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# ENHANCING THE FOREIGN DEMAND FOR AGRITOURISM

JEL classification: L83, Q17, F22

Santeramo Fabio Gaetano\*, Morelli Mariangela\*\*

**Abstract.** *Tourism is a major economic activity in Italy, and a growing sector in a vast majority of Countries. In particular, agritourism is a rapidly evolving sector. Studies on agritourism are increasing in number, although studies on determinants of the international demand for agritourism are still limited. We explore the international demand for agritourism in Italian structures by mean of a panel data approach. We underline the peculiarities of the international demand for agritourism, and the*

*main determinants of small and large flows of foreign tourists.*

*In order to enhance the attractiveness of agritourism, entrepreneurs and policymakers should focus their attention on targeted marketing campaigns that need to take into account the Countries of origin. Our paper aims at moving toward this goal.*

*Keywords: Agritourism, Italy, PPML, Quantile Regression, Gravity model*

## Introduction

A rapid evolutionary process has affected rural areas over the past few decades, leading to deep changes of their traditional socio-economic structure. Agricultural activities have been acknowledged to provide several benefit to the whole ecosystem: in particular, there is an increasing awareness that agricultural activities are multi-functional and that agriculture increases the diversification of economic activities in rural areas (Benton, 2012). The modern rurality contains greater complexity through which it seeks to respond to the new demands of the post-industrial society in terms of food safety, environmental protection, recreational needs and, in general, to improve the quality of life (Debaillleul, 2001; Van Huylenbroeck et al., 2007; Van der Ploeg, 2009). Among the main changes that have affected rural areas in recent decades, agritourism and especially agritourism have rapidly captured the interest of entrepreneurs and policy makers.

The changing scenario of the tourism sector has encouraged the demand for agritourism at national and international level, hence the supply of agritourism is expanding rapidly. agritourism is appealing to a wider range of consumers. Driven by the need to escape from the hustle and bustle of city life, tourists express a high appreciation for the quietness of countryside and small villages, as well as for a more direct contact with the natural environment and the rediscovery of folklore and ancient traditions (Debaillleul, 2001). On the other hand, policy makers have recognized to agritourism a strategic role in fostering the initiation and consolidation of sustainable

\* University of Foggia, Via Napoli 25, 71100, Foggia, Italy - Email: [fabio.gaetano.santeramo@gmail.com](mailto:fabio.gaetano.santeramo@gmail.com)

\*\* Duke University

rural development based primarily on local resources, both material (e.g. the ecosystem services needing protection) and intangible (history, culture, traditions, knowledge, skills) (MEA, 2005; NEA, 2011). agritourism is of crucial importance for several reasons: it helps preserving endangered resources that are likely to disappear (for example, many traditional products) or to be degraded (landscape, rural buildings, etc.) (NEA, 2011; LaPan and Barbieri 2014); it creates opportunities for employment and economic growth in marginal areas; it intensifies the interdependence between rural and urban areas (Benton, 2012). The current CAP reform, and in particular the writing of regional policies (PSR, Piani di Sviluppo Rurale), represents a unique opportunity for analysts and policymakers to reflect on the role of agritourism as catalyst for the economic growth. Our paper is provocative in that direction<sup>1</sup>.

Agritourism has been studied in various contexts (e.g. Carpio et al., 2008; Scarpellini and Polidori, 2009; LaPan and Barbieri, 2014; Marangon, et al., 2013; Santeramo and Morelli, 2015; Capacci, et al. 2015; Santeramo and Barbieri, 2015; Kline et al., 2015)<sup>2</sup>. Yet the lack of a unique definition undermines deeper investigations. Indeed, scientists are still trying to reach a consensus on the definitions of different forms of tourism (Hall and Mitchell, 2005; Tikkanen, 2007; Phillip *et al.*, 2010). The Italian case is peculiar in that the agritouristic activities are regulated by a specific Law (DL 96, 20 February 2006), which defines agritourism as “accommodation and hospitality activities carried out by farmers [...] through the utilization of their own farm in connection with the activities of cultivation of the land, of silviculture, and of the raising of animals”. The presence of a specific regulation represents an ideal framework to analyze agritourism.

Further aspects make the present analysis of particular interest. The Italian rural areas have an extraordinary potential, not yet valorized: notwithstanding the existence of numerous and valuable business initiatives, Italian agritourism lacks an integrated system for agritourism. On the other hand, the expectations of tourists, as well as the demand for integrated services, are considerably growing. In this framework, an analysis of the international demand for Italian tourism is one of the key elements for policymakers and entrepreneurs aiming at improving the attractiveness and the competitiveness of Italian rural areas. The contribution we aim at providing to the specific literature is clear: while Santeramo (2015) analyzed the international demand for Italian agritourism, we complement the study deepening the understanding of aspects that determine incoming flows of foreign visitor in Italian agritourism.

This paper explores two main issues. Firstly, we evaluate the country-of-origin characteristics that are associated with larger arrivals of foreign visitors in Italy. Secondly, comparing the global demand for tourism and the demand for agritourism, we underline the peculiarities of agritourism. To this end, we estimate a gravity-type model on a panel data that covers more than ninety percent of foreign arrivals in Italian structures. By exploring the determinants of international demand for agritourism over time and by underlying the differences across Countries of origin, we aim at providing valuable information to entrepreneurs and policymakers.

The remainder of the paper is as follows: next section summarizes the current trends of the international demand for agritourism in Italy; the third and fourth paragraph are respectively dedicated to the description of the methodology and of the dataset; the last two sections comment the empirical results and provide conclusive remarks.

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<sup>1</sup> The interested reader may refer to Sotte (2014), De Castro et al. (2014) as excellent reviews of the reform of rural policy.

<sup>2</sup> The interested reader may refer to Brown (2005) for an excellent, although dated, bibliography of agritourism papers.

## International demand for Italian agritourism

agritourism is growing very rapidly driven by the increasing globalization and the sharp decline in travel costs (e.g. Pompl and Lavery 1993; Tchetchik et al., 2008), and by the rapid technological advances in agriculture that have pushed workforce to abandon the primary sector for the industry and the third sector (Serra et al., 2005; Tchetchik et al., 2008), while searching for alternative sources of income such as agritourism business (Butler, Hall, and Jenkins 1998).

The agritourism in Italy confirms those trends. During the last decade, the number of foreigner visitors in Italy has increased by two hundred percent. Indeed, more than one third of tourists hosted by Italian farmhouses are of foreign nationality and their number has considerably grown. The three hundreds thousands visitors registered in 2000 is small considering that the foreign customers of Italian agritourism have been more than eight hundreds thousands in 2010. The demand for Italian agritourism is very heterogeneous. The sector attracts visitors from all over the world, although the main partners (Germany, United Kingdom, USA, Netherlands, France, Switzerland) account for eighty percent of total international demand of agritourism in Italy<sup>3</sup>.

German tourists are the most numerous: they accounts for fifty percent of the total international demand. A large number of tourists (8 percent of the total international demand) travels from the USA and Canada. Among the European citizens, English and Dutch visitors account, respectively, for 7 and 6 percent of the total. More modest is the demand from French and Swiss citizens, accounting for 5 percent each.

The arrivals of German tourists showed a decline, while streams of tourists from other Countries have increased, in particular from Countries that have had little relevance so far. In particular, differently from a general trend (+5.8 percent), arrivals from Germany have declined by 4 percent. Such a decreasing tendency is shared only by Israeli visitors, sensibly curtailed from 2002. In all other cases, the trend is positive. The expansion of the demand is particularly significant in rich (e.g. the United States of America, Switzerland) and close Countries (e.g. Spain, France, Czech Republic). The determinants of these trends are not a clear cut: why other rich and close Countries (e.g. Germany or Netherlands) show different trends is unclear.

## The methodology

The Gravity Model is a workhorse in applied analysis of international trade and has been widely adopted to analyze trade (Rose, 2002; Dal Bianco et al., 2015), migration (Karemera et al., 2000) and tourism flows (Fourie and Santana-Gallego, 2011; Santeramo and Morelli, 2015)<sup>4</sup>.

According to the gravity model, the bilateral volume of flows among countries is proportional to the “mass” of the Countries (proxied by Gross Domestic Product per capita, Population, or combinations of those variables), and inversely related to their respective distance:

$$(1) \quad X_{ijt} = G Y_{it}^{\alpha} Y_{jt}^{\beta} D_{ij}^{\delta}$$

where G is a scale factor,  $X_{ijt}$  represents the trade or migration flow,  $Y_i$  and  $Y_j$  proxy the eco-

<sup>3</sup> Further insights on international demand for tourism in Italy can be found in Bertella (2011), Massidda et al. (2014), Santeramo (2015).

<sup>4</sup> The interested reader may refer to the extensive literature of gravity modelling in tourism studies: e.g. Gil-Pareja et al. (2007), Eryigit et al. (2010), Arita et al. (2011), Massidda et al. (2014).

conomic masses of Country of origin (i) and Country of destination (j), and  $D_{ij}$  is the distance between the two Countries. After log-linearization the gravity model can be rewritten as follows:

$$(2) \ln X_{ij} = \alpha_0 + \alpha \ln Y_i + \beta \ln Y_j - \gamma \ln D_{ij} + \varepsilon_{ij}$$

This fundamental model has been expanded to take into account other determinants of international flows. Several candidates should be taken into account: population, income per capita, exchange rates, commercial agreements, and the presence of a common language or colonial links.

In order to correctly estimate the gravity model it is important to account for the presence of zero flows and heteroskedasticity in the error term affect the gravity-type estimations. We follow Silva and Tenreyro (2006) and estimate a pseudo-Poisson Maximum Likelihood estimator (PPML), with the following set of first-order conditions:

$$(3) \sum_{i=1}^k (X_k - \exp(Z_k \hat{\alpha})) = 0$$

where  $X_k$  represents trade flows,  $Z_k$  is the full vector of explanatory covariates,  $\exp(Z_k \hat{\alpha})$  is the expected value of  $X_k$  conditional on covariates (i.e.  $E[X_k | Z_k]$ ). Wooldridge (2002, p. 676) argues that PPML  $Z_k$  is consistent if the conditional mean is correctly specified, that is if  $E[Z_k] = \exp(Z_k \hat{\alpha})$  holds. The property applies regardless of the count data adopted.

Lastly, we introduce a relatively novel approach for tourism studies: we estimate gravity-type models by using quantile counts regression techniques (Machado and Silva, 2005). To the best of our knowledge, this is one of the few empirical application of quantile regression in tourism economics. Standard linear regression techniques synthesize the average relationship among dependent and independent variables, based on the conditional mean function  $E[Z_k]$ . Such a relationship is able to provide a narrow view: we might be interested in describing the relationship at different points in the conditional distribution of  $X_k$ . For instance, the median function  $Q_q[Z_k]$  describe the relationships at the median point (or 50th percentile, or quantile Q2), of the empirical distribution. Moreover, the quantile regression can be used to model conditional quantiles of the joint distribution of  $X_k$  and  $Z_k$  at selected quantiles. A further advantage is that quantile regression is more robust to outliers than least squares regression, does not rely on assumptions on the parametric distribution of the error process. Finally, the quantile regression estimator is asymptotically normally distributed (Koenker, 2005).

## The dataset

The data-set span from 1998 to 2010 and includes data on thirty-three countries so as we account for more than ninety percent of the total agritourism flows to Italy. The dependent variable is the number of arrivals of foreigners to Italian agritouristic structure. The data was extracted from the database of the Italian Institute of Statistics (ISTAT). The total number of agritouristic structures and the number of beds are accurate proxies of the supply. The gross domestic product at purchasing power parity per capita, expressed in current U.S. dollars, was extracted from the World Economic Outlook Database of International Monetary Fund. Data for population, in millions of inhabitants, was obtained from the FAO database. The geographical distance among capitals, expressed in kilometers, is computed using the Haversine formula and coordinates from the extracted from the CIA's The World Factbook.

**Tab. 1 - Definition of variables and descriptive statistics**

Variable name		Mean	Std.dev
Arrivalsjt	Foreign tourists in Italian structures from country j in year t (in .000 absolute value).	187.6	44.1
Arrivals_AGRjt	Foreign tourist in Italian agritourisms from country j in year t (in .000 absolute value).	13.4	37.9
Per-capita GPD jt	GDP per capita (current U.S. dollars) of country j, year t	22.4	16.4
Population jt	Total population (in millions) of country j, year t	99.1	262.3
Distanceij	The distance between Italy and country j in .000 kilometers	4.2	4.5
Structuresit	Number of Italian touristic structures (.000) in year t	112.7	29.1
Agritourismsit	Number of Italian agritouristic structures (.000) in year t	9.8	4.2
Euro j	1if country j has adopted the euro, 0 otherwise	0.30	0.46
Schengen agreement j	1if country j has signed Schengen agreement, 0 otherwise	0.16	0.37
Agricultural-Popjt	Agricultural population (in percent) of country j, year t	3.6	7.6
Rurality jt	Agricultural population (in percent) of country j, year t	26.5	13.6

*The statistics are computed from a pooled sample.*

A common practice in gravity model estimation to model the supply, is to use GDP to proxy output capacity. Nevertheless, while total GDP is appropriate for aggregated data, it may overestimate the effect of the Italian supply for tourism. We have proxied Italian supply with two specific variables: the number of touristic and agritouristic structures<sup>5</sup>. We expect a positive relationships with the number of arrivals and the total duration of stay.

On the demand side, the countries of origin’s purchasing capacity has been proxied by per capita GDP at PPP, while the effect of the economy size is captured by the total population. We expect a positive sign for both determinants. The expected signs of the variables “Rurality” and “Agricultural-Pop” may be ambiguous. In line with Santeramo (2015), we expect a negative relationship: the higher the urbanization of the Country of origin, the higher the demand for agritourism would be; in other terms, the higher the percentage of population living in rural areas, and working in agricultural sector, the lower the demand for agritourism.

Frictions are a major issue in international dynamics. The geographical distance between Italy and the Country of origin proxies travel costs. Although distance is the main friction to international flows (Disdier and Head, 2008), transaction costs may play a significant role: dummies on international agreements are adopted to proxy those costs. The variable “Euro” is equal to one if the country of origin has adopted the Euro currency, and zero otherwise. Sharing the same currency should facilitate movements of tourists. The variable “Schengen agreement” is one if the county of origin has signed the agreement, zero otherwise<sup>6</sup>. The agreement may have enhanced touristic flows. While these dummies are relevant for international trade, we cast doubts on their relevance in this niche. If and how effective are these friction for the international demand of agritourism is an empirical question.

<sup>5</sup> We have also included the total number of beds in touristic and agritouristic structures. The results are not different, therefore we have considered only the number of structures for the present analysis.

<sup>6</sup> EU Accession Negotiations began on 31 March 1998 for Cyprus, Estonia, Hungary, Poland, the Czech Republic and Slovenia. On 15 February 2000 the agreements has been expanded to include Bulgaria, Latvia, Lithuania, Malta, Romania and Slovakia.



## Results

The results on the factors that influence the international demand for Italian agritourism are presented in Table 2. We present the final specification on four different dependent variables: number of arrivals and duration of stay within the touristic sector, number of arrivals and duration of stay within the agritouristic sector.

Tab. 2 - Determinants of foreign arrivals in Italian structures				
Dependent variable:	Touristic sector		Agritouristic sector	
	Arrivals	Duration of stay	Arrivals	Duration of stay
<b>Supply</b>				
Number of structures	0.027 (1.34)	0.015 (0.86)		
Number of agritourism			0.139 (6.49)**	0.090 (5.05)**
<b>Demand</b>				
Per-capita GDP	0.001 (0.19)	0.000 (0.04)	0.016 (2.50)*	0.011 (2.06)*
Population	0.062 (13.07)**	0.056 (13.07)**	0.077 (11.15)**	0.063 (10.40)**
Rurality	-0.002 (6.02)**	-0.003 (6.73)**	-0.005 (9.27)**	-0.004 (9.00)**
Agriculture*Rurality	-0.011 (7.17)**	-0.008 (6.12)**	-0.017 (7.06)**	-0.013 (6.62)**
<b>Frictions</b>				
Distance	-0.102 (13.28)**	-0.112 (16.88)**	-0.130 (11.03)**	-0.116 (11.28)**
Schengen agreement	0.036 (2.92)**	0.030 (2.57)*	0.073 (3.96)**	0.058 (3.76)**
Euro	0.019 (1.50)	0.011 (0.84)	0.025 (1.39)	0.025 (1.58)
Constant	2.294 (9.62)**	2.719 (13.15)**	0.963 (4.34)**	1.671 (8.96)**
R2	0.59	0.63	0.59	0.57
<b>Observations</b>	466	466	466	466
+ p<0.1; * p<0.05; ** p<0.01				

Results show that the Italian supply is a major determinant for agritourism (the variable is statistically significant at 1% level), but this is not generally true for tourism. Intuitively, being a small share of Italy's touristic sector, demand for agritourism can be incremented by expanding the supply. Therefore, Italy should increase the proportion of agritourism with respect to the usual touristic structures in order to increase the international demand for tourism in Italy<sup>7</sup>.

The results for the demand side are of particular interest. All variables are statistically significant (except for "Per-capita GDP" in touristic sector), but not all determinants have the same importance. We found that the richer the Countries, and the richer the tourists, the higher the

<sup>7</sup> Our results are consistent with those in Santeramo (2015).



demand for Italian agritourism. This is not clear cut for the whole touristic sector. The issue is further discussed below. Moreover, the larger the population, the higher the demand for tourism in Italy. Our study suggests Italian entrepreneurs intending to expand their business to target populous countries, possibly with a solid growth in income per-capita. The variables “Rurality” and “Agricultural-Pop” show that the higher the percentage of population living in rural areas (say 1% increase), and working in agricultural sector, the lower the demand for tourism. The effect is twice as large for agritourism<sup>8</sup>.

As for the frictions in international tourism, we found that “Distance” is negative and statistically significant at 1% level. The coefficients suggest that distance affect rural demand more than general demand for tourism, but is equally influential on the duration of stay.

While the variable “Euro” is not statistically significant, the “Schengen agreement” have enhanced international demand for tourism. The results reinforce the findings in Santeramo (2015). Relying on a larger dataset we have been able to assess the impact of those variables with a larger degree of accuracy.

**Tab. 3 - Quantile regression of determinants on arrivals of foreign visitors in Italian structures**

Dependent variable:	Touristic sector			Agritouristic sector		
	Q1	Q2	Q3	Q1	Q2	Q3
<b>Supply</b>						
Number of structures	0.044 (2.05)*	0.051 (2.13)*	0.030 (1.01)			
Number of agritourism				0.158 (5.41)**	0.192 (6.06)**	0.116 (4.87)**
<b>Demand</b>						
Per-capita GPD	0.001 (0.53)	-0.000 (0.03)	0.009 (2.17)*	0.023 (4.25)**	0.006 (0.68)	0.032 (5.96)**
Population	0.067 (8.26)**	0.076 (13.02)**	0.054 (5.70)**	0.070 (5.36)**	0.081 (6.87)**	0.083 (12.30)**
Rurality	-0.003 (6.26)**	-0.002 (4.70)**	-0.004 (5.35)**	-0.006 (8.67)**	-0.008 (7.29)**	-0.004 (3.99)**
Agriculture*Rurality	-0.009 (4.18)**	-0.013 (4.28)**	-0.006 (2.38)*	-0.012 (4.04)**	-0.005 (1.15)	-0.021 (7.16)**
<b>Frictions</b>						
Distance	-0.125 (15.49)**	-0.133 (15.52)**	-0.093 (7.03)**	-0.140 (6.16)**	-0.182 (9.96)**	-0.100 (7.77)**
Schengen agreement	0.022 (1.28)	0.026 (1.54)	0.022 (1.41)	0.044 (1.53)	0.103 (2.84)**	0.039 (1.80)+
Euro	-0.011 (0.69)	-0.005 (0.30)	0.053 (3.59)**	-0.018 (0.62)	-0.003 (0.09)	0.045 (2.14)*
Constant	2.231 (9.05)**	2.106 (6.59)**	2.277 (6.39)**	0.907 (2.98)**	0.876 (2.93)**	0.798 (3.56)**
<b>Observations</b>	466	466	466	466	466	466

+ p<0.1; \* p<0.05; \*\* p<0.01

<sup>8</sup> For instance, dwellers of low rural Countries, such as those from Belgium, Luxembourg, Australia, Israel, Argentina, United Kingdom, Germany, Venezuela, New Zealand, Denmark, Brazil, Sweden, are more likely to be customers of Italian agritourism. *Ceteris paribus*, tourists from South Africa, Slovak Republic, Portugal, Slovenia and China (the most rural Countries in our sample) are less likely to choose Italian agritourism for vacation.

Table 4 summarizes the estimation by mean of quantile regressions. We present the results obtained at three quantiles: the 25<sup>th</sup> percentile, the 50<sup>th</sup> percentile and the 75<sup>th</sup> percentile. A vast majority of results are confirmed, other deserve further discussion. In particular, the relationships with number of structures and agritourisms and distance are stronger at median point than at different quantiles. This implies that the level of income and travel costs are not major determinants in explaining small and large flows. Put differently, the international demand for agritourism should be enhanced by promoting marketing campaigns in distant and income-growing Countries.

## Conclusions

The rapid expansion of agritouristic supply and of the demand for agritourism have motivated the present analysis. Our empirical investigation provides interesting insights for at least two reasons. Firstly, Italy is a major destination for international tourists from all over the world. Secondly, agritourism in Italy has expanded much more rapidly than the entire touristic sector, posing strong foundations for an empirical analysis of the determinants of international demand for agritourism. We have gravity-type models to explore the determinants of international demand for Italian agritourism. Quantile count specifications have also been estimated.

Our results are consistent with those in Santeramo (2015), and add further insights. We found that, while the touristic sector is mature in Italy, the agritouristic sector is a niche that would benefit from an expansion of the supply. Entrepreneurs should explore the potential gains in agritourism, and policymakers should promote the diversification of the touristic offer. Richer and growing Countries are the right targets. Moreover, the larger the urbanization, the higher the probability to attract new tourists would be. Obviously, these considerations, and the relative policy or business recommendations, are stronger for closer Countries.

The great turmoil that is animating Italian, and EU, agriculture during these months call for new interventions to promote agritourism. The current debate on the PSR (*Piani di Sviluppo Rurale*) represents a unique occasion to help the primary sector to exploit the opportunities provided the reformed Common Agricultural Policy. Although analyzing regional policies is beyond the scope of the present article, our findings will help policymakers currently debating on the future for agritourism.

The analysis is not exempt from limitations. Firstly, as recently pointed by Guizzardi and Bernini (2012), underreporting is an important issue in official sources on tourism. The authors alert that the bias is as large as 16%, on average, over the period 2007-2009, suggesting to explicitly consider this measurement error into account. Indeed, underreporting would generally weaken the significance level of our estimates, leaving the direction of causality unaltered. Therefore, the implications we provide are still valid. Secondly, the analysis is Country-specific and results cannot be directly generalized. Indeed, the peculiarity of the agritourism complicates the feasibility of empirical analysis, limiting the feasibility of comparing the results with existing literature. However, this apparent weakness makes it valuable our investigation in that it adds novelty to the current knowledge in tourism's economics, leaving open the debate to future researches.

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