

International Tourism Demand: the Italian Tourist Flows to Ireland⁽¹⁾

La Domanda di Turismo Internazionale: gli Italiani in Irlanda

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Riassunto: Questo studio identifica le determinanti degli arrivi di turisti italiani in Irlanda usando un modello di regressione. Reddito, prezzi relativi, tasso di cambio, spese di marketing e una dummy sono incorporate nel modello. I risultati empirici mostrano che i coefficienti dei prezzi relativi e delle spese di marketing sono stati trovati significativi ed elastici. I risultati di questa analisi forniscono interessanti informazioni di destination marketing.

Keywords: Tourism demand, Irish tourism, Multiple regression.

1. Introduction

Tourism is one of the world's major industries and in recent times its social and economic benefits have grown significantly and consistently. As tourism industry is highly competitive, destinations are more concerned about variables that influences tourism movements and moreover, in order to take advantage of tourism effects most destinations have implemented appropriate strategic and operational marketing activities and increased marketing expenditure. Although, West European countries and North America have dominated previous research (Crouch, 1994), with more than one hundred empirical studies among these only few attempts have been done to evaluate the marketing expenditure impact (eg. Crouch, Schultz and Valerio, 1992; Lee, 1996) and moreover very scarce attention has been paid on identifying the determinants of international demand in the Irish market (eg. Barry and O'Hagan, 1972). The purpose of this study is to redress this situation in the Irish context analyzing both the importance of different determinants in explaining variations in tourism demand and the effect of Bord Fáilte's⁽²⁾ marketing expenditure. This empirical study is a country-to-country regression model as it examines the outbound tourism demand from Italy to Ireland. Italy is the fifth most important market for Ireland and its growth is surprising if compared to other European origin countries. In this respect, the purposes of this study are to (a) identify major explanatory variables of Italian tourist arrivals to Ireland through a regression model; and (b) investigate the effect, on Italian market, of marketing variable by incorporating Bord Fáilte's marketing expenditure.

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² Bord Fáilte is the Irish Tourist Board.

2. Model Specification and Estimation Procedure

Based on a review of literature in this study the authors selected income, relative prices, marketing expenditure and dummy variable (in order to evaluate terrorism effect) as the important determinants of Italian tourism demand to Ireland. Preliminary estimation indicated that the double-logarithm forms fitted the data better than did linear forms in terms of expected signs and statistical significance. Indeed, this functional form has had good empirical performance in most of the previous studies (Lee, 1996). Secondary data were used and the model was estimated using annual time series from 1989 to 2000. This period and frequency were chosen because they provided the most consistent data set available to the authors at the time of writing. The *dependent variable* was measured as the number of total arrivals from Italy to Ireland divided by the Italian population in the same year. Data were supplied by Bord Fáilte and they are estimated based on (1) information from the Central Statistical Office's Country of Residence Survey - which is the best estimation and is based on count at frontiers - and (2) Bord Fáilte's Survey of Overseas travellers. The choice of the *explanatory variables* was based on a meticulous analysis of previous studies findings but it was also influenced and limited by data and time constraints. *Income*. According to the economic theory, income is one of the most important variables in tourism demand and for this reason it was considered in this study. The Italian GDP was considered as the most representative variable for Italian income; it was included in the model in per capita form and at 1995-price. ISTAT supplied the Italian GDP and population data. *Relative prices*. For the countries in consideration it was decided to include only the price of tourism in the form of cost of living in the destination country and in the substitute country. Moreover, as Italians tend to travel more in Italy than anywhere else, this study assumed that domestic tourism was the best and the only real substitute product in modeling Italian tourism demand. An exchange-rate-adjusted-consumer-price-index was created dividing the Irish Consumer Price Index for the Italian Consumer Price Index and multiplying for the Exchange Rate between Italian lira and the Irish pound (Witt and Witt, 1992). Central Statistical Office of Ireland and ISTAT supplied data used herein. Both of CPIs were considered at 1995-price. The exchange rates used here were obtained from the Italian Office for Exchange (Ufficio Italiano Cambi). *Marketing expenditure*. Marketing expenditure from the destination country to the origin country was the most important explanatory variable included in the model. Consistent with the previous literature that included marketing activity, it was considered the amount spent in market the destination by the National Tourism Organisations (NTOs) that is in this case Bord Fáilte who furnished the data used herein. In particular, data from 1989 to 1993 are our estimated based on European marketing expenditure while from 1994 the data are effective marketing expenditure in Italy. This variable was also transformed into per capita terms. *Dummy*. A dummy variable was included in order to evaluate the effect of the cease-fire treaty in 1994, between Northern Ireland and the Republic of Ireland, on tourism. The demand function to estimate Italian tourism to Ireland was specified as follows:

$$T_{Ir\ It} = f(I_{It}, CT_{Ir\ It}, M_{Ir\ It}, D, e)$$

where: $T_{Ir\ It}$ is the number of Italian arrivals to Ireland (per capita terms); I_{It} is Italian per capita income; $CT_{Ir\ It}$ is relative prices; $M_{Ir\ It}$ is the marketing expenditure; D is a dummy variable (1 if 1994 and 0 otherwise) and e is the disturbance term.

A general-to-specific process was carried out and the equations were regressed using Ordinary Least Square and attention was paid to the: (a) estimated coefficients both at significance level (t statistic) and sign coherency to the theory; (b) Adjusted R^2 ; (c) F statistic to test the joint significance of all coefficients; (d) SSR, the sum of squared residuals. Initial results and a market analysis of the two countries under investigation showed that the static model could be an appropriate specification for modeling Italian tourists flows to Ireland. The results of this estimate showed that the Static model⁽³⁾ was the most consistent with economic theory and it was parsimonious and encompassed all the other models considered in the analysis (Autoregressive, Leading Indicator, Growth Rate, Partial Adjustment and Dead Start). The Static model was specified as follows:

$$\ln T_{t\ Ir\ It} = \alpha_0 + \alpha_1 \ln I_{t\ It} + \alpha_2 \ln CT_{t\ Ir\ It} + \alpha_3 \ln M_{t\ Ir\ It} + \alpha_4 D_t + e$$

where the subscript t indicate the current value of the variable at the year t .

The specified model considers tourist arrival as a function of per capita income, relative price, per capita marketing expenditure and a dummy variable. According to the conventional economic and marketing theory the following hypotheses were states: $\alpha_1 > 0$, $\alpha_2 < 0$, $\alpha_3 > 0$ and $\alpha_4 > 0$.

3. Results and discussion

The best empirical results estimated from the equation are:

Table 1 Best empirical results

Static Model	Intercept	Relative Prices	Marketing	R ² adj.	DW Statistic	p-value F
Coefficients	+ 41.563	– 5.243	+ 1.785	0.863	2.418	0.00005
Significance	(0.007)	(0.010)	(0.000)			

Two explanatory variables, relative prices and marketing expenditure, were statistically significant at the 5% level of significance and the signs were found as expected from the tourism demand theory. Using diagnostic tests for autocorrelation, heteroscedasticity, functional form and structural instability rigorous statistical analysis was performed. The model fits the data reasonably well, was correctly specified and showed structural stability. There was no evidence of autocorrelation and heteroscedasticity although a suspicious of multicollinearity can arise, as in all previous studies, but it was unlikely that multicollinearity was serious. The suspect of the endogeneity of the marketing expenditure to the dependent variable was not confirmed by the Wu-Hausman test (Song and Witt, 2000). Results indicate that income and the dummy variable for the cease-fire in 1994 may not be as important for Italians as expected. The estimated coefficient of the relative price is highly statistically significant and its sign is negative as expected. Italian tourism demand to Ireland is highly price elastic, as the absolute value of the price elasticity exceeds unity and this means that an increase of prices of

³ This result is consistent with the previous literature including marketing variable (only eight main studies; for an up-to-date review of these studies see Volo, 2001). Although one could expect a more then one year marketing influence on tourism there is no evidence of that.

1% will result in a decrease of almost 5.2% in arrivals. The variable of marketing expenditure has the expected positive sign and it is highly statistically significant. The results of the current study provide strong evidence of a link between the marketing variable and international tourism. However, NTOs are more interested in the amount of additional tourist expenditure than in the increase of arrivals. Consequently, the relationship between estimated marketing elasticity and its impact in terms of possible additional Italian expenditure during Italian holidays in Ireland was calculated showing an average increase in receipt of 1,222,000⁽⁴⁾ (Irish Pound) when an increase of 1% of marketing expenditure was hypothesised. Moreover, the ratio between increased tourism receipt and the increase in marketing expenditure necessary to generate the increase in receipts is 276:1⁽⁵⁾. This result is in line with the results of Crouch, Schultz and Valerio (1992) and represents the highest benefit/cost ratio calculated to date.

4. Conclusion

The aim of this paper was to identify the determinants of Italian tourism demand to Ireland and to estimate the impact of Bord Fáilte's marketing expenditure on the number of tourist arrivals. Results from the regression analysis indicate income and marketing expenditures as key determinants. The results of the model are consistent with findings of previous studies demonstrating the link between both economic and non-economic factors and tourism demand. Although, it is important to emphasise that caution should be used in interpreting these results overall, they provide some encouraging evidence on the cause-effect relationship between Irish marketing expenditure in Italy and Italian arrivals to Ireland.

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⁴ Result of multiplying increased arrivals by average expenditure per arrival; and based on annual average data 1999-2000.

⁵ Based on annual average data 1999-2000, 1% of marketing expenditure is 4427 (Irish Pound).