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Tourism capital: Index for the Spanish provinces through confirmatory factor analysis

José Antonio Camuñez
Universidad de Sevilla, Spain

Maria P Pablo-Romero
Universidad de Sevilla, Spain; Universidad Autónoma de Chile, Chile

Javier Sánchez-Rivas
Universidad de Sevilla, Spain

Abstract

In this study, a new conception of the relationships between competitiveness, tourism, and economic growth is proposed. The naturally occurring or inherited tourism resources within the territory, together with productive resources and the relationships between them, are the determining elements of the capacity of the economy to grow. The analysis of this new conceptual framework implies the need to assess the productive factors on the one hand, and the tourism capital (TC) on the other, the latter being measured by some kind of indicator that is not affected by the productive factors. In this study, a TC index is developed for the first time in the literature. It is calculated for the Spanish provinces in 2014, by using synthetic indicators constructed from a weighted average of the initially proposed indicators, where the weight of each of these is obtained through a confirmatory factor analysis. The TC index may allow future empirical studies to analyze how tourism affects economic growth, in relation to other productive factors.

Keywords

confirmatory factor analysis, Spanish provinces, tourism capital, tourism resources

Corresponding author:
Maria P Pablo-Romero, Departamento de Análisis Económico y Economía Política, Universidad de Sevilla, Ramon y Cajal 1, 41018 Seville, Spain; Departamento de Investigación y Postgrado, Universidad Autónoma de Chile, Pedro de Valdivia 425, Santiago, Chile.
Email: mpablorom@us.es

Introduction

The relevance of tourism as a growth source has been highlighted by numerous institutions worldwide (UNWTO, 2017, WTTC, 2017). In the academic field, some economists also suggest that tourism promotes economic growth (Archer, 1995; Aslan et al., 2009; Durbarry, 2002; Mckinnon, 1964; Shan and Wilson, 2001). From an empirical point of view, since Balaguer and Cantavella-Jorda (2002) analyzed the so-called tourism-led growth hypothesis, many studies have been made on this link. Most studies confirm the hypothesis, although they differ in the value given to the link. The differences are associated with the methodology performed, the temporal and geographic framework, and the way in which tourism activity is measured (Brida et al., 2016, Pablo-Romero and Molina, 2013). Moreover, Castro-Nuño et al. (2013) show that the estimated effects of tourism on economic growth also depend on whether other variables, such as physical or human capital, are included, or not, in the analysis. Thus, if these variables are not considered, the estimated results may be biased.

On the other hand, bias may also be generated depending on how tourism activity is measured. Researchers use the obtained international tourism income (Belloumi, 2010; Dritsakis, 2004; Nowak et al, 2007; Oh, 2005; Srinivasan et al., 2012), foreign tourist numbers (Massidda and Mattana, 2013; Obadiah et al., 2012), number of overnight stays (Gómez-Calero et al., 2014; Pablo-Romero et al., 2017), and income obtained by the hotel industry (Louca, 2006; Tang and Jang, 2009). These tourism measures have a common demand approach. This perspective has been criticized by some economists in considering that it cannot adequately determine the contribution of tourism to economic growth (Jackman, 2012).

Recently, new approaches using competitiveness indicators for measuring the contribution of tourism to economic growth have been used (Webster and Ivanov, 2014). This has generated new research that broadens the debate on the factors that determine the competitiveness of tourism (Hall, 2007; Mazanec and Amata, 2011). Among them, several studies calculate the competitiveness indicators by considering the factors linked to economic growth, together with demand factors and naturally occurring and inherited territorial factors (Exceltur, 2016; Sánchez-Cañizares et al., 2011). Thus, the competitiveness indicators are influenced by the productive factors that determine economic growth, so their use for measuring the contribution of tourism to economic growth, may also be biased.

Therefore, if the contribution of tourism to economic growth is analyzed, and other production factors are not included in the analysis, the analysis would be biased. If they are included, and tourism is measured with indicators related to tourism demand, it would be equally biased, as tourism demand depends on tourism competitiveness and this, in turn, on the productive factors. If competitiveness indicators are included in the model to measure tourism, then the analysis would be even more biased, as these depend on productive and demand factors.

In this study, a new conception of competitiveness, tourism, and economic growth relationships is proposed. The naturally occurring or inherited tourism resources within the territory, together with productive resources (physical, human, etc.), and the relationships between them, are the determining elements of the capacity of the economy to produce and grow. The analysis of this new conceptual framework implies the need to assess the productive factors, on the one hand, and the tourism resources (which may be called tourism capital or TC) on the other, the latter being measured by some kind of indicator not affected by the productive factors. Tourism resources that are part of this TC may include environmental resources and historic cultural resources, which are indicated as the main attractions of a destination in numerous studies (Crouch and Ritchie, 1999;

Dwyer et al., 2000; Hong, 2009), and can be considered naturally occurring or inherited resources within the territory. Likewise, coastal resources and climatic factors may also be considered as TC resources, because they undoubtedly influence the sun and beach tourist demand.

In order to calculate a TC index for the first time in the literature, the previously used methodology to calculate tourism competitiveness indicators (TCI), such as the global Travel and Tourism Competitiveness Index (TTCI), the Competitiveness Monitor (CM), or similar (Pulido and Sánchez-Rivero, 2009), is employed in this study for the Spanish provinces in 2014. The TC index may allow future new empirical studies to analyze how TC affects economic growth, in relation to other productive factors.

This study is structured as follows: the second section details the methodology used, the third section details the data used and their sources, the results are shown in the fourth section, and finally, the conclusions are presented.

Methodology

The TC index is calculated by using the methodology employed for the TTCI and CM. These synthetic indicators are constructed from a weighted average of the initially proposed indicators, where the weight of each of these is obtained through a confirmatory factor analysis (CFA).

The calculation is performed in stages. First, the initial indicators to be used are detailed (one-dimensional indicators), classifying them into homogeneous groups. In this study, three groups are used: environmental, cultural, and that related to coastal and climate conditions. The use of these groups is based on the so-called inherited components of the Crouch and Ritchie (1999) model, and on the cultural and environmental indicators of the TTCI. These three groups are also associated with the main reasons for tourist attraction in Spain (Gómez-Calero et al., 2016). Unlike the previous indices, and other TCI such as MoniTUR which was made for the Spanish regions (Exceltur, 2016), the initially proposed indicators used for the construction of the TC index are neither directly linked to the productive factors, such as physical or human capital, nor to the demand factors.

Second, the variables are rescaled following the methodology used for the CM and TTCI. Accordingly, the variables are normalized and rescaled so that each of them oscillates in a range between 1 and 7. Thus, according to Pulido and Sánchez-Rivero (2009), if x_{ij} is the initial value of indicator j in province i, then the indicator's value in the range 0–7 may be expressed as follows

$$y_{ij} = 6\,x\,\frac{x_{ij} - \min(x_{ij})}{\max(x_{ij}) - \min(x_{ij})} + 1$$

All indices obtained move in the range 1–7, but each of them has its own mean (within that range) and its own dispersion, measured through the standard deviation.

Third, for each group, a partial synthetic indicator is calculated from a weighted average of the previously standardized variables, the respective weight being obtained through a CFA. Thus the value of the indicator Z_i is calculated as follows

$$Z_i = \sum_{k=1}^{8} \omega_k I_i^{(k)}$$

where

$$I_i^{(k)} = \frac{\sum_{j=1}^{m} y_{ij}}{m} \text{ and } \omega_k = \frac{|\beta_k|}{\sum_{k=1}^{n} |\beta_k|}$$

ω_k being the weights obtained through the CFA. That is, the weights are constructed from the value of the slopes of the factor analysis, which are built according to the degree of relationship between the initial indicators and the synthetic indicators.

Finally, once the partial indicators are obtained, a global index is calculated from their weighted average, where the weights are obtained again through a CFA.

The TC index may be used in growth functions to determinate how the naturally occurring or inherited tourism resources within the territory, together with productive resources, are the determining elements of the capacity of the economy to produce. In this sense, it is worth noting that the TC index, by its nature, will be constant or almost constant, at least over short periods. Therefore, its use in growth functions has to be done taking this characteristic into account. It cannot be used in first-differences estimates, and also has limited use in time series. Nevertheless, the use of the TC index in growth functions may be done including not only the TC variable, but also introducing the variable associated with physical or human capital, which expands the possibilities of use, and also reflects the relationships with these variables. In this regard, for example, the following two simple specifications using panel data can be estimated

$$y_{it} = \alpha_i + \delta_t + \beta_1 TKI_i + \beta_2 k_{it} + e_{it} \quad (1)$$

$$y_{it} = \alpha_i + \delta_t + \beta_1 TKI_i + \beta_2 k_{it} + \beta_3 TKI_i \times k_{it} + e_{it} \quad (2)$$

where y is the per capita income in logs, k is the per capita physical capital in logs, α is a measure of the *individual effect* not related to the TC index, and δ is a measure of the *time effect.*

Data

In order to calculate the TC index for the Spanish provinces in 2014, the main naturally occurring and inherited tourism offer resources in Spain have been taken into account, which refer to environmental, cultural and coastal and climatic resources.

The environmental resources are calculated from the information provided in the Statistical Yearbook of the Fundación Caja España-Duero (2015), in which information is gathered for the main environmental protection figures, emanating from European, national, and regional regulations. These protection figures are the Site of Community Importance (SCI), the Special Bird Protection Areas (SBPA), the Natural Reserves, the National Parks, the Natural Parks and the Natural Monuments.

Cultural resources data come from the Ministry of Education, Culture, and Sports (MECD, 2015). The five categories of protection of the cultural heritage emanating from Law 16/1985 (Monument, Historical Garden, Historic Site, Historical Site, Archaeological Zone) and those emanating from the autonomous community legislations are considered.

Coastal data are from the National Geographic Institute (ING, 2015). In addition, those related to blue flag sites are from the Association for Environmental and Consumer Education (ADEAC, 2015). Data on weather indicators come from the Ministry of Agriculture, Food, and the Environment (MAAMA, 2015).

Table 1. Weights used to construct indices 1, 2, and 3 and the global index.

Index 1: Environmental resources		Index 2: Cultural resources		Index 3: Coastal resources—weather conditions		Global index	
Items	Weights	Items	Weights	Items	Weights	Items	Weights
SCI	0.4185	Monument	0.2875	Km. of coast	0.1663	Index 1: Environmental resources	0.2555
SBPA	0.2370	Historical garden	0.2319	No. of blue flag beaches	0.1795	Index 2: Cultural resources	0.4923
Natural Reserve	0.1037	Historic complex	0.1563	No. of beaches	0.1065	Index 3: Coastal resources—weather conditions	0.2520
National Park	0.1185	Historic site	0.2875	Km. of beaches	0.1364		
Natural Park	0.0222	Archaeological zone	0.0356	Medium width of beaches	0.1828		
Natural Monument	0.1000	Emanating from the autonomous legislations	0.2875	Average temperature	0.1862		
				Hours of sunshine	0.0420		
Total	1.0000	Total	1.0000	Total	1.0000	Total	1.0000

Note: SCI: Site of Community Importance; SBPA: Special Bird Protection Areas.
Source: Own production.

Results

The TC index is developed by using the CFA. First, variables are normalized and rescaled in a range between 1 and 7. Then, the CFA is performed for each of the three resource groups, by using the maximum likelihood method and the AMOS program-version 22. From the obtained standardized slopes, the weights used to construct the partial indices 1, 2, and 3 are calculated. These weights are shown in Table 1. Then, these weights are used to calculate the partial indices for each province, which are shown in columns 3 to 5 in Table 2. Once the partial indices are obtained, the global index is calculated by using the same method. The estimated factorial model is shown in Figure 1, while the weights used are shown in Table 1. Finally, these weights are used to calculate the global index for each province, which are shown in column 6 in Table 2.

The goodness of the factorial adjustment is analyzed by using the goodness of fit index (GFI), incremental fit index (IFI), and comparative fit index (CFI), according to Bentler (1990) and Bollen (1989). Table 3 shows the values for the partial and global index.

Global index results indicate that the Spanish islands are those provinces with the highest TC endowments, their values are as follows: Balearic Islands 5.4, Tenerife 4.08, Las Palmas 4.04, Cadiz 2.83, Gerona 2.74, Asturias 2.71, Malaga 2.69, and Huelva 2.68. Provinces with the lowest

Table 2. TC partial and global index for the Spanish provinces (2014).

Autonomous community	Province	Index 1: Environmental resources	Index 2: Cultural resources	Index 3: Coastal resources—climatic conditions	Global index: Total inherited tourism resources
Aragón	Huesca	3.295	1.728	1.594	2.095
	Zaragoza	3.384	2.260	1.717	2.410
	Teruel	1.801	2.538	1.346	2.049
Asturias	Asturias	3.709	2.206	2.718	2.719
Canary Islands	Las Palmas	3.729	3.737	4.942	4.039
	Santa Cruz de Tenerife	4.060	4.101	4.051	4.078
Cantabria	Cantabria	1.774	2.878	2.442	2.486
Extrema-dura	Badajoz	3.132	1.584	1.902	2.060
	Caceres	3.140	2.206	1.802	2.343
Galicia	Pontevedra	1.344	1.731	3.977	2.198
	Orense	1.243	1.151	1.605	1.289
	La Coruña	1.371	1.584	4.545	2.276
	Lugo	1.230	1.542	2.337	1.663
Balearic Islands	Balearic Islands	3.893	6.332	5.168	5.415
La Rioja	La Rioja	1.571	2.168	1.473	1.840
Madrid	Madrid	2.037	2.879	1.462	2.307
Murcia	Murcia	1.820	2.265	3.896	2.562
Navarra	Navarra	5.056	1.914	1.380	2.582
País Vasco	Vizcaya	1.156	1.052	2.602	1.470
	Lava	1.336	1.088	1.237	1.189
	Guipuzcoa	1.195	1.238	2.367	1.511
Andalusia	Seville	1.892	2.346	2.096	2.167
	Huelva	2.146	2.310	3.945	2.680
	Cadiz	2.197	2.629	3.900	2.839
	Cordoba	1.436	1.957	1.972	1.828
	Malaga	2.165	2.412	3.772	2.691
	Granada	1.821	2.398	2.688	2.324
	Jaen	1.824	2.202	1.836	2.013
	Almeria	1.766	1.726	3.804	2.260
Castile and Leon	Palencia	1.447	1.958	1.236	1.645
	Segovia	1.336	1.407	1.328	1.369
	Zamora	2.198	1.411	1.431	1.617
	Valladolid	1.735	1.658	1.373	1.606
	Salamanca	1.835	1.727	1.373	1.665
	Soria	1.534	2.335	1.199	1.844
	Burgos	2.118	2.049	1.129	1.835
	Leon	1.601	1.720	1.239	1.569
	Avila	1.690	1.364	1.238	1.416

(continued)

Table 2. (continued)

Autonomous community	Province	Index 1: Environmental resources	Index 2: Cultural resources	Index 3: Coastal resources—climatic conditions	Global index: Total inherited tourism resources
Castile-La Mancha	Guadalajara	2.158	1.306	1.507	1.574
	Toledo	2.192	1.736	1.744	1.854
	Albacete	1.516	1.440	1.609	1.502
	Ciudad Real	2.241	1.270	1.695	1.625
	Cuenca	2.138	1.449	1.444	1.624
Catalonia	Gerona	2.251	2.846	3.043	2.744
	Lerida	2.716	2.273	1.659	2.231
	Tarragona	2.079	2.250	3.733	2.580
	Barcelona	2.055	2.112	3.128	2.354
Valencian Community	Alicante	2.387	1.678	4.281	2.515
	Castellon de la Plana	2.091	1.625	3.449	2.204
	Valencia	2.108	2.227	3.638	2.552

Note: TC: tourism capital.
Source: Own production.

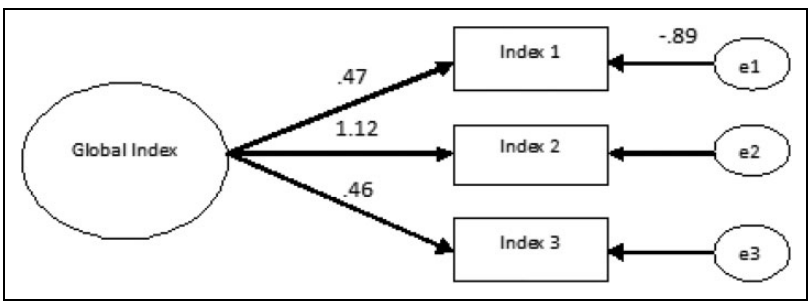

Figure 1. Global index estimated factorial model, standardized slopes. *Source:* Own production.

values are Avila (1.41), Segovia (1.37), Orense (1.29), and Alava (1.19). Table 4 shows the provinces with more and less TC endowments by partial index.

From the global index values shown in Table 2, equations (1) and (2) are estimated for the Spanish provinces during the period 2005–2013, by using the feasible generalized least squares model. The results are shown in Table 5. The TC contributes positively to explain the production differences in the Spanish provinces. Nevertheless, as the cross-product coefficient is negative, the productivity elasticity with respect to the capital stock is lower, although positive, as the TC increases.

The estimated results may be improved by using capital stock indicators directly related to tourism, to determine the cross-product value between capital and TC, or by also including other growth factors, such as human capital, in the function. In addition, future studies may also evaluate the estimates differences when using the TC index or the previous indices.

Table 3. Factorial adjustment goodness.

	Index 1	Index 2	Index 3	Global index
GFI	0.936	0.940	0.924	0.987
IFI	0.921	0.923	0.917	0.965
CFI	0.911	0.914	0.904	0.953

Note: GFI: goodness of fit index; IFI: incremental fit index; CFI: comparative fit index.
Source: Own production.

Table 4. Provinces with higher and lower capital endowments.

	Provinces	
Partial index	Higher endowments	Lower endowments
Environmental resources	Tenerife, Balearic Islands, Las Palmas, and Zaragoza	Orense, Lugo, Guipuzcoa, and Vizcaya
Cultural resources	Balearic Islands, Tenerife, Las Palmas, and Madrid	Orense, Guipuzcoa, Alava, and Vizcaya
Coastal resources—weather conditions	Balearic Islands and Las Palmas/Seville and Cordoba	Guipuzcoa and Lugo/Soria and Burgos
Tourism capital	Balearic Islands and Tenerife	Avila, Segovia, Orense, and Alava

Source: Own production.

Table 5. Estimate results of equations (1) and (2).

	FGLS equation (1)	FGLS equation (2)
TC	0.074*** (0.013)	0.043*** (0.006)
K	0.319*** (0.011)	0.279*** (0.013)
TC × K	—	−0.167*** (0.011)

Note: Income and capital variables are measured in millions of constant euros per thousand inhabitants in logs, from INE (2018) and Fundación BBVA and IVIE (2017), respectively. FGLS estimate in presence of heteroscedasticity, autocorrelation, and cross-section dependence. Variables have been transformed into deviation with respect to the mean of the series to avoid multicollinearity. Standard errors are shown in parenthesis. All estimates include individual and time dummies. FGLS: feasible generalized least squares; TC: tourism capital.
*** denotes significance at the 1% level.

Analysis and limits of the TC index

The calculation of each of the partial indicators of the TC index is made by avoiding the use of initial indicators, related to neither productive factors nor demand factors, in order to avoid bias when analyzing the relationships between tourism and economic growth.

On the one hand, unlike previous TCI, such as MoniTUR (Exceltur, 2016), the initial indicators used to calculate the TC index are not directly linked to the productive factors, avoiding

Table 6. Correlation between the TKI for the Spanish provinces, regions, the MoniTUR index and human and physical indicators.

	TKI (Spanish provinces)	TKI (Spanish regions)	MoniTUR index (Spanish regions)
Net capital stock (thousands of euros)	0.193	−0.059	0.696
Net capital per capita (thousands of euros per capita)	0.210	−0.068	0.353
Net capital by surface (thousands of euros per km^2)	0.248	0.213	0.678
Net capital in relation to GDP (euros of capital per product euro)	−0.011	0.017	−0.833
Active population human capital value (equivalent workers)	0.207	−0.052	0.697

Note: GDP: gross domestic product.
Source: Own elaboration from Fundación Bancaja and IVIE (2014) and Fundación BBVA and IVIE (2017).

the use of indicators that imply private or public capital investments, and those related to human capital. Of course, there will always be some kind of relationship with the physical or human capital of the territory, which at the very least is necessary for tourist capital conservation. However, its value does not depend directly on these capital investments. Thus the correlation of the TC index with physical and human capital is low. Table 6 shows the correlation coefficient values for the Spanish provinces (column A). In addition to comparing values with a TCI index, Table 5 also shows the correlation coefficients between the capital indicators and the TC index for the Spanish regions (column B), and the MoniTUR index (column C). Lower correlation values are clearly observed in columns A and B, indicating lower dependence on capital. On the other hand, unlike previous TCI, in the TC index construction no demand factor is included, thereby avoiding bias related to these kinds of factors.

It should be noted that this index is proposed to be used to analyze the relationships between tourism and economic growth, but not to measure the tourist competitiveness of the territory. Therefore, it is not intended to replace other indicators that have been used for this purpose.

Finally, it is worth noting that the TC index does not include all the naturally occurring and inherited resources that make the territory attractive to tourists. For example, it does not include factors linked to the capacity of a territory to develop sports practices, for example, skiing, nor intangible elements, such as cultural festivals, that make visiting the territory attractive. In this way, the current index can be improved in the future, once we have enough data to be able to assess these elements, without having to resort to capital factors. It is also worth noting that the possibility of calculating this indicator within territories depends on the previous definition of criteria (such as legislation) defining cultural and natural resources. Thus, it may be difficult to make the comparison between countries if there are no previous criteria, or if these criteria differ significantly between territories.

Conclusions

Based on the administrative protection over the environmental, cultural, and coastal resources, and also considering the weather conditions, a TC index is developed for the first time in the literature in this study. The TC index is developed, for the Spanish provinces in 2014, from three partial

indices. These indices are produced by using one-dimensional indicators related to the protection figures and weather conditions.

The environmental protection figures considered are SCI, SBPA, Natural Reserve, National Park, Natural Park and Natural Monument. The cultural protection figures considered are monument, historical garden, historic complex, historic site, and archaeological zone, and those figures emanating from the autonomous legislations. Finally, the items included to assess the coastal resources and the weather conditions are coast length, numbers of beaches, beaches with blue flags, length and width of beaches, mean temperature, and hours of sunshine.

From the previous data, partial indices were calculated, and a global index was produced from them. The CFA was used to produce these indices. This index shows the TC endowments for each of the Spanish provinces.

The calculation of each of the partial indicators of the TC index is made by avoiding the use of initial indicators related to neither productive factors, nor demand factors. Therefore, it could be used when analyzing the relationships between tourism and economic growth, reducing the bias of previous studies.

Finally, it is worth noting that the naturally occurring or inherited factors, with which the provinces are endowed, form the basis on which a specific economic activity can be developed, in this case, tourism. In that sense, the economic growth of the provinces also depends on other economic factors, such as human and physical capital. Therefore, it is appropriate to focus future research on the relationships between physical, human, and TC that positively influence tourism and economic growth, so that some indication could be given on how to promote economic growth in the Spanish provinces. It is worth noting that, in spite of the limits this index may have due to its almost constant value through time, introducing the variable associated with physical or human capital expands the possibilities of use.

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References

ADEAC (2015) *Campaña Bandera Azul 2014*. Madrid: Asociación para la Educación Ambiental y del Consumidor.

Archer B (1995) Importance of tourism for the economy of Bermuda. *Annals of Tourism Research* 22(4): 918–930.

Aslan A, Kula F and Kaplan M (2009) International tourism demand for Turkey: A dynamic panel data approach. *Research Journal of International Studies* 9: 65–73.

Balaguer J and Cantavella-Jorda M (2002) Tourism as a long-run economic growth factor: The Spanish case. *Applied Economics* 34(7): 877–884.

Belloumi M (2010) The relationship between tourism receipts, real effective exchange rate and economic growth in Tunisia. *International Journal of Tourism Research* 12: 550–560.

Bentler PM (1990) Comparative fit indexes in structural models. *Psychological Bulletin* 107: 238–246.

Bollen KA (1989) *Structural Equations with Latent Variables*. New York: Wiley.

Brida JG, Cortés-Jiménez I and Pulina M (2016) Has the tourism-led growth hypothesis been validated? A literature review. *Current Issues in Tourism* 19(5): 394–430.

Castro-Nuño M, Molina-Toucedo JA and Pablo-Romero M (2013) Driving licenses based on points system: An efficient road safety strategy or a global fashion policy? A worldwide meta-analysis. *Journal of Travel Research* 52(6): 745–758.

Crouch GI and Ritchie JB (1999) Tourism, competitiveness, and societal prosperity. *Journal of Business Research* 44: 137–152.

Dritsakis N (2004) Tourism as a long-run economic growth factor: An empirical investigation for Greece using causality analysis. *Tourism Economics* 10(3): 305–316.

Durbarry R (2002) The economic contribution of tourism in Mauritius. *Annals of Tourism Research* 29(3): 862–65.

Dwyer L, Forsyth P and Rao P (2000) The price competitiveness of travel and tourism: A comparison of 19 destinations. *Tourism Management* 21(1): 9–22.

Exceltur (2016) *Monitur 2014. Monitor de Competitividad Turística Relativa de las Comunidades Autónomas Españolas*. Madrid: Exceltur.

Fundación Bancaja and IVIE (2014) *Capital Humano en España y su Distribución Provincial*. Valencia: Fundación Bancaja and IVIE.

Fundación BBVA and IVIE (2017) *El stock y los Servicios del Capital en España y su Distribución Territorial y Sectorial (1964-2014)*. Valencia: FBBVA-IVIE.

Fundación Caja España-Duero (2015) *Datos Económicos y Sociales de las unidades territoriales de España*. Oviedo: Caja España-Duero.

Gómez-Calero MP, Molina-Toucedo JA and Pablo-Romero M (2014) Exploring the effect of tourism on economic growth in the Spanish provinces and autonomous communities, 1999–2008. *Tourism Economics* 20(5): 1117–1124.

Gómez-Calero MP, Pablo-Romero M and Sánchez-Rivas J (2016) Análisis de la demanda internacional de turismo en España en el periodo 2001-2013. *Boletín Económico de ICE* 3073: 59–70.

Hall CM (2007) Tourism and regional competitiveness. In: Tribe J and Airey D (eds) *Advances in Tourism Research, New Directions, Challenges and Applications*. Oxford: Elsevier, pp. 217–230.

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

INE (2018) *INEbase*. Madrid: Instituto Nacional Estadísitica.

ING (2015) *Atlas Nacional de España*. Madrid: Instituto Nacional de Geografía.

Jackman M (2012) Revisiting the tourism-led growth hypothesis for Barbados: A disaggregated market approach. *Regional and Sectoral Economic Studies* 12(2): 15–26.

Louca C (2006) Income and expenditure in the tourism industry: Time series evidence from Cyprus. *Tourism Economics* 12(4): 603–617.

MAAMA (2015) *Espacios Naturales Protegidos de España*. Madrid: Ministerio de Agricultura, Alimentación y Medio Ambiente.

Massidda C and Mattana P (2013) A SVECM, Analysis of the relationship between international tourism arrivals, GDP and trade in Italy. *Journal of Travel Research* 52(1): 93–105.

Mazanec JA and Amata R (2011) Tourism destination competitiveness: Second thoughts on the World Economic Forum reports. *Tourism Economics* 17(4): 725–751.

Mckinnon R (1964) Foreign exchange constrain in economic development and efficient aid allocation. *Economic Journal* 74: 388–409.

MECD (2015) *Bienes Culturales Protegidos*. Madrid: Ministerio de Educación, Cultura y Deporte.

Nowak JJ, Sahli M and Cortés-Jiménez I (2007) Tourism, capital good imports and economic growth: Theory and evidence for Spain. *Tourism Economics* 13(4): 515–536.

Obadiah NK, Odhiambo NM and Njuguna JM (2012) Tourism and economic growth in Kenya: An empirical investigation. *International Business and Economics Research Journal* 11(5): 517–528.

Oh CO (2005) The contribution of tourism development to economic growth in the Korean economy. *Tourism Management* 26: 39–44.

Pablo-Romero M, Sánchez-Braza A and Sánchez-Rivas J (2017) Relationships between hotel and restaurant electricity consumption and tourism in 11 European Union countries. *Sustainability* 9(11): 2109.

Pablo-Romero M and Molina JA (2013) Tourism and economic growth: A review of empirical literature. *Tourism Management Perspectives* 8: 28–41.

Pulido JI and Sánchez-Rivero M (2009) Measuring tourism sustainability: Proposal for a composite index. *Tourism Economics* 15(2): 277–296.

Sánchez-Cañizares SM, López-Guzmán TJ and Reis H (2011) Education of human capital as a source of competitiveness in tourist destinations. In: Matias A, Nijkamp P and Sarmento M (eds) *Tourism Economics*. Berlin: Springer, pp. 11–30.

Shan J and Wilson K (2001) Causality between trade and tourism: Empirical evidence from China. *Applied Economics Letter* 8: 279–283.

Srinivasan PK, Kumar S and Ganesh L (2012) Tourism and economic growth in Sri Lanka. *Environment and Urbanization* 3(2): 397–405.

Tang HCH and Jang SSC (2009) The tourism-economy causality in the United States: A sub-industry level examination. *Tourism Management* 30: 553–558.

UNWTO (2017) *Tourism Highlights 2017*. Madrid: United Nations World Tourism Organization.

Webster C and Ivanov S (2014) Transforming competitiveness into economic benefits: Does tourism stimulate economic growth in more competitive destinations? *Tourism Management* 40: 137–140.

WTTC (2017) *Travel & Tourism Economic Impact World 2017, European Union*. London: World Travel and Tourism.