

Understanding tourists' economizing strategies during the global economic crisis

Juan Antonio Campos-Soria^a, Federico Inchausti-Sintes^b and Juan L. Eugenio-Martin^c

^a Universidad de Málaga, Departamento de Economía Aplicada (Estructura Económica), Plaza El Ejido s/n, CP 29013 Málaga, Spain. E-mail: jacampos@uma.es; Tel.: +34 952131183; Fax: +34 952136616.

^b Universidad de Las Palmas de Gran Canaria, C/ SauloTorón s/n, Fac. de Economía, Empresa y Turismo, Despacho D. 3.01, CP 35017 Las Palmas de Gran Canaria, Spain. E-mail: finchausti@becarios.ulpgc.es; Tel.: +34 928458212; Fax: +34 928458183.

^c Universidad de Las Palmas de Gran Canaria, Instituto Universitario de Turismo y Desarrollo Económico Sostenible (TIDES), C/ SauloTorón s/n, Fac. de Economía, Empresa y Turismo, Despacho D. 2.06, CP 35017 Las Palmas de Gran Canaria, Spain. E-mail: jleugenio@daea.ulpgc.es; Tel.: +34 928458205; Fax: +34 928458183.

Abstract

This paper explores how tourists from 165 regions of EU-27 countries cut back their tourism expenditure during the global economic crisis in 2009. This study disentangles the cutback tourism expenditure in two mutually related decisions: First, it takes into account whether the tourist has had to cut back on tourism expenditure due to the crisis and second, how they decided to cut back according to six alternatives: “fewer holidays”, “reduced length of stay”, “cheaper means of transport”, “cheaper accommodation”, “travel closer to home” or “change the period of travel”. The econometric model able to deal with such simultaneous decisions is an adaptation of the Heckman model in generalized structural equations modeling. This methodology permits to control by sample selection bias and correlations between equations. This paper highlights the existence of patterns in the cut back alternatives depending on the socioeconomic characteristics of the household and the climate conditions in origin.

Keywords: Tourism expenditure; Economizing strategies; Economic crisis; Generalized structural equations modeling; Regional studies

JEL code: D12, L83

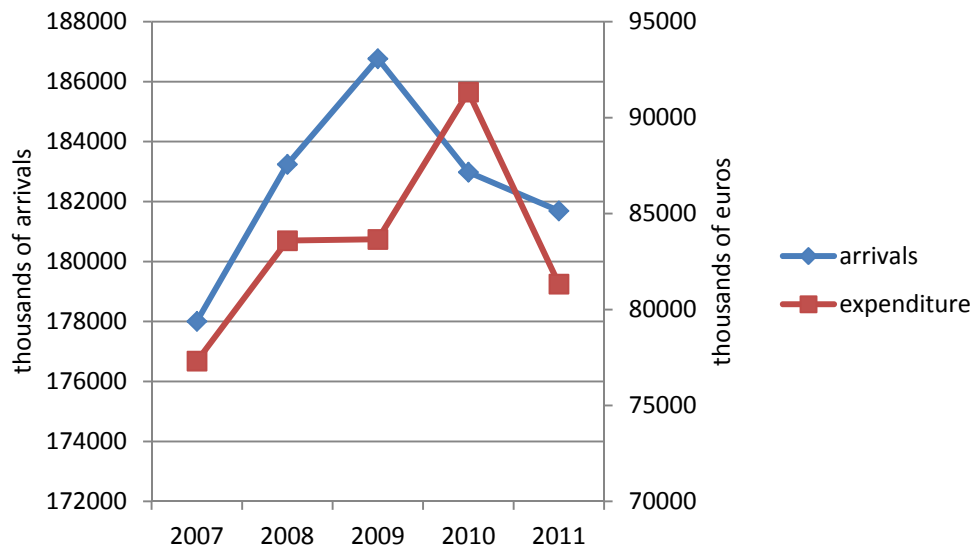
1. Introduction

Since 2008, the EU-27 is in a downturn economic situation. On average, real GDP growth has decreased by 0.16% from 2008 to 2012 and the unemployment rate has gone from 7.6% in 2008 up to 10.6% in 2012. The effect and consequences of the crisis have been different among countries. On the one hand, a country such as Germany has grown by 0.8% on average from 2008 to 2012 and has even reduced its unemployment rate from 7.5% in 2008 to 5.9% in 2012. On the other hand, countries such as Spain or Greece have suffered a sharp crisis (a -0.92% and -4.34% reduction in the real GDP from 2008 to 2012, respectively) and have shown tidy unemployment rates during the last four years (from 11.3% in 2008 to 25% in 2012 and from 7.7% in 2008 to 24.3% in 2012 for Spain and Greece, respectively). The crisis has also triggered debt-crises in Greece and Portugal, and banking-crises in Spain, Ireland and Cyprus.

At microeconomic level, such a downturn situation has a deep effect on individual disposable income and thus, on total consumption. Under these circumstances, tourism consumption is especially sensitive to tourism expenditure cutback decision because of its high income elasticity (Lanza, Temple, & Urga, 2003). According to Riley, Ladkin and Szivas (2001), tourism activity relies on the forecast of changing in demand to match correctly the supply decisions. Thus, anticipation is key for success in tourism activity. Tourism managers and policymakers need more information on how to react during economic crises. Nonetheless, there is a lack of suitable indicators and information about tourism behavior in economic crises situations (Sheldon & Dwyer, 2010; Smeral, 2010; and Bronner & Hoog, 2012). The consequences of such lack of knowledge have been already studied in the literature. According to Okumus and Karamustafa (2005), neither Turkish government nor tourism enterprises were able to deal with the economic crisis they suffered in 2001. O'brien (2012) points out that the lack of interaction between the government and the private sector explains why the tourism sector in Ireland is not growing yet whilst other European destinations have already returned to growth despite the economic crisis.

So far, tourism managers and policymakers have mainly based their analysis on arrivals and expenditure. As it can be seen in Figure 1, in 2008 tourists adjust immediately their expenditure to the crisis situation, whereas the numbers of arrivals keep growing. As the crisis persists, tourists begin to reduce the arrivals and increase the expenditure. Finally, since 2010, both arrivals and expenditure fall sharply. Although they do depend on each other, most of literature does not consider arrivals and expenditure relationship simultaneously. Thus, a better understanding and analysis of the mutual relationship between demand and supply could permit to disentangle which part of the changing in tourism expenditure is due to changing in arrivals and which is due to changing in prices.

Figure 1: tourism arrivals and expenditure



Source: Eurostat and WTO

In order to solve this issue, this paper disentangles the arrivals and expenditure discussion in more explicit arguments at microeconomic level. It is a way to approach macro variables such as arrivals and expenditure by micro-founded analysis.

This paper focuses on the underpinnings of the households' tourism expenditure cutback decision and how this decision is carried out during the global economic crisis in 2009 in the European Union. To such aim, the tourism decision is disentangled in two levels. Firstly, tourists decide whether to cut back or not. At this level, household expenditure could be the natural variable to be used (see for instance, Melenberg & Van Soest, 1996). However, tourism household expenditure could vary for several reasons, not all related with the economic crisis. To avoid this potential bias, a binary response variable is used as endogenous variable; asking individuals if they have had to cut back on tourism expenditure or not because of the crisis. Secondly, for the tourists who had to cutback, the study analyzes how tourists decide to cut back according to six alternatives: "fewer holidays", "reduced length of stay", "cheaper means of transport", "cheaper accommodation", "travel closer to home" or "change the period of travel". Table 1 shows how these alternatives could affect arrivals and tourism expenditure. For instance, the decision of cutting back taking "fewer holidays" affects both arrivals and expenditure, but, "cheaper transport" or "cheaper accommodation" affects expenditure only.

Literature is pretty scarce on how tourists redistribute their tourism expenditure under an economic crisis. For instance, Eugenio-Martin and Campos-Soria (2014) analyze the cutback tourism decision but not the way of distributing such decision. Alegre, Mateo and Pou (2013) disentangle the tourism decision in two parts: tourism participation and tourism expenditure, nonetheless they do not distinguish among any kind of tourism expenditures. From a macroeconomic perspective, Frechtling (1982) analyzes vacation travel by trips and travel characteristics during the eighties crisis in USA. Variables

such as “duration”, “round trip distance” or “logging nights” are analyzed. As far as we know, Bronner and Hoog (2012) is the only study that addresses the kind of cutback tourism decision from a microeconomic perspective depending on the geographical range of the crisis and its depth. They characterized thirteen different expected responses such as “giving up vacation”, “booking cheaper accommodation” or “taking another means of transport”. As Sheldon and Dwyer (2010, p. 4) state: “...Our lack of knowledge about possible consumer responses to the crisis places great impediments in the way of forecasting its effects on the industry. Thus, consumers may spend less, and travel less, but to what extent they shift to other products, reduce debt, or save more is not known. Typically estimates of income elasticities of tourism demand are based on long-term upward trended data and are not applicable to longer and very deep recessions. The degree to which tourists switch to closer destinations, domestic destinations, shorter lengths of stay, or “trade down” (e.g., lower-cost carriers, lower-standard hotels, business class to economy) are also an important research areas.”

Table 1: Relationships between the kind of cutback with the arrivals and expenditure

Economizing strategies	Arrivals	Expenditure
Fewer holidays	X	X
Reduced length		X
Cheaper transport		X
Cheaper accommodation		X
Closer to home	X	X
Period of travel		X

The econometric model able to deal with such simultaneous decision between “cut back” and “how do you cut back” is an adaptation of the Heckman model (Heckman, 1976, 1979) in generalized structural equations modeling. This methodology permits to control by sample selection bias and correlations between equations at micro level. As stated by Prideaux (1999) micro-approaches allow to control by both socioeconomic characteristics and macroeconomic indicators, improving the results significantly. Additionally, the attributes of the place of origin can be incorporated in the analysis since they play a key role to understand the tourism cutback decision. In that sense, Eugenio-Martin and Campos-Soria (2014) identify “push” factors on the outbound tourism demand associated with the attractiveness of the place of residence, such as climate, region on the coast and size of the community. For that purpose, the econometric model is built employing a survey conducted by the European Union in September 2009 at regional level (NUTS 2 regions of EU-27) with macrodata at origin

region which include attributes of the place of residence and economic indicators such as GDP changes.

2. Literature review

Tourism effects on the economic and employment growth on destinations are well documented in the literature. Tourism industry is highly sensitive to economic cycles because, on average, outbound, inbound and domestic tourism flows may be affected more than consumption of other goods and services. So, during an economic crisis, consumption of luxury goods and services, such as tourism, are expected to be significantly reduced, which affects arrivals and tourism receipts on destinations (Lanza, Temple, & Urga, 2003; Smeral, 2003; Eugenio-Martin & Campos-Soria, 2011). Destinations need to anticipate such downward demand shifts reducing prices or identifying *add value* demand strategies in an attempt for keeping or improving market share (Sheldon & Dwyer, 2010), or devaluing their currencies in relation to the main origin countries (Prideux, 1999). So far, most of these decisions carried out by policy makers consider macroeconomic indicators to evaluate the impact of economic crisis on destinations. Macroeconomic variables, such as arrivals, receipts or expenditure are more readily available over time and so, more likely to be used in applied studies. These figures can be used for forecasting, and let carry out homogeneous comparisons between destinations. However, as pointed out by different researchers, microeconomic approaches are also required to manage crisis properly (Bronner & de Hoog, 2012; or Smeral, 2009). Ideally, policymakers should combine macro and micro indicators. In fact, linkages between GDP changes and arrivals or receipts are necessary, but without neglecting the consumer responses to the crisis (Eugenio-Martin & Campos-Soria, 2014).

2.1. Macroeconomic indicators

During last decades, tourism demand analysis has dealt with the impact of different kinds of crises such as economic crisis (Smeral, 2010; Hall, 2010; Page, Song & Wu, 2012), terrorist attacks (Blake & Sinclair, 2003; Araña & León, 2008), or natural disasters, such as epidemics or earthquakes (Eugenio-Martin, Sinclair & Yeoman, 2005; Carlsen & Hughes, 2008; or Mao, Ding & Lee, 2010). However, one of the driving forces of tourism demand is the economy. A review of the literature focused on tourism and crisis suggests that economic and financial crises receive the most attention, although these crises are often linked to others such as terrorism (Wang, 2009; Hall, 2010). The first main economic crisis studied in tourism was the Asian financial crisis occurred in mid-1997. Such crisis is analyzed by Henderson (1999), Prideaux (1999) or Law (2001). Okumus, Altinay and Arasli (2005) investigate the impact of the February 2001 economic crisis in Turkey on the tourism sector in Northern Cyprus, while O'Brien (2012) analyzes tourism policies carried out to underpin the Irish crisis of 2008, where Irish tourism industry collapsed dramatically. Thereafter, the global economy crisis triggered in 2007 in the United States has been the most studied crisis

for its profound negative impact on the world economy in general and on tourism activity in particular (Song & Lin, 2010; Brent-Ritchie, Amaya-Molinar & Frechtling, 2010; Page, Son & Chenguang-Wu, 2012).

Once tourism demand shift is estimated, different studies stress the importance of advance planning and the coordination between public and private agents in a context of minimizing the effects of the crisis. However, estimations and predictions focused on macro indicators may help policy makers to evaluate the impacts of the tourism crisis, but partially. Two main reasons can explain it. On the one hand, changes in arrivals does not mean necessary that tourism receipts also decrease in the same proportion, but they can go in opposite direction. For instance, Bronner and Hoog (2012) state that in the Netherlands the number of holidays increased and expenditure decreased in 2009. This kind of studies does not take into account that downward demand shifts could also be effects reducing prices or devaluing the exchanges rates between origin and destination countries. Thus, simultaneity analysis between arrivals and receipts should be necessary, because otherwise the impact of the economic crisis on tourism shows biased results. On the other hand, as stated by Sheldon and Dwyer (2010) investment and marketing strategies, development of new products and action plans for keeping business viability are not well understood. To further explore the answers to these questions it will be necessary to obtain insight into the tourists' behavior during the crisis from a wider microeconomic perspective.

2.2. *Microeconomic indicators*

Sheldon and Dwyer (2010) state that the final impact of an economic crisis cannot only be approached from a macroeconomic point of view, since it may affect the firms' strategies and the tourist's behavior. Thus, the microeconomic approach based on individuals or households is required. This approach often deals with participation decision, expenditure or any other experimental observation of tourists' behavior as endogenous variables. However, literature is pretty scarce on how tourists redistribute their tourism expenditure under an economic crisis. Bronner and Hoog (2012) propose a general framework to investigate the consequences of the global economic crisis on individual tourist behavior and economizing strategies on holidays. They address the kind of cutback decision relying on the geographical range of the crisis and its depth, characterizing different expected responses. They included thirteen different alternatives of cutback decision (*cheese-slicing strategies*) such as "expending fewer days on vacations", "booking cheaper accommodation" or "taking another means of transport". Some of these strategies may affect travel expenditure, while others may affect on-situ destination expenditure. Fleischer, Peleg and Rivlin (2011) argue that most studies on vacation expenditure do not distinguish between both of them. As far we know, there are few studies that analyze cutback decision strategies. Alegre et al. (2013) study the consequences of the economic crisis on Spanish households, especially the role of employment. To such aim, they differentiate between two mutually related decisions: tourism participation and tourism expenditure. Finally, Eugenio-Martin and Campos-Soria (2014) study how European tourists react during the economic crisis modeling the

tourism expenditure cutback decision. This research reinforces the idea that those households that are cutting back on tourism expenditure in 2009 are more likely to spend their holidays closer to home. However, neither of these papers explores explicitly how those tourists are cutting back their budget.

Tourists may react shorting the lengths of stay, traveling in lower-cost carriers or staying in cheaper accommodation establishments. In that sense, Papatheodorou, Rossello and Xiao (2010) state that traveling closer to home is one of the most important strategies to reduce the expenditure, while HarrisInteractive (2009) proposes fewer length of stay during summer time as an important cutback decision. Some of these questions have been studied under economic crisis scenarios as we have already highlighted, but most of them do not. For instance, following the ETC (2009) report, in economically difficult times, tourist tend to minimize product prices and quality, preferring less than long-distance destinations, scale back their expenditure per night and economize on the duration of their stay. Olive Research (2009) reported that 64% of visitors from the United States, Spain, Ireland, and France were likely to cut back on holidays in terms of duration and spending. However, they are descriptive approaches that do not analyze how tourists cut back their tourism expenditure in a more in depth framework. This is the main question considered in this paper and further discussion will be analyzed later.

3. Methodology

3.1. Econometric modeling

Modeling tourism expenditure and how households adjust their tourism expenditure under an economic crisis is problematic. Firstly, cutback decision do not only depend on income variations, but on other individual characteristics. Since household tourism expenditure may vary due to circumstances not related with the economic crisis, bias results can be obtained. This paper avoids this potential bias since cutback decision is stated directly by the interviewee. Secondly, “how do you cut back” decision is observed only when the individual has cut back its tourism expenditure. Thus, there is a sample selection bias: tourists who decide not to cut back are not included in the next stage (how do you cut back). Finally, both decisions: “cut back” and “how do you cut back” are part of a simultaneous decision. The decision to cut back affects the decision of “how do you cut back”. From an econometric point of view, both decisions are modeled using a two-step approach. The simultaneity is captured assuming correlation between the errors term of both equations.

The econometric model able to deal with this two-step decision is an adaptation of the Heckman model (Heckman, 1976, 1979). The endogenous variable in the first step cb_i is a binary response variable that takes value 1 if the tourist decides to cut back and zero otherwise, where i denotes individuals. The endogenous variable of the second step is a multinomial response variable. “How do you cut back” is a discrete variable denoted by

hcb_{ij} , which takes values between one and six according to different alternatives: “fewer holidays”, “reduced length of stay”, “cheaper means of transport”, “cheaper accommodation”, “travel closer to home” or “change the period of travel”, where j denotes these alternatives.

This model is based in random utility models, Let cb_i^* be the latent variable of cutback decision and hcb_i^* the latent variable of “how do you cut back”, which depend on exogenous variables z_i and x_{ij} , respectively. In structural equations format, the Heckman model is conducted using a latent variable l_i that gathers up correlation between both equations (Skrondal & Rabe-Hesketh, 2004). The adapted Heckman model in structural equations format is shown below:

The model specification for the cutback decision is expressed according to the following equations:

$$cb_i^* = z_i\gamma + l_i + \xi_i \quad \xi_i \sim N(0,1) \quad (1.a)$$

$$cb_i = \begin{cases} 1 & \text{if } cb_i^* > 0 \\ 0 & \text{if } cb_i^* \leq 0 \end{cases} \quad (1.b)$$

where λ denotes a vector of unknown parameters, and ξ_i represents the error term.

Taking into account equations (1.a) and (1.b) we have:

$$P(cb_i = 1) = P(z_i\gamma + l_i + \xi_i > 0) = P(-\xi_i > z_i\gamma + l_i) = F(z_i\gamma + l_i) \quad (1)$$

Equation (1) is a logit distribution function that permits to obtain the probability of cutting back in tourism expenditure.

The model specification for the “how do you cut back” decision distinguishes the utility provided by each alternative j , as shown in the following equation:

$$hcb_{ij}^* = x_{ij}\beta_j + l_i\eta_j + e_{ij} \quad e_{ij} \sim iid(0, \sigma^2) \quad (2.a)$$

Where β_j and η_j denote vectors of unknown parameters, and e_{ij} represents the error term. Thus, the probability of “how do you cut back” is obtained in equation (2), for each alternative j .

$$P(hcb_{ij} = j) = P_{ij} = \frac{\exp(x_{ij}\beta_j + l_i\eta_j)}{\sum_{j=1}^6 \exp(x_{ij}\beta_j + l_i\eta_j)} \quad j = 1, \dots, 6 \quad (2)$$

Equations (1) and (2) are the adapted version of the Heckman model in structural equations. Equation (1) is a probit model and equation (2) is a multinomial logit model,

so that both of them are estimated simultaneously. In order to ease the identification process of the structural equation model, the variance of the latent variable is set up to be equal to one.

3.2. Model specification

The exogenous variables z_i considered in the specification of the cutback equation (equation (1)) can be split up into socioeconomic variables and regional variables. The set of socioeconomic variables considered are age and age squared, so that the latter may capture the non-linear effect of age on the cutback decision, gender (male = 1), education and employment. All these variables are used as a proxy for personal income. Education is a continuous variable that takes the value of the age at which the individual stopped full time education. Employment can be one of the following: Farmer, forester or fisherman; Owner of a shop or craftsman; Professional such as lawyer, medical practitioner, accountant, or architect; Manager of a company; Professional such as employed doctor, lawyer, accountant or architect; General manager, director or top management; Middle management; Civil servant; Office clerk; Employees such as salesman, or nurse; Supervisor (foreman), or team manager; Manual worker; Unskilled manual worker; Looking after the home; Student (full time); Retired; Unemployed; and sets of Other occupations within different professional categories.

The set of regional variables are considered because preferences for tourism are conditioned by the place of residence of the household. As pointed out by Hung, Shang and Wang (2013) households that belong to the same region have a more similar tourism expenditure pattern. Therefore, if tourism expenditure estimations ignore factors related with the geographical location of the tourists, biased results are likely to happen. In particular, climate, per capita GDP in PPS and GDP growth are included. Climate in the origin region is one of the most important “push” factors in the outbound tourism demand (Agnew & Palutikof, 2006), explaining asymmetries in the willingness to travel among regions (Madison, 2001). Eugenio-Martín and Campos-Soria (2014) show that households located in regions with “good climate” are more likely to cut back their tourism expenditure than those located in regions with not so good climate. Climate definition is based on double hurdle climate index introduced by Eugenio-Martin and Campos-Soria (2010). Such double hurdle climate index ranges from 0 to 12 depending on the number of months that pass each hurdle. The climatic variables that are considered are temperature, rainfall and days with rainfall. The thresholds that determine each hurdle are based on Mieczkowski’s (1985) tourism climatic comfort conditions. On the other hand, per capita GDP in Purchasing Power Standard (PPS) is considered, jointly with the socioeconomic variables, as a proxy for personal income. Finally, GDP growth captures the expectation on personal income variations. Consumption theories predict that changes in demand can be due not only to changes in current income but also to expectations on future income. Hong-bumm, Jung-Ho, Seul and SooCheong (2012) analyze this effect on international tourism demand.

Similarly, the exogenous variables x_{ij} considered in the “how do you cut back” equation are socioeconomic and regional variables. Preferences for tourism and how households decide on the way tourism expenditure cutbacks are taken depend on age and gender. Again, these variables are defined in the same way as in the cut back model specification. At regional level, climate, length of the coast and the presence of airports are considered as relevant for household cutback strategies. Variable coast represents an index of how relevant the length of the coast is with respect to the size of the region, and airport is a dummy variable that takes unitary value if the region has at least one airport.

3.3. Case study

The study employs a survey conducted at the household level and macrodata at the origin region. Microdata is gathered up from a survey carried out in 2009 in EU-27 regions. The survey is entitled as “Attitudes of Europeans Towards Tourism” and it belongs to *Flash Eurobarometer* 281 (European Commission, 2010). It contains information on socioeconomic characteristics of 23,606 households and information about their decisions on outbound tourism demand such as destination choice and cutback decision. Macrodata considered in this study was collected for 165 regions of EU-27 countries. The data source of GDP in PPS and GDP growth is Eurostat and data on climate index was obtained from World Meteorological Organization. Average per capita GDP in PPS was 22,942.44\$ in 2009 for the whole sample, reaching a maximum value of 62,500\$ for Luxembourg and a minimum value of 6,400\$ in Severozapaden (Bulgary). It should be pointed out that 95.7% of the regions had a negative GDP growth in 2009. Groningen (The Netherlands) reaches the lowest growth rate at -17.01%, while Północny (Poland) was one of the few regions that registered a positive value, 1.64%.

4. Results

4.1. Economizing strategies by countries

Descriptive analysis of the dataset is very relevant. It shows that 46.32% of the interviewees had to cut back on tourism expenditure in 2009. Out of them, 26.76% opted for “reduced length”, whereas 21.84% for “cheaper accommodation”, 18.87% for “closer to home”, 16.15% for “fewer holidays”, 8.89% for “period of travel” and 7.48% for “cheaper transport”.

Regional differences in the probability of cutback have been shown in the literature. Eugenio-Martin and Campos-Soria (2014) highlight that there are marked differences between North-European and Mediterranean regions, responding to climate and GDP differences. Analyzing the relative frequencies of the economizing strategies by countries (Table 2), the ranking in the relative frequencies described in the previous paragraph is not held by most of the countries. Countries such as Austria, France,

Greece, Malta, Romania and Slovenia fulfill the hierarchy shown in the relative frequency at aggregated level, but that is not the case for the rest of the countries. Thus, there is a regional heterogeneity in the pattern of the cutback alternatives. Anyway, “reduced length” and “cheaper accommodation” seem to be a highly chosen economizing strategy in order to cutback, independently of the cited hierarchy and the country considered.

Table 2: Tourists’ economizing strategies during an economic crisis by country (EU-27)

Country	P(reduced length)	P(cheaper accommodation)	P(closer to home)	P(fewer holidays)	P(period of travel)	P(cheaper transport)
Austria	31.84	22.9	17.31	14.52	11.17	2.23
Belgium	24.65	19.17	13.69	16.43	15.06	10.95
Bulgaria	36.52	24.65	10.04	13.24	7.76	7.76
Cyprus	22.07	19.48	22.72	21.42	5.84	8.44
Czech Republic	22.4	29.46	21.57	14.1	4.14	8.29
Denmark	21.95	23.57	15.44	17.07	8.94	13.01
Estonia	21.55	19.16	20.95	17.36	6.58	14.37
Finland	31.03	14.77	19.21	19.21	8.37	7.38
France	37.78	23.28	12.97	12.21	7.63	6.1
Germany	31.4	18.59	16.94	11.57	14.46	7.02
Greece	35.36	21.73	15.94	15.36	6.08	5.5
Hungary	20.76	25.23	13.41	24.28	8.94	7.34
Italy	33.33	21.28	12.85	14.05	14.45	4.01
Ireland	22.6	20.65	26.73	13.69	10	6.3
Latvia	19.1	24.2	16.56	18.47	3.82	17.83
Lithuania	30.92	18.55	25.25	16.49	5.15	3.6
Luxembourg	19.38	22.44	23.46	14.28	10.2	10.2
Malta	25	23.61	22.22	11.11	6.94	11.11
Poland	27.72	18.18	20	11.36	11.36	11.36
Portugal	20.57	22.01	24.4	18.18	11.48	3.34
Romania	26.05	22.4	18.48	15.4	9.52	8.12
Spain	29.77	26.86	13.26	19.41	6.14	4.53

Slovakia	20.13	24.3	23.61	15.27	8.33	8.33
Slovenia	35.38	25.38	15.38	13.84	7.69	2.3
Sweden	33.33	13.19	18.75	19.44	5.55	9.72
The Netherlands	13.63	18.18	27.84	21.02	10.79	8.52
UK	18.93	21.92	23.58	16.94	10.63	7.97

4.2. Estimation

The results of the estimation of the two-step econometric model proposed in the previous section 3 are shown in Table 3. Such estimates take into account the simultaneity and sample selection issues. Table 3 depicts odd-ratios for both decisions. A parameter higher than one means that the variable has a positive effect on such probability regarding the base category, whereas parameters lower than one have a negative effect.

In the cutback equation, current GDP and GDP growth are key determinants. Current GDP has a negative effect on the cutback decision. With an increase in 1 dollars in the GDP, the probability of cutback is 0.1% (0.999-1) lower than not to cut back. In order to provide more precise estimates of income effects on tourism expenditure, changes in expectations are required. A positive GDP growth has a negative impact on the cutback decision. With 1 percentage point increase in the GDP growth, the probability of cutback is 3.7% lower. Consequently, as in previous findings such as Eugenio-Martin and Campos-Soria (2014), households react cutting back their expenditure when they have negative future expectations on GDP. Occupation is a highly relevant determinant on cutback probability and plays the expected role. Occupation such as *General manager* shows the lowest probability to cut back. For a general manager, the probability of cutting back is 51.6% (0.484-1) lower than not to cut back. On the opposite side, *Unskilled manual workers* have higher probabilities of not cutting back. Additionally, this paper proves that young individuals are more likely to cut back than older ones. However, authors generally agree that age has a non-linear effect on tourism expenditure (Alegre & Pou, 2004). Estimates in this paper show that there is a quadratic effect of the age on the cutback decision. People 20 years old are 1.83% more likely to cut back. However, for people 65 years old, it is 2.64% less likely to cut back. The education has also a negative impact. Individuals with one more year of education, have their probability of cutting back reduced by 1.4% on average. Regional variables also show some interesting results. In particular, it is interesting to point out that regions with good climate are more likely to cut back than those with not so good climate. On average, when *climate index* increases by one point, the probability of cutback increases by 7.96%. This result corroborate the idea that climate in the origin region is one of the most important “push” factors in the outbound tourism demand (Agnew & Palutikof, 2006; Eugenio-Martin & Campos-Soria, 2014).

Table 3: The determinants of the cutback decision and economizing strategies (odd-ratios)

Variable	Cutback	How do you cutback?				
		Reduced length	Cheaper transport	Cheaper accommodation	Closer to home	Period of travel
GDP pc (PPS)	0.999 ^{***}					
Growth	0.963 ^{***}					
Socioeconomic variables						
<i>Employment variables:</i>						
Farmer. Forester. Fisherman	0.491 ^{***}					
Owner of a shop	0.660 ^{***}					
Professional self employee	0.614 ^{***}					
Manager	0.525 ^{***}					
Other self employed	0.666 ^{***}					
Professional employee	0.598 ^{***}					
General manager	0.484 ^{***}					
Middle manager	0.542 ^{***}					
Civil servant	0.544 ^{***}					
Office clerk	0.666 ^{***}					
Salesman. nurse	0.636 ^{***}					
Other employee	0.551 ^{***}					
Supervisor	0.915					
Manual worker	0.950					
Unskilled manual worker	1.002					
Other manual worker	0.512 ^{***}					
Looking after home	0.809 ^{**}					
Student	0.622 ^{***}					
Retired	0.658 ^{***}					
Other not working	0.710 ^{**}					
Age	1.039 ^{***}	1.003	0.986 ^{***}	0.987 ^{***}	0.997	0.992 ^{**}
Age squared	0.999 ^{***}					
Gender (male = 1)	0.871 ^{***}	1.214 ^{**}	1.016	1.088	1.204 ^{**}	0.872
Education	0.986 ^{***}					
Regional variables						
Climate	1.079 ^{***}	1.024 ^{**}	0.951 ^{***}	1.031 ^{**}	0.965 ^{***}	0.964 ^{**}
Coast		1.049	0.908	0.975	1.091	0.767 ^{**}
Airport		0.898	0.940	1.003	1.133	0.840
<i>Latent variable:</i>						
L	1(constrained)	1.440	1.142	2.753 ^{***}	1.449	1.349
Log likelihood	-18633.156					
Number of observations	13851					

***Level of significance 1%. **Level of significance 5%. *Level of significance 10%.

Notes: Base outcome in multinomial logit is: "Fewer holidays". Omitted occupation dummy variable is: "Seeking a job".

It should be noted that in any choice model estimated with a random utility framework, the analysis of results need to take into account the omitted alternative. Thus, every parameter needs to be interpreted in relation to such variable. In regards to the “how do you cutback” equation the omitted alternative used is “fewer holidays”.

The age affects negatively on “cheaper transport”, “cheaper accommodation” and “period of travel”. In that last case, it is 0.8% less likely to cut back traveling off-high season when age increases. In other words, younger people are more willing to travel off-high season, using cheaper transport and booking lodging deals than older people. For the other two alternatives, the age has not any significant influences in comparison to “fewer holidays”. A similar reasoning could be done about gender. It affects positively on “reduced length” and “closer to home¹”, but it has not a significant influence in the other alternatives. It is 20.4% more likely to cut back traveling “closer to home” for a male than for a female. Literature shows that women are keener on participation both in domestic and abroad travelling (Mergoupis & Steuer, 2003). On the other hand, it is interesting to note that as soon as climate improves in the place of residence, the probability of choosing “reduced length” and “cheaper accommodation” increases over the probability of “fewer holidays”. For instance, with a unit increase in the *climate index*, it is 2.4% (1.024-1) more likely to reduce the length of stay rather than fewer holidays. This reduction can be supported because households located in regions with better climate conditions have higher probability of travelling domestically (Eugenio-Martin & Campos-Soria, 2010), so that they can reduce the number of days in tourism easier. In the case of “cheaper accommodation”, it is 3.1% more likely (1.031-1) to choose this option rather than fewer holidays. Summarizing, people who live in regions with good climate prefer reducing the length of stay or booking cheaper accommodation rather than opting for fewer holidays. For the rest of the cutback alternatives, the probabilities decrease when climate conditions in origin improves. For instance, as soon as the climate improves, it is 3.6% less likely to cut back traveling off-high season rather than take fewer holidays. The presence of coast in the place of resident has only influence on the decision of “period of travel”, while for the other alternatives there are not significant differences in comparison to fewer holidays. The presence of *coast* makes 23.3% (1-0.767) more likely to cut back with changes in the period of travel rather than with fewer holidays.

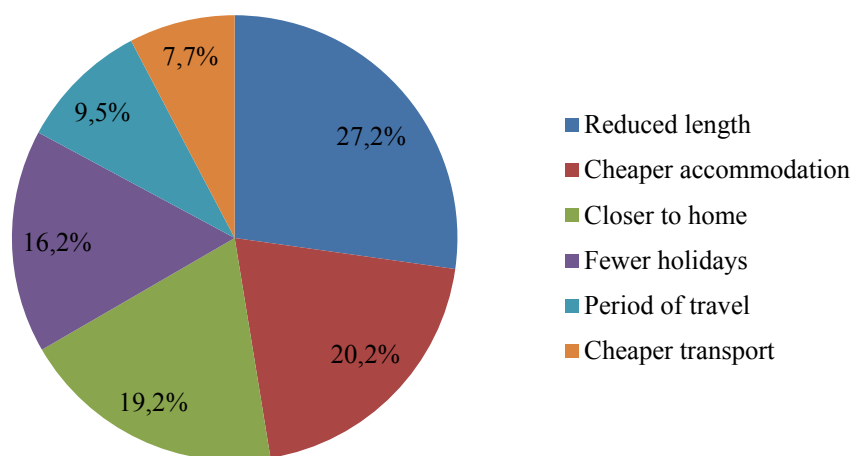
4.3. Post-estimation analysis

Post-estimation analysis is carried out employing the probabilities of “how do you cut back” on tourism expenditure. Analyzing the probabilities of the economizing strategies in Figure 2, it seems that the most likely cutback decision is “reduced length” (27.2%), followed by “cheaper accommodation” (20.2%), “closer to home” (19.2%), “fewer holidays” (16.2%), “period of travel” (9.5%) and finally “cheaper transport” (7.7%). These estimates probabilities are in accordance with the relative frequencies shown in section 4.1. According to Papatheodorou et al. (2010) traveling closer to home is one of

¹ Closer to home does not mean travel domestically. In fact, the 33% of people that have traveled closer to home, have gone abroad.

the most important cutback decisions (the third most important one in our case). Moreover, this hierarchy in the cutback decision is in accordance, albeit with exceptions, with Bronner and Hoog (2012). According to them, cheese-slicing strategies (economizing on aspect of the holiday) such as “reduced length”, “cheaper accommodation” or “closer to home” in our case, are preferred to pruning strategies (fewer holidays). Thus, our results corroborate them and Sheldon and Dwyer’s (2010) idea that, on average and in a context of economic crisis, tourists prefer economizing in holiday expenditure rather than fewer holidays.

Figure 2: Probabilities of the economizing strategies

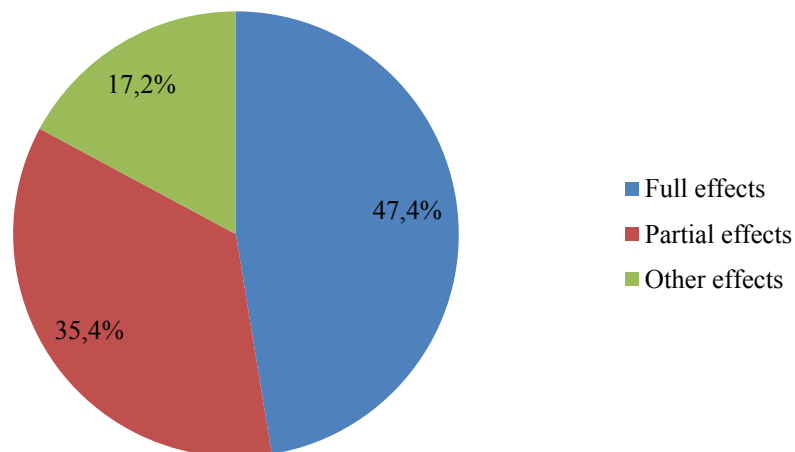


Destinations should consider different profiles of tourists regarding their cutting back patterns, since some alternatives may affect the expenditure during the journey (for instance, “cheaper transport”) and some others do explicitly affect destination expenditures (“reduced length of stay” or “cheaper accommodation”). In that sense, Fleischer, Peleg and Rivlin (2011) argue that it is necessary to disentangle expenditure between travel and on-situ destination. In terms of tourism expenditure at the destination, economizing strategies have a varying impact. Some of them have a direct impact, such as “reduced length” or “cheaper accommodation”. For these cases, the destination absorbs the impact of the crisis in full. For that reason, these effects are categorized as “full effects” of the crisis. However other cutback alternatives such as “fewer holidays” and “closer to home” may or not affect the expenditure of a particular destination, but on aggregate terms, it does affect them with different intensity. For that reason, these effects are categorized as “partial effects” of the crisis. For instance, a Portuguese tourist may have traveled to three different international destinations (Spain, Russia and Australia) before the economic crisis. Nonetheless and due to the crisis, he may decide to travel to closer destinations such as Spain, Russia and France. Finally,

“cheaper transport” and “period of travel” show a fuzzy effect on destinations; and they are considered as “other effects”.

As depicted on Figure 3, the full effects show the highest probability (47.4%), followed by the partial effects (35.4%) and finally, other effects (17.2%). Such information could be used by policymakers and tourism firms in order to minimize the effects of the economic crisis on destinations, since tourists are more willing to cutback with economizing strategies on destination (full effects). Destinations can anticipate the downward demand changes, adapting their strategies properly. For instance, suppliers of tourism services need to know where the reduction in tourism expenditure is going to fewer holidays, to less days of vacation or to lower quality services, for instance, booking lodging deals. Gokovali, Bahar and Kozak (2007) state that lower tourism expenditure does not necessary mean less vacation days, since service quality also may change, affecting tourism expenditure. Thus, sometimes, destinations should reduce prices, but not always. They need to identify add value demand strategies such as offering more flexible packages.

Figure 3: Final effects on the destination



Additionally, post-estimation analysis let analyze how the estimated probabilities change with some key determinants, such as climate index and age of the head of the household. Figure 4 plots the moving median of these probabilities in relation to climate index. According to such figure, there is a clear effect on the probability of cutback alternatives by climate. Firstly, the probabilities of “reduced length” and “cheaper accommodation” are the highest of the six alternatives and grow smoothly with the *climate index*. Secondly, “period of travel” and “cheaper transport” show the lowest probabilities and decrease steadily with the *climate index*. Finally, “closer to home” and “reduced number of trips” remain almost constant. However, if we analyze the rate of change of the probabilities of the alternatives by climate in origin, the

changes are pretty significant. On the one hand, households located in regions with the best climate conditions for tourism (*climate index* = 12) show a 32% higher probability to cut back with "reduced length" than those households located in regions with the worst climate (*climate index* = 0). In the case of "cheaper accommodation", the change is not so sharp. It is 1.05% more likely to cut back with this cutback option for those households with the best *climate index* rather than those with the worst *climate index*. On the other hand, it is 2% less likely to cut back changing "the period of time" for those tourists with the highest climate index than tourists with the lowest one. These results indicate that differences in the place of origin play an important role on those probabilities.

Figure 4: Moving median probability by climate

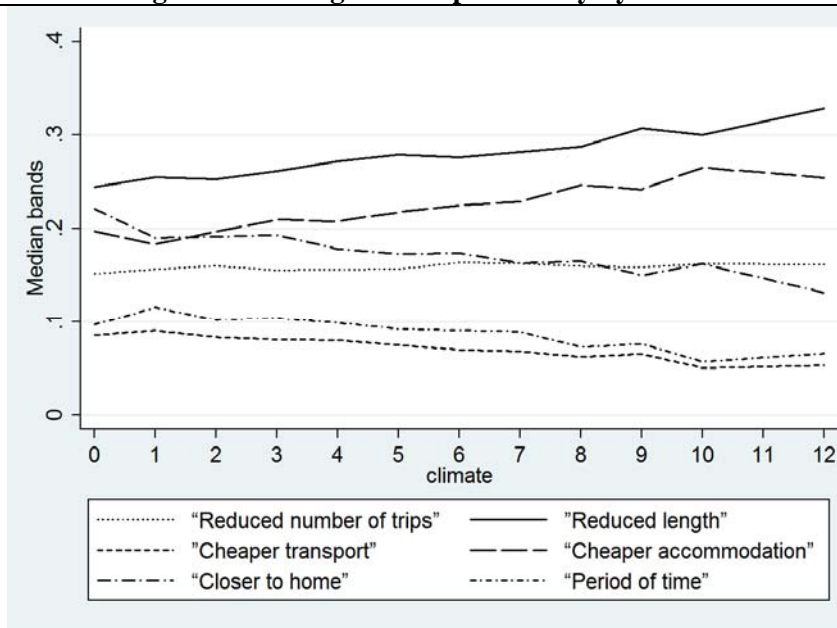
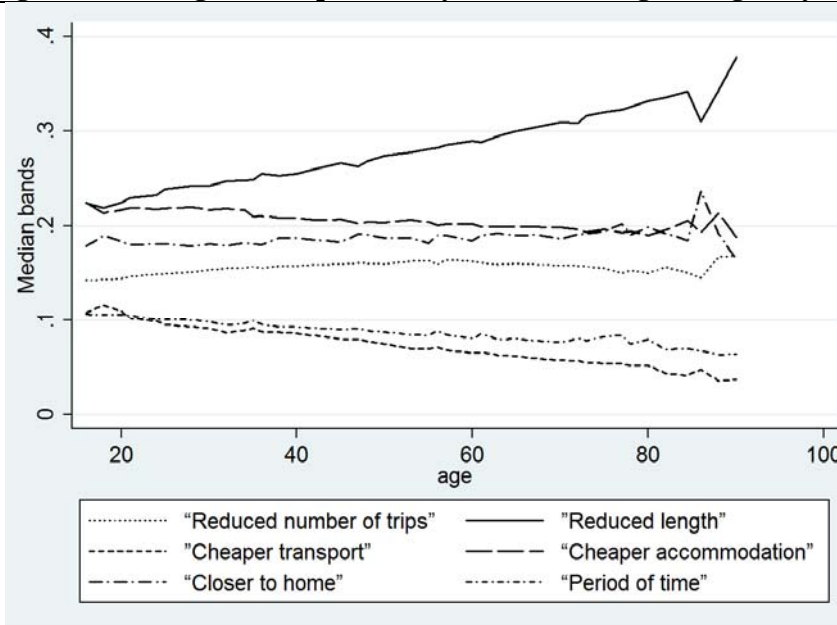


Figure 5: Moving median probability of economizing strategies by age



The age of the head of the family helps providing a new insight. Figure 5 is constructed according to the median probabilities of each alternative of cutback by age moving bands. Analyzing the rate of change of the probabilities by age, it should be noted that for people 65 years old, the probability of the “reduced length” is 34.78% higher than for people 20 years old. In regards to the “cheaper accommodation” alternative, the probability decreases 33.33% for people 65 years old in comparison to people 20 years old.

5. Conclusions

The lack of understanding of the tourist’s behavior during an economic crisis has direct consequences on the way that tourism managers and policymakers deal with their decisions to manage it. This paper explores from a microeconomic perspective how tourists from 165 regions of EU-27 countries cut back their tourism expenditure during the global economic crisis in 2009. This approach is novel in the literature for several reasons. Firstly, as far as we know, it is the first study that models the determinants of how the households cut back their tourism expenditure during an economic crisis. This decision is carried out taking into account different alternatives: “fewer holidays”, “reduced length of stay”, “cheaper means of transport”, “cheaper accommodation”, “travel closer to home” or “change the period of travel”. Secondly, this paper avoids biased results, since cutback decision is captured directly by the interviewer. Otherwise, changes in tourism expenditure due to circumstances not related with the economic crisis will cause random expenditure variations. Thirdly, modeling “how do you cut back” is a challenge because it is not independent of the “cut back” decision, so there is a sample selection bias. For that reason, the econometric modeling used is a two-step approach which captures the simultaneity between “cutback” and “how do you cut back” decisions. Finally, since it is ideal to use a comprehensive dataset with macro and micro indicators, the estimates considered in this paper combine socioeconomic characteristics of the households, regional attributes of their environment and macroeconomic variables.

This paper proves that socioeconomic differences among households condition the kind of cutback alternatives chosen. Age of the head of the family affects negatively on “cheaper transport”, “cheaper accommodation” and “period of travel”. Younger people are more willing to travel off-high season, using cheaper transport and booking lodging deals than elderly people. Also, gender affects positively on “reduced length” and “closer to home”, but it has not a significant influence in the other alternatives in comparison to “fewer holidays”. Moreover, this paper explores in depth the heterogeneity preferences regarding the cutback alternatives from a regional perspective since households that belong to the same region have a more similar tourism expenditure pattern. Therefore, if tourism expenditure estimations ignore factors related to geographical location of tourists, biased results can be obtained. Preferences for tourism are conditioned by the attributes of the place of residence of the household,

such as climate or region on the coast. For instance, it is interesting to note that as soon as climate improves in the place of residence, the probability of choosing “reduced length” and “cheaper accommodation” increases over the probability of “fewer holidays”. For the rest of cutback alternatives, the probabilities decrease when climate condition in origin improves. The presence of coast in the place of resident only has influence in the decision of “period of travel”, while for the other alternatives there are not significant differences in comparison to fewer holidays. Besides, households react cutting back their tourism expenditure depending on GDP and GDP growth.

Post-estimation analysis highlights the existence of patterns in the cut back alternatives. Firstly, tourist prefers reducing the length of stay. Secondly, they opt to cut back booking a cheaper accommodation. Thirdly, traveling closer to home. Fourthly, taking fewer holidays. Fifthly, changing the period of travel. And lastly, taking cheaper mean of transport. Since not all these alternatives equally affect on the destinations, this paper groups the economizing strategies depending on their intensity. Reduced length and cheaper accommodation are directly related to the on-situ destination expenditure (full effects). On the other hand, fewer holidays and closer to home may or not affect directly on the destination (partial effects). Lastly, cheaper transport and period of travel are fuzzier than the partial effects regarding their impact on destination (other effects). According to the results, the probability of cutting back through economizing strategies which directly affect on destinations (full effects) is 47,4%. While the rest of the probabilities, partial effects and other effects, account for 35.4% and 17.2%, respectively. Destinations need to anticipate what alternatives are more crucial to manage the effects of the economic crisis properly. Policymakers and tourism manager need to adequate their offer taking into account the importance of the full effect over the other effects during the crisis.

The analysis of the determinants of the cutback decision and the hierarchy in the cutback alternatives by countries could permit to tourism managers to work in two levels in an economic crisis context. Firstly, knowing which alternatives are preferred and, based on such findings, differentiating among socioeconomic profiles that condition such decisions. For instance, it would be efficient for a tourism manager in traditional host countries such as Portugal, Spain, France or Italy adequate its offer focusing on the “reduced length” and “cheaper accommodation” alternatives (full effects). Moreover, such tourism offer should be oriented to male young tourist in bad climate regions. This profile and many others could ease the matching between tourism outputs and tourism demand and achieve a more steady employment rate in the long term.

Further research on other issues is necessary. Results obtained in this paper can be improved, considering methodologies that can deal with the intensity of the cutback. Moreover, extending this model for analyzing the relationship between different service suppliers provide useful information for destinations. In this research, shorter vacations does not mean necessary that the number of trips remain constant, since the tourists provide in the questionnaire the most important alternative for cutting back their

expenditure. Thus, households may reduce their expenditure combining shorter vacations with more holidays. Such behavior could imply higher operational cost for the accommodation establishments, but higher number of flights for the travel industry. Higher pressure on travel industry could have environment implications for air pollution and emission of greenhouse gases, which should be considered by environmental legislation.

References

- Agnew. M.D.. & Palutikof. J.P. (2006). Impacts of short-term climate variability in the UK on demand for domestic and international tourism. *Climate Research*, 21: 109–120.
- Alegre. J.. & Pou. L. (2004). Micro-economic determinants of the probability of tourism consumption. *Tourism Economics*, 10(2): 125–144.
- Alegre. J.. Mateo. S.. & Pou. L. (2013). Tourism participation and expenditure by Spanish households: The effects of the economic crisis and unemployment. *Tourism Management*, 39: 37–49.
- Alegre. J.. Mateo. S.. & Pou. Ll. (2013). Tourism participation and expenditure by Spanish households: the effect of the economic crisis and unemployment. *Tourism Management*, 39: 37–49.
- Brent-Ritchie. J.R.. Amaya-Molinar. C.M.. & Frechtling. D.C. (2010). Impacts of the world recessions and economic crisis on tourism: North America. *Journal of Travel Research*, 49: 15–45.
- Bronner. F & Hoog. R. (2012). Economizing strategies during an economic crisis. *Annals of Tourism Research*. 39(2). 1048–1069.
- Bronner. F.. & de Hoog. R. (2012). Economizing strategies during an economic crisis. *Annals of Tourism Research*, 39(2): 1048–1069.
- Carlsen. J.C.. & Hughes. M. (2008). Tourism market recovery in the Maldives after the 2004 indian ocean tsunami. *Journal of Travel & Tourism Marketing*, 23: 2–4.
- Eugenio-Martin. J. L.. & Campos-Soria. J. A. (2010). Climate in the region of origin and destination choice in outbound tourism demand. *Tourism Management*, 31(6): 744–753.
- Eugenio-Martin. J. L.. & Campos-Soria. J. A. (2011). The role of income and the substitution pattern between domestic and international tourism demand. *Applied Economics*, 43(20): 2519–2531.
- Eugenio-Martin. J. L.. & Campos-Soria. J. A. (2014). Economic crisis and tourism expenditure cutback decision. *Annals of Tourism Research*, 44: 53–73.
- Eugenio-Martin. J. L.. Sinclair. M. T.. & Yeoman. I. (2005). Quantifying the effects of tourism crises: An application to Scotland. *Journal of Travel and Tourism Marketing*, 19(2/3): 23–36.
- Fleischer. A.. Peleg G.. & Rivlin. J. (2011). The impact of changes in household vacation expenditures on the travel and hospitality industries. *Tourism Management*, 32(4): 815–821.

- Frechtling, D.C. (1982). Tourism trends and the business cycle. *Tourism Management*, 3(4): 285-290.
- Gokovali, U., Bahar, O., & Kozak, M. (2007). Determinants of length of stay: a practical use of survival analysis. *Tourism Management*, 28(3): 736–746.
- Hall, C. M. (2010). Crisis events in tourism: subjects of crisis in tourism. *Current Issues in Tourism*, 13(5): 401–417.
- HarrisInteractive (2009). Adults in five largest European countries and the US will take fewer vacation days this summer but won't let economic crisis spoil their vacations. Press release, Harris Interactive, Rochester NY, June 26th, www.harrisinteractive.com.
- Heckman, J. (1976). The common structure of statistical models of truncation, sample selection and limited dependent variables models and a simple estimator for such models. *Annals of Economics and Social Measurement*, 5: 475–492.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47: 153–161.
- Henderson, J.C. (1999). Managing the Asian financial crisis: tourist attractions in Singapore. *Journal of Travel Research*, 38: 177–181.
- Hong-bumm, K., Jung-Ho, P., Seoul, K.L., & SooCheong, S.J. (2012). Do expectations of future wealth increase outbound tourism? Evidence from Korea. *Tourism Management*, 33(5): 1141–1147.
- Hung, W-T., Shang, J-K., & Wang, F-C. (2013). A multilevel analysis on the determinants of household tourism expenditure. *Current Issues in Tourism*, 16(6): 612–617.
- Lanza, A., Temple, P., & Urga, G. (2003). The implications of tourism specialisation in the long run: an econometric analysis for the 13 OECD economies. *Tourism Management*, 24: 315–321.
- Law, R. (2001). The impact of the Asian financial crisis on Japanese demand for travel to Hong Kong: a study of various forecasting techniques. *Journal of Travel & Tourism Marketing*, 10 (2-3): 47–65.
- Madison, D. (2001). In search of warmer climates? The impact of climate change on flows of British tourists. *Climatic Change*, 49: 193-208.
- Mao, C-K., Ding, C.G., & Lee, H-Y. (2010). Post-SARS tourist arrival recovery patterns: an analysis based on a catastrophe theory. *Tourism Management*, 31: 855–861.
- Melenberg, B., & Van Soest, A. (1996). Parametric and semi-parametric modeling of vacation expenditures. *Journal of Applied Econometrics*, 11(1): 59–76.

- Mergoupis.T.. & Steuer. M. (2003). Holidays taking and income. *Applied Economics*, 35(3): 269-284.
- Mieczkowski. Z. (1985). The Tourism Climatic Index: A method of evaluating world climates for tourism. *Canadian Geographer*, 29(3): 220–233.
- O'brien. A.(2012). Wasting a good crisis. Developmental failure and irish tourism since 2008 *Annals of Tourism Research*, 39(2): 1138–1155.
- Okumus. F.. Altinay. M.. & Arasli. H. (2005). The impact of Turkey's economic crisis of February 2001 on the tourism industry in Northern Cyprus. *Tourism Management*, 26: 95–104.
- Okumus. F. & Karamustafa. K. (2005). Impact of an economic crisis. Evidence from turkey. *Annals of Tourism Research*, 32(4): 942–961.
- Olive Research. (2009). *Impact of Economic Downturn on Attitudes and Behaviour of International Tourists to Britain*. London: VisitBritain.
- Page. S. Song. H.. & Wu. D.C. (2012). Assessing the impact of the global economic crisis and swine flu on inbound economic crisis in the United Kingdom. *Journal of Travel Research*, 51(2): 142–153.
- Page. S.. Song. H.. & Wu. D. C. (2012). Assessing the impacts of the global economic crisis and swine flu on inbound tourism demand in the United Kingdom. *Journal of Travel Research*, 51(2): 142–153.
- Papatheodorou. A.. Rosselló. J.. & Xiao. H. (2010). Global economic crisis and tourism: consequences and perspectives. *Journal of Travel Research*, 49(1): 39–45.
- Prideaux. B. (1999). Tourism perspectives of the Asian financial crisis: lessons for the future. *Current Issues in Tourism*, 2(4): 279–293.
- Prideaux. B. (1999). Tourism perspectives of the Asian Financial Crisis: Lessons for the future. *Current Issues in Tourism*, 2(4): 279–293.
- Riley. M.. Ladkin. A.. & Szivas. E. (2001). *Tourism employment. Analysis and planning*. Channel view. Aspect of Tourism.
- Sheldon. P.. & Dwyer. L. (2010). The global financial crisis and tourism: Perspectives of the academy. *Journal of Travel Research*, 49(1): 3–4.
- Sheldon. P.. & Dwyer. L. (2010). The global financial crisis and tourism: Perspectives of the academy. *Journal of Travel Research*, 49(1): 3–4.
- Skrondal. A.. & Rabe-Hesketh. S. (2004). *Generalized latent variable modeling*. Chapman & Hall/CRC.

Smeral. E. (2003). A structural view of tourism growth. *Tourism Economics*, 9(1): 77–93.

Smeral. E. (2009). The impact of the financial and economic crisis on European tourism. *Journal of Travel Research*, 48(1): 3–13.

Smeral. E. (2010). Impacts of the World recession and economic crisis on tourism: Forecasts and potential risks. *Journal of Travel Research*, 49(1): 31–38.

Song. H. & Lin. S. (2010). Impacts of financial and economic crisis on tourism in Asia. *Journal of Travel Research*, 49(1): 16–30.

Wang. Y.S. (2009). The impact of crisis events and macroeconomic activity on Taiwan's international inbound tourism demand. *Tourism Management*, 30: 75–82.