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Is UNESCO the Best Travel Agent for a Country?

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Abstract

This study studies the relationship between tourism demand across countries and the number of UNESCO properties. In defining the connection, a linear functional form of the regression model is utilized, taking the year 2012 as the base of the study. The sample includes 50 countries, the most important 10 countries regarding the number of foreign tourists from each geographical region: Europe, Americas, Asia and the Pacific, Middle East, and Africa. In order to isolate the effect of other factors over the number of foreign tourists we used some control variables: sea, mountain, business center, civil and political rights, and proximity towards the main countries that generate tourists. According to the estimations, the number of UNESCO sites is the most representative explanatory variable.

Keywords: tourism demand, UNESCO heritage, OLS regression

1. Introduction and literature review

In the last half of century, at worldwide level, tourism has grown more rapidly than the average of the economy. Consequently, the number of academic articles treating different aspects of this sector multiplied. The estimation of the touristic demand is a topic which attracts a lot of interest on the part of researchers through theoretical, descriptive or econometric studies. In the last few years the originality of the research in this field consisted either in finding some novel factorial variables, or in using more performing technologies explaining demand better.

Most econometric studies regarding estimations of the touristic demand targets a certain country (e.g. Guizzardi and Mazzocchi, 2010 for Italy, Akis, 1998 for Turkey, Summary, 1987 for Kenya, Schiff and Becken, 2011 for New Zealand, Algieri, 2006 for Russia, Blake et al., 2006 for Scotland, Alleyne, 2006 for Jamaica, Vu and Turner, 2006 for Thailand, etc). We remark that the spectrum of applications aims countries from all the continents. Thus you can emphasize regional specificities and national specific variables. A first serious review of those types of researches has been done by Lim (1997). Over a hundred studies from the academic literature were investigated and classified after the decade of publication, type of data, sample sizes, model specifications, the types of dependent and explanatory variables used, and the number of explanatory variables used. The author shows that the most popular explanatory variables used have been income, relative tourism prices, and transportation costs. The results of these studies are often used by authorities for orienting the promotion and infrastructure policy. For this purpose the articles which investigate the forecasting of tourist's number are very useful. A

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recent and ample overview of studies combining the demand behavior with forecasting was completed by Song and Li (2008). They classify the published articles by some criteria: data frequency, region focused, modeling and forecasting methods, forecasting exercise and research theme.

In the last decency, majority of studies regarding the tourism demand treat different issues of this topic, with restricted but very precise research hypotheses:

- Correlation between tourism demand and the business cycle (Guizzardi and Mazzocchi, 2010);
- Tourism demand elasticity (Song, Kim, and Yang, 2010);
- Tourism consumption dynamics (Wu, Li, and Song, 2012);
- The long-run effects of socioeconomic and meteorological factors on the domestic tourism demand (Otero-Giráldez, Álvarez-Díaz, and González-Gómez, 2012);
- Relationship between tourism demand in and hot summer air temperatures (Serquet and Rebetez, 2011);
- The impact of climate change on tourism (Hamilton and Tol, 2007);
- Effects of television news on demand for tourism (Fielding and Shortland, 2009).

Our study signs up in this trend, measuring the effect of the number of sites from the UNESCO list over the touristic demand. The empirical observations show that some of the UNESCO properties are also top touristic destinations: Sydney Opera House (Australia), Historic Centre of Vienna (Austria), the Great Wall and the Imperial Palaces in Beijing (China), the Pyramid Fields from Giza (Egypt), Mont-Saint-Michel and Palace of Versailles (France), Acropolis (Greece), Taj Mahal (India), Historic Centre of Rome (Italy), Petra (Jordan), Pre-Hispanic Cities of Teotihuacan and Chichen-Itza (Mexico), Medina of Marrakesh (Morocco), Machu Picchu and Cuzco (Peru), Kremlin and Red Square, Moscow (Russia), the Escorial, Madrid (Spain), Historic Areas of Istanbul (Turkey), etc. There are also many other popular destinations that offer another type of tourism. For isolating their effects we introduced in our study some control variables, whose role in forming the touristic demand has already been demonstrated in previous studies.

2. Research hypothesis, variables and methodology

Based on previous studies and on the personal empirical observations we have constructed the following working hypothesis:

> ***H1***. *There is a positive correlation between the number of foreign tourists and the number of protected UNESCO sites of the country.*

Generally, the UNESCO protected sites are well-known touristic destinations. These are attractive for tourists: either we talk about historical buildings or world's wonders. There is also another type of attractions which brings an important afflux: an attractive seaside, mountains recognized for their ski potential, important business centers, the level of political freedom and civil rights, closeness to the main countries visited by tourists, etc. Their impact has been repeatedly studied in academic researches. In our study, we will keep them as control variables.

For the purpose of our research we have employed OLS regressions for a cross-section of countries. For a good image of the phenomenon at worldwide level we consider the first 10 countries from the ranking of the number of tourists from each region: Europe, Americas, Asia and the Pacific, Middle East, and Africa. The data consists in the values made public by the UNESCO World Heritage (2013), UNWTO - United Nations World Tourism Organization (2012) and Freedom House (2012). All data refers to the year 2012.

Endogenous variable

INTERNATIONAL_TOURISTS
International tourist arrivals by country of destination (2012).

Exogenous variables

UNESCO_PROPERTIES
The World Heritage List includes 962 properties forming part of the cultural and natural heritage which the World Heritage Committee considers as having outstanding universal value. $UNESCO\_PROPERTIES_i$ indicates the number of properties from country *i*.

SEA
Dummy variable. It has value 1 if country *i* have an important seaside and value 0 otherwise.

MOUNTAIN
Dummy variable. It has value 1 if country *i* have an important mountain area, which attracts tourists masively, especially for ski, and value 0 otherwise.

AFFAIRS
Dummy variable. It has value 1 if country *i* is an important business center and value 0 otherwise. We refer mainly to small countries, in which the number of entraces in the country in business interest is important related to the number of inhabitants (UA Emirates, Hong Kong, Macau, Singapore).

CIVIL_POLITICAL = DEMOCRACY + POLITICAL_FREEDOM
DEMOCRACY and *POLITICAL_FREEDOM* are annual scores representing the levels of political rights and civil liberties in each state and territory, on a scale from 1 (most free) to 7 (least free). Depending on the ratings, the nations are then classified as "Free", "Partly Free", or "Not Free" (Freedom House, 2012).

PROXIMITY
Dummy variable. It has value 1 if country *i* is near a country placed in top ten biggest spenders on international tourism (see Figure 1) and 0 otherwise. We have considered the countries with significant air traffic, which allow flights with an average price below 25% of the mean value of a holiday in that country.

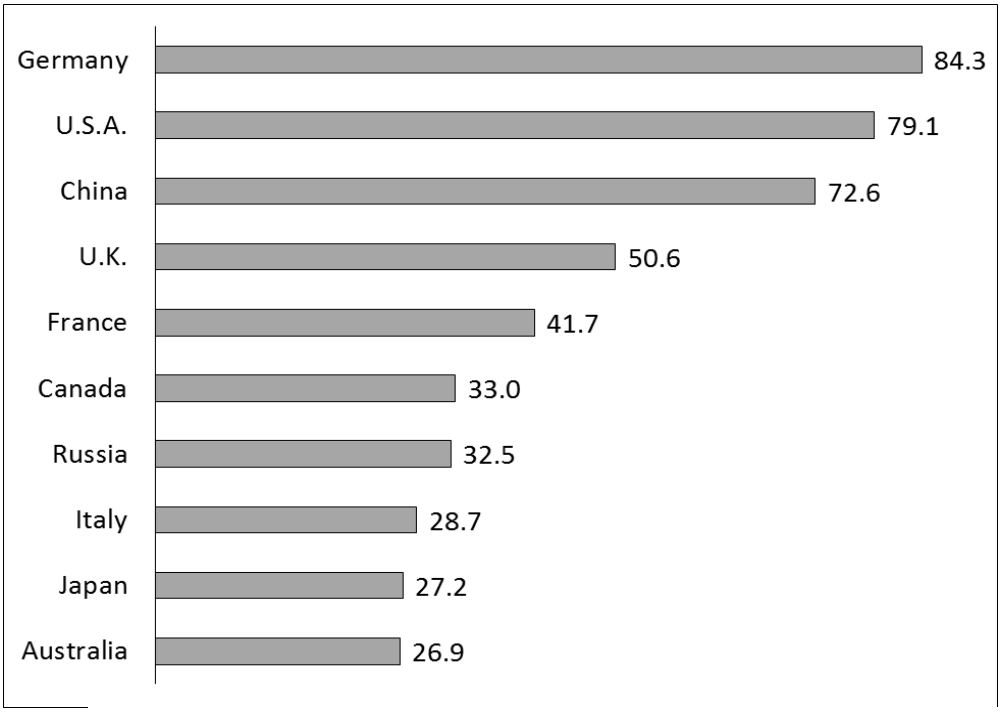

Fig. 1: Top ten biggest spenders on international tourism for the year 2012 (billion $).
Source: data from UNWTO (2012)

To test the *H1* hypothesis we chose a linear specification of the model and estimated the parameters using OLS regressions:

$$INTERNATIONAL\_TOURISTS = b_0 + b_1 UNESCO\_PROPERTIES + b_2 SEA + b_3 MOUNTAIN + \\ + b_4 AFFAIRS + b_5 CIVIL\_POLITICAL + b_6 PROXIMITY + \varepsilon$$

The error term ε is assumed to have the standard classical properties.

3. Results and discussions

In order to have an idea regarding the variables from the regressions we analyzed the descriptive statistics. In table 1 we present some significant parameters of the involved variables.

Table 1: Descriptive statistics of variables

Variable	Min.	Max.	Mean	St. dev.
INTERNATIONAL_TOURISTS (million)	0.98	79.5	15.0	17.8
UNESCO_PROPERTIES	0	47	11.7	13.3
SEA	0	1	0.44	0.50
MOUNTAIN	0	1	0.20	0.40
AFFAIRS	0	1	0.12	0.33
CIVIL_POLITICAL	2	13	6.66	3.84

PROXIMITY	0	1	0.42	0.50

Source: data from UNWTO (2012), UNESCO World Heritage (2013), and Freedom House (2012)

The distributions of the values of the variables show that they have enough variability, in order to be considered exogenous statistically. The number of UNESCO sites differs significantly from a country to another. In figure 1 we have represented the first ten and the last ten countries from the sample in relation to the annual number of tourists (between parentheses). We have also represented the mean values from the 50 countries' sample. Although the ranking in relation to the two variables is not identical, we observe a positive and very strong correlation. There are of course exceptions, as the case of Malaysia, which is a destination in great demand, despite the reduced number of UNESCO sites. Such cases impose the use of control variables.

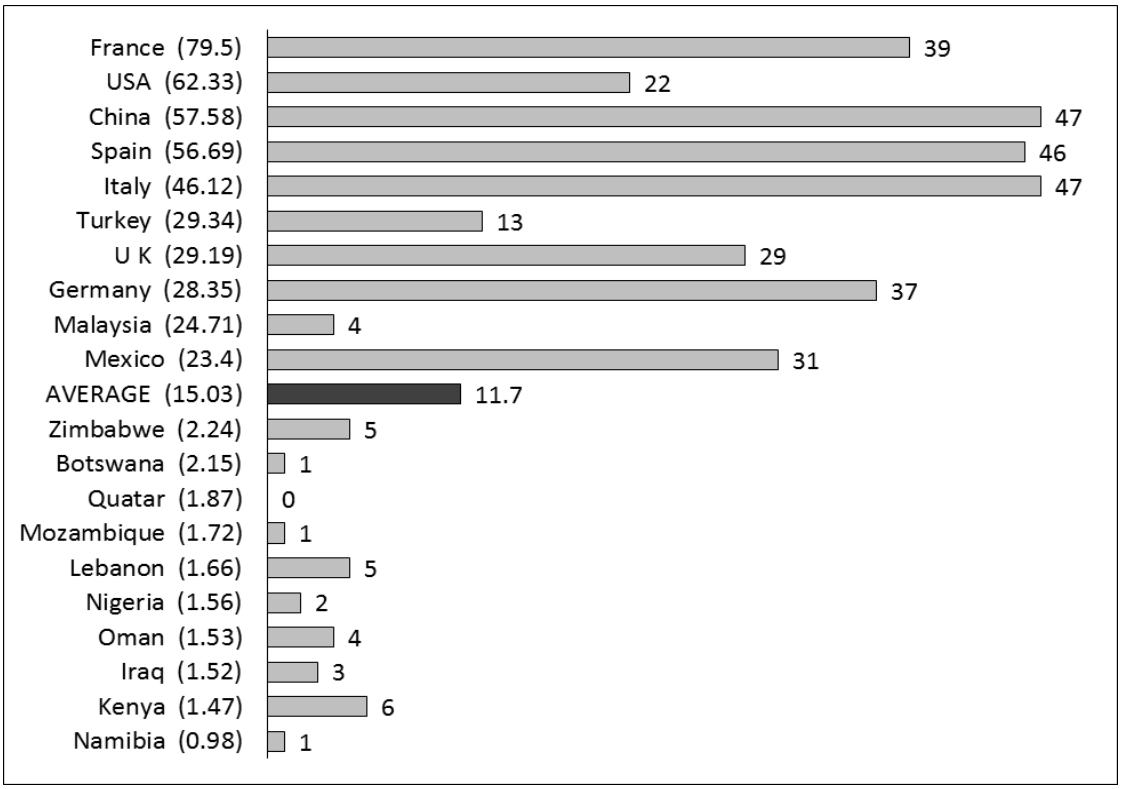

Fig. 1: Distribution of countries from the sample in relation to the number of UNESCO properties. Source: data from UNESCO World Heritage (2013)

Table 2: The matrix of the correlation coefficients

	INT_TOUR	*UNESCO*	*SEA*	*MOUNT*	*AFFAIRS*	*CIV_POL*	*PROXI*
INT_TOUR	1.00						
UNESCO	0.77	1.00					
SEA	0.29	0.16	1.00				
MOUNT	0.65	0.60	0.06	1.00			

AFFAIRS	-0.06	-0.27	-0.08	-0.18	1.00		
CIV_POL	-0.27	-0.31	-0.16	-0.43	0.21	1.00	
PROXI	0.51	0.40	0.31	0.28	-0.06	-0.28	1.00

The matrix of coefficients shows that all the explanatory variables are correlated with the number of tourists. In exchange the correlations between the explanatory variables are not so big that poses multicolinearity problems.

Table 3: The coefficients of the OLS regression on *INTERNATIONAL_TOURISTS* (standard error and *p*-values)

	Coefficient	*Standard Error*	*p-value*
UNESCO_PROPERTIES	0.7261***	0.1423	0.000
SEA	5.2570*	2.9795	0.085
MOUNTAIN	14.249***	4.6216	0.004
AFFAIRS	8.3391*	4.5213	0.072
CIVIL_POLITICAL	0.3883	0.4191	0.359
PROXIMITY	6.5587**	3.2531	0.050
Constant	-4.9998	4.0665	0.226

****, **, * : significant at 1%, 5% and 10% level*
Source: own calculations using STATA 9.1 software.

The control variables are generally statistically significant. Natural attractions measured by *SEA* and *MOUNTAIN* have the expected sign and are taking the effects of the tourists behavior which are not necessarily seeking famous destinations, but more likely rest, relaxation and sport. The existence of an important business center also has the predicted impact. Though the variable *AFFAIRS* is not very significant, especially because of the small number of countries which possess this characteristic. The civil and political freedom can have a strongly significant impact if they take extreme values (ex: North Korea). However, across analyzed countries, we cannot prove a decisive role of this variable over attracting foreign tourists. Vicinity to at least one of the countries that generates massive tourists flux, measured through the variable *PROXIMITY* is also relevant.

It is remarkable the effect of the number of UNESCO properties. According to *p*-values and the coefficient of correlation it is the most important explanatory variable. This finding gives an affirmative response to the title of this empirical study: UNESCO is the best travel agent of a country.

5. Conclusions

Our study is not intended to resolve exhaustively the estimation of the international touristic demand of a country. The working hypothesis was very precise, related to the effect of the number of UNESCO properties. All the others explanatory variables have had controlling role, theirs effects being already studied in the academic literature. The conclusion is very clear, the

impulse given by the UNESCO list to the tourism being very significant. For a more complete analysis remains to be studied the effect of varying the number of indexed sites on the respective country's position on the international tourism.

Appendix - List of Countries

Europe: France, Spain, Italy, Turkey, United Kingdom, Germany, Austria, Russia, Ukraine, Greece; ***Americas***: United States of America, Mexico, Canada, Argentina, Brazil, Dominican Republic, Puerto Rico, Chile, Uruguay, Cuba; ***Asia and the Pacific***: China, Malaysia, Hong Kong, Thailand, Macau, Singapore, South Korea, Indonesia, India, Japan; ***Middle East***: Saudi Arabia, United Arab Emirates, Syria, Bahrain, Jordan, Israel, Qatar, Lebanon, Oman, Iraq; ***Africa***: Egypt, Morocco, South Africa, Tunisia, Zimbabwe, Botswana, Mozambique, Nigeria, Kenya, Namibia.

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