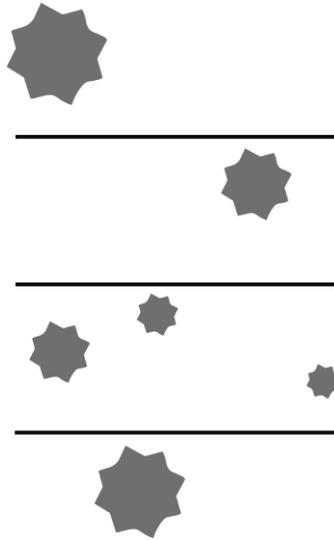


***Extended abstract***

*From rural exodus  
to interurban brain drain:  
the second wave of depopulation*



***Miguel González-Leonardo, Antonio López-Gay***  
*Centre for Demographic Studies, Autonomous University  
of Barcelona, Spain*

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### *Highlights:*

1. The exodus of young Spanish populations has increased in traditional out-migration regions.
2. Currently, in such regions, more emigrants leave the core cities instead of rural areas.
3. Out-migration is highly selective by educational attainment. The most qualified populations are more likely to migrate.
4. The global city of Madrid is the main destination of university graduates.
5. Internal migration has increased regional inequality in the distribution of human capital in Spain.

*Abstract:* The interregional imbalances result in the out-migration of human capital in some territories and its concentration in a few Spanish global cities. The aim of this paper is to analyse net-migration of the Spanish youth by educational attainment and the urban-rural dimension at the NUTS 2 geographic level. In order to do so, microdata from the register of population movements and the Spanish Labour Force Survey between 1992 and 2018 are used. The results reveal that net-migration rates are more unbalanced over time. In addition, one of the main demographic components which causes depopulation, the exodus of young populations, is currently mostly affecting urban areas of inland and northern regions instead of rural municipalities. The youth born in these areas, mainly the highly educated, are more likely to emigrate towards the global cities, namely since the 2008 financial crisis. The departure of qualified young populations is not compensated for by the arrival of immigrants, both in quantity and in regards to the level of education of such immigrants. This situation enhances processes of educational decapitalization. Most of the highly educated youth migrants move to the global city of Madrid, where boosting dynamics of qualified human capital accumulation have been identified.

*Keywords:* Internal migration, interurban migration, selective migration, brain drain, human capital accumulation.

Miguel González-Leonardo. Código ORCID: <https://orcid.org/0000-0003-2508-7977>.

Correo electrónico: [mgonzalez@ced.uab.es](mailto:mgonzalez@ced.uab.es)

Antonio López-Gay. Código ORCID: <https://orcid.org/0000-0001-8892-2816>.

Correo electrónico: [tlopez@ced.uab.es](mailto:tlopez@ced.uab.es)

## *Extended abstract*

### **1. Introduction and objectives**

The intensity of internal migration has decreased in most developed countries (Bell and Charles-Edwards, 2013; Champion *et al.*, 2018). However, this is not the case of the interregional mobility of young Spaniards, which has increased since the 1990s. This new trend breaks the two-decade period of decline (García-Coll and Stillwell, 1999; Recaño, 2004), that followed the massive rural exodus experienced during the of 1950 and 1960 (Cabré *et al.*, 1985; Camarero, 1993; Collantes and Pinilla, 2019). In this research we aim to study the effects of this new trend in the redistribution of human capital between Spanish regions (NUTS 2) from 1992 to 2018. The analysis includes the territorial dimension (urban and rural) and the educational attainment of migrants, a variable that has barely been used in studies of internal migration.

The following research questions structure this study: has the increase of interregional movements led to more unbalanced population exchanges between regions? What is the situation in rural and urban areas? Are rural areas the territories with greatest negative net-migration rates? What is the educational level of in and out migrants in each region? Could we observe a specific evolution over time, is there any relationship with the economic cycles?

### **2. Data and methodology**

We use two data sources from the Spanish Statistical Office - *Instituto Nacional de Estadística* (INE): Register of Population Movements - *Estadística de Variaciones Residenciales* (EVR) and the Labor Force Survey - *Encuesta de Población Activa* (EPA). We make use of the EVR to analyze interregional and international migration dynamics and net migration in each region. We examine migration matrices using circular migration diagrams, and we calculate classic indicators of demographic analysis: out-migration, in-migration and net migration rates. We use the EPA to study the educational level of interregional migrants. Using this source, we calculate

the percentage of university graduates for migrants and non-migrants (individuals living in the same region of birth). Finally, we propose an Educational Capitalization Index (ECI), which is calculated as the difference between the percentage of university graduates in the immigrant and emigrant population.

### **3. Results**

#### ***Out-migration and interurban exodus from depopulated regions***

Both interregional out-migration and in-migration rates have increased, especially after the 2008 crisis. However, in the peripheral regions of the interior of Spain, the growth of internal out-migration has been higher than that of in-migration, which has resulted in a remarkable increase of negative net migration rates over time. On the contrary, there is a very intense growth of interregional movements with destination to Madrid since 2008. This increase has also been stated, in a lesser extent, in Catalonia and the Balearic Islands. International out-migration also grew after the crisis, but the intensity and balances of these movements were not very relevant compared to internal mobility.

In the post-crisis context, we also have observed greater losses due to migration in the provincial capitals -inner cities- of the interior regions, previously affected by episodes of rural depopulation. In the past, rural municipalities were the territories with the highest negative net migration rates. We observe similar dynamics in the provincial capitals of some northern peripheral regions that do not register significant regional losses. The positive migratory balance of the global city of Madrid experienced a very important growth since 2008. The Catalan capitals also registered an increase during the post-crisis period, mainly as a result of a growing attraction of Barcelona.

#### ***Selective migration, educational decapitalization and regional accumulation of quality human capital***

The percentage of the Spanish young-adult individuals (aged 25 to 39 years old) with university studies has increased in both migrant and non-migrant groups. However, the growth has been higher among migrant populations, which reflects a reinforce in selective migration. In general, in most regions the educational level of interregional migrants is higher than that of the population residing in the place of birth. Therefore, selectivity is positive and dominant, and has increased over time, especially in the peripheral territories of the interior and the northwest. In addition,

in most of the regions the educational level of immigrants is lower than that of emigrants and this gradient increases throughout the period analysed. The only exceptions are Madrid and Catalonia, where internal immigrants are more educated than emigrants.

#### **4. Conclusions**

The growth of interregional migration among young Spaniards has caused more unequal population exchanges between regions, mainly after the economic crisis of 2008. The peripheral regions of the interior and the northwest register increasingly intense negative migratory balances. The provincial capitals of these regions are now the areas that are losing more young residents due to migration, in contrast to the greater previous rural decline. In sum, there has been an increase in the selectivity of out-migrants that has not been offset by the educational level of people who arrived from other regions. International out-migration has contributed to reinforce the loss of human capital, but its effect on the migratory balances has not been quantitatively remarkable compared to internal mobility.

In Madrid, the power of attraction has increased towards highly educated young adults born in other regions. On the contrary, selective migration is negative when we analyse out-flows from Madrid, due to the higher likelihood of lower qualified groups to emigrate. The Catalan capitals register increasing processes of educational capitalization, as a consequence of the in-flows of qualified young adults to Barcelona. However, levels are far from those reached in Madrid. The Balearic Islands also attract high numbers of Spanish born migrants, but they are not highly qualified. The archipelago's tourism sector demands low-skilled labour.

#### **5. Discussion**

Our results identify an incipient interurban exodus and the educational decapitalization of the peripheral Spanish regions. We also identify growing processes of agglomeration of qualified human capital in the global city of Madrid. This is a relatively recent phenomenon in Spain that has been reinforced year after year since the 2008 crisis. The results seem to be in line with the international literature that argues for a polarization of cities. A few global cities tend to concentrate

technological and financial activities and demand highly skilled immigrants (Sassen, 1991; Florida, 2002; Harvey, 2006). At the same time, small and medium cities in peripheral regions have a weak productive fabric with little technological capacity (Martínez-Fernández *et al.*, 2012), and are unable to employ the growing number of native university graduates (González-Leonardo and López-Gay, 2019).

## **6. Next steps**

Our research agenda includes a deeper investigation between internal migration of young Spaniards and the labour market. We also aim to explore the role of non-economic/labour pull factors, such as the value given by migrants to the supply of leisure and consumption activities. Longitudinal analyses are presented as a particularly useful tool to know if the increase in mobility responds to a decrease in immobility or to an increase in the number of movements per person. Cohort studies that analyse migratory behaviours of previous generations show that even during the rural exodus, most of the Spanish internal migrants made a single interregional movement throughout their life cycle, while chained mobility was more representative in other countries (Bernard and Vidal, 2020)