Belgeo
Revue belge de géographie

3 | 2018
Mobility and the international migration of young people: new models, new behaviours

Does regional development explain international youth mobility?

Spatial patterns and global/local determinants of the recent emigration of young Italians

Barbara Staniscia and Federico Benassi

Electronic version
URL: http://journals.openedition.org/belgeo/30305
ISSN: 2294-9135

Publisher:
National Committee of Geography of Belgium, Société Royale Belge de Géographie

Electronic reference
Barbara Staniscia and Federico Benassi, « Does regional development explain international youth mobility? », *Belgeo* [Online], 3 | 2018, Online since 23 December 2018, connection on 03 January 2019. URL : http://journals.openedition.org/belgeo/30305

Does regional development explain international youth mobility?

Spatial patterns and global/local determinants of the recent emigration of young Italians

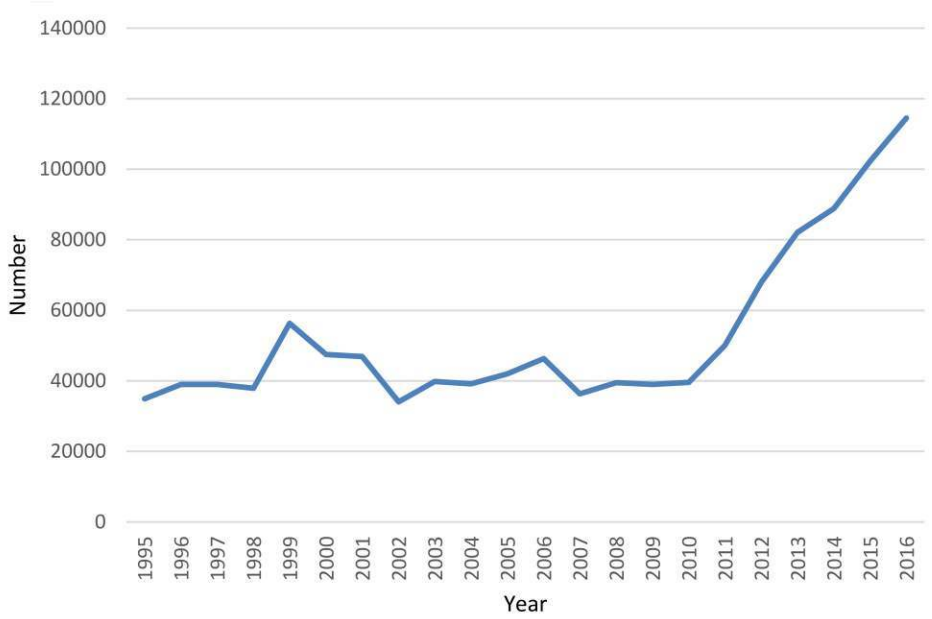
Barbara Staniscia and Federico Benassi

The research leading to these results received funding from the Horizon2020 YMOBILITY project (Youth Mobility: Maximising Opportunities for Individuals, Labour Markets and Regions in Europe), grant agreement no. 649491. Project website: www.ymobility.eu.

Introduction[1]

1 Recent academic debate about the international mobility of young Italians has centered on Italy's systemic issues and ongoing short-term economic crisis. The number of young Italians moving abroad has grown continuously since the beginning of the century (ISTAT, various years; Bonifazi, 2017), with the outflow intensifying further following the economic and financial crisis of 2007-2008 (Bonifazi and Livi Bacci, 2014; Montanari and Staniscia, 2017), even though these streams are not always recorded in the official figures (Sanfilippo, 2017). Figures for the number of Italians who have transferred their residence to another country since 1995 are given in figure 1.

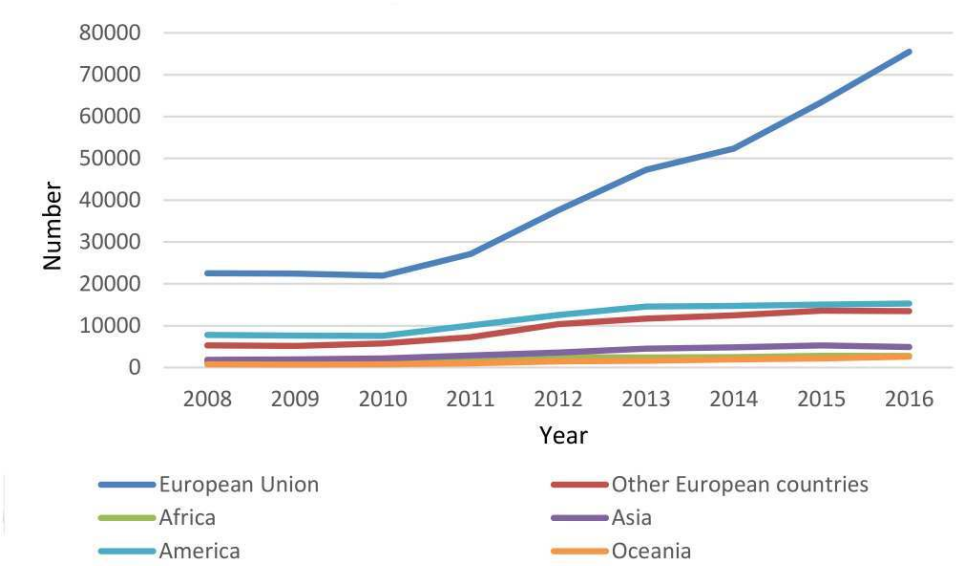
Figure 1. Italian citizens who have transferred their residence abroad in the period 1995-2016.



Source: authors' own elaboration on ISTAT data (http://demo.istat.it/)

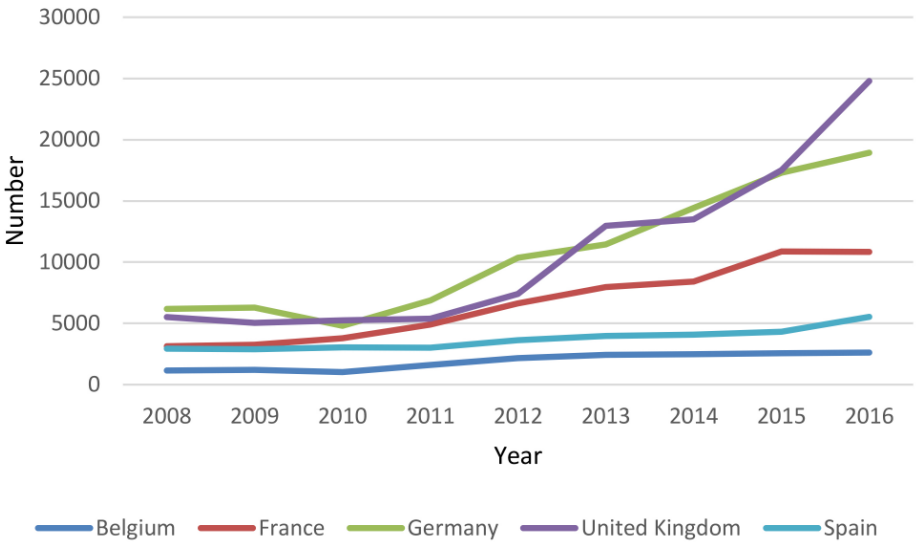
2 2016 saw the greatest number of Italians leaving the country since 1970. Indeed, the figure is so great that Pugliese (2018) has labeled this phenomenon as the "new Italian emigration", a "new cycle", a revival of the large intra-European migratory movements typical of the phase of industrial development that followed World War II and peaked during the Sixties (Pugliese, 2018). Young people account for a large share of this new wave of migration: the highest numbers are in the 25-30 age range, though the average age of emigrants is increasing (32.7 among males, and 32.8 among females according to ISTAT, 2017). The proportion of migrants classed as "highly-skilled" is also on the rise: 30.8% of Italians aged 25 and over living abroad as of 2016 had a university degree (ISTAT, 2017). The outward movement of Italians is concentrated into a small number of destination countries. Figures 2 and 3 show the principal destination countries for Italians leaving Italy since 2008.

Figure 2. Italian citizens who have transferred their residence abroad in the period 2008-2016, by destination.



Source: authors' own elaboration on ISTAT data (http://demo.istat.it/)

Figure 3. Italian citizens who have transferred their residence abroad in the period 2008-2016, main EU destination countries.



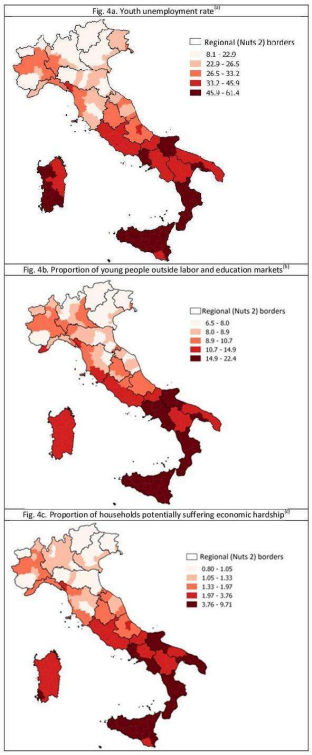
Source: authors' own elaboration on Pugliese (2018)

3 The dominant literature on the phenomenon of Italian youth mobility paints quite a different picture from that outlined by Favell (2008), in which talented young Europeans – "Eurostars" – move freely within the EU space taking advantage of freedom of movement and, what is at least striving to be, an integrated labor market. The young Italians described by several scholars are quite different. The factors that facilitate or promote greater international mobility among young people (at the cost of accepting structurally precarious employment – Pugliese, 2018), meanwhile, appear both complex and

numerous (Gallo and Staniscia, 2016): difficulty in finding a job or long-term employment in a country with negative or weakly positive growth rates, where a growing number of people live "below the breadline" and inequality is on the rise (Gjergji, 2015); recruitment methods that lack in transparency and meritocracy (Conti and King, 2015); the system's inability to make proper use of "talents" and "brains", i.e. highly-skilled professionals, particularly those working in research (Brandi, 2006; 2014); a general degree of dissatisfaction with Italy, a general feeling of resignation and the dream of moving abroad in the hope of finding more open, stimulating and outward-looking societies (Gjergji, 2015; Caneva, 2016; Montanari and Staniscia, 2017; Staniscia, 2018). The determinant factors in the emigration of young Italians in this period seem to be of a similar nature to, and in keeping with, those at work in other Mediterranean countries (Labrianidis and Vogiatzis, 2013; Triandafyllidou and Gropas, 2014; King *et al.* 2016; Domínguez-Mujica and Pérez García, 2017; Pratsinakis *et al.*, 2017).

4 In terms of levels of development across different territorial units, Italy presents a heterogeneous picture. The most notable contrast is the divide between Northern and Southern Italy in terms of economic growth, productivity, labor market trends, crime rates, efficiency of public administration and public services, and investments (SVIMEZ, various years; Giannola, 2015; Montanari and Staniscia, 2017). Figure 4 illustrates these differences through a selection of indicators.

Figure 4. Regional disparities in Italy as shown by selected socio-economic indicators. Italian Provinces (NUTS 3). Distribution by quintiles. 2011 (9 October).



[a]Ratio (%) of number of resident of 15-24 year-olds seeking employment, to the total of resident labor force 15-24 year-olds.
[b]Ratio (%) of residents aged from 15 to 29 other than students who are not working, to the number of residents in the same age range
[c]Ratio (%) of the number of households with children (with family head up to age of 64) in which no member is employed or retired, to the total number of households

Source: authors' own elaboration on ISTAT 2011 Census, portal 8milaCensus (http://ottomilacensus.istat.it/)

5 In this paper, we analyze the international mobility of young Italians in relation to regional imbalances. Our aim is to assess whether – and to what extent – regional development (not limited to economic growth) has a bearing on the international mobility of young Italians. We analyze the emigration of Italian citizens in the age range 15-34 who left the country in the period 2010-2017. Within this group, there is a range of diverse motivations behind the decision to emigrate, from study or work to the need to accompany parents (for under-18s) or a partner, or the hope of finding a new path in life or experience new lifestyles. For this reason, we have chosen not to focus on the reasons for migrating, nor on the spatial effects in either the origin or destination regions. Rather, we focus on the possible relationship between developmental status at a regional level and international migration.

6 The idea behind this paper is that there is not a simple relationship between the emigration of young people and the level of development of different territorial units. As such, we *do not* maintain that there is a necessary correspondence between a greater degree of development and higher rates of migration abroad (or vice versa). We do believe that this relationship becomes more complex at more localized levels and we are

interested in emphasizing the relevance of spatial variability of the factors as a possible key of interpretation.

7 We have chosen to apply our analysis to NUTS 3 level regions (110 Italian provinces). As far as we know, this level has seldom been used in this type of analysis (Basile, Girardi, Mantuano and Russo, 2018). To represent regional disparities, we have selected variables that relate to: economic dynamism at a local level (GDP per capita); the efficiency of the labor market (proportion of workers in low-skilled jobs and percentage of the 15-34 year-old population not participating in the labor market); levels of social fragility (proportion of the population in "high vulnerability" municipalities); educational underdevelopment (illiteracy rates); and spatial peripherality (accessibility to urban and logistics networks).

Development and migration: a complex relationship

8 The theories that have traditionally held sway in relation to international migration are founded on the premise that different countries have different economic growth rates, and these differences operate as push or pull factors that encourage or dissuade people from moving.

9 The variables that most prominently distinguish one region from another in the classical theories on international migration, can be summarized as follows (Massey *et al.,* 1993; Castles, 2008; de Haas, 2010):

10 (a) In *neoclassical* economics, it is assumed that individuals make rational choices designed to maximize their relative marginal utility. In *neoclassical macro-economic* theory, international migration is driven by differences in wages. At the *micro-economic* level, it is suggested that wage differences are associated with different levels of unemployment. The individual considers the long-term costs and benefits of migration based on an evaluation of the available human capital and skills acquisition, and how these might be put to use relatively in the origin and destination countries. As such, in neoclassical economics, the key variables that influence the decision to emigrate or not are income and employment.

11 (b) The *new economics of migration* focuses on the household. The decision to migrate is based on a family strategy of risk diversification, whereby some members of the household are driven to move, but others are compelled to stay and continue with their existing economic activities. The main variables of this model are related to the existence of different markets – labor, credit, insurance – and to possible imbalances: the countries that experience major market failures tend to be those in which migration flows originate.

12 (c) According to the *dual labor market theory,* international migration is due to the labor needs of developed countries, where there is a demand for migrant workers in the second section (lower layers) of the labor market, where wages are low, conditions difficult and career prospects poor. Here, the main regional variable considered is the labor market and its segmentation.

13 (d) In the *world systems theory* the world is polarized and divided into *core* and *peripheral* areas. This leads to a flow of people from the latter to the former. In terms of spatial organization, areas are divided up according to their level of development.

14 (e) The *cumulative causation theory* singles out six socio-economic factors to explain international migration: income distribution, land distribution, organization of agriculture, the migration culture, regional distribution of human capital, and the social significance of work.

15 (f) According to the *migration systems theory,* the world is a system split up into *core* areas – a country, or group of countries – which attract/receive international migrants, and a network of "sending" countries, with flows of varying intensity towards each of the *core* areas.

16 In theories on international migration with a strong spatial component, what counts at a regional level are differences in growth and development; areas marked by high GDP, low unemployment, high incomes, and a sound human – and social – capital base are "attractive", while areas characterized by underdevelopment and a greater degree of spatial peripherality are "repulsive". The same approach can be applied at a sub-national scale: differences in regional growth within a country lead to internal migration.

17 Evidence of notable disparities between regions in countries such as Norway, Israel, China, Japan (Portnov, 1999) and Italy (Fratesi and Percoco, 2014) has encouraged several scholars to study the relationship between regional levels of development and internal migration at an inter-regional level (inter-State for the USA) (Portnov, 1999; Chen and Rosenthal, 2008; Fielding, 2014; Fratesi and Percoco, 2014; Yang *et al.*, 2015; Basile *et al.*, 2012).

18 Fielding (2014), in analyzing the relationship between inter-regional migration and economic growth, arrived at a three-tier model. In the first tier – which he labels "conjuncture" – he analyzes the relationship between economic growth and inter-regional migration in relation to business cycles; in the second tier – labeled "restructuring" – he analyses the relationship between growth and migration as it relates to the international divisions of labor and the specialization of macro-areas; in the third tier – "deep structural" – he analyzes the link between growth and migration by looking at the global geography of wealth distribution. Fielding's model has the merit of breaking away from the schemata of both the *neo-classical* model and the *new economics of migration* by taking into consideration the complexity of flows – work-related *vs* amenity-led, low-skilled *vs* high-skilled, housing-adjustment, gender, youth *vs* retirement – and the notion of "attractiveness".

19 Chen and Rosenthal (2008) examined inter-state and inter-city migration in the United States, using quality of life and the quality of the business environment as explanatory variables. They make distinctions between the different life stages of individuals and households, for instance revealing a propensity among young people to move to States/cities with a high-quality business environment. This choice is particularly common among high-skilled couples – for whom the chosen location needs to satisfy the career ambitions of both individuals – and high-skilled singles.

20 With reference to China, Yang *et al.* (2015) analyzed inter-regional migration using a combination of economic variables (regional GDP, income, employment opportunities, investment), variables related to quality of life (green spaces, investment in education, availability of leisure services and household amenities), and geographical variables, for instance the distance between regions. The study showed that regional GDP is less relevant in explaining migration rates than personal income and environmental and social indicators that affect quality of life. These last two factors prove to be as important

as personal income. Regions characterized by a high GDP display high levels of both immigration and emigration, driven by the dynamism of the labor market. Although important, employment is a secondary factor in comparison to these others.

21 Portnov (1999) analyzed the relationship between internal migration and disparities in regional development in Israel and Japan. Here, share of population, employment capacity, number of rented houses, and attractiveness to migrants are used as indicators of development; climate, population density, change in GDP per capita, employment and employment change, housing construction and prices are explanatory variables. Portnov's study concluded that internal migratory patterns do not reflect regional labor market imbalances because of the important role played by the housing market. In *core* regions, where the labor market is dynamic – and the chances of getting a job are high – housing costs are also high. As such, the more modest housing costs of peripheral regions can be a draw factor encouraging migration away from *core* regions.

22 Fratesi and Percoco (2014) examined internal migration flows in Italy in relation to regional disparities. For these authors, the determinant factors in migration are: (i) GDP per capita, (ii) unemployment rate, (iii) services location quotient, (iv) manufacturing location quotient, (v) housing prices. Their analysis indicates that regions in Southern Italy lost human capital to regions in the Centre/North (with some exceptions) incrementally over the period 1980-2001. They suggest that high-skilled young persons are more mobile than their low-skilled contemporaries, with a cluster effect creating concentrations of high-skilled young people, and that Italy's Northern regions are made more attractive by low unemployment rates, the capacity of the labor market to absorb high-skilled workers, and greater economic growth. These conclusions are supported by the findings of Basile, Girardi and Mantuano (2012), who studied the effects of internal migration on regional imbalances in Italy in the period 1995-2007. Their conclusion was that migratory flows have heightened rather than reduced regional disparities.

Data and Methods

Data and measures

23 Our dependent variable (y) is the emigration rate of Italian citizens aged between 15 and 34, calculated at a provincial level (NUTS 3), and in reference to 2013 (t)[2]. The emigration rate as at 2013 can be considered as a proxy for the emigration rate over the period 2010-2017.

24 A limitation of the study lies in the great heterogeneity of this category of "young persons" (aged between 15 and 34). For instance, individuals at the younger end of this spectrum are clearly not making their own decisions about migration; the mobility of minors is typically part of a family migration strategy. However, while it is acknowledged that the 15-34 age range is a rather broad definition of "youth", it is also true that any definition will have, *a priori*, an element of arbitrariness.

25 The socio-economic indicators taken into consideration (as *proxies* of the level of regional development) in identifying which factors actually influence the dependent variable are set out in Table 1.

Table 1. Indicators used as explanatory variables in the regression analysis.

Indicator	Dimension
Index of accessibility to urban and logistic nodes (x_1)	Regional development (accessibility)
GDP per capita (x_2)	Economic development (wealth)
Illiteracy rate (x_3)	Social (human capital)
Proportion of workers in low-skilled jobs (x_4)	Socio-economic (labor market)
Proportion of population in "high vulnerability" municipalities (x_5)	Socio-economic (socio-economic hardship)
Rate of non-participation in the labor market rate among residents aged 15-34 (x_6)	Socio-economic (labor market)

26 In order to accommodate the "delayed" effects of certain factors in terms of mobility choices (due to the time required for the organization of migratory projects, activation of networks of family and friends, estimation of costs, acquisition of the necessary means), some of the explanatory variables refer to t-1 (2012) and t-2 (2011). Other variables, which can be treated as relating directly to the systemic/structural make-up of the relevant territorial unit, refer to 2013 (t).

27 Table 2 reports the reference period, source and calculation method for each explanatory variable, as well as the unit of measurement in which it is expressed.

Table 2. Indicators used as explanatory variables in the regression analysis. Time reference, source and calculation method.

Indicator	Time reference	Source	Calculation method
Index of accessibility to urban and logistic nodes (x_1)	t (2013)	ISTAT	This index is derived from data on travel times (in minutes) from the center of each municipality to the three closest examples of a number of node types (ports, airports, railway stations, motorway tollgates). Travel times were calculated using a commercial road graph, taking into account actual road speeds (and thus the morphology of the territory) in ideal conditions, i.e. in the absence of traffic[a] (expressed in minutes spent traveling to urban and logistic nodes).
GDP per capita (x_2)	t -2 (2011)	EUROSTAT	Ratio of gross domestic product (GDP) at current market prices by NUTS 3 Region to the average annual population to calculate regional GDP data by NUTS 3 Region.
Illiteracy rate (x_3)	t-2 (2011)	ISTAT	Resident illiterate population aged 6 years and over as percentage of the total resident population aged 6 years and over (%).
Proportion of workers in low-skilled jobs (x_4)	t-2 (2011)	ISTAT	Percentage of workers in ISTAT job category 8 (unskilled professions) out of all workers (%).
Proportion of population in "high vulnerability" municipalities (x_5)	t-2 (2011)	ISTAT	Percentage of the total resident population who reside in municipalities classed as having "heightened vulnerability" on the social and material vulnerability index[b] (%).
Rate of non-participation in the labor market rate among residents aged 15-34 (x_6)	t-1 (2012)	ISTAT	Ratio of total of unemployed persons (actively seeking work) plus "persons not actively seeking a job but available for work", to the total of this latter group plus the labor force (employed and unemployed) (%).

(a) As there are no motorways in Sardinia, and thus no data on access to motorway toll gates, the value for this indicator for Sardinian provinces was calculated by taking the average of travel times to the three closest examples of the existing node types.

(b) The material and social vulnerability index is obtained by synthesized the standardized values of the following indicators: 1) percentage of the population aged 6 and above without an academic qualification; 2) proportion of households at risk of economic hardship; 3) proportion of households at risk of welfare distress ; 4) serious crowded housing index; 5) proportion of households with 6 or more members; 6) proportion of households with young and adult single parents; 7) percentage of persons aged 15-29 not in education, employment or training.

Regression models

28 In recent years, Geographically Weighted Regression (GWR) models, also known as local models (Fábián, 2014), have been used increasingly in spatial statistical analysis. This class of model is derived from the work of Brunsdon *et al.* (1996, 1998) and Fotheringham *et al.* (2002), and has been used in the analysis of various socio-economic and demographic phenomena (Longley and Tobón, 2004; Mennis, 2006; Chen *et al.*, 2012), including Italian examples (Benassi and Naccarato, 2016, 2017; Mucciardi and Bertuccelli, 2013).

29 GWR models may be seen as a development of the classic regression models (OLS – Ordinary Least Squares – or global) that takes the spatial variability of parameters into account during the estimate process. The GWR procedure entails the estimate of a classic linear regression model, followed by a test similar to the Monte Carlo test (Hope, 1968) which serves to ascertain the spatial non-stationarity of the parameters. The parameters that prove to be marked by spatial variability are then estimated at a local level, making it possible to map local parameters in order to highlight geographic patterns (Benassi and Naccarato, 2017). Notwithstanding the numerous limitations of GWRs (as with any other model) – which, incidentally, are described in detail in Wheeler and Tiefelsdorf (2005), Boots and Okabe (2007), Wheeler and Calder (2007), Griffith (2008), Wheeler and Waller (2009), Chen *et al.* (2012) – we concur with Matthews and Yang (2012) that GWR models are a useful technique for exploring phenomena in which – like in this case – spatial non-stationarity is very likely, and where its presence (or absence) needs to be ascertained.

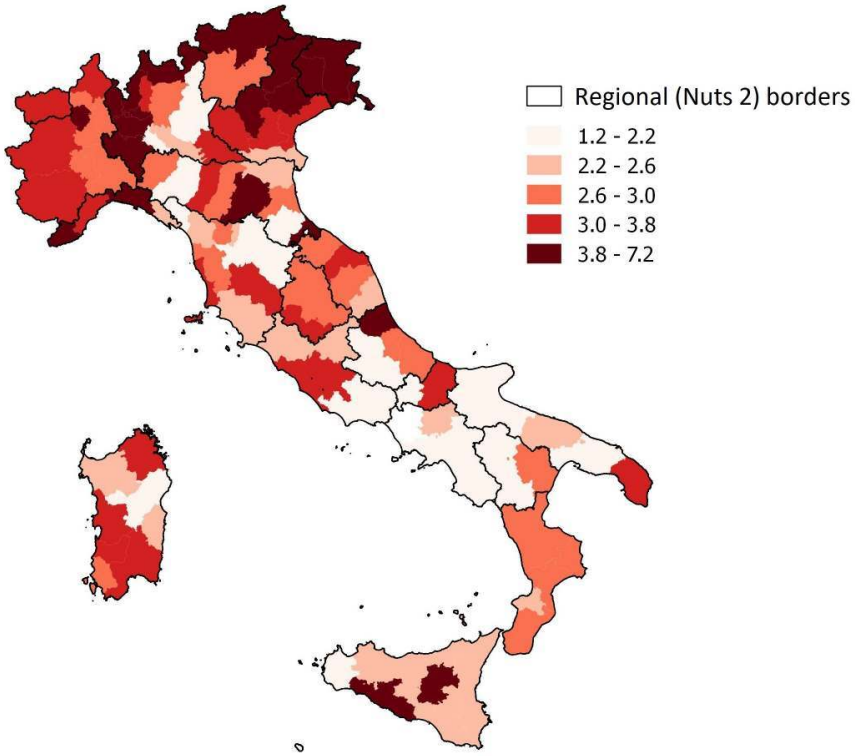
Results

Preliminary descriptive analysis

30 The emigration rate for young Italians (y) displays a significant degree of spatial variability (Figure 5), appearing more intense, albeit with some relevant exceptions, in the most economically dynamic areas of the Italy and close to its North-east borders.

31 The minimum value of y is a little below 1.2 per thousand, while the maximum value is a little above 7.2 per thousand. The average value for the rate is 3.0. The standard deviation is approximately 1.00.

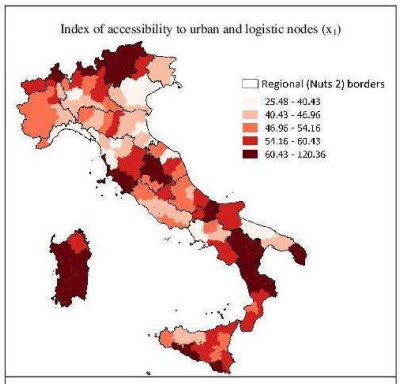
Figure 5. Emigration rate (per 1,000) for young Italians (15-34 years old), Italian provinces (NUTS 3), 2013. Distribution quintiles.

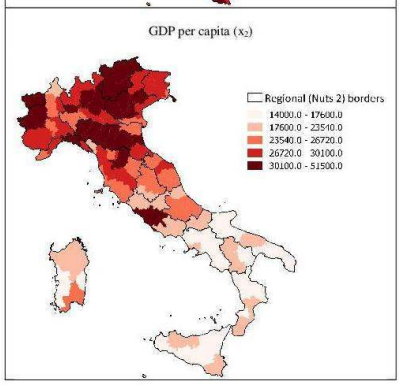


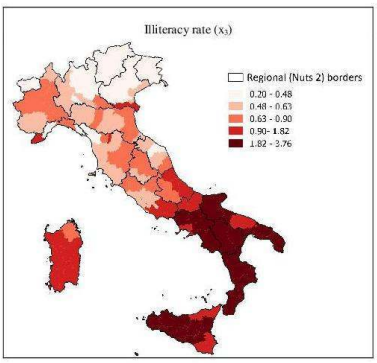
Source: authors' own elaboration on ISTAT data "Iscrizioni e cancellazioni all'anagrafe per trasferimento di residenza" and resident population, 2013

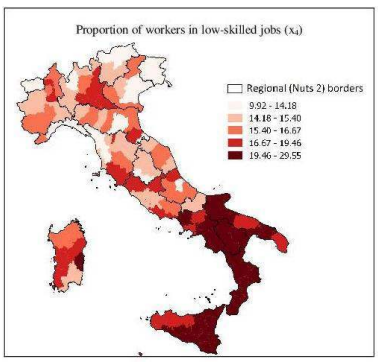
32 Figure 6 shows the spatial distribution of the selected explanatory variables (x_i).

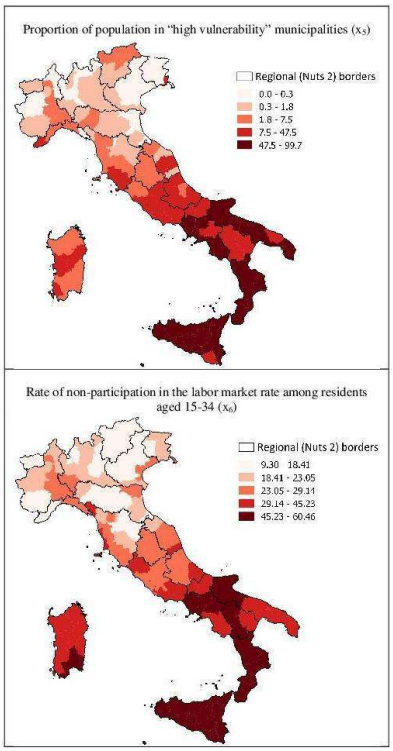
Figure 6. Explanatory variables. Italian provinces (NUTS 3). Distribution quintiles.











33 There is an evident gap between the Centre/North on one side and the South and Island regions on the other. Areas in the Centre/North post higher GDP per capita values, have a lower percentage of workers in low-skilled jobs, better levels of accessibility to urban and logistic nodes, lower levels of illiteracy, and modest values for indicators concerning the resident population in "high vulnerability" municipalities and for the non-participation of young persons in the labor market. This profile is effectively an identikit of well connected, accessible and socio-economically dynamic areas with comparatively high levels of wealth.

34 The situation is very different in provinces in the South of the country and in the two large island regions. The social and economic indicators paint a far less robust picture – compared to North and Central Italy – with lower rates of labor market participation among young people and, overall, much lower levels of wealth.

35 Looking at Table 3, we note that the degree of variability is quite modest with some indicators, but much more pronounced in certain other cases.

Table 3. Explanatory variables, selected descriptive statistics.

Explanatory variable	Minimum value	Average value	Maximum value	Standard deviation
Index of accessibility to urban and logistic nodes (x_1)	25.5	52.2	120.4	15.7
GDP per capita (x_2)	14,029.4	24,828.1	51,471.4	6,646.0
Illiteracy rate (x_3)	0.2	1.1	3.8	0.8
Proportion of workers in low-skilled jobs (x_4)	9.9	16.9	29.5	3.7
Proportion of population in "high vulnerability" municipalities (x_5)	0.0	20.7	99.7	31.4
Non-participation rate of 15-34 year-old population in labor market (x_6)	9.30	30.5	60.5	13.9

Source: authors' own elaboration on ISTAT and EUROSTAT data, various years.

Results from the global model (OLS)

36 Table 4 provides the results of the global model. The explanatory power of the model is not especially high (Adjusted R square, 0.31), yet it appears to be in line with the model proposed by Fratesi and Percoco (2014) which, since it deals with a similar subject, offers a good comparison.

37 All the variables entered in the model are statistically significant; they are assumed to be non-correlated as the Variance Inflation Factor (VIF) value for each of them is <10.

Table 4. Global regression model (OLS).

Explanatory variable	Global estimated coefficient (sig.)	VIF
Index of accessibility to urban and logistic nodes (x_1)	0.260**	1.246
GDP per capita (x_2)	0.320*	3.323
Illiteracy rate (x_3)	0.473*	6.383
Proportion of workers in low-skilled jobs (x_4)	-0.568**	4.184
Proportion of population in "high vulnerability" municipalities (x_5)	0.369*	4.703
Non-participation rate of 15-34-year-old population in labor market (x_6)	-0.531*	6.961

Source: authors' own elaboration on ISTAT and EUROSTAT data, various years. Model estimated using the SPSS software package version 13.0. *p<0.05; **p<0.01; ***p<0.001

38 Moving on to an interpretation of global estimated regression coefficients, we note that four of the variables are directly related to the dependent variable: index of accessibility

to urban and logistic nodes (x_1); GDP per capita (x_2); illiteracy rate (x_3); proportion of population in "high vulnerability" municipalities (x_5). The two variables that have an inverse relationship with the dependent variable are the proportion of workers in low-skilled jobs (x_4), and the non-participation rate of the 15-34-year-old population in the labor market (x_6).

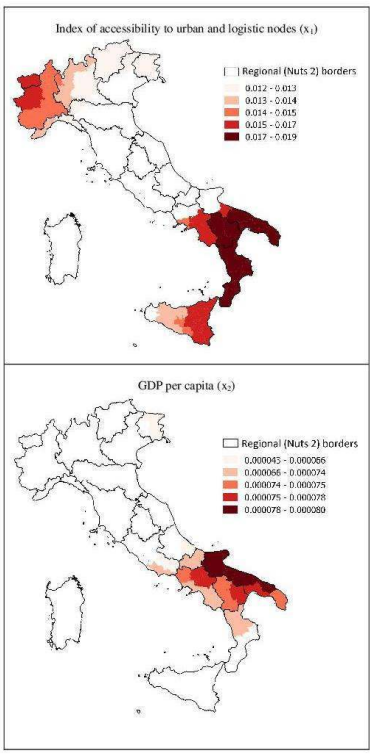
39 The factors that favor migration include various positive and negative aspects of individual territorial units. The former category includes elements such as GDP (despite the limitations of the indicator, which says nothing about the degree of wealth concentration), while in the latter we find limited accessibility (high values for the indicator imply longer travel times, thus less accessibility), higher illiteracy rates and greater concentration of the population in "high vulnerability" municipalities. When we look at which factors discourage international migration among young Italians, the situation is clearer. Here we find only the shortcomings of the provinces: a higher proportion of workers in low-skilled jobs and higher rates of non-participation in the labor market among young people.

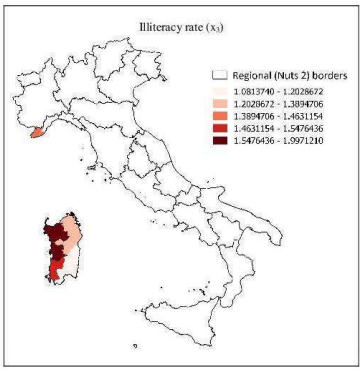
Results from the local model (GWR)

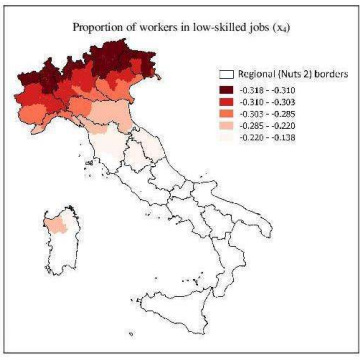
40 The estimated GWR model offers a greater explanatory capacity than the global model (Adjusted R square of 0.54) and a better specification (the AICc value goes down from 279.93 to 247.08).[3]

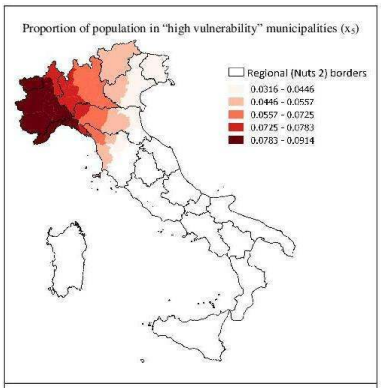
41 Figure 7 shows only the statistically significant local estimated coefficients ($p<0.05$). Their spatial distribution is interesting, and helps give a clearer understanding of the phenomenon.

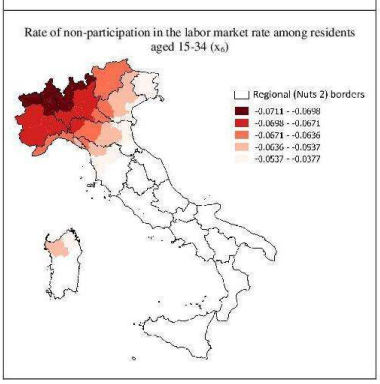
Figure 7. Local estimated coefficients. Italian provinces (NUTS 3). Distribution quintiles.











Model estimated using the GWR4.0 software package (National Center for Geocomputation) – version 4.0.90: 12 March 2015.

Source: authors' own elaboration on ISTAT and EUROSTAT data, various years

42 The values associated with each local parameter are in line with those estimated at a global level. Relations are direct for four variables and inverse for two variables.

43 What sets the results of the local analysis apart from the global analysis is the possibility of analyzing the geography of local parameters (Figure 7) and comparing them with those of the explanatory variables (Figure 6).

44 Looking at the first variable, regarding accessibility, with the local model we find a sizeable divergence, with the value differing significantly from zero in provinces at the North and South extremities of the country but not in Central areas. Specifically, the most pronounced positive effects are recorded in provinces in Calabria, Puglia and Basilicata. Thus, other conditions being equal, in these areas the effects of this variable are felt more intensely. We note that some of the territories in this group post some of the highest values for this variable, meaning they are characterized by particularly poor accessibility compared to other areas: young people move away from areas that are isolated and not well connected.

45 Looking at the second variable – GDP per capita, a *proxy* of regional wealth – the local parameters (that are all very low) reveal a number of interesting features. The relationship remains positive at a local level, but is only statistically significant in certain provinces in Central and Southern Italy, in particular in Southern Lazio, Campania, Puglia and Calabria. The comparative most pronounced effects are recorded in some areas of Puglia. Other conditions being equal, the effects of this variable on the dependent variable are more intense in these areas than in other provinces. If compared with the local distribution of the variable, this result is very interesting, and leads us to reconsider questions of inequality and the concentration of GDP. The territories in question post comparatively lower values of GDP per capita, which usually implies a greater concentration. There are two possible ways to interpret this finding: (i) the people moving abroad are young persons who, albeit they come from relatively poor areas, have access to relatively high levels of wealth because it is so concentrated; (ii) those moving abroad are likely to be young people from deprived social groups, since a higher value (GDP per capita) would suggest greater concentration, and therefore greater inequality.

46 The illiteracy rate – which retains a positive relationship with the dependent variable – is only statistically significant in Sardinian provinces and in one province in the Liguria region. It may be supposed that young people in those areas choose to move abroad in search of a more modern, forward-looking environment, breaking away from the social systems of the mountains and countryside, which are very much tied up with tradition. The effect may indeed be seen in combination with others linked to the structure of local societies, since the highest values of the indicator (Figure 6) are recorded in Southern Italy and in provinces located in other regions.

47 The proportion of the working population engaged in low-skilled jobs – for which we find a positive relationship with the dependent variable at local level – is only statistically significant in Central and Northern Italy (except for two provinces in Northern Sardinia). The North-West, in particular, witnesses the most pronounced effects. It is worth noting that, in terms of spatial distribution, we find relatively modest values for this indicator in such areas. We can hypothesize that young people choose international mobility as an alternative to working in low-skilled jobs: when low-skilled employment increases, young people decide to move to labor markets that are better placed to meet their expectations in terms of job quality.

48 The geographic pattern for the proportion of the population residing in "high vulnerability" municipalities, based on the local model, is quite similar to that outlined in

the previous paragraph. The relationship with the dependent variable remains positive (like in the global model), but the effects are only statistically significant in certain provinces in Central Italy and, especially, in the North of the country. The geographic distribution for the indicator shows the lowest values in the same territories, which suggests that international migration is the effect of a relative deterioration of the socio-economic situation in otherwise relatively low-vulnerability areas. We might suppose, therefore, a selectivity of international migration tied up with the perception of the trend more than the objective nature of reality.

49 The analysis of local parameters for the final indicator – namely the non-participation of young people in the labor market – appears to corroborate what has already emerged. The local relationship with the dependent variable remains negative, and is statistically significant in provinces in more economically dynamic areas, which are those in which the indicator posts the lowest values. It might be possible to suppose a mismatch of supply and demand and a relationship between discouragement (non-participation in the labor market) and "laziness" (reduced mobility) as the effect of greater wealth (GDP per capita) giving people the possibility to remain immobile and not to have to choose.

Conclusions

50 The international mobility of young Italians is comparatively intense in the more economically dynamic areas of the country, in border regions and in metropolitan areas. At the level of individual territorial units, the most important factors are those that relate to spatial proximity (border regions) and peripherality (difficult-to-access territories), imbalances in local labor markets (not just youth unemployment but also the mismatch of supply and demand in terms of skills and aspirations), and underdevelopment in terms of human capital.

51 When we consider where international migration flows originate in geographical terms, we find evidence for a "city effect" and a link between consumption-led temporary mobility (study, leisure, tourism, city use) and the international mobility of young people: provinces that include large urban areas (Milan, Rome), those with high a proportion of university students (Bologna) and tourists (Rimini) see high emigration rates.

52 We are inclined to believe that, compared with interpretations of the reasons for internal migration, the local factors that influence international mobility are "soft", in the sense that they are related to living and working environments and not necessarily to "hard" local resources. Our analysis of the origin of these flows leads us to believe that the choices of individuals – and households – are less rational than those supposed by classical theories, and are more dependent on the preferences, expectations and emotions that characterize the relative period in history. Numerous considerations – including psychological and emotional factors – have an impact on the mobility choices of Italian young people. Such factors are not easy to define or quantify. Our study is not exception to this evidence. Nonetheless it highlights two important results:

53 (i) international mobility of young Italians is a highly-spatially diversified phenomenon that is inextricably linked with the effects of regional imbalances. For this reason, spatial analysis methods were a key element in our research;

54 (ii) the apparent impact of the factors that favor or discourage the international mobility of young Italians can vary depending on whether they are analyzed "globally" or "locally".

55 Our conclusions are in keeping with the findings of certain qualitative studies (Pumares *et al.*, 2018; Staniscia, 2018), which have shown that the international mobility of young Italians is a complex choice that cannot be reduced to the simple equation: economic crisis + inefficient labor market = flight abroad.

BIBLIOGRAPHY

BASILE R., GIRARDI A. & MANTUANO M. (2012), "Migration and regional unemployment in Italy", *The Open Urban Studies Journal*, *5*, Sharjah (U.A.E), Bentham Open, pp. 1-13.

BASILE R., GIRARDI A., MANTUANO M. & RUSSO G. (2018), "Interregional Migration of Human Capital and Unemployment Dynamics: Evidence from Italian Provinces", *German Economic Review*, Chichester, Wiley, doi: 10.1111/geeer.12172.

BENASSI F., NACCARATO A. (2016), "Foreign citizens working in Italy: Does space matter?", *Spatial Demography*, Berlin, Springer, doi: 10.1007/s40980-016-0023-7.

BENASSI F., NACCARATO A. (2017), "Households in potential economic distress. A geographically weighted regression model for Italy, 2001-2011", *Spatial Statistics*, *21*, Amsterdam, Elsevier, pp. 362-376.

BONIFAZI C. (a cura di) (2017), *Migrazioni e integrazioni nell'Italia di oggi*, Rome, IRPPS.

BONIFAZI C., LIVI BACCI M. (a cura di) (2014), *Le migrazioni italiane al tempo della crisi*, Rome, NeoDemos.

BOOTS B., OKABE A. (2007), "Local statistical spatial analysis: Inventory and prospect", *International Journal of Geographical Information Science*, *21*, 4, Abingdon, Taylor & Francis, pp. 355-375.

BRANDI M.C. (2006), *Portati dal vento. Il nuovo mercato del lavoro scientifico: ricercatori piu' flessibili o piu' precari*, Rome, Odradek.

BRANDI M.C. (2014), "L'emigrazione dei ricercatori italiani: cause e implicazioni", *in* FONDAZIONE MIGRANTES, *Rapporto italiani nel mondo 2014,* Todi, Tau editrice, pp. 74-83.

BRUNSDON C., FOTHERINGHAM A.S. & CHARLTON M.E. (1996), "Geographically weighted regression: A method for exploring spatial non stationarity", *Geographical Analysis*, *28*, 4, Chichester, Wiley, pp. 281-298.

BRUNSDON C., FOTHERINGHAM A.S. & CHARLTON M.E. (1998), "Geographically weighted regression: Modelling spatial non-stationarity", *Journal of the Royal Statistical Society: Series D (The Statistician)*, *47*, 3, Chichester, Wiley, pp. 431-443.

CANEVA E. (2016), "Giovani italiani che emigrano: percorsi di vita inediti all'epoca della crisi economica globale", *Mondi Migranti*, *3*, Milan, Franco Angeli, pp. 79-93.

CASTLES S. (2008), "Development and migration – Migration and development: what comes first?", *in* SOCIAL SCIENCE RESEARCH COUNCIL (ed.), *Migration and development: future directions for research and policy*, NY, SSRC Migration and Development Conference Papers, pp. 10-32.

CHEN V.Y.J., DENG W.S., YANG T.C. & MATTHEWS S.A. (2012), "Geographically weighted quantile regression (GWQR): An application to US mortality data", *Geographical Analysis*, *44*, 2, Chichester, Wiley, pp. 134-150.

CHEN Y., ROSENTHAL S.S. (2008), "Local amenities and life-cycle migration: Do people move for jobs or fun?", *Journal of Urban Economics*, *64*, Amsterdam, Elsevier, pp. 519-537.

CONTI F., KING R. (2015), "Of mentalità and raccomandazione: comparing the emigration and internal migration of recent Italian graduates", *Studi Emigrazione. International Journal of Migration Studies*, *52*, 197, Rome, CSER, pp. 121-140.

de HAAS H. (2010), "Migration and development: a theoretical perspective", *International Migration Review*, *44*, 1, Chichester, Wiley, pp. 227-264.

DOMÍNGUEZ-MUJICA J., PÉREZ GARCÍA T. (2017), "The economic crisis and the Southern European migration model", in GLORIUS B., DOMÍNGUEZ-MUJICA J. (eds.), *European Mobility in Times of Crisis. The new context of European South-North Migration*, Bielefeld, transcript, pp. 17-48.

FÁBIÁN Z. (2014), "Method of the Geographically Weighted Regression and an Example for its Application", *Regional Statistics*, *4,* 1, Budapest, Hungarian Central Statistical Office, pp. 61-75, doi: 10.15196/RS04105.

FAVELL A. (2008), *Eurostars and Eurocities: free movement and mobility in an integrating Europe*, Chichester, Wiley.

FIELDING T. (2014), "Population mobility and regional development", *Working Paper 74*, Brighton, University of Sussex-Sussex Centre for Migration Studies, pp. 1-14.

FOTHERINGHAM A.S., BRUNSDON, C. & CHARLTON M.E. (2002), *Geographically Weighted Regression: The Analysis of Spatially Varying Relationships*, Chichester, Wiley.

FRATESI U., PERCOCO M. (2014), "Selective migration, regional growth and convergence: evidence from Italy", *Regional Studies*, *48*, 10, London, Routledge, pp. 1650-1668.

GALLO G., STANISCIA B. (2016), "Italian youth mobility in the last two decades: an overview in eight selected EU countries", *Hungarian Geographical Bulletin*, *65*, 4, Budapest, Hungarian Academy of Sciences, pp. 345-360, doi: 10.15201/hunggeobull.65.4.4.

GIANNOLA A. (2015), "Crisi del Mezzogiorno e nuove spinte migratorie", *in* GJERGJI I. (ed.), *La nuova migrazione italiana. Cause, mete e figure sociali*, Venezia, Edizioni Ca' Foscari, pp. 39-56.

GJERGJI I. (a cura di) (2015), *La nuova emigrazione italiana. Cause, mete e figure sociali*, Venice, Edizioni Ca' Foscari.

GRAIG D. M. (1980), *Optimisation*, London, Longman.

GRIFFITH D.A. (2008), "Spatial-filtering-based contributions to a critique of geographically weighted regression (GWR)", *Environment and Planning A*, *40*, 11, London, Sage, pp. 2751-2769.

HOPE A.C.A. (1968), "A simplified Monte Carlo significance test procedure", *Journal of the Royal Statistical Society: Series B (Methodological)*, *30*, Chichester, Wiley, pp. 582-598.

ISTAT (2015), *Migrazioni internazionali e interne della popolazione residente. Anno 2014,* Rome, ISTAT.

ISTAT (2016), *Migrazioni internazionali e interne della popolazione residente. Anno 2015,* Rome, ISTAT.

ISTAT (2017), *Migrazioni internazionali e interne della popolazione residente. Anno 2016,* Rome, ISTAT.

KING R., LULLE A., MOROSANU L. & WILLIAMS A.M. (2016), "International youth mobility and life transitions in Europe: questions, definitions, typologies and theoretical approaches", *Working Paper 86,* University of Sussex-Sussex Centre for Migration Research, Brighton, University of Sussex, pp. 1-61.

LABRIANIDIS L., VOGIATZIS N. (2013), "The mutually reinforcing relation between international migration of highly educated labour force and economic crisis: the case of Greece", *Southeast European and Black Sea Studies, 13*, 4, Abingdon, Taylor & Francis, pp. 525-551.

LIVI BACCI M. (1981), *Introduzione alla Demografia*, Turin, Loescher.

LONGLEY P.A., TOBÓN C. (2004), "Spatial dependence and heterogeneity in patterns of hardship: An intra-urban analysis", *Annals of the Association of American Geographers*, *94*, Abingdon, Taylor & Francis, pp. 503-519.

MASSEY D.S., ARANGO J., HUGO G., KOUAOUCI A., PELLEGRINO A. & TAYLOR J.E. (1993), "Theories of International Migration: A Review and Appraisal", *Population and Development Review*, *19*, 3, Chichester, Wiley, pp. 431-466.

MATTHEWS S.A., YANG T.C. (2012), "Mapping the results of local statistics: Using geographically weighted regression", *Demographic Research*, *26*, Rostock, Max Planck Institute for Demographic Research, pp. 151-166.

MENNIS J.L. (2006), "Mapping the results of geographically weighted regression", *The Cartographic Journal*, *43*, 2, Abingdon, Taylor & Francis, pp. 171-179.

MONTANARI A., STANISCIA B. (2017), "Young Italians on the move", *in* GLORIUS B., DOMÍNGUEZ-MUJICA J. (eds.), *European Mobility in Times of Crisis. The new context of European South-North Migration*, Bielefeld, transcript, pp. 49-73.

MUCCIARDI M., BERTUCCELLI P. (2013), "Modelling spatial variation of fertility rate in Italy", *in* GIUSTI A., RITTER G. & VICHI M. (eds.), *Classification and Data Mining*, Berlin, Springer, pp. 251-259.

NAKAYA T. (2014), *GWR4 user manual*, geodacenter.asu.edu/drupal_files/gwr/GWR4manual.pdf.

NATIONAL CENTER OF GEOCOMPUTATION (2009), Maynooth, Ireland: National University of Ireland, http://ncg.nuim.ie/ncg/GWR/software.htm, version 4.0.90:12, March 2015, Developed at NCG (National Centre for Geocomputation, National University of Ireland Maynooth) and Department of Geography, Ritsumeikan University, Japan.

PORTNOV B.A. (1999), "The Effect of Regional Inequalities on Migration: A Comparative Analysis of Israel and Japan", *International Migration*, *37*, 3, Oxford, Blackwell, pp. 587-615.

PRATSINAKIS M., HATZIPROKOPIOU P., GRAMMATIKAS D. & LABRIANIDIS L. (2017), "Crisis and the resurgence of emigration from Greece: trends, representations, and the multiplicity of migrant trajectories", *in* GLORIUS B., DOMÍNGUEZ-MUJICA J. (eds.), *European Mobility in Times of Crisis. The new context of European South-North Migration*, Bielefeld, transcript, pp. 75-102.

PUGLIESE E. (2018), *Quelli che se ne vanno. La nuova emigrazione italiana*, Bologna, il Mulino.

PUMARES P., GONZÁLEZ-MARTIN B., MONTANARI A. & STANISCIA B. (2018), "Reciprocal Youth Mobilities between Italy and Spain: A Question of Elective Affinities", *Population, Space and Place*, *24*, 1, Chichester, Wiley, https://doi.org/10.1002/psp.2113.

SANFILIPPO M. (2017), "La nuova emigrazione italiana (2000-2017): il quadro storico e storiografico", *Studi Emigrazione. International Journal of Migration Studies*, *54*, 207, Rome, CSER, pp. 359-378.

STANISCIA B. (2018), "La movilidad internacional de los jóvenes italianos altamente calificados: Motivaciones, experiencias y expectativas", *Iztapalapa. Revista de ciencias sociales y humanidades, 39*, 84, Ciudad de México, Universidad Autónoma Metropolitana, pp. 49-73, http://www.redalyc.org/revista.oa?id=393.

SVIMEZ (2015), *Rapporto SVIMEZ 2015 sull'economia del Mezzogiorno*, Bologna, il Mulino.

SVIMEZ (2016), *Rapporto SVIMEZ 2016 sull'economia del Mezzogiorno*, Bologna, il Mulino.

SVIMEZ (2017), *Rapporto SVIMEZ 2017 sull'economia del Mezzogiorno*, Bologna, il Mulino.

TERRA ABRAMI V. (1998), *Le previsioni demografiche*, Bologna, il Mulino.

TRIANDAFYLLIDOU A., GROPAS R. (2014), "'Voting with their feet': highly skilled emigrants from Southern Europe", *American Behavioral Scientist*, *58*, 12, London, Sage, pp.1614-1633.

WHEELER D.C., CALDER C.A. (2007), "An assessment of coefficient accuracy in linear regression model with spatially varying coefficients", *Journal of Geographical Sciences*, *9*, 2, Berlin, Springer, pp. 145-166.

WHEELER D.C., TIEFELSDORF M.R. (2005), "Multicollinearity and correlation among local regression coefficients in geographically weighted regression", *Journal of Geographical Sciences*, *7*, 2, Berlin, Springer, pp. 16-187.

WHEELER D.C., WALLER L.A. (2009), "Comparing spatially varying coefficient models: A case study examining violent crime rates and their relationships to alcohol outlets and illegal drug arrests, *Journal of Geographical Sciences*, *11*, 1, Berlin, Springer, pp.1-22.

YANG Z., CAI J., QI W., LIU S. & DENG Y. (2015), "The Influence of Income, Lifestyle, and Green Spaces on Interregional Migration: Policy Implications for China", *Population, Space and Place*, *23*, Chichester, Wiley, doi: 10.1002/psp.1996.

NOTES

1. The content of this paper does not reflect the official opinion either of Sapienza University of Rome or of ISTAT. Responsibility for the information and views expressed in the paper lies entirely with the authors.

2. For each of the 110 Italian provinces, the emigration rate is calculated as the ratio between the total number of young Italians (15-34 years old) who, in the reference year (2013), were cancelled from the population register of the i-th province because they moved abroad and the average population of Italian nationals in the same age group residing in the same province (per thousand). Data concerning the changes of residence are extracted from ISTAT « Iscrizioni e Cancellazioni Anagrafiche »; data on resident population are extracted from ISTAT demographic data, and are based on population registers of municipalities (www.demo.istat.it). The data used for the calculation of the emigration rate have two major limitations: (i) they refer to those people who are registered as "resident" in a given territory, which may not correspond exactly to the population that actually lives there; (ii) they do not take into account relocations that – albeit potentially long-term – do not result in a transfer of residence (*i.e.* cancellation from the Population Register), which may be a considerable number of cases (Livi Bacci, 1981) (See, among others, Livi Bacci (1981) and Terra Abrami (1998) for aspects relating to demographic measures and population mobility).

3. The Diff of criterion (Nakaya, 2014) was used to test the assumption of the spatial non-stationarity of the parameters of the model. All parameters were proven to be characterized by spatial non-stationarity (negative Diff of criterion values).

ABSTRACTS

In this essay, we tackle the issue of the international mobility of young Italians in relation to regional disparities. Our intention is to determine if and to what extent a relationship exists between regional development and the international mobility of young people. We analyze the international migration of Italian citizens aged 15-34 who left the country in the period 2010-2017 using several variables that reflect the varying conditions found in different NUTS 3-level regions in terms of economic dynamism, labor-market efficiency, social fragility, educational underdevelopment and spatial peripherality.
Ordinary Least Squares (OLS) and Geographically Weighted Regression (GWR) models show that the international mobility of young Italians is very much dependent on local conditions and affected by spatial differences. It is greatest in the most economically dynamic areas of the country, in border regions and in metropolitan areas, with factors relating to spatial proximity and peripherality, imbalances in local labor markets, and paucity of human capital proving particularly significant.

Dans cet article, nous abordons la question de la mobilité internationale des jeunes Italiens par rapport aux disparités régionales. Notre intention est de déterminer si et dans quelle mesure une relation existe entre le développement régional et la mobilité internationale des jeunes. Nous analysons la migration internationale des citoyens italiens âgés de 15 à 34 ans qui ont quitté le pays entre 2010 et 2017 en utilisant plusieurs variables reflétant les différents niveaux de dynamisme économique, efficience du marché du travail, fragilité sociale, retard culturel et périphéricité spatiale des zones NUTS 3.
Les modèles de moindres carrés ordinaires (OLS) et de régression pondérée géographique (GWR) montrent que la mobilité internationale des jeunes Italiens est un phénomène très dépendant des conditions locales et affecté par les différences spatiales. Elle est intense dans les zones les plus dynamiques du pays, dans les régions transfrontalières et dans les agglomérations métropolitaines. Les facteurs les plus importants sont liés à la proximité spatiale et à la périphéricité, aux déséquilibres des marchés locaux du travail et au retard en termes de dotation en capital humain.

INDEX

Mots-clés: mobilité internationale des jeunes, développement régional, Italie, lien migration-développement
Keywords: international youth mobility, regional development, Italy, the migration-development nexus

AUTHORS

BARBARA STANISCIA

Corresponding author, Sapienza University of Rome, Department of European, American and Intercultural Studies - P. le Aldo Moro, 5 - 00185 Rome – Italy, http://orcid.org/0000-0003-2874-5058, barbara.staniscia@uniroma1.it

FEDERICO BENASSI

ISTAT-Italian National Institute of Statistics, benassi@istat.it