



Abstract ampliado

RESUMEN AMPLIADO

Título: SPATIAL APPROACHES TO DEPOPULATION DYNAMIC

Autores y e-mails: Alamá-Sabater, L. (alama@uji.es)^{1a}, Budí, V. (budi@uji.es)^{1a}, García-Álvarez-Coque, J.M. (jmgarcia@upvnet.upv.es)^{2b}, Roig-Tierno, N. (noratroig@gmail.com)^{2b}

Departamento: ¹ Departamento de Economía, ² Departamento de Economía y Ciencias Sociales

Universidad: ^a Universitat Jaume I e Instituto de desarrollo local (IIDL),
^b Universidad Politécnica de Valencia

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Resumen: (*mínimo 1500 palabras*)

This paper sets out to explore the determinants of population growth in the municipalities of a Southern European region, Comunitat Valenciana. Our findings contribute to explore the depopulation problem in inland municipalities by considering not only the most important drivers of population dynamics but also the interdependence between a municipality's dynamics and that of their surrounding territory. For this we define a spatial population growth model, considering the literature about this issue and focusing our attention in three factors mentioned by literature and also identified by regional policy makers as the main topics related with population dynamics: accessibility, economic conditions and public equipment¹.

Why do some municipalities are suffering population loss? To what extent is depopulation a merely local issue or respond to spatial interdependences among neighboring municipalities? Population growth is a topic in regional economics that has been widely analyzed by literature considering different dimensions such as the impact over metropolitan areas, rural-urban migration flows, sustainable development, or quality of life, between others. Depopulation is a major issue in Spain, where 5.4% of the total population lives in 54,8% of the total country's area (Burillo et al. 2019).

¹ A study taken out by Generalitat Valenciana (2017a), that is the regional Government of the Comunitat Valenciana, has classified a group of municipalities as "in risk of depopulation". The classification has been done constructing three indicators that collect certain variables related with: accessibility, public equipment and economic conditions.



While the pattern of depopulation in the second half of 20th century was driven by interregional and international outflows of rural migrants, in the first decade of the present century it was influenced by an inflow of foreign migrants attracted by economic growth (Collantes et al. 2014). In present times population shifts are more of intraregional character and shaped by natural growth (Collantes and Pinilla, 2011; Pinilla et al. 2008). This recent process suggests the need to explore local population changes within a region where rural and urban areas coexist as it is the case of Comunitat Valenciana.

The literature on population movements has largely focused on rural-urban interactions. Authors like Jedwab, Christiaensen and Gindelsky, (2017) focus the analysis on rural push factors and urban pull factors to explain urban expansion and consider economic determinants as income growth, differences in productivity, wages gaps and urban-biased policies to explain population movements from rural to urban areas. Glaeser, Scheinkman and Shleifer (1995) examine socioeconomic drivers of growth of US cities in different periods of time, they conclude that education level of inhabitants as well as employment force are key variable to cities growth. Graves (1979, 1983), Graves and Linneman, (1979) and Chi and Marcouiller, (2011) underline that natural amenities as landscapes, open space, climate, forest etc., are important resources that attract local population and economic activities. Other authors (Cushing, 1987, and Shields et al. 2005) provide evidences that population movements are a result of both natural amenities and economic conditions.

Delfmann et al. (2014) have paid more attention to the causes of population declining, and have underlined the spatial distribution of employment and economic opportunities as key factors to explain population growth. On this line Polèse and Shearmur (2006) analyse the population decline in five Canadian regions attending to local economic factors.

In the field of regional economics, local development studies have paid special attention to the characteristics of territories and have introduced the endogenous development concept as a factor that improves the value of municipalities. Quality of life indicators have been treated by Clark et al. (1988), Glaeser et al. (2001), Glaeser and Shapiro (2003) and Shapiro (2006), Cheshire and Magrini (2006, 2009), Portnov and Schwartz (2008), Delfmann, (2014), Royuela, (2011) and Royuela, Suriñach and Reyes, (2003), among other authors.

Natural amenities, public infrastructure, quality of life, local political decisions and economic cycles in certain regions have caused population movements could be in two directions: rural to urban and urban to rural. Firmino, Silva, Elhorst and Mota (2017), following a spatial econometrical approach focused in a large country, point out that demographic change can be treated as a whole, including regions with population growth and regions with declining population. Urban areas may grow at the expense of rural areas and, therefore, dealing with both population growth and decline, more information might be obtained about the impact of certain determinants of modern migration flows (Camarero and Sampedro (2019). Conversely, Mata, Diechmann, Henderson, Lall and Wang, (2007) consider a subset of cities and analyses the growth of certain Brazilian urban cities taking into account demand and supply determinants.



Demographic challenges are a current concern of European Union's political debate on future regional and rural policies. The debate includes the question on which territorial policies that could involve a special focus on isolated and lagging local communities in order to guarantee equal provision of services and basic citizens' rights (European Parliament, 2018). In Spain, the demographic challenge started to be considered a matter of state with the creation of a Special Commission in the Congress and a recent discussion of the basis for a national strategy that tackles the aging problem and the loss of population in extensive parts of the Spanish territory (Gobierno de España, 2019). Discussion has extended to specific regional contexts and has affected not only predominantly rural regions but also relatively urbanized areas where communities at high risk of depopulation are contiguous to highly populated areas. Neighborhood between more and less dynamic areas makes the Comunitat Valenciana a very suitable geographical area to test spatial interactions as it carried out in the present work.

In the context of the so-called Agenda Antidespoblación (AVANT) in the Valencian Region, policy makers have considered certain population characteristics² related with population dynamics and have classified villages according with their risk of depopulation (Generalitat Valenciana, 2017a; Alama-Sabater et al. 2019). In the present study, a pool of factors has also been defined that may influence depopulation of a territory, as well as the population dynamics. Those determinants are related with economic conditions, accessibility and public equipment and services.

The purpose of this paper is to explore from a spatial point of view the determinants of population dynamics compiled by policy makers and quantified their impact on population growth, both on the municipalities with depopulation risk and on municipalities without depopulation risk. We consider all municipalities in the Comunitat Valenciana and assess a set of specific factors that can explain depopulation, regardless of the eventual categorization of the municipality as rural or urban.

To do this we used spatial econometric techniques that allow us to exploring the spatial structure of dependence among municipalities as well as the drivers which involve spillover effects over neighboring territories. The results obtained improve the knowledge to support the territorial policy design in order to influence the population dynamics in areas with depopulation problems. An additional contribution of this paper is the estimation of indirect effects of change in depopulation factors, therefore the possibility to detect differences between municipalities with population risk and municipalities without depopulation risk.

Palabras Clave: population dynamics, urbanization, spatial connections, territorial development, migration.

Clasificación JEL: J18, R11, C21

² Population density, demographic growth, vegetative growth, aging index, dependence index and migration rate.

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