



## **ENVIRONMENTAL CONCERN IN TOURISM FROM A CROSS-NATIONAL PERSPECTIVE**

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## 1. Purpose

Contributions to a better understanding of tourists' attitudes to sustainable tourism development are necessary. This paper uses a micro and macro perspectives simultaneously, through a multilevel approach, which may be helpful for understanding how the characteristics of the tourists of each country (compositional effect) and how the country characteristics (contextual effect) can affect the proportion of tourists that consider environment in their holiday decisions. The estimates and the postestimation analysis allow to check several hypotheses regarding the contextual and compositional effects:

First, we check the so-called “*affluence hypothesis*”, according to which people in wealthier nations are more willing to make financial effort to protect the environment. Second, we check the “*challenge-response hypothesis*”, which states that environmental protection is higher when people are confronted with objective environmental problems in its country or region, such as air quality or natural disasters. Third, we analyze the “*postmaterialist hypothesis*” according to which the emergence of environmental concern in the last decades are related to gradual cultural changes from materialist to post-materialist values. Finally, we investigate differences between pro-environmental attitudes when tourist decide to go on holiday domestically or abroad, in relation to the so-called as “*attribution hypothesis*”.

## 2. Design, Methodology or Approach

The analysis is carried out for EU-27 countries combining micro-data provided by households and macro-data belonged to different international surveys and statistics. Micro-data corresponds to Flash Eurobarometer 281 drawn from the European Commission and data from the European Value Survey. Macro-data considered in the study was collected from Eurostat, the Environmental Sustainability Index in collaboration with the World Economic Forum and the United Nations Environment Program.

In general, environmental support by households exhibit a particular type of grouped structure. Specifically tourists from the same country share common characteristics, due to economic, political and cultural conditions that characterize such country. Let us then consider a two-level structure where individuals,  $i$  (first level), are nested into countries,  $c$  (second level). It is supposed a binary response about the environmental attitudes for each individual. Since the outcome is a dichotomous variable, the most appropriate multilevel analysis is a Two Level Random Intercept Logistic Model. We propose three specifications: First, a null model without explanatory variables (Model 1). Model 2, which depends on a vector of individual characteristics and a Model 3 with combines micro and macro variables.

## 3. Results/Findings

The results of the estimation of the random intercept logistic models are carried out by maximum likelihood (ML) method using adaptive quadrature (by Stata). A general finding from the analyses indicated that significant variance exists within and among nations in the level of environmental support. Regarding the compositional effect, gender, age and educational attainment have been identified as consistent predictors of environmental support. Women are keener on

considering environment in their holiday decisions. Education level is positively related. However, age present a nonlinear pattern as a consequence of life-cycle effects, which simply reflect differences between priorities of young and old people. Motivations for travelling also play a key role on environmental support. Those tourists interested both in “social considerations” and “safety and security” on the destination, increase their probabilities of considering environmental issues by 163.41% and 46.43%, respectively. Our results also support the *attribution hypothesis* because environmental concerns of tourists when travelling domestically is 15.27% higher than those travelling abroad. Regarding the contextual effect, the *affluence hypothesis* is rejected because there is a negative nonlinear relationship between per capita GDP and the probability of tourism environment support. We second find no conclusive evidence for the *challenge-response hypothesis* because some indicators of environmental quality are negatively related to higher levels of environmental concern, but not others. Finally, our results clearly support the *postmaterialist hypothesis*, because the cultural and social change from materialist to postmaterialist values are positively related to tourism environmental concern in the sample.

**Table 1.** Estimates from random intercept logistic regression

	Model 1	Model 2	Model 3
<b>Intercept</b>	0.04334***	-0.9046***	1.6318***
<b>Individual-level regressors</b>			
Gender (male=1)		-0.1739***	-0.1726***
Age		0.0208***	0.0211***
Age squared		-0.0020***	-0.0020***
Education		0.0191***	0.0189***
<b>Motivations for travelling</b>			
Service quality		0.1321***	0.1354***
Budget		-0.0897**	-0.0912**
Eco-friendliness		0.9685***	0.9590***
Social considerations		0.0854*	0.0897*
Safety and security		0.3813***	0.3800***
<b>Type of destination</b>			
Travelling domestically		0.1421***	0.1402***
<b>Contextual-level regressors</b>			
GDP pc (PPS)			-0.0002**
GDP pc (PPS) squared			4.63e-10**
GDP growth			0.0252***
Postmaterialism			0.1754***
<b>Environmental quality</b>			
Water quality			-0.0393***
Air quality			1.10e-08***
N° of protected areas			0.0197**
Var (constant) $\sigma_u^2$	0.1894	0.1920	0.0395
VPC (%)	5.44	5.52	1.19
LR test	796.77	701.09	98.38

#### 4. Conclusions

The main findings obtained in this paper are congruent with the necessity of simultaneously assessing the effects of individual and contextual levels variables on the environmental support across European countries. Estimates demonstrate that tourists from different European countries present a heterogeneous pattern regarding the environmental support. Northern European countries like Denmark, Ireland, United Kingdom and The Netherlands show the lowest predicted probabilities, whereas Southern and Eastern countries like Romania, Poland or Lithuania, show the highest. These results will be useful for designing policies to increase the environmental support in the tourism sector.