Understanding the Link between Regional Characteristics and Geographical Indications: an Infrequency of Purchase approach

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Introduction

The use of geographical indications (GIs) throughout Europe varies widely, especially between Northern and Mediterranean countries. However, differences emerge also at the national level, where some areas are more prone to register GI products than others. Authors have repeatedly tried to identify which factors are connected with such differences. So far, however, studies focused mainly on one or **few factors** at a time, and were usually based on **few products or regions**. As a consequence, the external validity of existent studies is low and a more general understanding still lacks.

Measuring differences

To measure the differences in the propensity of applying for a GI we used an **index** that weights the number of submissions in each **NUTS3 region** in Italy, France and Spain by the area where the production of the submitted GI can take place. Only GIs whose **agricultural phase** must take place in the area of origin were considered.

$$SI_i = \sum_{t=2005}^{2015} \frac{\sum_{m_i}(n_{m_i,t} \cdot UAA_{m_i,2010})}{UAA_{i,2010}}$$

n: number of GI submissions
i: NUTS3 region
m_i: municipality of the ith region
t: year
UAA: utilised agricultural area

Objective

The objective of our study is to provide a **comprehensive and quantitative understanding** of which factors affect the propensity of different areas to use GI schemes. Moreover, we also explore whether and how different **national contexts** may alter the role played by those factors.
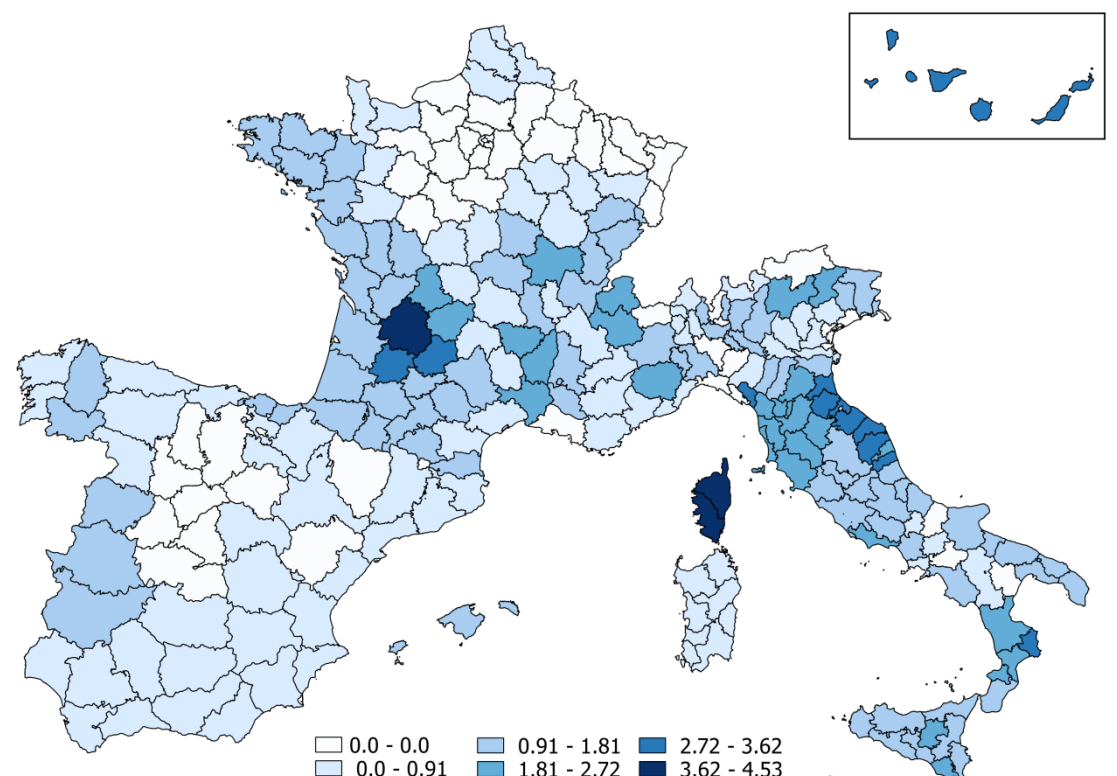
The Infrequency of Purchase model

The Infrequency of Purchase model is an alternative to the Tobit specification for modelling **censored variables**. It uses two equations representing two different choices. The first choice is the "participation decision", where the buyer (NUTS3 region) decides **whether** to buy the product (GI submission). The "consumption decision" concerns the **amount** of product the consumer buys.

$$D_i = z_i\gamma + w_i$$

$$y_i^* = x_i\beta + e_i$$

$$y_i = \begin{cases} \frac{(y_i^* + v_i)}{\phi(z_i\gamma)} & if\, D_i > 0 \\ 0 & otherwise \end{cases}$$

We devised an **aggregate** model and three **country-specific** models, according to our objectives. We applied the Inverse Hyperbolic Sine transformation to the dependent variable (the SI index) to deal with non-normality issues and we modelled heteroskedasticity. Regressors were selected according to the literature on the topic.

Variable	Aggregated		Italy		France		Spain		Variable	Aggregated		Italy		France		Spain	
	γ	β	γ	β	γ	β	γ	β		γ	β	γ	β	γ	β	γ	β
Intercept	4.89	-1.28	-27.30	-0.67	28.57	-5.17	31.85	7.50	Age (>60)	-5.48	0.58	20.79	-0.56	-23.18	6.01	-26.17	-7.41
Climate (Arid)	0.95	-0.21	-3.42	-1.25	-	-	-2.52	0.09	Agricultural cooperatives	-	-	12.09	8.57	-0.14	-0.02	7.48	-1.95
Climate (Mediterranean)	0.76	0.20	1.23	0.21	-1.23	0.61	-0.70	0.41	Institutional contacts	0.55	0.29	2.17	0.27	-	-	-1.14	0.30
Lass favoured areas	1.05	0.26	0.26	-0.18	4.36	1.02	-2.44	0.40	Website information (B)	-0.50	0.04	-1.60	0.88	-	-	-0.76	-0.22
Agricultural value added/ Total value added	7.98	-1.11	57.83	-18.21	38.02	5.79	27.64	-4.76	Website information (C)	-0.05	0.32	0.93	1.16	-	-	-0.50	0.36
									France	-0.36	0.04	-	-	-	-	-	-
Agricultural intensity (med)	1.45	0.30	-0.10	3.01	-15.34	-3.43	5.05	1.40	Spain	-0.51	-0.04	-	-	-	-	-	-
Agricultural intensity (high)	-0.01	-0.35	3.92	-1.62	-7.61	-2.54	-1.78	0.18	North (Italy)	-	-	-4.52	0.26	-	-	-	-
Farm size	-0.02	0.00	0.04	-0.01	-0.02	-0.01	-0.07	0.00	South and Islands (Italy)	-	-	-4.26	-0.39	-	-	-	-
Age (40-60)	-4.20	2.47	43.02	2.58	-23.54	11.32	-36.13	-10.34	Consumers' awareness	2.27	1.06	-	-	-	-	-	-
N	253		110		91		50		Log-likelihood	-276.53		-92.76		-79.63		-12.91	

Results

In France the propensity of registering GIs is higher in **marginal areas** and, to some extent, this is true for Spain as well. Conversely, in Italy, **cooperative behaviour** is a more important factor. Institutional assistance seems to show some degree of endogeneity. Due to the differences in the national models, the aggregated model results are less clear.

Conclusion

Many factors suggested in the literature actually display a correlation with the regional attitude of implementing GI protection. However these factors act through **specific national patterns**, which should be taken into account whenever the analysis of the GI policy is of interest.