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"How Important to a City Are Tourists and Daytrippers? The Economic Impact of Tourism on The City of Barcelona"

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Abstract

In this paper, we devise a methodology that is able to objectively quantify the impact of tourism on the urban economy. This methodology takes various dimensions into account. First, to analyse the impact at sectoral level, it should bear in mind that tourism is a "cross-sectional" activity which affects many sectors, both directly and indirectly. Therefore, it is important to consider the impact of urban tourism on sectors traditionally defined as "tourism-related" (that is, hotels, restaurants, shops, etc.) but also its impact on other sectors (for instance, textiles, food, construction, to name only a few) due to the intersectoral relationships that emerge. Second, we need to calculate the percentage of the turnover of each sector that is due to the tourism industry. Third, it is important to establish the geographic distribution of this impact: how is the effect shared between the city and its neighbouring areas? Finally, the effect of urban tourism should be quantified not only in terms of turnover, but also in terms of its contribution to GDP and employment.

JEL classification: .
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1.- Introduction

Although urban tourism is probably one of the oldest forms of leisure travel1, it was only during the last decades of the twentieth century that many cities really became aware of its economic potential and embraced it as a key sector inside their economies. Today, urban tourism is one of the most dynamic segments within the travel industry: in 1999, the Global Development Research Center predicted that the number of international visitors to cities worldwide would triple by 2020, reaching a figure of 1.6 bn foreign visitors alongside a similar number of domestic visitors. The Barcelona Metropolitan region[2] offers a clear example of this trend: while the total overnight stays in Catalonia as a whole increased steadily throughout the decade, the Barcelona region's share rose from 22.7% in 1999 to 30.7% in 2009[3]. In 2009, the total number of overnight hotel stays in Barcelona stood at almost twelve and a half million, placing the city at the same level as other major tourist destinations such as London, Paris and Rome (Office du Tourisme et des Congrès de Paris, 2010).

Clearly, the ability to attract visitors has a significant effect on the economy of tourist cities. However, the desirability of tourism may be less obvious to the city's residents, or even to economic policy makers. Indeed, a significant segment of the population living in tourist cities see visitors as a nuisance. We find examples of this reaction in the complaints of tourist saturation in certain neighbourhoods in Barcelona[4], protests about the interference of visitors in everyday life in New York[5], or the contemptuous manner with which many Parisians treat tourists, which has created what is known as the "Paris Syndrome" (Katada, 1998; Uria, 2006; Wyatt, 2006). As the saying goes, a picture paints a thousand words; the anonymous artist who drew a line down a New York pavement to create one walking lane for tourists and another for New Yorkers made the point particularly well[6].

Any study of the effect of tourism on cities should bear this fact in mind: that is, that a sizeable proportion of the residents of major tourist destinations are far more aware of the inconvenience

[1] As early as the seventeenth century, it was common for young aristocrats in many European countries (especially the English) to undertake a long journey, known as the Grand Tour, through the major cities of Europe (Gross, 2008).
[2] The region comprises the city of Barcelona and the four neighbouring towns of Badalona, L'Hospitalet de Llobregat, Sant Adrià de Besòs and Santa Coloma de Gramenet, with a total population of 2,251,600 inhabitants in 2009.
[3] In the municipality of Barcelona alone, total overnight stays in hotels increased from 8,351,818 in the year 2000 to 12,311,976 in 2009 (source: the National Statistics Institute).
[4] La Vanguardia (Catalonia's most read daily newspaper), reported these complaints in articles published on June 16, 2008, April 9, 2009, May 5, 2009, June 7, 2009 and May 8, 2010.
[5] CBS, April 22, 2010, Chelsea Now, November 19, 2009, New York Times, July 6, 2010, to cite a few examples.
[6] New York News and Features, May 20, 2010, http://nymag.com/daily/intel/2010/05/tourist_sidewalk_lanes_actuall.html

generated by tourism than of the benefits[7]. Other important points that should be reflected in the study methodology are the fact that urban tourism represents an increasing share of the tourist industry worldwide, and that major cities and metropolitan areas are becoming ever more dominant in the global economy[8].

So we need to devise a methodology that is able to objectively quantify the impact of tourism on the urban economy. This methodology should take various dimensions into account. First, to analyse the impact at sectoral level, it should bear in mind that tourism is a "cross-sectional" activity which affects many sectors, both directly and indirectly. Therefore, it is important to consider the impact of urban tourism on sectors traditionally defined as "tourism-related" (that is, hotels, restaurants, shops, etc.) but also its impact on other sectors (for instance, textiles, food, construction, to name only a few) due to the intersectoral relationships that emerge. Second, we need to calculate the percentage of the turnover of each sector that is due to the tourism industry. Third, it is important to establish the geographic distribution of this impact: how is the effect shared between the city and its neighbouring areas? Finally, the effect of urban tourism should be quantified not only in terms of turnover, but also in terms of its contribution to GDP and employment.

This article aims to provide answers to all these questions. We present our methodology for quantifying the economic impact of tourism on the city of Barcelona, one of the world's most popular urban tourism destinations, in 2009.

In our preparation of the study we considered the various methodological approaches[9] used in previous research aiming to calculate the economic impact of urban tourism. Based on these approaches, though bearing in mind that all cities and urban systems[10] have idiosyncratic features of their own, we designed a methodology able to quantify the tangible economic effects of urban tourism but also versatile enough to adapt to plural urban environments. The main considerations that we bore in mind were:

[7] This phenomenon has led some authors to analyse the tourism-carrying capacity of cities, that is, their capacity to absorb visitors without negatively affecting residents (Mathieson and Wall, 1982, O'Reilly, 1986, Flores and Parra, 2010.)
[8] According to Price Waterhouse Coopers (2009), 100 cities produced 30% of world GDP in 2008, and 30 cities produced 18% of world GDP that year.
[9] See Del Corpo et al (2008).
[10] Not only in terms of its scale, its urban morphology or, for example, its economic fabric, but also as regards the statistical information available.

• The methodological recommendations made by the World Tourism Organization[11]. The definitions and classifications we used were conceptually consistent with regard to the ones used in major international trade statistics and services, national accounts, and other statistical operations.

• The existence of metropolitan areas means that studies of the economic impact should also consider the effects produced beyond the borders of the city in question. The economic effect initially generated in the city should be measured throughout the entire territory[12].

• Visitors are defined as travellers making a trip to a destination outside their usual environment, for less than a year, for any purpose (business, leisure or personal) other than to be employed by an entity resident in the country or place visited. The methodology should consider two sub-categories of visitors: tourists (who spend at least one night in town) and daytrippers (who come to the city but do not spend the night there). These two categories of visitors should be analysed separately because their motivations and behaviour in the city are very different.

• Also with regard to the main motivation for the visit, visitors are defined as people who travel for personal reasons (holidays, leisure and recreation, visiting friends and relatives; education and training, health and medical care, religion/pilgrimage, shopping, etc.) and also those who travel on business or for professional reasons (fairs, congresses, etc.).

• The analysis of "tourists" should not be limited to those who stay in hotels (hotels, aparthotels and legally authorized apartments), because there are other important categories of tourist accommodation, such as youth hostels, dorms, homes of friends or relatives, apartments for rent, and so on. The study of these categories is much more difficult but the economic impact of tourists who stay in these forms of accommodation must also be taken into account.

• A complete appraisal of the economic impact of tourism, the direct, indirect and induced effects should be considered.

• Finally, the complexity of the analysis obliges us to use both the existing baseline information and also the information obtained by standard procedures designed ad hoc to overcome the limitations of the traditional sources.

The article is organized as follows. Section 2 reviews the existing literature, section 3 explains the methodology used, section 4 presents and discusses the results, and finally, section 5 presents the main conclusions.

[11] UNWTO (2008)

[12] This is especially important in the case of the metropolitan area of Barcelona, since many of the tourism studies have focused on the city of Barcelona, forgetting (or glossing over) the effect of urban tourism in the other municipalities in the area.

2.- Literature Review

For the most part, studies in the area of urban tourism have focused on cost-benefit analyses, the creation of a system of indicators of sustainable tourism, and the assessment of its economic impact.

In their assessment of studies of the economic impact of tourism (the aspect we analyse here), Del Corpo et al (2008) divides them into two types: studies based on a partial equilibrium model, and those based on a general equilibrium model. The main difference is that in partial equilibrium models rises in demand involve an increase in the supply factors, but not an increase in prices, whereas in general equilibrium models the prices vary as well. That is, partial equilibrium models assume the existence of an unused store of production factors (capital and labour) which can be brought into play when there is an increase in demand without increasing prices. In the present economic situation, with unused hotel capacity, hotel construction projects on hold and a high unemployment rate, we believe that this assumption is perfectly acceptable and so our methodology can be framed within the partial equilibrium models. Similar approaches can be found in the studies by Del Corpo et al (2008) for the cities of Bergen (Norway), Elche (Spain) and Siracusa (Italy), Heng and Low (1990) for Singapore, Murillo et al (2008) in Granada (Spain) and other studies not specifically focused on urban tourism which we will quote later on in this section.

Economic impact studies usually estimate three types of effect: direct (the initial stimulus), indirect, and induced. In the context of the impact of urban tourism, the direct effects are the immediate effects of spending by visitors in the town (spending in hotels, restaurants, internal transport, etc..); the indirect effects are generated in other sectors of the economy through intersectoral relationships (i.e., links between suppliers and customers) between companies which are directly affected by the spending of visitors; finally, the induced effects are the result of the consumption by all individuals whose income depends on tourism. So the analysis of the economic impact aims to identify expenditure flows associated with tourism throughout the territory under study.

In the literature, direct spending is quantified from two perspectives: either from the perspective of demand, or from the perspective of supply. The first approach analyses the availability and activity of an array of tourist facilities which can be classified according to the purpose for which they are created (for example, accommodation, catering, travel agencies, sports and recreational facilities, and so on). The second approach analyses the behaviour of visitors entering the area under study.

A study from the perspective of supply may be more accurate, but it must define and identify each of the activities involved, in line with the concept of satellite accounts[13]. Given the difficulty of this procedure, an approach based on the demand side has traditionally been advocated in the literature[14]. The demand side approach requires information on tourist spending in the city and on its sectoral distribution. This information can determine the direct impact of tourism (though not the indirect and induced effects), but it may be affected by the subjective nature of the survey. As we explain in the following paragraph, this article combines the two approaches, supply and demand. As far as the calculation of indirect and induced effects is concerned, the best analytical tools are input-output tables and Keynesian multipliers (Frechtlin, 1994; Stynes 2001a and 2001b).[15,16]

Several studies of economic impact analysis have been conducted in Spain to evaluate tourism consumption and production at both global (Figuerola, 1985) and local level (Ascanio, 1993, in the case of Lanzarote, and Sarabia, et al. 1999 for the case of Cantabria). Others have assessed the impact of specific tourism-related actions (Villaverde and Coto, 1998 for the port of Santander, and Montalvo, 1998 on the impact of airports) and the impact of the Guggenheim museum in Bilbao (Plaza, 2000, 2006). Finally, the economic impact of tourism in the city of Barcelona has been assessed in the studies by Artis and Suriñach (dir) (2001, 2005, 2009 and 2010).

3.- Design of the methodology

3.1. General outline

In this article we estimate the economic impact of spending in 2009 by visitors (tourists and daytrippers) to the city of Barcelona. Our methodological approach considers three levels of effects: direct, indirect and induced (Chart 1).

As noted in section 2, the direct effects are the immediate effects of the spending by visitors in the area under study. Following international recommendations (UNWTO, 2008), tourism expenditure covers the amount spent (by visitors themselves, or reimbursable by others) to acquire consumer goods and services and valuables (for their own use or as presents) for and during tourist trips. Given that in this study the area analysed is Barcelona, the analysis is limited to categories that have a direct impact on the city. The direct effects are the result primarily of visitors' spending on

[13] The few studies in the urban environment based on tourism satellite accounts have focused almost entirely on the evolution of the economic impact (Law, 1992, Van der Berg et al., 1995; Smith, 1989.)
[14] The international recommendations of the UNWTO (2008) advise taking into account all the available information, that is, the information from studies of both supply and demand.
[15] See Archer, 1984, for the British economy.
[16] Using a meta-analysis technique, Baaijens et al (1998) developed a methodology that integrates both aspects.

accommodation, food and drink, local transport, recreation, culture, sporting activities and shopping.

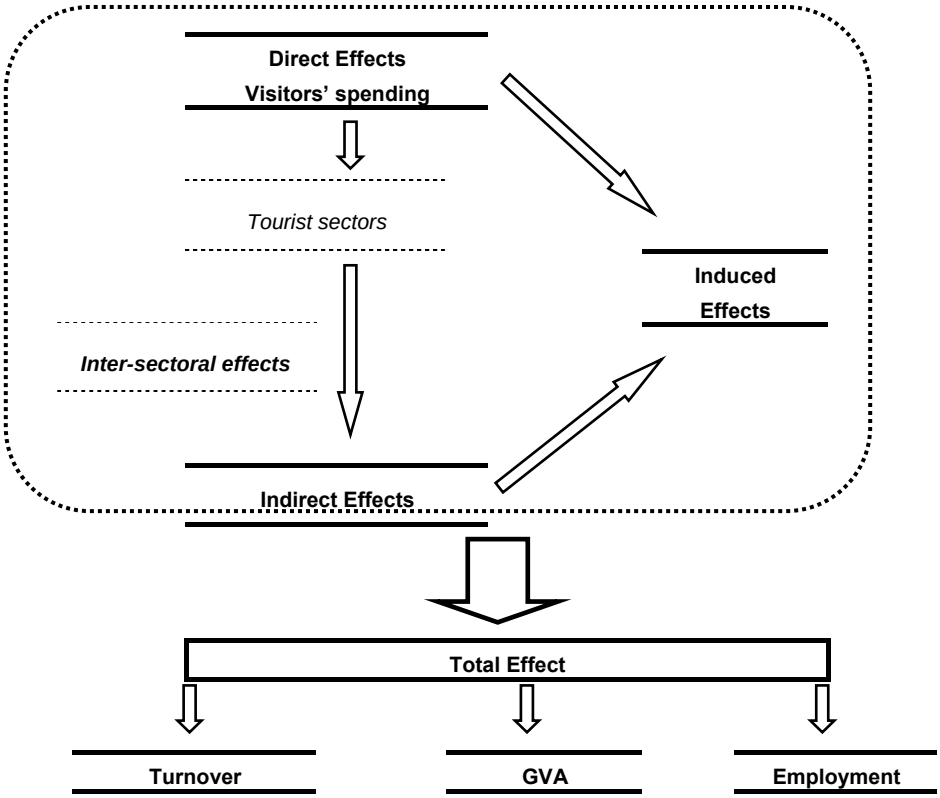
Indirect effects occur as a result of business generated from spending by visitors within a particular sector (tourism) in the economic area. They include the effects on other economic sectors generated by the intersectoral relations and customer-supplier links between firms. That is, in order to meet the demand made by visitors, companies in the tourism sector must have access to the inputs provided by other companies: for example, food products, cleaning, clothing and footwear, electronics, software, hardware, and so on.

Induced effects are the effects that are caused by the stimulus transmitted to the economy by the consumption made possible by the labour income generated, either directly or indirectly, by visitors' spending.

As shown in Chart 1, the direct, indirect and induced effects are measured based on different variables of interest: sales, gross value added[17] and employment.

[17] Gross value added (GVA) represents the wealth generated in the economy during the period in question. It is calculated as the difference between production value and the value of the intermediate consumptions used (raw materials, external services and supplies, etc.).

Chart 1. Effects considered in the estimation of the economic impact of tourism in the city of Barcelona



Source: Authors' own data

The methodology used to estimate the final economic impact is based on the completion of a series of intermediate objectives that are addressed sequentially in the four stages shown in Chart 2. The following sections present a detailed review of the methodology used to estimate each of the tangible effects generated by visitors to the city of Barcelona.

This methodology can easily be adapted to other urban environments, since it combines the use of information sources that consider the phenomenon either from the perspective of supply or from the perspective of demand[18]. In any event, as this design allows us to incorporate data from existing sources such as *ad hoc* field work, the full comparability of data obtained in different areas is intrinsically dependent on the quality of the basic statistical information, whatever the source from which it comes.

[18] Following the recommendations of the UNWTO (2008).

Chart 2. Stages in the estimation of the final economic impact of tourism

STAGE ONE: CALCULATION OF THE DIRECT EFFECT (1)	
Objective of the stage	*Information necessary*
● To determine the amount of direct tourism expenditure by visitors in the city (the economic area under study).	► To determine the number of visitors, their average length of stay and the corresponding average expenditure per person per day.

STAGE TWO: CALCULATION OF THE DIRECT EFFECT (2)	
Objective of the stage	*Information necessary*
● To identify the proportion of the total tourist-related activity of the "tourist sector establishments" in the area.	► To calculate the turnover, GVA and number of employees in the "tourist sector establishments" in the area.

STAGE THREE: CALCULATION OF THE INDIRECT EFFECTS	
Objectives of the stage	*Information necessary*
● To identify the intersectoral effects (indirect effects) of tourist activity on other economic sectors.	► To identify the intersectoral multiplier effects of the economic stimulus generated by visitors' direct spending.
● To identify the territorial area in which the indirect effects arise.	► To establish the location of the suppliers of the tourist sectors, in order to identify the territorial area in which the economic effects occur. We consider three areas: local (the city of Barcelona), Metropolitan (Metropolitan Region of Barcelona) and regional (Catalonia).

STAGE FOUR: CALCULATION OF INDUCED EFFECTS	
Objectives of the stage	*Information necessary*
● To determine the employees' earnings generated as a result of the direct and indirect effects of tourism.	► To calculate the labour income generated directly or indirectly by tourism.
● To assess the proportion of those earnings which are ultimately destined to the consumption of goods and services.	► To determine the structure of household budgets in order to deduct the portion of labour income that goes into savings.
● To identify the spatial location of the induced effects	

Source: Authors' own data

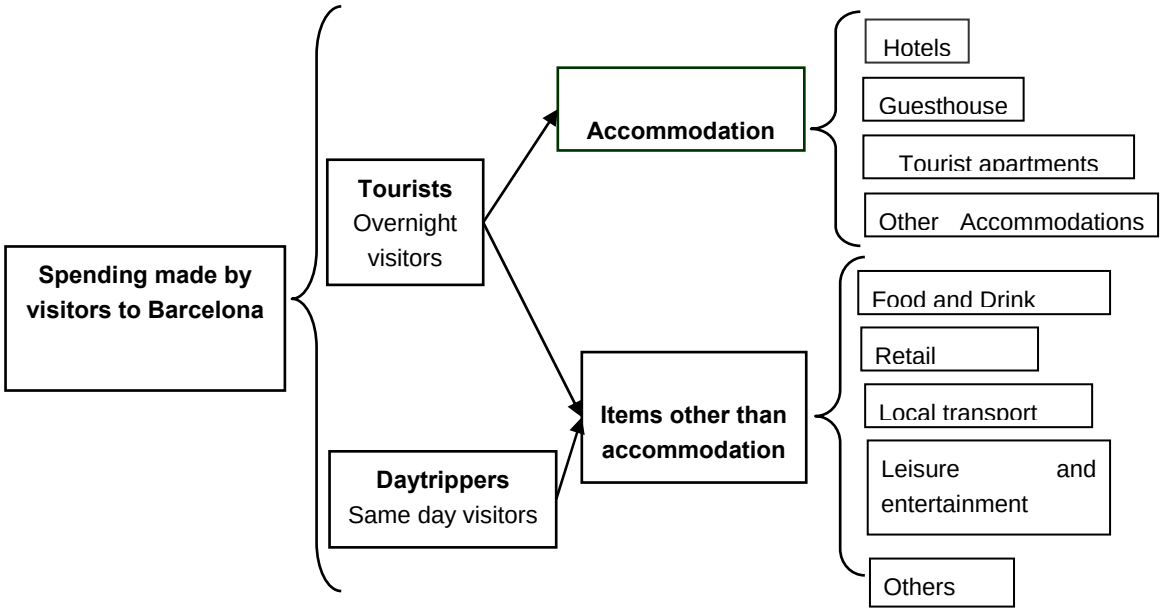
3.2. Methodology used to quantify the direct impact of tourism in the city of Barcelona. Analysis of direct spending by visitors in 2009.

To fine-tune the calculation of visitors' spending and consumption, we analysed tourists and daytrippers separately. This is a key distinction: as daytrippers do not stay overnight in the city, they do not spend money on accommodation. The "tourist sectors" shared by tourists and daytrippers are restaurants and bars, local transport, retail, and activities related to entertainment and culture.

To calculate the total expenditure by both types of visitor, we need to use the data obtained from both the supply and the demand perspectives. We need to know: (a) the number of visitors to the city and their average stay (in nights and days), and (b) the average expenditure per person per day, both the total figure and broken down into the different sectors of economic activity.

Our analysis of tourist expenditure is based on the type of visitor (tourists and daytrippers) and the area of spending (spending on accommodation vs. spending on other items). We also analyse the subcategories inside each area of spending, calculating spending on accommodation independently for each different type (i.e., hotels, apartments, and so on). Similarly, we divide spending on other items into spending on food, shopping, leisure, transport, and so on). Chart 3 shows the structural analysis according to type of visitor, highlighting the methodology used in our analysis.

Chart 3. Structure of visitors' spending



Source: Authors' own data

Before going into the specifics of the methodology used, we should note that the availability of reliable baseline data for implementing a city-wide analysis is crucial to the viability of certain methodological approaches. Our methodology, on the other hand, is designed to be applicable in urban areas where the statistical information relating to tourism is not at its optimum level.

For the selection of our data we prioritized official sources, provided they give information at the level of disaggregation (both territorial and conceptual) that we need. If official data are unavailable or out of date, we used the data provided by studies commissioned by semi-public bodies (for instance, Turisme de Barcelona[19] and the Barcelona Tourism Strategic Plan) and carried out by consulting firms that specialize in tourism (Tea-Cegos Consultur and DYM), or data provided by associations in the sector (Apartur[20] or Barcelona Hotels Association).

To evaluate tourists' spending on accommodation (obviously excluding daytrippers) we analysed the different types of lodgings separately. As shown in Chart 3, we identified four broad categories of establishments: hotels, guesthouses, apartments and other accommodations. The first three categories are legally recognized[21] by the Catalan regional government in its supervision of tourist accommodation. For these three categories, especially for hotels, the various sources of data provide adequate information for the study of the number of tourists staying there and the number of overnight stays, from the supply perspective. The fourth category, which we term "other accommodations", deserves special attention because of the difficulty of its analysis. This is the most heterogeneous category and the one about which least is known: it includes all the types of housing that are not designated by law as local tourist accommodation, that is, certain categories of guesthouses, hostels, holiday or vacation homes, second homes, student residences, rented flats (not specifically designed for tourists), houses or apartments belonging to friends and family, and also "unofficial" tourist accommodation apartments not declared by their owners. This category includes forms of accommodation governed by market prices and others for which no payment is generally made (e.g., apartments and houses belonging to friends or relatives); therefore, it is difficult to obtain information from the perspective of supply. In cases in which this approach may be viable (for example, guesthouses, hostels, student residences, etc.) the official sources do not provide adequate data for Barcelona and in the other cases information cannot be obtained. Therefore, to quantify the tourists who stay in "other establishments", we used the raw data from the EQV, the survey[22]carried out by Tea-Cegos Consultur for the Barcelona Tourism

[19] This consortium for the promotion of tourism in the city comprises the City Council and the Barcelona Commerce Chamber.
[20] The association of owners of tourist apartments.
[21] Decree 183/2010 (DOGC 5764) of the Parliament of Catalonia, 23 November, governing tourist accommodation establishments.
[22] The authors were involved in the design of this survey.

Strategic Plan. As this survey aims to quantify from the perspective of demand, the number of visitors (tourists and daytrippers) to the city of Barcelona and their behavior during their stay are established by the ratio of tourists staying in hotels, guesthouses or apartments (the categories for which data are available from the perspective of supply) to those staying in the forms of accommodation included in the "other accommodations" category. The analysis shows that for every two tourists who stay in legally recognized tourist accommodation, one stays in accommodations in the category "other establishments".

Tourists' spending was also analysed from the perspective of demand and independently for the four major categories in question (hotels, guesthouses, apartments and other places). We used the microdata from the Tourist Profile Survey conducted by Turisme de Barcelona, obtaining the average spending per person on overnight accommodation for each of the four categories. In the case of legally recognized tourist apartments, we used the information obtained by the sectoral organization (Apartur) regarding their customers.

Before selecting our basic data sources, we identified alternative scenarios that examine the direct effects taking other data sources, or combinations of sources, as their reference. We then performed a sensitivity analysis of the effect of the use of one or other type of source on the assessment of the direct effects of tourism in the city. We compared the consistency of the results obtained with the information available on tourism in the city, and as the most plausible scenario[23] we decided to use the sources whose methodology is most consistent with the practices in the Tourism Satellite Accounts, and ad hoc sources designed for the analysis of the city of Barcelona but which are easily replicable in other urban environments. The sources that were eventually used to obtain information on the magnitudes of the variables (number of tourists, overnight stays, average spending per person and overnight accommodation by type) needed for the calculation of the direct effects are shown in bold in Tables 1 and 2.

[23] We estimated the direct effects of tourism for a wide range of scenarios, but for reasons of space they are not shown here.

Table 1: Sources of information available on the number of tourists and nights stayed according to type of accommodation

Accommodation	Perspective	Source	Information
Hotels and apartment hotels	Supply	INE-Idescat[24]	Number of tourists and nights stayed according to type of accommodation
	Supply	**EDH**[25]	
Pensions	Supply	**INE-Idescat**	
	Demand	EQV[23] of the Tourism Strategy Plan for the City of Barcelona	
Tourist apartments	Supply	INE-Idescat	
	Supply	**Apartur**	
	Demand	EPT[26] carried out by Turisme de Barcelona	
	Demand	EQV[23]	
Other accommodation	Demand	EPT[27] carried out by Turisme de Barcelona	
	Demand	**EQV**[23]	

Table 2. Information on tourists' spending on accommodation

Type of accommodation	Perspective	Source	Information
Hotels and apartment hotels	Demand	EPT[27] carried out by Turisme de Barcelona	Average cost per overnight stay by tourists and type of accommodation
Guesthouses	Demand	EPT[27] carried out by Turisme de Barcelona	
Tourist apartments	Demand	EPT[27] carried out by Turisme de Barcelona	
	Offer	**Apartur**[21]	
Other accommodations	Demand	EPT[27] carried out by Turisme de Barcelona	

After obtaining the necessary background information (number of tourists in each category, number of nights, and average cost for accommodation per person per night according to the type of establishment, see Table 3), we determined the direct spending on accommodation by tourists in the city of Barcelona. The calculation is presented in Chart 4.

[24] INE: Spanish National Statistics Institute. Idescat: Catalan Statistics Institute.
[25] Survey of hotel managers carried out by Turisme de Barcelona.
[26] Tourist Profile Survey carried out by DYM for Turisme de Barcelona.

Table 3. Visitors' spending and length of stay (city of Barcelona)

	2009	Visitors	Overnight stays	Av. stay		Spending by visitor /night - /day	
				Nights*	Days	On accommodation	On other items
Tourists	Hotel	6,476,033	12,822,545	1.98	2.98	93.13 €	93.40 €
	Guesthouse	431,300	1,010,500	2.34	3.34	41.29 €	55.58 €
	Tourist apartment	415,703	1,812,465	4.36	5.36	68.95 €	62.46 €
	Other accommodation	3,997,645	10,909,614	2.73	3.73	24.95 €	40.97 €
	Daytrippers	11,320,681	---	---	1	---	44.56 €
	Visitors	22,641,363					

Chart 4: Calculation of tourists' spending on accommodation

Number of **overnight** stays by tourists (by type of accommodation)	x	**Average spending on accommodation by person and by overnight stay** (by type of accommodation)

After analysing tourists' spending on accommodation, we now quantified the spending by visitors on other items (restaurants, retail, transport, leisure and other activities), distinguishing between tourists and daytrippers. In the case of tourists, we used the same approach used to quantify the spending on accommodation, so spending on other items was also recorded according to type of accommodation. The information required was obtained entirely from the perspective of demand. With the exception of tourists who stay in apartments, where the source is Apartur, for the other categories we used microdata from the Tourist Profile Survey (2009) conducted by the Turisme de Barcelona Consortium. After analysing these raw data, for each category we obtained information on the spending unrelated to accommodation and its distribution (see Table 3). Spending by tourists on items unrelated to accommodation can be calculated as shown in Chart 5.

Chart 5. Calculation of tourists' spending on items unrelated to accommodation

Number of tourists (by type of accommodation)	x	**Average stay (days)** (by type of accommodation)	x	**Average spending not related to accommodation per person and day** (by type of accommodation)

Finally, we analysed spending by daytrippers. Although the UNWTO (2008) recommend the inclusion of daytrippers in the compilation of statistics on tourism, their inclusion is a novelty because of the difficulty of achieving an accurate assessment of their behaviour. To characterize this group we used information from the Tourism Strategy Plan of the City of Barcelona, which quantifies the number of daytrippers, their spending and its distribution in the different sectors (as in the case of tourists, with the obvious exception of accommodation)27. As mentioned above, the authors of this paper were involved in the design of the EQV. One of its main contributions was to define exactly when a person visiting the city of Barcelona should be considered as a daytripper.

Using this metropolitan area of Barcelona (RMB) as the setting for our study, the information provided by the EQV allowed us to quantify the number of visits by daytrippers, their spending in the RMB and its distribution (food and drink, local transport, recreation, culture and sporting activities, shopping and others). The information obtained on the number of visits by daytrippers, and average expenditure per visit, are shown in Table 3.

This study was designed ad hoc for the city of Barcelona but can be adapted to other urban environments (wherever or not there is a metropolitan area). We estimated that more than 11 million daytrippers visited the city of Barcelona in 2009. Adding the figures for tourists, we found that more than 22.6 million visitors to the city of Barcelona in 2009. Tourists who spend the night in the city accounted for around half the total of visitors.

We now calculated the total expenditure by daytrippers in the city using the formula shown in chart 6.

Chart 6. Calculation of daytrippers' spending

Total visits by daytrippers	x	**Average spending by daytrippers per visit**

Finally, adding together the spending by tourists (on accommodation and on other items) and daytrippers (in all areas except accommodation) we quantified the direct impact generated by tourism.

[27] The results are shown in Table 8.

3.3 .- Calculation of the indirect effects

After estimating the direct spending of tourists and daytrippers we should bear in mind that, in order to meet their clients' needs, tourist industries have to buy goods and services from other sectors of the economy. Spending on these goods and services represent the indirect effects of tourism. After determining the turnover, Gross Value Added (GVA) and the number of jobs in each sector that can be directly attributed to tourism, we calculated the indirect effects deriving from the flow of intersectoral relationships produced by the direct effects.

We estimated these indirect effects by applying the input-output methodology and by defining a set of multipliers. We used three different multipliers: one for production/turnover, one for GVA and another for employment. This enabled us to make separate calculations for the increases in turnover, GVA and employment brought about indirectly by tourism demand.

To calculate these multipliers we used the latest Input-Output Table for Catalonia (IOTC) for the year 2005, published in 2010 by the Catalan Statistics Institute (Idescat). Despite its advantages, the use of this table presents two limitations. The first relates to differences in timing. While IOTC refers to the year 2005, the study uses the data of tourism expenditure and GDP in 2009. To overcome this limitation we updated the ratios calculated from the IOTC (GVA per production, production per employee and GVA per employee) for the year 2009 (using data from the Consumer Price Index for Catalonia, published by Idescat).

The second limitation is to do with the territorial scope of the multipliers. The Input-Output multipliers refer to Catalonia, while the objective of the study was to determine the indirect effects on the city and the metropolitan area of Barcelona. To address this limitation, we first used the results of a specific survey conducted in 2009 by researchers with companies in the sector[28] in the city of Barcelona in order to identify the multipliers that characterize the intersectoral relations that occur as a result of direct spending by visitors in the city. The survey specifically asked each company what proportion of total purchases of goods and services came from suppliers based in the municipality of Barcelona, the Metropolitan Region of Barcelona (RMB)[29] (i.e. not including the city) the rest of Catalonia (excluding the RMB), the rest of Spain, and abroad.

[28] The sample comprised 109 companies in sectors related to tourism (cultural and recreational activities, travel agencies, inbound tourism agencies, trade, businesses related to cruises, hotels, apartments, car and bike rental, nightlife, restaurants and transport). This sample size allowed us to work with a maximum estimation error of 9%, and a confidence level of 95%.

[29] The Metropolitan Region of Barcelona (RMB) comprises a total of 164 contiguous municipalities around the city of Barcelona, with a total population of 3,500,000 inhabitants and a surface area of 3,236 sq. km.

This information allowed us to obtain the IOTC multipliers for specific locations, for instance for the city of Barcelona and for the RMB. The possibility of calculating indirect effects not just for the city but for the Metropolitan Region as well is another innovation with respect to other studies, which have only estimated the indirect effect on the central city (Plaza, 2006; Andranovich et al, 2001; Del Corpo et al, 2008; and Murillo et al, 2008). It should be noted, however, that the process of spatial location used has two implicit assumptions: (a) that the proportion of providers with a common geographical origin for a particular tourist activity is identical, regardless of the type of product; in the catering sector, for example, we assumed that the weight of suppliers located in the city of Barcelona is the same for all inputs purchased by the sector; (b) that the geographical distribution of second-tier suppliers (i.e., suppliers of suppliers), was the same as that found in the tourism sector. That is, if the catering industry states that 57% of its purchases are made from suppliers based in the city of Barcelona, we assumed the same weight for their suppliers (for example, in the food industry). Therefore, we assumed that 57% of the suppliers in the food sector were also based in the city of Barcelona.

These two assumptions are probably too restrictive, and it is not possible to test them with the information available. The reason is that the survey data only tell us the geographical distribution of the direct providers in each tourism sector in global terms, without differentiating by product. Therefore, we could not establish whether there are differences according to the product purchased, nor could we determine the geographic distribution of the suppliers' suppliers.

In order to address these limitations, in the process of spatially locating the indirect effects we also took into account the territorial distribution of employment, i.e. the relative weight of Barcelona, the RMB and the rest of Catalonia in terms of the total population employed (measured by the number of Social Security affiliations for each of the 65 branches of activity in the IOTC). Thus, our final spatial definition of the indirect effects was based on the two sources: the EQV survey which we helped to design, and the geographical distribution of Social Security affiliations at the sectoral level.

3.4.- Calculation of the induced effects

Induced effects are the effects that arise from the economic stimulus produced by the consumption funded by the earnings that visitors' spending generates. We applied a two-stage procedure to quantify these effects. First, we obtained an estimate of consumer spending at the sectoral level made by the individuals whose income is either directly or indirectly associated with tourist spending in the city; then, we calculated the direct and indirect effects that result from this consumption in terms of turnover, employment, and GVA.

To estimate this spending on consumption, we first calculated the wage per employee at the sectoral level using the IOTC 2005. For each of the 65 branches of activity in the IOTC, we then multiplied this wage per employee by the number of individuals in Catalonia whose income is either directly or indirectly associated with tourist spending in the city of Barcelona. Third, we obtained the total remuneration of employees generated in Catalonia, updated for 2009 from the IPC. Fourth, we used these overall data to estimate the consumer spending by individuals whose income is either directly or indirectly associated with tourist spending in Barcelona. To estimate the share of labour income spent on consumption, we deducted social security payments and a figure for savings, taking as our reference the breakdown of the gross salary provided by the Spanish Statistics Institute from the Structural Wage Survey and the data provided by the Statistics Institute's Quarterly National Accounts.

We then divided this final consumption at the sectoral level according to the distribution by branch of activity of final household consumption in the IOTC 2005 (after deducting the percentage of each product that consumers buy outside Catalonia).

Having estimated the final consumption at the sectoral level, using the input-output methodology we calculated the direct and indirect effects in Catalonia of this consumption in terms of turnover, employment and GVA. Finally, we established the location of these induced effects from the spatial distribution of the population employed, that is, in relation to the weight of Barcelona, the RMB and the rest of Catalonia in terms of Social Security affiliations in each of the 65 branches of activity in the TIOC.

4.- Main results

The tables below summarize the main results obtained using the methodology and the scenario described in section 3.1.

The results shown in Tables 4 to 9 suggest that tourism (adding together its direct, indirect and induced effects) has a significant impact on the economy of the city of Barcelona. The more than 22.5 million people who visited the city in 2009 generated an annual turnover of nearly €6.3 bn, corresponding to an annual GVA of €3.56 bn. The sector employs 68,711 workers directly, and 83,818 people if we count the indirect and induced effects, in the municipality of Barcelona alone. Visitors to the city of Barcelona also had a significant effect on Catalonia as a whole, being responsible for 2.4% of the region's GDP, and for 4.1% of the existing jobs. These figures are highly significant, especially bearing in mind that they correspond to a period of economic recession (2009) and that tourism was one of the activities most affected by this situation

Table 4. Visitors' spending (tourists and daytrippers) (€)

2009		Visitors' direct spending			
		Accommodation	Other items	Total	%
Tourists	Hotel	1,194,163,616	1,802,487,217	**2,996,650,833**	62.82%
	Guesthouses	41,723,545	80,065,324	**121,788,869**	2.55%
	Tourist apartment	124,969,463	139,171,374	**264,140,837**	5.54%
	Other accommodation	272,194,873	610,750,421	**882,945,294**	18.51%
	Daytrippers		504,449,560	**504,449,560**	10.58%
	Total visitors	**1,633,051,497**	**3,136,923,897**	**4,769,975,394**	**100%**

Source: Authors' own data.

Table 5. Visitors' spending according to item (€)

2009	Direct spending		
	Tourists	Daytrippers	Total
Accommodation	1,633,051,497		**1,633,051,497**
Retail	650,151,214	149,251,352	**799,402,566**
Food and drink	1,203,794,754	220,306,135	**1,424,100,889**
Local transport	264,501,137	43,311,287	**307,812,424**
Entertainment	434,636,886	74,048,557	**508,685,443**
Others	79,390,345	17,532,230	**96,922,575**
Total	**4,265,525,833**	**504,449,560**	**4,769,975,394**

Source: Authors' own data.

Table 6. Turnover (€)

Sector	Total turnover in the sector in Barcelona	Direct spending by visitors	Visitors' direct spending as % of total
Hotels and other accommodation	1,760,399,685	1,633,051,497	92.8%
Food and drink	4,034,273,354	1,424,100,889	35.3%
Transport	1,561,604,491	307,812,424	19.7%
Retail and repairs	2,984,629,531	799,402,566	26.8%
Entertainment and culture, and Others	3,402,572,544	605,608,018	17.8%
Total tourist sectors	**13,743,479,605**	**4,769,975,394**	**34.7%**

Source: Authors' own data

Table 7. Direct employment

Sector	Number of employees in the sector in Barcelona	Employment directly generated by tourism	Number of employees generated by tourism as % of total
Hotels and other accommodation	25,792	23,926	92.8%
Food and drink	38,688	13,644	35.3%
Transport	17,851	3,465	19.4%
Retail and repairs	93,402	23,315	25.0%
Entertainment and culture, and Others	24,694	4,361	17.7%
Total tourist sectors	**200,427**	**68,711**	**34.3%**

Source: Authors' own data

Table 8. Direct Gross Value Added (€)

Sector	Total GVA of the sector in Barcelona	GVA directly generated by tourism	GVA directly generated by tourism as % of total
Hotels and other accommodation	1,132,219,279	1,050,313,974	92.8%
Food and drink	2,306,721,526	813,515,192	35.3%
Transport	684,224,095	128,325,880	18.8%
Retail and repairs	2,069,159,482	516,498,839	25.0%
Entertainment and culture, and Others	1,333,122,168	243,416,185	18.3%
Total tourist sectors	**7,525,446,550**	**2,752,070,070**	**36.6%**

Source: Authors' own data.

Table 9. Economic impact of visitors to Barcelona (€)

		Direct (1)	Indirect	Induced	Total
Barcelona City	**Turnover**	4,769,975,394	993,432,234	534,014,550	6,297,422,178
	Employment	68,711	8,097	7,010	83,818
	GVA	2,752,070,070	500,332,420	310,091,059	3,562,493,549
Metropolitan Region (including Barcelona)	**Turnover**	4,769,975,394	1,769,465,557	984,801,053	7,524,242,004
	Employment	68,711	14,507	11,933	95,150
	GVA	2,752,070,070	877,189,620	555,538,003	4,184,797,693
Total Catalonia	**Turnover**	4,769,975,394	2,332,982,492	1,386,586,796	8,489,544,682
	Employment	68,711	18,976	16,279	103,966
	GVA	2,752,070,070	1,148,309,941	766,452,999	4,666,833,009

Source: Authors' own data

(1) All the direct impact is generated in the City of Barcelona, so it is the same figure for the Metropolitan Region (as it includes the City of Barcelona) and the whole Catalonia (which includes the Metropolitan Region).

Putting together the direct, indirect and induced effects, **every day** tourism contributes €7,539,918 (€17,000,000) to the GVA (turnover) in the municipality of Barcelona and €12,785,743 (€23,200,000) to Catalonia as a whole. In fact, if tourism in Barcelona were a single company, it would be Spain's 13th largest firm in terms of turnover (more than 4.5 bn euros), just behind Gas Natural and Peugeot's Spanish subsidiary. The figure of 68,711 jobs directly generated by tourism in Barcelona is higher than Spain's largest employers, which are the Post and Communications Service (64,205), El Corte Inglés (63,629) and Mercadona (61,803). And at the sectoral level, tourism in Barcelona generates more jobs than the construction sector (58,744) and more than publishing, film and television, telecommunications and information technology taken together (which account for 49,897 jobs).

Obviously, the sector which benefits most from tourism in Barcelona is the accommodation sector (hotels, hostels, apartments, and so on), which receives almost 93% of its income from visitors. However, other sectors have also received a significant boost due to demand from visitors: considering only the direct effect, 35.3% of sales in the catering sector are due to visitors, 25% of retail revenue, 18.8% in the transport sector (including public transport, bus, taxi and car hire), and 18.3% of the recreational and cultural services. These sectors receive additional demand because of the indirect and induced effects of tourism, and other industries not related to tourism also increase their turnover. Intersectoral relations highlight a number of sectors which are apparently not related to tourism, but an important part of the demand for their services is due to its indirect effects: for example, real estate, other business activities, wholesale or households

employing domestic staff. Of the total effect (direct, indirect and induced) generated by tourism, these four sectors account for 17% of the turnover and nearly 20% of jobs.

Another interesting finding is that visitors to Barcelona not only benefit the city itself but the metropolitan area as well, and even the rest of Catalonia. Analysis of the three variables studied (turnover, employment and value added) shows that 74.1% of the revenue generated stays in the municipality of Barcelona, 14.4% in the rest of the metropolitan area, and the remaining 11.3% in the rest of Catalonia. So 25.7% of the effect of tourism benefits the area beyond the limits of the city. As for occupation, the figures are 80.6% for the city itself, 10.8% for the RMB and 8.4% for the rest of Catalonia (that is, 19.2% of the employment generated by tourism in the city of Barcelona is located outside the city). As far as GVA is concerned, 76.3% remains in the municipality of Barcelona, 13.3% goes to the Metropolitan Area and 10.3% the rest of Catalonia; so 23.6% of the value added generated by visitors to Barcelona benefits the rest of Catalonia.

Analysing the impact of visitors according to type, we see that 89.4% of the direct impact of tourism is originated by tourists, and the remaining 10.6% by daytrippers[30], a far from negligible figure. This segment should be borne in mind in the design of plans for promoting the city, as a large part of the daytrippers reside relatively close to Barcelona and are likely to visit regularly. This conclusion most likely applies to other cities that attract large numbers of visitors.

Of the 89.5% of tourists' direct spending (i.e., not counting daytrippers), 62.8% correspond to tourists staying in hotels, 2.5% to tourists in guest houses, 5.5% to tourists in apartments and the remaining 18.5% to those who stay in other accommodation (mainly the homes of relatives or friends). These data show that accommodation other than hotels plays an important role in tourism in Barcelona.

As regards the types of effect, direct effects are the most important of the three, generating 56.2% of sales, 66.1% of employment and 59% of GVA. However, indirect effects (27.5% of sales, 18.3% of employment and 24.6% of GVA) and induced effects (16.3% of sales, 15.7% employment and 16.4% of GVA) also make significant contributions to the overall effect of tourism in the city of Barcelona and to the Catalan economy as a whole.

[30] The total number of visitors to Barcelona is divided almost equally between tourists and daytrippers.

5.- Conclusions

This article describes our methodology for quantifying and spatially locating the direct, indirect and induced effects of tourism in the city of Barcelona. The results draw attention to the following key points:

(A) The need to consider daytrippers in policy decisions: that is, visitors who do not stay overnight in the city. Daytrippers generate more than 10% of visitors' direct expenditure, and account for almost 50% of visitors to Barcelona.

(B) The territorial distribution of the impact: 25.7% of the total turnover and 19.8% of the employment generated by visitors to the city does not remain in Barcelona, but is spread out through the rest of Catalonia.

(C) The strong effect of tourism in the hotel sector (92.8% of total revenues), catering (35.3%), retail trade and repairs (26.8%), transport (19.7 %) and recreational and cultural services (17.8%).

(D) The importance of urban tourism to the economy of the city of Barcelona: adding together all three types of effect, urban tourism has an overall turnover of 17 (23.2) million euros a day and represents nearly 84,000 (104,000) jobs in Barcelona (Catalonia).

Finally, we stress that the methodology used draws largely on existing information which will also be available in other tourist cities of similar characteristics to Barcelona. It can therefore be adapted relatively easily in order to calculate the economic impact of tourism and its spatial dimension in other cities and metropolitan areas, both in Europe and in other developed countries.

References

Andranovich, G; Burbank, M.; Heying, C. (2001): "Olympic Cities: Lessons Learned from Mega-Event Politics". *Journal of Urban Affairs*, Vol. 23, No. 2, pp. 113-131.

Archer, B. (1984): "Tourism and the British Economy". *Rivista Internazionale di Scienze Economiche e Commerciali*, v. 31, iss. 7, pp. 596-613

Artís, M., and Suriñach, J. (dir) (2001), *Estudio del impacto económico del turismo en la ciudad de Barcelona*, Barcelona City Council, Barcelona.

Artís, M., and Suriñach, J. (dir) (2005), *Actualización del impacto económico del turismo en la ciudad de Barcelona*, Barcelona City Council, Barcelona.

Artís, M., and Suriñach, J. (dir) (2009): *L'impacte de l'activitat turística a la ciutat de Barcelona* (2007). Barcelona City Council, Barcelona.

Artís, M., and Suriñach, J. (dir) (2009): *L'impacte de l'activitat turística a la ciutat de Barcelona* (2009). Barcelona City Council, Barcelona.

Ascanio, A. (1993), 'Impacto del turismo en la economía local de la isla de Lanzarote (Canarias)', *Estudios Turísticos*, No 119–120, pp 29–37.

Baaijens, S R., Nijkamp, P., and Van Montfort, K. (1998), 'Explanatory Meta-analysis for the Comparison and Transfer of Regional Tourist Income Multipliers', *Regional Studies*, Vol 32, No 9, pp 839-849.

Van den Berg, L.; van der Borg, J.; van der Meer, J. (1995): *Urban tourism: Performance and strategies in eight European cities*. Aldershot, U.K.

Del Corpo, B.; Gasparino, U.; Bellini, E. and Malizia, W. (2008): "Effects of tourism upon the economy of small and medium-sized European cities". FEEM Working Paper No. 44.2008.

Figuerola, M. (1985), *Teoría económica del turismo*, Alianza Editorial, Madrid.

Flores, M.P. y Parra, M.C. (2010): "Indicadores de capacidad de carga del turismo". *TURyDES*, Vol 3, Nº 8. http://eumed.net/rev/turydes/08/fapm.htm

Frechtling, D.C. (1994), 'Assessing the Economic Impact of Travel and Tourism. Introduction to Travel Economic Impact Estimation', in Brent, J.R., and Goeldner, C.R., *Travel, Tourism, and Hospitality Research*. A handbook for Managers and Researchers, Second Edition (eds), John Wiley & Sons, Inc., New York, pp 359-365

Global Development Research Center (1999): "Cities and Tourism". *Sustainable Tourism Info-Sheets* (http://www.gdrc.org/uem/eco-tour/cities-tour.html).

Gross, Matt. "Lessons From the Frugal Grand Tour" *New York Times* 5 September 2008.

Heng, M.T. and Low, L. (1990): "Economic impacto of tourism on Singapore". Annals of Tourism Research, vol. 17, pp. 246-269.

Katada, T. (1998): "Reflexions on a case of Paris syndrome". *Journal of the Nissei Hospital*, vol 26,2, pp. 127-132.

Law, C.M. (1992): "Urban Tourism and Its Contribution to Economic Regeneration". *Urban Studies*, v. 29, iss. 3-4, pp. 599-618

Mathieson, A. Y Wall, J. (1982). Tourism: *Economic, Physical and Social Impacts*. London: Longman Group.

Montalvo, J. (1998), 'A methodological proposal to analyse the economic impact of airports', *International Journal of Transport Economics*, No 25, pp 181–203.

Murillo, J.; Romaní, J.; Surinach, J. (2008): "The Impact of Heritage Tourism on an Urban Economy: The Case of Granada and the Alhambra". *Tourism Economics*, , v. 14, iss. 2, pp. 361-76

Ofice du tourisme et des congrès de París (2010): *Tourism in Paris*, 2009 key figures. París.

O'Reilly, A.M. (1986). "Tourism carrying capacity: concepts and issues", *Tourism Management*, 7 (4), 254-258.

Plaza, B. (2000): "Evaluating the influence of a large cultural artifact in the attraction of tourism. The Guggenheim Museum Bilbao Case". *Urban Affairs Review*, Vol. 36, No. 2, pp. 264-274

Plaza, B. (2006) The Return on Investment of the Guggenheim Museum Bilbao. International Journal of Urban and Regional Research, 30(2), 452-467.

Pricewaterhouse Coopers (2009): UK Economic *Outlook* (https://www.ukmediacentre.pwc.com/imagelibrary/downloadMedia.ashx?MediaDetailsID=1562).

Sarabia, J.M., Pérez, C., and López, C. (1999), *Evaluación del PIB del subsector turístico en Cantabria, Gobierno de Cantabria*, Consejería de Industria, Turismo, Trabajo y Comunicaciones, Dirección General de Turismo, Santander.

Smith, V.K. (1989): "Taking Stock of Progress with Travel Cost Recreation Demand Methods: Theory and Implementation". *Marine Resource Economics*, v. 6, iss. 4, pp. 279-310

Stynes, D.J. (2001a), 'Economic Impact of Tourism', available in: http://www.msu.edu/course/prr/840/econimpact/.

Stynes, D.J. (2001b), 'Estimating Economic Impacts of Tourism Spending on Local Regions; a comparison of satellite and survey/I-O approaches', TTRA Conference, Illinois.

UNWTO (2008) International Recommendations for tourism statistcs. United Nations Publication. ST/ESA/STAT/SER.M/83/Rev.1. United Nations, Madrid and New York, 2008.

Uría, L. (2006): "El Síndrome de París". *La Vanguardia*, 20 de Septiembre de 2006.

Villaverde, J., and Coto, P. (1998), 'Port economic impact: methodologies and application to the port of Santander', *International Journal of Transport Economics*, No 25, pp 159–179.

Wöber, K.W. 2000 Standardizing European City Tourism Statistics". *Annals of Tourism Research*, 27, 1, 51-68

Wyatt, C. (2006): "'Paris Syndrome strikes Japanese". *BBC News*, 20-December-2006.

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