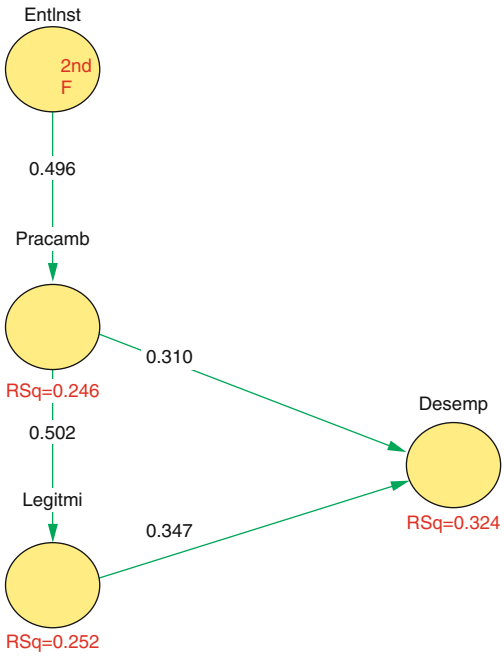

Fig. 17.4 Results with a second-order latent variable (Source: Authors' own elaboration)

- With reference to the coefficients of regression, in both the first-order and second-order models, the value put forward by Chin (1998) as the minimum to be considered acceptable, is exceeded. However, the strength of the relationships established between the application of environmental management practices and legitimacy, and between legitimacy and business performance achieved, is greater, albeit only slightly, in the second model. On the other hand, the strength of the relationship between the application of environmental management practices and business outcomes achieved is less in the second case, but only slightly.
- In relation to the predictive power of the second research model, this is greater in all the constructs except for that corresponding to the application of environmental management practices, where it is lower. In any event, for all the constructs, the minimum value of 0.1 proposed by Falk and Miller (1992) is exceeded.
- With respect to the criterion of the overall quality of the model, evaluated by the Goodness of Fit (GOF) index, it can be seen that, whereas the limit of 0.36 proposed by Chin (1998) is exceeded in the first model (with a value of 0.42), in the second model the GOF index takes the lower value of 0.28.[2] Therefore, the first model is preferred since it offers better overall quality.

[2] To calculate the Degrees of Freedom in the second model, only the latent variables with reflective indicators have been taken.

Table 17.5 Comparison between the first- and second-order models

	Measurement model				Structural model				
	Constructs	PC	AVE	Discriminant validity	*Relationships of the internal model*	*β*	R^2	*Students-T*	*GOF*
First- order model	**PresCor**	0.697	0.537	0.733	**PresCoer- > Pracamb**	0.312	–	2.230	0.42
	PresNorm	0.802	0.579	0.761	**PresNorm- > Pracamb**	0.222	–	1.739	
	PresMim	0.744	0.593	0.770	**PresMim- > Pracamb**	0.288	–	2.147	
	Pracamb[a]	0.915	0.576	0.759	**Pracamb- > Legtimi**	0.486	0.345[a]	5.096	
	Legtimi[a]	0.885	0.609	0.780	**Legtimi- > Desemp**	0.282	0.236[a]	1.776	
	Desemp[a]	0.867	0.505	0.710	**Pracamb- > Desemp**	0.368	0.315[a]	1.474	
Second- order model	**Entinst**	0.653	0.437	0.661	**Entinst– > Pracamb**	0.496	–	*No-Bootstrap*	0.28
	Pracamb[a]	0.848	0.423	0.651	**Pracamb– > Legitmi**	0.502	0.246[a]	*No-Bootstrap*	
	Legitimi[a]	0.828	0.323	0.569	**Legitmi– > Desemp**	0.310	0.251[a]	*No-Bootstrap*	
	Desemp[a]	0.839	0.357	0.597	**Pracamb– > Desemp**	0.347	0.323[a]	*No-Bootstrap*	

Source: Authors' own elaboration
Note: [a]indicates correspondence between the constructs and the R^2 values.

17.7 Conclusions

The object of the work present here is to analyze the impact of the corresponding institutional context on the golf courses of Andalusia, verifying the appropriateness of the framework built by the Institutional Theory. A series of conclusions can be drawn from this analysis, with implications for the management of organizations of this type.

First it must be stated that the golf courses of Andalusia coexist with a highly institutionalized environment; the classic mechanisms of pressure and isomorphism, developed and argued by authors such as Meyer and Rowan (1977), DiMaggio and Powell (1983) and Scott (1995) can be differentiated in this institutional context. Thus, we can distinguish a coercive mechanism that reflects the extensive legal tradition regulating the activities of these organizations. Similarly, we have been able to identify a mimetic mechanism arising out of other organizations' experiences in environmental matters that are considered successful. Lastly, there is a normative mechanism that arises from the various initiatives in environmental matters promoted by professional associations of this field.

In respect of this particular institutional context, we can conclude, in function of the parameters of reliability that we have obtained, that all the constructs considered in the present study have a fairly acceptable degree of internal consistency. Similarly, validity is another of the characteristics to be noted.

It can also be stated that the mechanism that has the most incidence in the application of environmental management practices in these organizations is the coercive pressure. Second in influence is mimetic pressure; and third is normative pressure, which is found to be less well-developed. This proposition is motivated by the great diversity of standards that exist in relation to the activities of golf course management, and their relationship to the natural environment, and especially by the approval of Decree 43/2008 that regulates the establishment and functioning of golf courses in Andalusia, with many environmental implications.

Another of the conclusions that merits emphasis refers to the importance for these golf course of the concept of legitimacy, understood broadly as social acceptance. It has been demonstrated in the study that the principal motivation for operating practices that are respectful of the natural environment is to obtain social legitimacy – more important, even, than to improve the financial results. Moreover, the managers interviewed at these golf courses do not believe that a greater legitimacy necessarily generates better returns for them. They are similarly sceptical that putting environmental policies into practice represents a better organizational performance for them. The preceding statement lends weight to the conclusion that being respectful of the natural environment is important for these golf courses because it brings them the social acceptance and, indirectly, the customers and resources needed to ensure their survival.

One of our aims with this study is to contribute to the studies termed "environmental or green institutionalism", but from a perspective of organizations related to tourism, and we believe this study provides additional knowledge to this field of research. We can state that the present paper responds to the appeal made by authors

such as DiMaggio and Powell (1983), Scott (1995) and Tolbert and Zucker (1996), regarding the need for empirical studies that would help to consolidate the Institutional Theory. In this context, Tolbert and Zucker (1996) claim that there is little consensus on the research techniques and methodologies that are most appropriate for the institutionalist approach. With this study we have provided a statistical methodology for the theoretical framework of institutionalism that is valid for testing its principles To date, there are virtually no previous studies that have used the PLS methodology for this purpose, particularly in organizations that are not linked to the public sector and are subject to market pressures and competition.

In our view the PLS technique has validity and contributes to explaining the management styles, practices, strategies, based on the analysis of the institutional context. This has been the principal concern of the institutionalist studies undertaken in the last decade (Fernández 2001).

We believe that this study demonstrates that the institutional pressures of the business and market context should be taken into account in order to understand the environmental behaviour of all types of organization, and of golf courses in particular; it also demonstrates the growing interest in the application of practices for the sustainable management of the natural environment that confers social legitimacy on such organizations.

However, the study presented also has certain limitations that should be made clear. The possible generalizations that can be made from the conclusions obtained are limited not only by the small size of the sample and its restricted geographic and sector scope, but also by the possibility that subjective viewpoints have conditioned the responses by the persons interviewed (course managers and greenkeepers). Thus, the application of other more confirmatory techniques would be justified and advisable. In recognition of this last limitation, the authors propose a future line of research using such techniques, complemented with the expansion of the sample, the performance of multi-group analysis, and based on a theoretical framework incorporating other normative approaches.

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Market Segmentation in Tourism: An Operational Assessment Framework

18

Vicky Katsoni, Maria Giaoutzi, and Peter Nijkamp

18.1 Introduction

Distribution channels are the paths by which tourism organizations carry out the communication and sales of their products and services. To varying degrees, all tourism product suppliers depend on these channels for the distribution of their products (Bitner and Booms 1982; Middleton 1994). While the importance of understanding and managing the structure and behaviour of such channels has been clearly identified in many mainstream academic and trade publications (Holloway and Plant 1988; Duke and Persia 1993; Ryan 1991), relatively little tourism research has focused on this subject (Uysal and Fesenmaier 1993; Buhalis 2000). Many destinations have also invested in Information and Communication Technologies (ICTs), in their quest for more efficient and effective ways of managing tourism demand and facing domestic and global competition (Sigala et al. 2004). Consumer behaviour, on the other hand, has attempted to explain the decision-making processes of consumers facing several alternatives or choices. Van Raaij (1986) posited that "consumer research on tourism should be a cornerstone of marketing strategy".

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While the tourism literature evidences that several factors influence travellers' behaviour in consuming tourism products (Lepp and Gibson 2008; Hsu et al. 2009), to date, investigation into the determinants of tourism consumption remains inadequate in the literature; for example, the relative importance of the various information sources (ICT sources included) used by travellers has not yet been systematically analysed. Given the increasing importance of this particular market segment for destinations, additional research is needed to understand the behaviour of tourists in an attempt to bring further theoretical and practical contributions to this field of study (Ramkissoon et al. 2011). The present paper provides a comprehensive overview of the behaviour patterns of travellers to Arcadia (Greece) and contributes to the study of information sourcing behaviour in their travel decision process. It also provides a basis for channel members, especially suppliers, to assess their distribution strategies

The research took place in Arcadia, a historic land of intense and continuous presence from antiquity to the Byzantine and modern periods of history. In the European countries after the Renaissance, the "Arcadian ideal" refers to the dream of escaping from the disturbed world of violence and exploitation and returning to a world of eternal innocence and tranquillity that would be based on the good operation and fair competition of its members. Our research provides a better understanding of how channels are used by different types of travellers in different types of travel situations. The study adopts a dynamic situational perspective (Bieger and Laesser 2002), combining characteristics of travellers with characteristics of trips, and formulating the relevant hypotheses which are analysed below.

18.2 Background Literature

18.2.1 Tourist Segmentation

Market segmentation is a technique used to subdivide a heterogeneous market into homogeneous subgroups that can be distinguished by different variables, such as consumer needs, characteristics, or behaviour (Kotler 1998; Middleton 1994). Because people have individualized needs, tastes, and attitudes as well as different life stages and lifestyles, no single variable can be used to segment travel markets (Andereck and Caldwell 1994). The primary bases for segmentation include demography, geography, behaviour, lifestyle, personality, motivations (Cha et al. 1995; Madrigal and Kahle 1994), benefits sought (Gitelson and Kerstetter 1990), while some basic characteristics (e.g. demographic and behavioural) are sometimes criticized for their failure to adequately predict actual consumer behaviour (Andereck and Caldwell 1994; Cha et al. 1995; Morrison 1996; Prentice et al. 1998). Employing multiple variables should yield greater explanatory power than using a single variable. In several major hospitality and tourism texts, the use of "multi-stage segmentation" (Middleton 1994; Havitz and Dimanche 1990; Morrison 1996) or a "combination" of multiple variables rather than just one has

been recommended. A review of the literature indicates that there is no single correct way to segment a market.

Market segmentation is a valuable instrument in planning appropriate marketing strategies, and can assist in framing management thinking. Segmentation is justified on the grounds of achieving greater efficiency in the supply of products in order to meet identified demand and increased cost effectiveness in the marketing process and maximize financial resources (Perdue 1985). Numerous methods of tourist segmentation exist, including a posteriori or factor-cluster segmentation, a priori or criterion segmentation, and neural network models (Mazanec 1992). A priori market segmentation can be less time consuming and more effective for separating markets at less cost. In tourism, the importance of segmentation is widely acknowledged (Bieger and Laesser 2002; Cha et al. 1995; Kastenholz et al. 1999; Mo et al. 1994). To date research has assisted us to understand which bases can be used by tourism destinations to effectively segment tourism markets, and these efforts have largely centred upon building tourist profiles for a destination, using visitor data (Frochot 2005).

The purpose of the trip is recognized as one of the non-traditional segmentation bases closely associated with travel motivation, and has been approached from different perspectives in formulating marketing segmentation approaches. Examples of such studies include the interaction of trip purposes with activities (Hsieh et al. 1992; Morrison et al. 1994; Moscardo et al. 1996), interest (Sorensen 1993; Wight 1996), motivation (Cha et al. 1995; Wight 1996), and opinion and value (Madrigal and Kahle 1994). In using trip type as a key variable to segment the travel market, the inclusion of more trip-related characteristics in the analysis is highly recommended for a comprehensive understanding of the target segment from a consumer behaviour perspective (Sung et al. 2001). Such characteristics include length of stay and size of the travel party (Hsieh and O'Leary 1993).

18.2.2 Information Search and Distribution Channels' Usage

Buhalis (2000, p. 113) saw the functions of distribution in these terms: "The primary distribution functions for tourism are information, combination and travel arrangement services. Most distribution channels therefore provide information for prospective tourists; bundle tourism products together; and also establish mechanisms that enable consumers to make, confirm and pay for reservations". These purposes and functions have received unequal attention from researchers examining the visitors' perspective, and relevant studies are often not set squarely in the literature on distribution channels. This is especially the case with questions of information search, in which a large discrete body of work has developed as one take of interest in consumer behaviour. A distinction of tourism distribution channels can be made between those which are direct and those which are indirect in character. *Direct channels* normally link suppliers and consumers without the aid of channel intermediaries. Such channels normally involve suppliers developing and maintaining direct information and sales contacts with consumers in specific

target market areas. *Indirect distribution channels* (e.g. travel agents, tour operators and wholesalers) involve a wide range of organizations communicating and selling products to consumer markets on behalf of tourism suppliers and destinations (Gee et al. 1989; Michie and Sullivan 1990). All of these channel operators have the potential to significantly influence the travel patterns and behaviour of specific travel markets.

There is no clear answer to the question which type of channel should best be used, and it is important for tourism suppliers and destination marketing organizations to understand the product preferences, the prior experiences, perceived risks, travel package price thresholds, use of unique or novel destinations, and market support needs of channel partners and their customers prior to forming their marketing strategy (Hsieh and O'Leary 1993; Haukeland 1995; Snepenger et al. 1990; Calantone and Mazenec 1991). Generally, the closer the destination is to the consumer in physical, product awareness, and experiential terms, the more direct the channel of distribution becomes. Frequently, however, strategic information concerning the product preferences of potential channel partners and their customers is not available (Murray 1991). Understanding how customers acquire information is important for marketing management decisions. This is especially true for travel and tourism products, which are delivered away from home, often in unknown places, inducing functional, financial, physical, psychological, and social risks (Lovelock and Wright 1999; Teare 1992; Srinivasan 1990; Wilkie and Dickson 1985). Travel products are mostly intangible personal service products, involving personal interactions between customers and service providers (Lovelock and Wright 1999; Normann 1996; Teare 1992) and the consumption and production of tourism products always coincide, creating high personal involvement (Bieger and Laesser 2002). According to the economics of information, these characteristics often lead to high personal investments of time, effort, and financial resources for customer decision making (Lambert 1998).

The use of information sources has also been applied empirically as a segmentation variable. When employed as a descriptor to profile the behaviour of tourists who have been segmented on some other basis, information search has provided valuable insights for planning marketing strategies and targeting marketing communications (Moutinho 1987). With increasing frequency, tourists have been directly segmented based on their search behaviour (Bieger and Laesser 2004; Fodness and Murray 1997; Um and Crompton 1990; Baloglu 1999; Crotts 1998; Snepenger and Snepenger 1993; Etzel and Wahlers 1985; Perdue 1985; Schul and Crompton 1983; Woodside and Ronkainen 1980). With regard to information search behaviour research, three major theoretical streams can be identified (Schmidt and Spreng 1996; Srinivasan 1990; Bieger and Laesser 2004): namely, (a) the individual motivation approach; (b) the economic cost-benefit approach; and (c) the process approach.

(a) The Psychological/Motivational/Individual Characteristics Approach

Traditional perspectives of information search focus on functional needs, defined as motivated efforts directed at or contributing to, a purpose (Vogt and Fesenmaier 1998). According to this approach, the search for information enables

travellers to reduce the level of uncertainty and hence enhance the quality of a trip (Fodness and Murray 1997; Teare 1992; Schiffmann 1972). The psychological/motivational approach can be linked to travel motivation theory, where a differentiation between a push and pull demand stimulation is stipulated (Cha et al. 1995). The idea behind this dimensional approach lies in the proposition that people are pushed by their own internal forces and pulled by the external forces of the destination attributes (Gitelson and Kerstetter 1990; Yuan and McDonald 1990; Shoemaker 1989, 1994). Consequently, the individual's characteristics influence the utilization of available internal and external information sources (Bonn et al. 2001; Schonland and Williams 1996; Crompton 1992; Snepenger et al. 1990; Leiper 1990; Hugstad and Taylor 1987).

After identification of needs, customers may first start internal search, using existing knowledge that is also dependent on consumers' ability to access stored knowledge and information contained in memory related to past experiences with the provider and other related learning about the environment/situation, such as vicarious learning when actual experience is not available (Peter and Olson 1996). Examples of vicarious learning include gathering information via word of mouth about the experiences of others with service providers. (Bettman 1979; Soloman et al. 1985; Alba and Hutchinson 1987; Brucks 1985; Gursoy and McLeary 2003; Kim et al. 2007; Vogt and Fesenmaier 1998). If internal search is not successful and consumers face uncertainty, then they continue with external search, that is information seeking from the environment (Murray 1991). Various typologies exist for classifying external sources of information, including: service-provider dominated (advocate) versus independent/objective sources (Murray 1991); personal versus impersonal sources (Hawkins et al. 1998); and, from the tourism literature, professional versus non-professional sources (Opperman 1999). Typically, the consumer will prefer one source over another based on the perceived effectiveness of a particular information source. Implicit in the concept of source effectiveness is the notion that some types of sources are more influential than others in providing useful information with which to form pre-service encounter expectations (Hawkins et al. 1998).

Although information seeking is often coupled with a cultural (and therefore regionally different) background resulting in different patterns of behaviour (Dawar 1993), a number of common travel-specific denominators regarding information collection have also been identified, such as length of trip, previous experience and/or visits to the destination, and travel party characteristics (e.g. composition of the vacation group, the presence of family and friends at the destination). All these determine information search behaviour, defined not only in terms of the use of particular sources but also in terms of information search effort, the number of sources used, situational influences, product characteristics (e.g. the degree of novelty associated with the destination), and search outcomes (Fodness and Murray 1997; Woodside and MacDonald 1994; Schul and Crompton 1983; Bieger and Laesser 2002; Snepenger et al. 1990).

Gursoy and MacLeary (2003) proposed a model of tourist information search behaviour that integrated internal and external search, cost of search, concepts of

familiarity, expertise, and previous visits with the involvement and learning of the individual. In addition, Zins and Teichmann (2006) conducted a longitudinal study where they found that the credibility of information channels change from the pre-trip to the post-trip phase. Bieger and Laesser (2004) also investigated the differences in information channels before and after a trip decision is made. Consistent with the Zins and Teichmann (2006) study, the Bieger and Laesser (2004) study shows that the selection of the information channel differs significantly depending on type of trip, degree of packaging, and choice of destination. They also found that friends or, in the web context, other users are very important channels, as are guide books, regional and destination information brochures, and tourist boards (Bieger and Laesser 2004).

(b) Economic Cost/Benefit Approach

According to the cost/benefit approach, tourists' search for information and the use of information sources depends on the expected costs and benefits of the information sourcing alternative. In that regard, most traditional perspectives of information search are embedded in processing theory and consumer behaviour models (Assael 1984; Bettman 1979), addressing issues such as the role of product knowledge (Hirschman and Wallendorf 1982); uncertainty (Murray 1991) either with regard to knowledge uncertainty or choice uncertainty; utility (Bettman and Sujan 1987); and efficiency (Bettman 1979). Costs within this framework are either generated on behalf of risk-limiting search costs or the assumption/acceptance of risk.

The assessment of risk is perceptual; and the information search strategy with the greatest possible efficiency reduces risk and uncertainty (Murray 1991; Bettman 1973; Schiffmann 1972). According to Mitra et al. (1999), perceived risk derives from a cognitive conflict between customer expectations and the anticipated outcome of the purchase decision, with information sourcing as a reaction to this conflict in order to re-establish cognitive balance. Murray (1991) and Lutz and Reilly (1973) further suggested that perceived risk and information search are positively correlated. Risk encountered in service purchase can be reduced by seeking additional information about the service (Lutz and Reilly 1973; Hugstad and Taylor 1987). This implies that the higher the perceived risk (associated with the purchase of services), the more likely it is that there will be a heightened information search effort on the part of the tourist. However, consumers' information behaviour is also likely to be influenced by the perceived costs of information search. When the perceived costs of acquiring additional information are high, information search declines (Lee and Cunningham 2001; Porter 1985). The economics of information perspective implies a consumer trade-off between the perceived benefits and costs of acquiring additional information.

(c) Process Approach

Recent studies have recognized that travel decision making is complex, involving multiple decisions including length of trip, primary destinations, companions, activities, attractions, accommodations, trip routes, food stops, and shopping places (Fesenmaier and Jeng 2000; Moutinho 1987; Woodside and MacDonald 1994). For multiple product decisions, travellers search for information and move back and

forth between, the search and the decision-making stages (Woodside and MacDonald 1994). In addition, actual travel behaviour does not always follow plans (March and Woodside 2005). Accordingly, in studying travel behaviour, researchers should consider interactions or intersections of multiple goals and decisions, information search as an ongoing process, and differences in planned and actual behaviors. The process approach focuses on the process of information search rather than on the action itself.

A number of authors have reported that the choice process adopted by consumers with regard to non-routinized, high-involvement purchases is phased (Correia 2002; Vogt and Fesenmaier 1998; Hsieh and O'Leary 1993; Crompton 1992; Um and Crompton 1990; Woodside and Lysonski 1989; Bettman and Sujan 1987). A number of concepts are proposed to describe the process of decision making. Basically, they include a number of input variables and a phased process that includes an information acquisition phase, a procession phase, a purchase phase, and, last but not least, a consumption phase (Vogt and Fesenmaier 1998; Correia 2002). Crompton (1992) identified three stages of this process, including an initial consideration set, a late consideration set, and an action and interaction set. Leiper (1990) puts forward a model in which a generating information marker (i.e. information received before setting out) creates a reaction on the needs/wants of a potential traveller, leading to positive expectations/motivations and to a travel decision. Vogt and Fesenmeier (1998) propose a five-stage model, focusing on the heuristics of information finding and decision making. In this model, purchase and consumption coincide. Correia (2002) examined and expanded the travellers' decision-making process and classified the act of purchasing a trip into three distinctive stages: the pre-decision stage; the decision stage; and the post-decision stage.

A few researchers have suggested that travel-planning theories are more suitable to explain or predict complex travel behaviours compared to the single goal-oriented decision-making theories, because a planning process includes multiple decisions and interactions among decisions (Pan and Fesenmaier 2003). A plan is a traveller's reasoned attempt to recognize and define goals, consider alternative actions that might achieve the goals, judge which actions are most likely to succeed, and act on the basis of those decisions (Hoc 1988). This definition of planning includes all information search behaviours, information uses or applications, purchase behaviours, actual trip behaviours, and the learning from all these experiences.

The Internet has intensified the complexity of the travel decision-making process, as it has become an important channel for travellers' information search (Gretzel et al. 2006; Gursoy and McLeary 2003; Pan and Fesenmaier 2006; Xiang et al. 2008; Jun et al. 2007), creating an environment whereby online information providers such as tourist boards, hotel and resort websites, travel agents, bloggers and magazines actively compete for attention to attract searchers and ultimately, bookers. Many travel decision-making models present information search and assessment as having been processed before decision making (Um and Crompton 1990; Woodside and Lysonski 1989); however, the Internet has made it easier for travellers to collect information, purchase travel products, and change their decisions at any stage of the decision-making process.

The Internet provides an opportunity for travel and tourism service providers to intermix traditional marketing channels (i.e. distribution, transaction, and communication), which were previously considered independent processes (Zins 2009). A single interaction on the Internet can provide product information, a means for payment and product exchange, and distribution, whereas more traditional interaction frequently separates these functions (Jun et al. 2007). Particularly interesting studies have considered the use of online information sources relative to more conventional ones. The application and extension of Information Technology (IT) in the tourism sector (Buhalis and Law 2008; Buhalis and Zoge 2007) has greatly favoured the dissemination of information about tourism destinations and their promotion, mainly through the World Wide Web, which some consider to be the ideal source for the distribution of such information. Nonetheless, a considerable part of the studies produced on the new IT deal with the possibilities that this IT can offer to market tourism destinations.

As a consequence of all this, we conclude that a gap in the tourism literature concerns the need for more research about information at destinations. The aim of this present research is to examine the tourists' requirements for information, the effects of socio-demographic characteristics on information search, and the tourists' information search behaviour, for instance, the influence of the information on trip characteristics such as the composition of the traveller party.

18.3 Research Method

18.3.1 Data Collection

The present investigation was designed to further understand the tourism market in the province of Arcadia, Greece, over a period of 12 months, between July 2007 and July 2008 in order to eliminate seasonality. The survey, included Greek and foreign tourists in the region. In most cases, the hotel owner or manager agreed to collect the data for the study, as the survey questionnaires were distributed to the survey sites, and respondents freely participated in answering the survey questionnaire after they had stayed in the hotel for at least one night. Then, the researchers visited each hotel and collected the completed survey questionnaires. Data were collected by using a four-page self-administered questionnaire primarily designed to gather information on the subjects' general motivations for travel. A total of 3,500 questionnaires were given to tourists. Ultimately, 820 usable questionnaires were collected, which leads to the response rate of 23.43 %.

18.3.2 Analysis

The survey data were coded and analysed using R, an open-source statistical package. A descriptive-statistical analysis was applied to the collected data to explore the overall sample profile. Chi-square tests were conducted to verify

whether differences between the above mentioned two tourist sub-groups, as regards the particular characteristics of the population of tourists, are due to chance variation or reveal some statistically significant trend. Chi-squared tests were chosen for use in this exploratory investigation to aid in making an inference about the uniform distribution (or not) of the two sub-groups in relation to demographic variables, trip characteristics, selection of information sources for their journey, and their degree of satisfaction from the use of these information sources.

18.3.3 Research Objectives and Hypotheses

All the previously mentioned approaches demonstrate the complexity of the information search process, illustrate a range of approaches (psychological-motivational and cost-benefit being the most prominent), and emphasize a concern with determinants, information sources, decision making, and segmentation. The overall goals of the present research was to combine research about information both at the tourism destinations and before the trip, question whether segmentation based on the information search behaviour is an appropriate way to develop marketing strategies and target marketing communications; and analyse the importance of information at destinations from the tourists' perspective. The specific objectives of the study were to compare the importance that international and domestic tourists attribute to various forms of information, both at tourism destinations and in the pre-trip context, and make an analysis of their information sourcing behaviour, based on internal and external information sources, including the use of the Internet. This would provide a better understanding of how channels are used by different types of travellers in different types of travel situations, thus taking a dynamic situational perspective (Bieger and Laesser 2002), combining characteristics of travellers with characteristics of trips. Bearing in mind the objectives of this study, the hypotheses formulated state the following:

H1. The composition of the travel party has an effect on the way tourists seek information about their journey (trip-related, situational descriptor).

H2. The socio-demographic characteristics of the traveller (gender, age, education level, occupation, nationality) have an effect on the way tourists seek information about their trip.

H3. The purpose of the trip has an effect on the way tourists seek information.

These hypotheses are now tested in our subsequent analysis.

18.4 Results

18.4.1 The Travel Party (H1)

Table 18.1 displays the results from the comparison of the distribution of the population according to how the travel party is composed (out of the total population: 49 % travel with friends, 41.7 % with family, and 6.2 % on their own), with the

Table 18.1 Comparison between the sources of information and the composition of the travel company/team

	On you own (%)	With friends (%)	With family (%)	Total	Chi-squared test
Total population	6.2	49.0	41.7	820	
Information brochures (source 1)	4.6	44.3	48.9	131	*X*-squared = 2.3649, df = 2, p-value = 0.3065
Hotel listings (source 2)	3.9	51.0	43.1	51	*X*-squared = 0.4671, df = 2, p-value = 0.7917
Oral information provided by retailer/agency (source 3)	6.8	29.6	59.1	44	***X*-squared = 6.3642, df = 2, p-value = 0.0415**
Oral information provided by tourist information at the destination or from local tourist offices (source 4)	0	50.0	43.8	16	*X*-squared = 1.03, df = 2, p-value = 0.5975
Advertisements and articles in newspapers/magazines(source 5)	5.4	38.8	51.2	129	*X*-squared = 4.9285, df = 2, p-value = 0.08507
Travel guidebooks and travel magazines (source 6)	4.0	51.1	42.8	278	*X*-squared = 2.0926, df = 2, p-value = 0.3512
Radio and TV broadcasts (source 7)	7.1	44.7	45.9	170	*X*-squared = 1.2653, df = 2, p-value = 0.5312
Video,CDROM,DVD,video-text (source 8)	6.8	31.8	52.3	44	*X*-squared = 3.7485, df = 2, p-value = 0.1535
INTERNET (source 9)	5.1	54.9	37.0	430	*X*-squared = 4.0599, df = 2, p-value = 0.1313
Recommendation from friends and relatives (source 10)	5.2	49.8	42.5	442	*X*-squared = 0.5747, df = 2, p-value = 0.7503
Personal experience/knowledge (source 11)	10.4	45.1	41.8	131	*X*-squared = 4.2729, df = 2, p-value = 0.1181

Note: Significant differences (p = <0.05) in mean scores printed in *bold*

distribution of sub-groups of the population according to the same criterion, i.e. the composition of the travel team/party. The sub-groups are determined by the use of the different sources of information displayed on Table 18.1. The results of the Chi-squared test reveal that statistically significant differences are observed only with regard to the 'Oral Information provided by retailer/agency' (source 3). Significant percentage of tourists who made use of this particular source travel with their family compared with their share in the total population. Other than that, we do not observe any other significant differences in the distribution of the total population and the individual sub-groups according to the composition of the trip party.

18.4.2 Socio-demographic Characteristics (H2)

In the following paragraphs we analyse the use of the different sources of information with regard to the socio-demographic characteristics of the participants for this survey, i.e. gender, age, education level, occupation and nationality. In the analysis, the results of which are presented in the following Tables 18.2, 18.3, 18.4 and 18.5, we have made comparisons between the distribution of the total population and that of sub-groups of the population. These sub-groups are created according to the use of the different sources of information. Statistically significant results (i.e. p-value < 0.05) reveal that the characteristic under analysis is not independent of the use of the information sources.

18.4.2.1 Gender

The total population comprises 55.4 % women and 42.2 % men. This distribution pertains for sub-groups of the population (see Table 18.2), with the exception of the users of Source 5 (Advertisements and articles in newspapers/magazines), Source 6 (Travel guidebooks and travel magazines) and Source 7 (Radio and TV broadcasts). In these three sources we observe greater participation of women (above 65 %) compared to the total population.

18.4.2.2 Age

In the total population, the age group between 25 and 34 years accounts for approximately one third (30.4 %) of the total population, while only a small proportion of the population are above 65 (3.9 %). This distribution pertains in most sub-groups (see Table 18.2), with the exception of Source 3 ('Oral Information provided by retailer/agency'), Source 4 ('Oral information provided by tourist information at destination or from local tourist offices') and Source 9 ('Internet'). In particular, for users of Source 3 we observe higher frequencies (27.3 %) in the ages above 55, compared with the total population (12.6 %) and accordingly frequencies in the younger ages are smaller. The situation is similar with users of Source 4, while the majority (63.3 %) of users of Source 9 are between 25 and 44 years' old, significantly above the corresponding frequencies for the total population.

Table 18.2 Chi-square analysis of socio-demographic characteristics for users of the different sources of information – gender, age

	Gender			Age						
	Men (%)	Women (%)	Chi-squared test	15–24 (%)	25–34 (%)	35–44 (%)	45–54 (%)	55–64 (%)	Πάνω από 65 (%)	Chi-squared test
Total population	42.20	55.40		14.4	30.4	23.2	17.4	8.7	3.9	
Source 1	35.11	61.83	*X*-squared = 1.9405, df = 1, p-value = 0.1636	16.79	22.14	25.19	17.56	13.74	3.05	*X*-squared = 6.5593, df = 5, p-value = 0.2555
Source 2	37.25	62.75	*X*-squared = 0.48, df = 1, p-value = 0.4884	23.53	19.61	27.45	17.65	7.84	1.96	*X*-squared = 5.4417, df = 5, p-value = 0.3644
Source 3	47.73	52.27	*X*-squared = 0.1824, df = 1, p-value = 0.6693	18.18	11.36	15.91	25	13.64	13.64	**X-squared = 18.036, df = 5, p-value = 0.002902**
Source 4	31.25	62.50	*X*-squared = 0.2553, df = 1, p-value = 0.6133	6.25	12.5	31.25	12.5	18.75	18.75	**X-squared = 12.8597, df = 5, p-value = 0.02473**
Source 5	30.23	68.22	**X-squared = 6.592, df = 1, p-value = 0.01024**	11.63	27.91	27.91	20.93	6.2	3.88	*X*-squared = 3.4317, df = 5, p-value = 0.6337
Source 6	32.73	65.47	**X-squared = 7.886, df = 1, p-value = 0.004982**	12.59	28.78	25.54	16.55	8.99	4.68	*X*-squared = 1.5665, df = 5, p-value = 0.9053
Source 7	33.53	64.12	**X-squared = 4.1323, df = 1, p-value = 0.04207**	15.29	22.94	27.65	18.82	9.41	3.53	*X*-squared = 4.2274, df = 5, p-value = 0.5172
Source 8	47.73	47.73	*X*-squared = 0.4904, df = 1, p-value = 0.4838	25	13.64	18.18	27.27	11.36	2.27	*X*-squared = 10.4696, df = 5, p-value = 0.06297
Source 9	44.19	53.26	*X*-squared = 0.409, df = 1, p-value = 0.5225	14.19	36.98	26.28	15.81	3.49	1.4	**X-squared = 22.1264, df = 5, p-value = 0.0004954**
Source 10	41.63	56.79	*X*-squared = 0.0689, df = 1, p-value = 0.793	12.22	31.9	24.66	16.06	8.82	5.43	*X*-squared = 3.2711, df = 5, p-value = 0.6583
Source 11	45.60	51.10	*X*-squared = 0.7432, df = 1, p-value = 0.3886	14.29	26.92	24.73	19.78	8.79	3.85	*X*-squared = 1.2034, df = 5, p-value = 0.9446

Note: Significant differences (p = <0.05) in mean scores printed in *bold*

Table 18.3 Chi-square analysis of socio-demographic characteristics for users of the different sources of information – education level, nationality

	Education level						Nationality		
	Primary (%)	Secondary/ high school (%)	Tertiary (%)	Postgraduate studies (%)	Other (%)	Chi-squared test	Greeks (%)	Foreigners (%)	Chi-squared test
Total population	3.7	24.3	40.5	21.5	6.8		85.4	14.6	
Source 1	1.53	30.53	35.11	19.85	9.92	*X*-squared = 5.7294, df = 4, p-value = 0.2203	83.2	16.8	*X*-squared = 0.2622, df = 1, p-value = 0.6086
Source 2	1.96	39.22	33.33	17.65	5.88	*X*-squared = 5.5849, df = 4, p-value = 0.2324	80.4	19.6	*X*-squared = 0.5847, df = 1, p-value = 0.4445
Source 3	4.55	20.45	40.91	25	9.09	*X*-squared = 0.82, df = 4, p-value = 0.9357	79.6	20.5	*X*-squared = 0.7027, df = 1, p-value = 0.4019
Source 4	18.75	12.5	31.25	25	6.25	***X*-squared = 10.6906, df = 4, p-value = 0.03027**	87.5	12.5	*X*-squared = 0.0139, df = 1, p-value = 0.906
Source 5	3.1	24.81	44.19	21.71	4.65	*X*-squared = 1.2433, df = 4, p-value = 0.871	83.0	17.1	*X*-squared = 0.3405, df = 1, p-value = 0.5595
Source 6	2.52	24.82	48.2	17.63	3.96	*X*-squared = 8.0167, df = 4, p-value = 0.09097	81.7	18.4	*X*-squared = 1.9017, df = 1, p-value = 0.1679
Source 7	4.12	18.82	45.29	15.88	11.76	*X*-squared = 9.3049, df = 4, p-value = 0.05391	78.8	21.2	***X*-squared = 4.0607, df = 1, p-value = 0.04389**
Source 8	4.55	43.18	11.36	18.18	18.18	***X*-squared = 22.8263, df = 4, p-value = 0.0001372**	54.6	45.5	***X*-squared = 26.9882, df = 1, p-value = 2.047e-07**
Source 9	2.56	19.77	45.81	25.35	4.42	***X*-squared = 9.9672, df = 4, p-value = 0.04098**	82.1	17.9	*X*-squared = 2.036, df = 1, p-value = 0.1536
Source 10	2.94	28.05	44.57	18.1	4.52	*X*-squared = 7.2209, df = 4, p-value = 0.1247	85.3	14.7	*X*-squared = 0.0024, df = 1, p-value = 0.9609
Source 11	5.49	21.43	38.46	21.98	8.79	*X*-squared = 2.7372, df = 4, p-value = 0.6027	89.0	11.0	*X*-squared = 1.3571, df = 1, p-value = 0.2440

Note: Significant differences (p = <0.05) in mean scores printed in *bold*

Table 18.4 Chi-square analysis of socio-demographic characteristics for users of the different sources of information – occupation

	Occupation										
	Scientific, free professional, technical, etc. (%)	Administrative/ managerial (%)	Clerical (%)	Trade and sales (%)	Farmer, fisherman, etc. (%)	Craftmanworker, operator (%)	Pensioner (%)	Housework (%)	Unemployed, looking for job (%)	Student (%)	Chi-squared test
Total population	27.7	14.6	18	7.1	2	4.9	5.6	4.6	4.4	10	
Source 1	32.82	8.4	16.79	7.63	0.76	3.82	6.87	3.82	6.87	10.69	*X*-squared = 7.5712, df = 9, p-value = 0.5779
Source 2	25.49	11.76	19.61	13.73	0	3.92	1.96	9.80	0	11.76	*X*-squared = 10.6041, df = 9, p-value = 0.3038
Source 3	18.18	29.55	6.82	9.09	2.27	0	18.18	2.27	6.82	6.82	**X-squared = 24.6377, df = 9, p-value = 0.003399**
Source 4	12.5	0	18.75	25	0	6.25	12.5	6.25	0	12.5	*X*-squared = 13.6691, df = 9, p-value = 0.1346
Source 5	30.23	8.53	20.16	4.65	2.33	0.78	4.65	10.85	6.2	11.63	**X-squared = 17.9038, df = 9, p-value = 0.03631**
Source 6	29.5	14.75	16.55	5.76	1.08	2.52	6.83	7.55	5.04	10.07	*X*-squared = 8.6267, df = 9, p-value = 0.4724
Source 7	25.29	13.53	14.71	4.71	2.94	10	5.88	4.71	8.24	9.41	*X*-squared = 13.7054, df = 9, p-value = 0.1332

Source 8	15.91	4.55	6.82	0.00	9.09	15.91	6.82	20.45	2.27	15.91	**X-squared = 51.5289, df = 9, p-value = 5.549e-08**
Source 9	29.77	17.44	19.53	6.51	1.16	3.49	1.63	4.65	3.95	10.7	X-squared = 15.4161, df = 9, p-value = 0.08012
Source 10	28.05	11.54	21.04	7.01	2.26	1.36	7.24	6.11	4.3	10.18	X-squared = 15.7455, df = 9, p-value = 0.07239
Source 11	30.77	17.03	16.48	3.3	2.75	4.95	7.14	4.4	4.95	7.69	X-squared = 6.5691, df = 9, p-value = 0.6819

Note: Significant differences (p = <0.05) in mean scores printed in *bold*

Table 18.5 Mean scores and ranking for combinations of trip purpose and the source of information

	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7	Source 8	Source 9	Source 10	Source 11	ANOVA
Visiting natural attractions and enjoying the quiet nature of the region	4.09 (1)	4.04 (3)	4 (2)	4.07 (2)	4.15 (2)	4.15 (2)	3.75 (3)	3.65 (2)	4.13 (2)	4.14 (2)	4.11 (1)	**F-value = 3.4676, df = 10, p-value = 0.0001562**
Learning about local culture/history	4.05 (2)	4.14 (2)	3.83 (4)	4 (3)	4.05 (3)	4.08 (3)	3.89 (2)	3.26 (4)	4 (3)	4.04 (3)	4.05 (3)	**F-value = 4.0015, df = 10, p-value < <0.00005**
Sunbathing/swimming	4.05 (3)	4.23 (1)	4.2 (1)	4.5 (1)	4.17 (1)	4.18 (1)	4.04 (1)	4.22 (1)	4.17 (1)	4.15 (1)	4.08 (2)	F-value = 0.7247, df = 10, p-value = 0.7018
Night life/entertainment	3.76 (4)	3.54 (4)	3.37 (7)	3.38 (6)	3.52 (4)	3.6 (4)	3.6 (4)	3.05 (7)	3.64 (4)	3.58 (4)	3.64 (4)	**F-value = 2.0808, df = 10, p-value = 0.02302**
Shopping	3.56 (5)	3.44 (5)	3.52 (3)	3.38 (5)	3.41 (5)	3.31 (5)	3.34 (5)	2.69(10)	3.31 (6)	3.29 (5)	3.49 (5)	**F-value = 2.8819, df = 10, p-value = 0.001416**
Mountaineering and other intense athletic activities	3.31 (6)	2.96 (9)	2.97(10)	3.54 (4)	3.24 (6)	3.23 (6)	3.25 (8)	3.19 (5)	3.37 (5)	3.27 (6)	3.27 (7)	F-value = 0.9548, df = 10, p-value = 0. 0.4814
Winter holiday in the snow	3.25 (7)	3.08 (8)	3.05 (9)	3 (9)	3.13 (8)	3.12 (8)	3.26 (7)	2.6 (11)	3.29 (7)	3.22 (7)	3.17 (9)	F-value = 1.6514, df = 10, p-value = 0.08683
Visiting friends and relatives	3.2 (8)	3.17 (7)	3.44 (5)	3.14 (7)	3.3 (7)	3.22 (7)	3.24 (9)	3.65 (3)	3.13 (8)	3.17 (8)	3.35 (6)	F-value = 1.4577, df = 10, p-value = 0.1493
Visiting agricultural sites	3.11 (9)	2.62(10)	3.38 (6)	3 (8)	3.04(10)	2.97(10)	3.27 (6)	2.95 (9)	3.01 (9)	3.06 (9)	3.2 (8)	**F-value = 2.1924, df = 10, p-value = 0.01594**
Visiting religious sites	3.08(10)	3.34 (6)	3.35 (8)	3.07(10)	3.07 (9)	2.99 (9)	2.87(10)	3.12 (6)	2.95(10)	3.04(10)	3.1 (10)	F-value = 1.2377, df = 10, p-value = 0.2615
Watching sporting events	2.75(11)	2.42(11)	2.61(11)	2.92(11)	2.4 (11)	2.46 (11)	2.67(11)	3 (8)	2.54(11)	2.46(11)	2.49(11)	F-value = 1.8092, df = 10, p-value = 0.05426
Mean score	3.47	3.36	3.43	3.45	3.41	3.39	3.38	3.22	3.41	3.40	3.45	

18.4.2.3 Education

40.5 % of all the participants of this survey have tertiary education. Second in frequency come those with secondary education (24.3 %), and third holders of postgraduate degrees (21.5 %). The results of Table 18.3 reveal that this distribution is similar for all sub-groups, with the exception of Source 4 ('Oral information provided by tourist information at the destination or from local tourist offices'), Source 8 ('Video, CD- Rom, DVD, Videotext') and Source 9 ('Internet').

In particular for users of Source 4, we observe that a significantly higher percentage of tourists (18.8 %) have primary education, while the corresponding percentage for the total population is considerably lower (3.7 %). For users of Source 8, we always see higher frequencies, compared with the total population, in the group who have secondary education (43.2 % compared to 24.3 % in the total population). Users of Source 8 who have tertiary education are considerably less (11.4 % compared to 40.5 % in the total population). Finally users of the Internet are mostly gathered in the categories 'Tertiary education' and 'Postgraduate studies' (71.2 % compared with 62 % in the total population).

18.4.2.4 Nationality

The majority of the participants in this survey were Greeks (85.4 %) as opposed to 14.6 % foreigners. When comparing the total population with the sub-groups of users of the different sources of information significant differences were only observed for users of Source 7 ('Radio and TV broadcasts') and Source 8 ('Video, CD- Rom, DVD, Video-text'). (The results of Table 18.1). In particular, foreign users of Source 7 are significantly more (21.2 %) than foreigners in the total population (14.6 %). The same happens with users of Source 8, with even higher frequency of foreigners (45.5 %) in this group.

18.4.2.5 Occupation

The most commonly reported occupations in order of frequency in the total population are: Scientific and free professional (27.7 %), Clerical worker (18 %), Administrative and Managerial worker (14.6 %) and Students (10 %). The results of the analysis reveal that the distribution of tourists according to their occupation is not significantly different in the various sub-groups when compared with their distribution in the total population, with the exception of Source 3 ('Oral Information provided by retailer/agency'), Source 5 ('Advertisements and articles in newspapers/magazines'), and Source 8 ('Video, CD- Rom, DVD, Videotext'). In particular:

- The most common jobs among users of Source 3 are Administrative and Managerial workers (29.6 %), Scientific and free professionals (18.2 %), Pensioners (18.2 %) and Trade and sales workers (9.1 %);
- The most common jobs among users of Source 5 are Scientific and free professionals (30.2 %), Clerical workers (20.2 %), Students (11.6 %) and Housework (10.9 %);

- The most common jobs among users of Source 8 are Housework (20.5 %), Scientific and free professional (15.9 %), Craftsmen, workers, operators (15.9 %) and Students (15.9 %).

18.4.3 Trip Purposes (H3)

Table 18.5 shows the results from the Analysis of Variance (ANOVA) that has been applied to identify significant differences in the mean scores (ranging between 1 – 'Very unlikely' and 5 – 'Very likely') that users of the different sources of information gave to the different trip purposes. The table summarizes for each 'trip purpose' and 'source of information' combination the mean score, along with a ranking that shows the preference that users of each source had for the different trip purposes. The table has been arranged according to the ranking derived for users of Source 1 (i.e. Information Brochure). The results on the table reveal that differences in the mean scores are found to be significant (p-value < 0.05) only with respect to the following 'trip purposes': Visiting natural attractions and enjoying the quiet nature of the region; Learning about local culture/history; Night life/entertainment; Shopping and Visiting agricultural sites. The results shown on this table also indicate that Sunbathing/Swimming comes first in the preference of users of all the different sources of information, with the exception of the Information Brochures, which comes third in the preference of users of this source. Visiting natural attractions and enjoying the quiet nature of the region and Learning about local culture/history also come high (in the first three most- popular purposes) in the preferences of users of all sources. Differentiation is observed only with respect to the magnitude of preference, expressed by the mean score.

18.5 Conclusions

This paper supports the view that developing alliances with well-positioned, knowledgeable distribution channels is especially important for the assessment of tourism policies. The research implies that a segmentation based on the information search behaviour is an appropriate way to develop marketing strategies and target marketing communications. The promotion of attractions should ideally be based on an understanding of travellers' behaviour in order to achieve the long-term success of tourism, and providers of tourism products need to acknowledge and support the efforts of regional and national tourism organizations. The accuracy of the information is an important quality factor for building and maintaining trust in a specific source (Bieger and Laesser 2004).

Hypothesis 1 which postulates "The composition of the traveller party has an effect on the way tourists seek information about their journey" is not verified by the results of our survey. The only exception is with regard to the 'Oral Information provided by retailer/agency', where a significantly higher percentage of tourists

who made use of this particular source, travel with their family compared with their share in the total population. Thus, this trip-related, situational descriptor, i.e. the composition of the traveller party seems to have no effect on information search behaviour

The present study agrees with other researchers that travellers usually rely on multiple information channels depending on, as postulated by Hypothesis 2, their socio-demographic characteristics (Katsoni 2011). However, this hypothesis is only partially verified by the results of this analysis. It important to note that women make greater use than men of information sources such as advertisements and articles in newspapers/magazines, travel guidebooks and travel magazines and radio and TV broadcasts. The analysis of education and age characteristics, also shows the Internet to be a favoured source of information among travellers who have university/college education and postgraduate studies, irrespective of gender, and who are in the age group 25–44 years old. Travellers in Arcadia are mainly scientific and free professionals (27.7 %), Clerical workers (18 %), Administrative and Managerial workers (14.6 %) and Students (10 %), and this distribution of tourists according to their occupation applies to all sources of information, with the exception of "Oral Information provided by retailer/agency', 'Advertisements and articles in newspapers/magazines' and 'Video, CD- Rom, DVD, Videotext'. The analysis of the similarities and differences between international and domestic tourists regarding the importance of the information at destinations shows that correspondences exist between both groups on the order of use of the information source, with the exception of Radio and TV broadcasts' and 'Video, CD- Rom, DVD, Videotext' which are slightly more preferred by foreign travellers.

Hypothesis 3: "The purpose of the trip has an effect on the way tourists seek information" is only partially verified by the results of this analysis. Differences are found only with respect to the following 'trip purposes': Visiting natural attractions and enjoying the quiet nature of the region; Learning about local culture/history; Night life/entertainment; Shopping; and Visiting agricultural sites, which come first, second, third, forth and fifth, respectively, in the preference of users of all the different sources of information. It is also noteworthy that Watching sporting events comes last in the preference of users of all the different sources of information, with the exception of Source 8, Video, CDROM, DVD and Videotext.

The results of this study have important implications from the managerial perspective at the tourism destinations. The present study can help managers carry out their task in a more informed and strategic manner by examining the effects of demographic traits on tourist consumption and considering the effects that the provision of information has for the tourists at the destinations. This information can increase the economic impacts from travel and tourism at the destinations, and lead to the adoption of the necessary measures to reinforce the forms of information analysed in this study in order to attract the most suitable target market. The implementation of the forms of communication analysed requires the collaboration of diverse tourist agencies, and the creation of the Destination Management Systems (DMSs) or the Destination Management Organizations (DMO) to integrate all this information in a manner that meets the needs of the tourists.

A main limitation of this study is that the research does not cover all important aspects associated with the information available at destinations, such as the modification of the image conveyed by a flood of information at destinations and the economic effects of the information on the destinations. "Internet" also is considered as a homogeneous source of information, as it neglects the different types and sources of information a tourist can collect in the web, such as social networks, DMO's websites, etc. More research on all these topics is necessary to develop a more complete understanding of the information at tourism destinations.

As tourism industry grows in both capacity and services, so will its need for a wide variety of distribution channels. This research has identified a range of strategies for developing and supporting links with them. It seems evident that Tourist Boards can have a significant impact on these processes, and the present findings will possibly help them by providing a brief examination of these issues.

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