

# FOREIGN IMMIGRATION AND PULL FACTORS IN ITALY: A SPATIAL APPROACH

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**ABSTRACT:** Significant changes have affected currently internal mobility in Italy. We try to understand what are the variables that allow a place to attract population. This work focuses on the foreign population and aims to detect the factors that push immigrant population towards Italian municipalities. We want to verify whether the action is different between movements of foreigners already resident in Italy and of immigrants coming directly from abroad. Data on flows, stock of populations and socioeconomic variables on Italian municipalities from Istat, Ministry of Economy and Sole 24 were exploited. Methods used are regression analyses enriched with spatial factors with reference to the possible action of spatial variables through the building of OLS, spatial lag and spatial error models.

**KEYWORDS:** Foreign immigration, pull factors, internal mobility, regression, spatial analysis

## 1 Background and aim

Significant changes have affected the current internal mobility in Italy. Foreign immigration, the repopulation of internal or marginal areas are important phenomena that may have played a role in the capacity of an area to attract population. We try to understand what are the variables that allow a place to attract population. Some results of a previous work (Natale, Santacroce, Truglia, 2016) show an unexpected absence of a link between the "attraction" variables identified for Italians and also those designed for foreigners. The reasons that lead natives (Italian citizens) to move within the country seem different from those of immigrants (Foreign citizens). This work focuses on the foreign population and aims to detect the capability of the foreign population already resident in the Italian municipalities to attract further flows of immigrants originated either from other municipalities or directly coming from abroad. In other words the paper tries to detect the factors underpinning the *network effect* due to foreign population resident in Italy.

## 2 Materials and methods

We analyze in this first phase only four Italian regions: Piedmont, The Marches, Apulia and Calabria<sup>1</sup>. Three sources of data are used. We consider the data concerning foreigners enrolled in the municipality population registry (demographic balance data supplied by Istat, the Italian Statistical Institute) in the about 2000 municipalities of the four regions examined. We took into account both the series recently made available by Istat, beginning with the Census data (*8mila Census*), and statistics on per capita income obtained from studies carried out by the Ministry of Economy and Finance.

We first calculated the foreign immigration rate  $FR_i$  for a generic municipality  $i$  observed in the years 2012-2014. The rate is defined as:

$$FR_{i,12-14} = (F_{i,2012} + F_{i,2013} + F_{i,2014})/3 / (FP_{i,1.1.2012} + FP_{i,31.12.2014})/2$$

where  $F_i$  is the sum of foreign inflows coming from other municipalities or from abroad,  $FP$  is the foreign resident population. Then we calculated two further measures: *internal* (regarding flows of foreigners resident from other Italian municipalities) and *external* (foreigners from abroad) foreign immigration rates (respectively,  $IFR_i$  and  $EFR_i$ ).

In order to detect the effect of various factors and patterns of spatial association, autoregressive models are used (Anselin, 1988 and 1995). In particular, OLS, spatial lag and spatial error models are estimated. In this paper only the results concerning this strategy of analysis are showed. Anyway the results obtained with the second model are quite similar.

## 3 Main Results

In the four Regions the *internal* immigration rates are not so different (around 4-6%: see Table 1).

**Table 1** Total, internal and external foreign immigration rates (%) in Piedmont, The Marches, Apulia and Calabria. Italy, 2012-2014.

Regions	Total Immigration Rate	Internal Immigration Rate	External Immigration Rate
Piedmont	11,5	6,3	5,2
The Marches	11,3	5,9	5,4
Apulia	14,8	5,0	9,9
Calabria	13,7	3,8	9,9
Total Regions	12,2	5,8	6,4

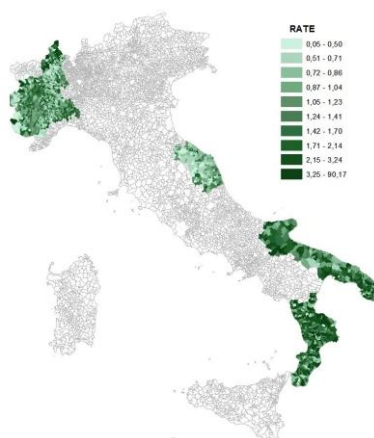
Source: own elaboration based upon Istat Resident Population Balance

A less capability of the resident foreign population to pull further flows coming from the rest of the country (the rate is equal to 3,8%) clearly emerged in Calabria.

<sup>1</sup> The four areas were chosen for the sake of comparison with a previous research conducted in the same Regions with reference to the attraction of Italian population: see Natale, Santacroce and Truglia (2016).

Apulia, the other Southern Region, shows low level of IFR as well. Regarding the external pull force the situation is reversed: EFR is higher in the Southern Regions (about 10% in the three years examined), well above the rates observed in the Centre-North Regions (value around 5%)<sup>2</sup>. Total immigration rates are clearly influenced by this different pattern: rates range from 11.3 (The Marches) to 14.8 (Apulia)<sup>3</sup>. Concerning the rate observed at municipal level the variability is very high, showing a surprising range of very different levels inside the same Region (see Map 1).

**Map 1** Total Foreign Immigration Rate by municipalities. Italy, 2012-2014.



The autoregressive models are used prove to be useful for the analysis of the factors underlying a high or low attraction capacity of the foreign population in the municipalities chosen. The results of the preliminary analyses seem to suggest adoption both of a model with lag of the variables used and a model with autoregressive spatial disturbances (Table 2). This results are not new in the literature (see, for instance, Cracolici *et al.*, 2009; Arbia, 1993; Truglia, 2013).

Some relevant variables are associated with IFR and EFR. Percentage of foreign population has a negative association with the pull force of the municipalities. It seems to be an evidence of the existence of a scarce network effect: in other words

<sup>2</sup> In the two Southern Regions a slight increasing presence of immigrants from African continent is observed in the 2012-2014 period: in Italy the percentage increased by 12%, in Apulia and Calabria by 25%. However to include this effect in the model didn't significantly improved the results obtained. The higher EFR in Apulia and Calabria could be also linked to the capacity of foreign population already resident in Italy to attract other components of the household from abroad. This capacity is inversely linked to the duration of stay in the country of arrival. In the Southern Regions the percentage of long sojourn residents is lower than in the Piedmont and The Marches.

<sup>3</sup> Regarding Italian resident population it is important to note that both the rates are below the levels observed for foreign population: nearly zero concerning the flows of Italians from abroad, more or less one third with reference to the internal migration.

municipalities with an high percentage of foreign population exert a weak force in attracting foreign flows. This could be in accordance with a theory of spatial assimilation in which foreigners tend to disperse in the territory. Unemployment has a negative effect only with reference to EFR<sup>4</sup>. It is interesting to note that some variables act in a different way on the two mobility measures used: in the areas with high percentage of high percentage of poor household the IER is low, the contrary happened with reference to the EFR. It is important to say that the presence of a neighbour effect emerged in the models considering spatial effects. These effects are obviously neglected by using OLS model.

**Table 2:** Test to determine the goodness of the model.

Test	Internal Migratory Rate		External Migratory Rate	
	Statistic	Sig.	Statistic	Sig.
Moran's I (error)	5,10	0,00	8,90	0,00
Lagrange Multiplier	17,41	0,00	55,53	0,00
Robust LM (lag)	0,43	0,51	2,91	0,09
Lagrange Multiplier (error)	22,71	0,00	72,76	0,00
Robust LM (error)	5,74	0,02	20,14	0,00
Lagrange Multiplier (SARMA)	23,14	0,00	75,67	0,00

In sum the level of the attractiveness of the foreign population in Italy is linked to the levels of the municipalities around, so that this pull force tends to be clustered in the Regions used. An extension of these results to the whole nation could lead to further interesting results.

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<sup>4</sup> For sake of brevity the model is not reported here. Other information can be requested directly to the authors.