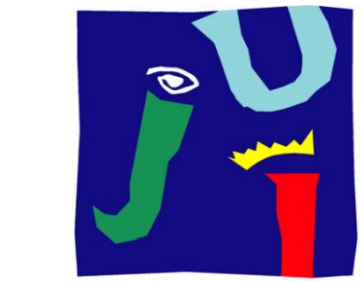


UNIVERSITAT JAUME·I

BACHELOR'S THESIS

VALENCIAN MUNICIPALITIES: AN ANALYSIS OF DEPOPULATION FACTORS

Degree in Economics

Author: Blanca Salom Moreno (al314888@uji.es)

Academic year 2020/2021

Supervised by Luisa Alamá Sabater

ABSTRACT

The aim of this paper is to study which municipalities are at risk of depopulation in the Valencian Community. Firstly, the problem of depopulation has been contextualized through a review of the literature, explaining its origin, the factors that influence it, and how the problem should be tackled. Then, after data collection, the demographic indicators of depopulation and the tools used for their study were explained. Subsequently, a spatial dependency analysis was carried out for each indicator. Finally, the Valencian municipalities at risk of depopulation and their level of risk have been identified.

Keywords: Population decline, spatial connections, depopulation

JEL codes: J18, R11, C21

TABLE OF CONTENTS

FIGURES

TABLES

VALENCIAN MUNICIPALITIES: AN ANALYSIS OF DEPOPULATION FACTORS

1. INTRODUCTION

Depopulation is a problem present throughout Europe that affects a large part of the Spanish territory. The rural areas of Spain have undoubtedly been hit the hardest hit by this phenomenon, thus generating both demographic and economic consequences.

During the second half of the 20th century, in the period known as rural exodus, the first depopulation processes took place. People started to abandon the more rural areas and migrating to the big cities in search of new job opportunities and higher salaries (Camarero, 1992). From that moment on, the problem of depopulation has persisted until nowadays. It is currently observed that municipalities located around large cities are more dynamic than municipalities located in rural areas (Delgado, 2018). Moreover, if we pay attention to the depopulation threshold set by the European Union (12.5 inhabitants/km^2), Spain has almost half of their territory in depopulation, although this problem is more severe because most of the Spanish territory does not exceed 8 inhabitants/km^2 (De la Torre, 2018).

However, although depopulation is a real problem where many rural municipalities are on the verge of disappearing, governments have not paid the necessary attention to solve it, having applied inefficient policies in most cases. Therefore, to implement actions it is necessary for the authorities to know the risk of depopulation in each territory after studying their demographic indicators and their environment. This is the only way to establish efficient policies instead of general and abstract ones in order to solve this problem.

The purpose of this study is to determine which of the 542 municipalities that make up the Valencian Community are at risk of depopulation. Therefore, for this purpose the indicators used in the Agenda Valenciana Antidespoblament (AVANT) 2017 have been taken as a reference. By means of these demographic indicators, spatial dependence and the current risk depopulation suffered by some Valencian municipalities will be studied. The data used to prepare this study are the demographic indicators of

depopulation for the year 2019, which are available on the Statistical Portal of the Generalitat Valenciana.

Therefore, the aim of this study is to answer the key questions: which municipalities in the Valencian Community are at risk of depopulation? What level of risk are they at? Is there spatial dependence? Has the depopulation situation changed with respect to 2016?

This paper is structured as follows:

- The first section is introductory, it sets out the purpose of the work and summarized the problem.
- In the second section, through a review of the literature, is discussed how the problem of depopulation has evolved with the progress of society. In addition, we will identify the factors that influence the depopulation of a territory and the measures that should be adopted to stop it.
- The third section explains the indicators that determine the risk of depopulation and how they may be used to classify the level of risk in each municipality. The indicators used to carry out the spatial analysis are also explained.
- In the fourth section, using the GeoDa software and the application of Moran's I index, the spatial dependence for each of these indicators is studied.
- In the fifth section, municipalities are classified according to their risk of depopulation.
- Finally, the conclusions obtained from this study are presented, a comparison between the current municipalities at risk of depopulation and those determined by the AVANT 2017 document is made.
- Additionally, it includes references and an annex with the tables that have been produced.

2. LITERATURE REVIEW

2.1. The problem of depopulation: a historical overview

Depopulation according to Pinilla and Sáez (2017): *"It is a demographic and territorial phenomenon, which consists of a decrease in the number of inhabitants of a territory or nucleus in relation to a previous period".* According to these authors, the causes of this phenomenon are related to negative vegetative growth, a negative migratory balance or both at the same time. However, we may not forget the economic factor as economically depressed areas are also the most affected due to their lack of dynamism and the loss of human capital.

In order to better understand this problem, it is necessary to understand its causes and origins. After the Second World War, in the second half of the 20th century, Europe experienced a period of high urbanization accompanied by a fall in the rural population (Collantes & Pinilla, 2020). This period, known as rural exodus, was marked by strong migratory movements from rural to urban areas; these migratory flows were motivated by the new job opportunities (higher wages and a greater supply of services) offered by large cities. This emigration neutralized natural population growth in the first decades of the exodus, but later, in the 1970s, these movements declined to such an extent that in the 1980s they became almost non-existent (Camarero, 1992). These migratory flows had negative consequences in rural areas, the aging of the population caused a drop in the birth rate and negative vegetative growth. This demographic decrease was also accompanied by an economic decline due to the scarcity of investment and entrepreneurial opportunities generated by the loss of human capital. Therefore, it may be said that these vicious feedback loops are responsible for the loss of dynamism in the economy (Sáez & Pinilla, 2017).

If we go back to the middle of the 19th century, with the beginning of the Spanish industrialization, cities started to be great cores of rural-urban migration. The first decades of the 20th century, due to the demographic transition, a moderate growth of the rural population, and a rapid urban growth coexisted in Spain. However, around 1940, a rural demographic decline began, and in the second half of the 20th century this demographic decline became absolute. At this point, the rural population fell by around 40% due to the absence of job opportunities outside the agricultural sector. The peak of economic growth was between 1950 and 1975 as most of migratory flows took place because rural families moved from the most backward areas to the most advanced regions. As of 1980, the rural exodus began to decline, but not in the desired way as there was no return of the population to the countryside, but an increase in urban unemployment due to the harsh adjustment of the Spanish economy after the world oil crisis where unemployment levels increased substantially, which together with the inefficient economic policies of Franco's regime aggravated the problem (Sáez & Pinilla, 2017).

Franco's policies contributed to rural depopulation. On one hand, agricultural policies only promoted the modernization of large farms and, on the other hand, did not take into

account the territorial economic imbalances where most rural areas had a shortage of services and obsolete infrastructure. Furthermore, despite improvements in health services, inequalities continued to be generated. To access the most advanced medical services (hospitals, specialists, old people's homes, etc.) the rural population needed to travel to urban centers. The railway and road network generated another disadvantage for the rural population as it generally linked the most populated areas, ignoring small towns with poor connections. In addition, the high aging of the population and the flight of young people to the cities led to the closure of schools due to a lack of children (Collantes & Pinilla, 2020).

In the first decade of the 21st century, the Spanish economy grew rapidly, depopulation in rural areas was reduced and demographic growth began. This new situation was largely occurred due to the arrival of a large number of foreign immigrants who were attracted by the job opportunities offered by agriculture and construction sectors (Collantes et al., 2014). However, due to the economic crisis of 2008, the problem has regained strength and has returned to its initial stage, foreign immigration has only been a demographic mirage that has not solved the problem. (Recaño, 2017) .

Currently, we may find that a large part of the Spanish territory is unpopulated, with a density of between 5 to 10 inhabitants per square kilometer, rising to the appearance of demographic deserts. The most affected areas are those located in the Iberian System, especially the provinces of Soria, Teruel, and Cuenca. These provinces have the lowest population density in Spain and form one of the most significant demographic deserts in Europe (Sáez & Pinilla, 2017). Although most rural areas have never had high population densities, they did retain a sustainable economy where there was a demographic and social balance. However, now we may find a marked pattern of an ageing rural population, which, together with the rising of mortality and the fall birth rates, is leading to a declining rate of generational replacement.

In short, depopulation has been the result of a synergy between social, technological, business, territorial factors, and lack of political action. Therefore, in order to combat this problem, it is necessary to understand the causes of its origins, apply efficient policies, assess the existing ones, and reform them (Collantes & Pinilla, 2020).

2.2. Factors and solutions for depopulation

Spain has an optimistic outlook in comparison with other European countries, because although there is a real problem with depopulation, the data does not show that we are facing an extreme situation. Nowadays, depopulation is not as accelerated as it was in the past, however, rural areas are the most affected areas by far in comparison with big cities (Collantes & Pinilla, 2020).

There are multiple factors that jeopardize social sustainability in rural areas: the flight of young people, particularly women, who seek academic training and a different lifestyle; the longevity of the population which generates a higher dependency rate, the progressive feminization of rural society, because of a longer female life expectancy, and the reduction of the demographic structure due to the lack of births and the high number of elderly people. In many cases, it has been believed that the arrival of new settlers would solve this problem; however, it has been proven that despite providing greater diversity to its social structure, the problem has not been solved (Camarero et al., 2009).

It is interesting to establish policies that give importance to cultural heritage so that it may be used as a tool against depopulation. The rural environment has great diversity both at a socio-demographic and cultural level; however, in many rural areas, due to depopulation, this peaceful way of life and its historical memory is being lost (Benito, 2020) . Therefore, in order to fight against this phenomenon it is necessary to focus the debate on its policies and actions. It is very important that the strategies taken are innovative and discriminatory, because when a rural community goes into decline, its prevalence is endangered due to the demographic desert that is generated therein (Sáez & Pinilla, 2017) . Although we may apply the term governance as a solution that emerged after the crisis of the seventies as a result of the problems to maintain the welfare state, this term is applicable to the fight against depopulation, referring to a change in the way of governing and leaving behind a vertical structure, to give way to a horizontal structure that makes use of participatory strategies where all the agents, both public and private, are involved (Martín et al. 2020).

According to Estrada (2020), to debate and give voice to these problems, there are two types of discourse depending on who is sending the message. On the one hand, when it is the rural world itself that constructs the discourse, claiming the importance of the local and the quality of life in small towns, it is said that this is a *discourse from within*,

movements such as "Orgullo Rural" and platforms such as "Soria ¡YA!" or "Teruel Existe" support this discourse and give voice to the problems of *España vacíada*[1]. On the other hand, when the urban world is the one demanding we have the *discourse from outside*, Within this vision, depending on the type of denunciation that is being made, three types may be distinguished: the *discourse of denunciation* that focuses on the protest against the abandonment of the rural world and the lack of action by public institutions, the *discourse of rural idyll* that takes as its object the demand for the quality of life in the rural world to attract new settlers leading a slow-slow life where they may enjoy the cultural heritage, getting in touch with nature, its calmness, etc. Finally, we may also find the *discourse of the denaturalization of rural areas*, which aims to re-establish ecosystems and recover nature so that the natural landscape may be used by the population as an alternative form of enjoyment.

In order to combat the problem of abandonment, a combination of top-down and bottom-up public policies will be necessary. Top-down policies include top-down and administrative actions that promote large investments at the macroeconomic level, where the permanence of the population is stimulated by offering income transfers and new facilities. Bottom-up policies are bottom-up and participatory, they have to be taken at the county level and include the cooperation of municipalities, county councils and autonomous communities so that the rural population may have access to the basic services of the welfare system. Actions such as the implementation of local pacts are important so that local councils have the competences and resources to implement anti-population actions, but for these measures to be as efficient as possible, it will be necessary to take into account the characteristics of each county. These actions, taken in relation to the peculiarities of each area, should focus on modernizing agriculture, facilitating women's access to co-ownership of farms, conserving nature, attracting entrepreneurs, rehabilitating rural houses, boosting tourism, and promoting mobility and transport to generate rural-urban interaction. Most of these actions are included in the European Union's strategic program 2014-2020 (Estrada, 2020) .

While the measures mentioned above correspond to actions by the public authorities, there are also initiatives by the local population such as the use of new technologies,

[1] Refers to the areas of Spain that suffered massive emigration during the rural exodus.

such as video-assistance, to improve health care or to offer new services in culture and leisure, gastronomy, folklore, sports, etc. (Estrada, 2020) .

In short, it is important that both public and private initiatives turn their zero-sum dynamics into positive ones. A good starting point would be to reclaim the Law for the Sustainable Development of the Rural Environment that was passed in 2007 and has not yet been implemented. It is also necessary for the autonomous communities to distribute the funds they receive from the Common Agricultural Policy efficiently, not only by subsidizing farmers but also by encouraging the diversification of the rural economy and the promotion of its quality of life. Furthermore, it should not be forgotten that actions have to take a bottom-up perspective and not a top-down one; local populations are the ones who have to drive rural development by implementing their own projects and initiatives (Collantes & Pinilla, 2020).

In order to get closer to our subject of study, we will contextualize the situation of the Valencian Community. The Valencian Community is a touristic, industrial, and agricultural territory with a high rate of urbanization and population density compared to the rest of Spain, the latter being more marked in the coastal area (Febré, 2019). According to Alamá-Sabater et al (2021), there are a number of relevant factors that affect the distribution of the population as it is observed that municipalities that are close to urban areas which tend to experience positive population growth because of accessibility; i.e. the distance to an urban center is a factor valued by the population. Economic conditions are relevant as well, number of contracts and per capita income have a positive influence as an increase in population is found where these factors are higher. However, rural areas have a lower degree of urbanization and a lower increase in population. Another factor to take into account are public facilities and services, given that in areas where these are insufficient there are problems of growth.

Also noteworthy is the high rate of ageing in the southern areas of the Valencian Community due to the immigration of a large part of the retired population coming from the rich countries of Europe (Febré, 2019).

In terms of public services, the limited supply of public transport, such as buses, makes it difficult for the rural population to access basic services. Rural mobility depends to a

large extent on private means of transport; however, a high percentage of the rural population does not have a vehicle and, therefore, in order to access services that are only available in more urban areas, it is necessary to use trains and/or bus. This inefficient mobility network is a conditioning factor that, in many cases, forces the inhabitants of more rural areas to migrate to more populated ones. This may be seen in the interior parts of the province of Castellón, where since the second half of the 20th century, in the smaller towns, there has been a tendency towards a reduction in these services together with a sharp decline in population (Dols & Martí, 2020) . For these reasons, the implementation of an efficient network of public transport and other means of mobility are key elements in the fight against depopulation, with benefits for the local population and even a positive effect on tourism.

3. METHODOLOGY

The six depopulation indicators defined by the Agenda Valenciana Antidespoblament (AVANT) in November 2017 have been used as a reference for the preparation of this study. These indicators allow us to evaluate the risk of depopulation in which each municipality finds itself based on the number of criteria that are met.

In order to update these indicators, the database of the Statistical Portal of the Generalitat Valenciana has been used to obtain the figures for each indicator in 2019 and to create a database in Excel. In addition, as an extension to the study carried out by AVANT 2017, the possible dependency relationships between municipalities have been analyzed. It should be taken into account that, from a methodological point of view, the presence of spatial dependence is an additional element to explain and define depopulation.

The spatial analysis will be carried out using the global and local correlation statistics tools (Moran's I) defined by Anselin (1988), and the data will be processed with the GeoDa software.

3.1. Indicators

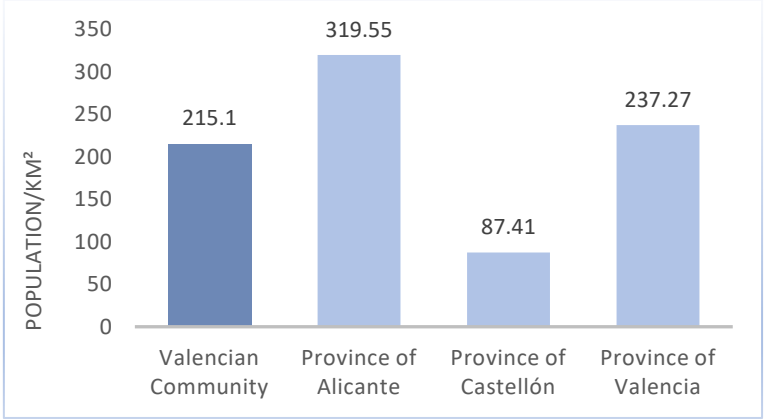
The six demographic indicators used for this analysis are population density, population growth, vegetative growth rate, aging index, dependency ratio, and migration rate (GVA, 2017).

Population density (dens) is defined as the number of inhabitants per square kilometer, its calculation refers to the quotient between the population of a municipality in a year and its surface area in km2.

As shown in Figure 1, in 2019 the Valencian Community had a population density of 215.1 inhabitants/km^2. By provinces Alicante has the highest density, 319.55 inhabitants/km^2, followed by the province of Valencia with 237.27 inhabitants/km^2, and finally, Castellón with 87.41 inhabitants/km^2.

Figure 1

Population density, 2019



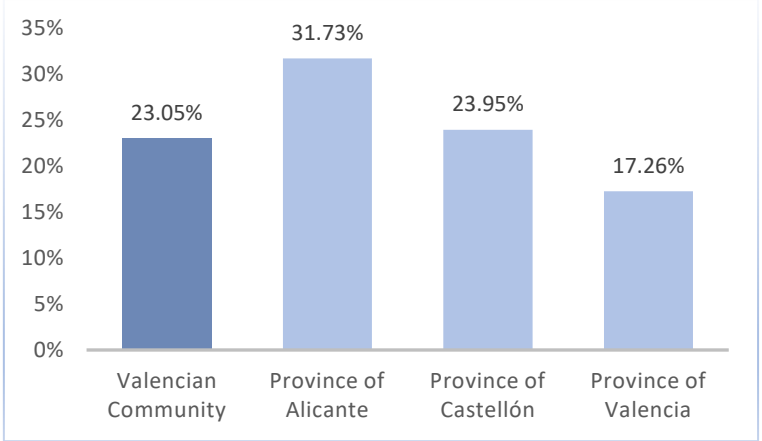
Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Population growth (growth_pop) refers to the population growth rate over the last twenty years, in this case for the period 1999 to 2019.

In the last twenty years, the Valencian Community has increased its population by 23.05%. By province, Figure 2 shows that Alicante is the province with the highest growth rate, followed by both Castellón and Valencia.

Figure 2

Population growth, 1999-2019



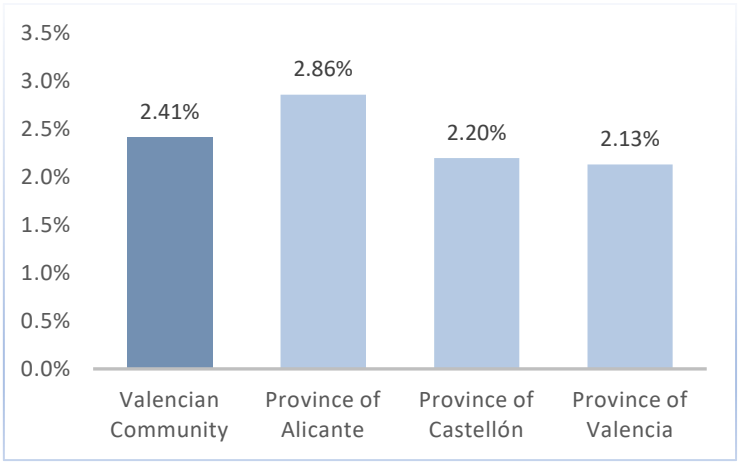
Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Vegetative growth rate (growth_veg) indicates the difference between births and deaths (vegetative balance) as a function of total population for the period 1999-2019.

According to Figure 3, the vegetative growth in the Valencian Community was 2.41%. By provinces, Alicante shows the highest growth with 2.86%, followed by Castellón and Valencia, with 2.2% and 2.13% respectively.

Figure 3

Vegetative growth rate, 1999-2019



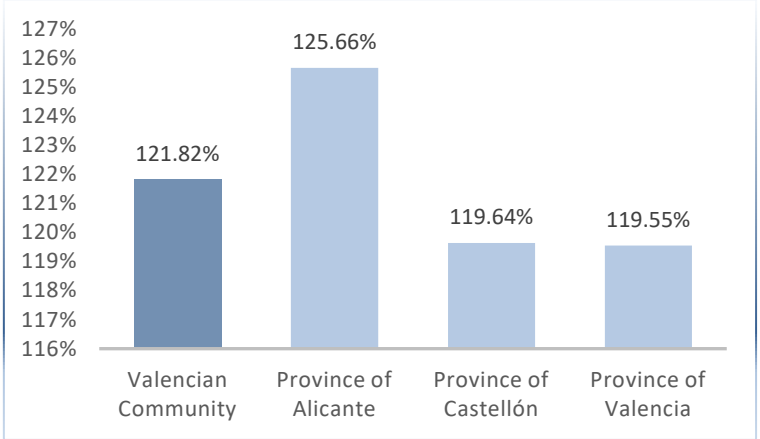
Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Aging rate (aging), this ratio indicates the percentage of the adult population over 64 years out of children and young people under 16 years.

According to Figure 4, the aging index for the year 2019 is 121.82% in the Valencian Community. By provinces, Alicante is the one with the most aged population, followed by Castellón with a figure very close to that of Valencia.

Figure 4

Aging rate, 2019



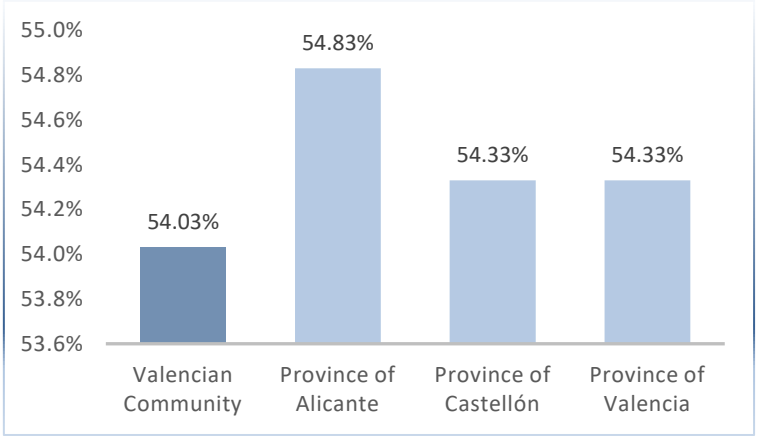
Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Dependency ratio (dep) is the ratio of dependent persons (sum of the population under 16 and the population over 64) to the active population (working age population between 16 and 64).

In 2019, Figure 5 shows that around 54.03% of the population in the Valencian Community is dependent, a very similar figure in all provinces.

Figure 5

Dependency ratio, 2019



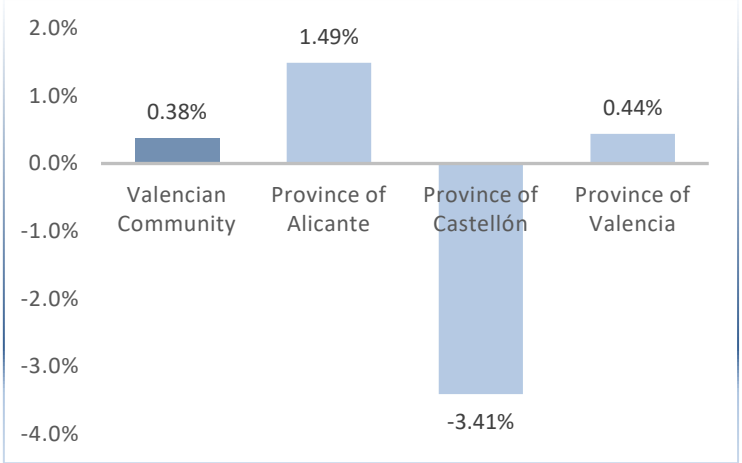
Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Migration rate (migr) expresses the migration balance (difference between migration inflows and outflows) of the last ten years over the total number of population in the last year.

For 2019 year, Migrations in the Valencian Community have only involved the entry of 0.38% of migrants. In Figure 6, disparity is observed between the three provinces. The province of Castellón has a negative rate (-3.41%), which means that there have been more outflows than inflows of migrants.

Figure 6

Migration rate, 2019



Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Once the demographic indicators have been defined, in order to establish the degree of depopulation suffered by each municipality, we will make use of the criteria stipulated by the Agenda Valenciana Antidespoblament (AVANT) in November 2017 in the report entitled *Proposal for a System of Indicators*.

Table 1

Demographic indicators to establish the level of depopulation

INDICATOR	YEAR	REQUIREMENT
Population density	2019	≤ 20 hab/ km^2
Population growth	1999 - 2019	≤ 0%
Vegetative growth rate	1999 - 2019	≤ -10 %

Aging rate	2019	≥ 250%
Dependency ratio	2019	≥ 60%
Migration rate	2009 - 2019	≤ 0%

Source: Own elaboration from AVANT (GVA, 2017).

According to the Agenda Valenciana Antidespoblament (AVANT), GVA, 2017, p. 4-5: *"Depending on the value of these demographic indicators, a classification of municipalities is established according to the risk of depopulation:*

- ***Very high risk**: when the requirements for all indicators are met simultaneously in the municipality.*
- ***High risk**: when the requirements are met in at least five of the indicators.*
- ***Moderate risk**: when the requirements are met in at least four of the indicators or the population of the municipality is equal to or less than 100 inhabitants.*
- ***Other municipalities**: when it meets the requirements in a smaller number of indicators and the population exceeds 100 inhabitants."*

3.2. Spatial dependence

Territorial analysis at the municipal level involves carrying out a study of the territory and, therefore, of the relationships generated within it. As pointed out in the literature, Alamá-Sabater et al. (2019), the characteristics of a municipality and its population and employment dynamics may not be analyzed in isolation and without taking into account its surroundings. A municipality is the way it is because it is located in a certain territory and is surrounded by neighbors; therefore, the phenomenon of depopulation should not be limited to the analysis of the municipality itself, but the scope of study should be broadened alongside the environment and, therefore, the elements and dynamics of the municipalities that we consider to be neighbors, should be introduced among the explanatory factors of depopulation.

Consequently, this study extends the analysis carried out by AVANT (GVA, 2017), analyzing the spatial correlation that may exist between the indicators defined in the previous section. For this purpose, the Moran's I index will be applied, a spatial autocorrelation tool that allows studying the behavior of geo-referenced data and determining the type of association that exists between neighboring spatial units (Celemín, 2009) .

According to Anselin (1988), spatial autocorrelation refers to the relationship between what happens at a given point in space and what happens at other points in space. Two types of spatial autocorrelation may occur: positive or negative.

The presence of positive spatial correlation in specific indicator (for instance population growth) means that certain municipality is surrounded by municipalities with close values (high or low). A negative Moran index indicates that municipalities with high (low) population growth are surrounded by municipalities with low (high) values (Celemin, 2009).

Spatial autocorrelation may be global or local. The global index is used to know if there is spatial autocorrelation in the whole of the territory under study, but it does not allow us to know if it also exists at the local level. Therefore, to determine whether there is spatial autocorrelation in the subset of spatial units we will use the local index (Sánchez, 2008).

Moran's global I-index is calculated using the following expression (Moran, 1948):

$$I = \frac{n}{S_0} \frac{\sum_i \sum_j w_{ij}(x_i - \mu)(x_j - \mu)}{\sum_i (x_i - \mu)^2}$$

[1]

n: number of municipalities.

S_0: is a scaling factor that equals the sum of all the elements of w_{ij}.

w_{ij}: spatial dependency matrix: spatial dependency matrix defining how geographical areas *i* and *j* are connected. The elements on the diagonal are given a value of zero.

x_i: the value of observation in the municipality *i*.

μ: the average of the observations between municipalities.

The results for this index are interpreted based on the acceptance or rejection of a null hypothesis by means of a statistical significance test of Z-values that follows a normal distribution (Bucheli, 2019). The null hypothesis (H_0) states that the element being

analyzed (demographic indicator) follows a random distribution among the study areas (municipalities). In other words, the spatial distribution generated by the observed values occurs randomly. The alternative hypothesis (H_1) states that the spatial distribution does not occur randomly.

H_0: No spatial autocorrelation (there is spatial randomness)

H_1: There is spatial autocorrelation (there is positive or negative autocorrelation)

The interpretation of the results is done by the value of the global normalized I index Z(I), so that:

- If the Z(I) value is within the interval [-1.96; 1.96], the null hypothesis of spatial randomness is accepted at the 95% confidence level.
- If the Z(I) value is positive (>1.96) and statistically significant at the 5% significance level, the null hypothesis is rejected, and the data may be said to have positive spatial autocorrelation.
- If the Z(I) value is negative (< -1.96) and statistically significant at 5% significance level, the null hypothesis is rejected, and it may be stated that there is negative spatial autocorrelation in the data.

Another way to reject or accept the hypothesis is by means of the p-value, if the p-value is greater than the significance level, the null hypothesis will be fulfilled and there will be spatial randomness. On the contrary, if the p-value is lower than the significance level, there will be enough statistical evidence to reject the null hypothesis and to be able to affirm that the spatial distribution is not random, but that there is spatial autocorrelation.

To complete the spatial analysis, Local Indicators of Spatial Association (LISA) are used. In this case we will analyze the local Moran's I index. This index decomposes the global Moran's I to determine the presence of autocorrelation in neighboring units and thus evaluate the influence of individual locations on the global statistics (Anselin, 1995).

The LISA maps identify the presence of four different types of clusters:

- High-High (HH): indicates that a location that has a high value is surrounded by spatial neighboring units with high values (I>0).

- Low-Low (LL): indicates that a location with a low value is surrounded by spatial neighboring units with low values (I>0).
- High-Low (HL): indicates that a location with a high value is surrounded by spatial neighboring units with low values (I>0).
- Low-High (LH): indicates that a location with a low value is surrounded by spatial neighboring units with high values (I>0).

4. SPATIAL ANALYSIS

In this section, using the GeoDa software and the data obtained for the year 2019 from the Statistical Portal of the Generalitat Valenciana, the spatial analysis has been carried out for each of the six indicators.

It should be noted that in order to calculate the Moran's I index, both global and local, it is necessary to connect all municipalities with a weight matrix (W) that define the type of neighborhood between municipalities.

Therefore, for this purpose, and following most of the literature, in this study neighboring municipalities have been defined as those that are less than or equal to 20 km away. The matrix is specified as follows:

$$w_{ij} = \begin{cases} 1 \; if \; i \; and \; j \; share \; are \; less \; than \; 20 \; km \\ 0 \; if \; i \; and \; j \; are \; more \; than \; 20 \; km \;\; or \; i = j \end{cases}$$

The elements w_{ij} indicate the way that region *i* spatially connects to region *j*. The elements w_{ii} on the diagonal are set to zero and scaled to sum to unity in each row (standardized weights matrices) with typical elements:

$$w_{ij}^{*} = \frac{w_{ij}}{\sum_{j=1}^{N} w_{ij}}$$

[2]

4.1. Population density

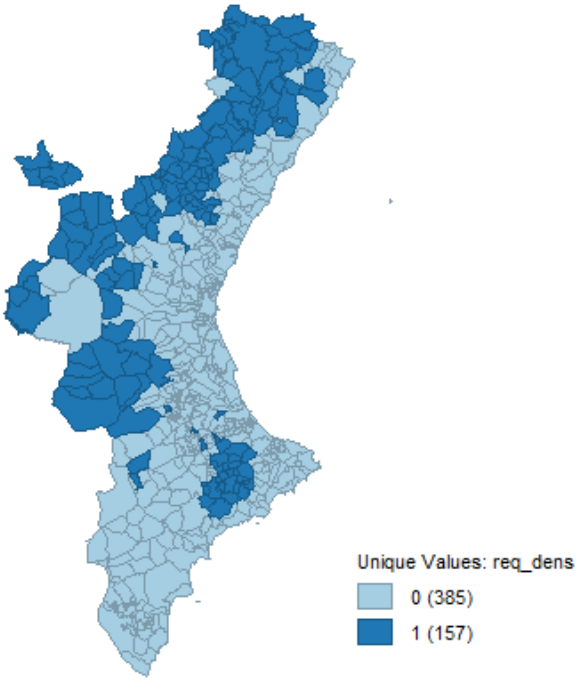
The population density indicator measures the number of inhabitants per square kilometer living in each area. The AVANT document (GVA, 2017) establishes that a municipality meets this requirement for depopulation when the indicator takes a value ≤ 20 inhab/km^2.

Figure 7 shows that 157 municipalities out of the 542 that make up the Valencian Community have a low population density (≤20 inhabitants/km^2). These localities are equivalent to approximately 28.97% of the municipalities in the community. In the province of Castellón the whole inland area stands out, in the province of Valencia the regions of Rincón de Ademuz, Els Serrans, and Valle de Cofrentes-Ayora, and, finally, in the province of Alicante, the region of El Comtat.

The municipalities of Castell de Cabres (0.55 inhab /km/km^2), Vallibona (0.76 inhab /km^2), and Puebla de San Miguel (0,98 inhab/km^2), have the lowest population densities in the whole of the Valencian Community, even below one inhabitant per square kilometer. On the other hand, there are the municipalities with the highest population densities in the whole community, these being: Emperador (26644.43 inhab/km^2), Mislata (21499.36 inhab/km^2), and Benetússer (19006.61 inhab/km^2).

Figure 7

Population density, 2019



Source: Own elaboration.

In figure 8, the global Moran's I index, defined by means of expression [1], is represented, and its value is I= 0.261. The positive sign indicates that municipalities with low (high) population density are surrounded by municipalities with low (high) population density. To verify this autocorrelation, the GeoDa program performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

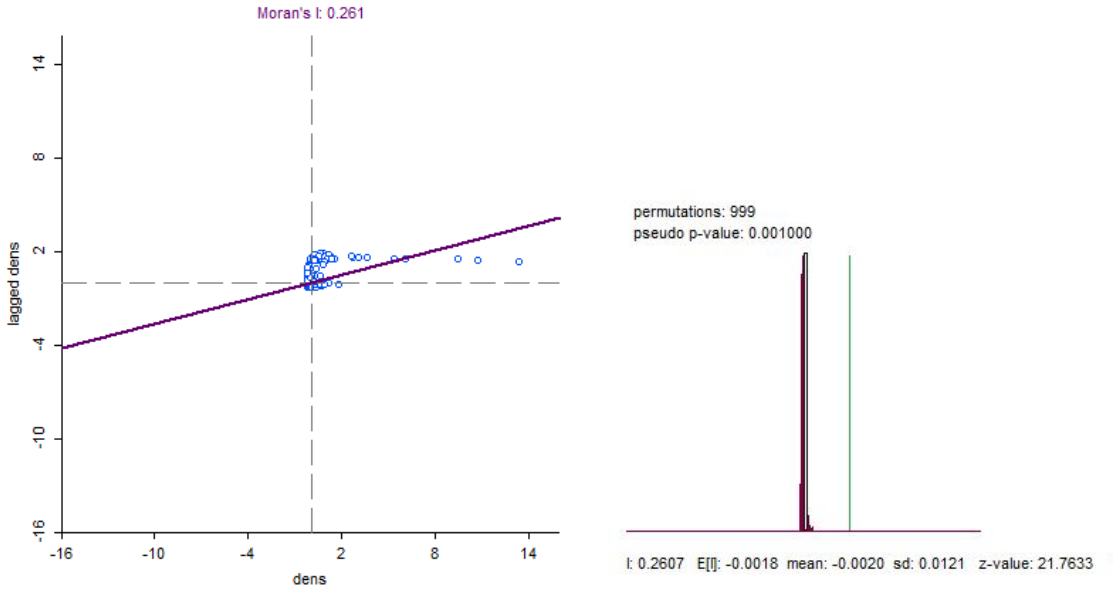
$$\begin{cases} H_0: \text{Spatial randomness} \\ H_1: \text{Spatial autocorrelation} \end{cases}$$

A p-value of 0.001 has been obtained, which is less than the significance level ($\alpha = 0.05$). Therefore, with a confidence level of 95% there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the presence of spatial autocorrelation at the global level has been indicated, the presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran I Index to obtain a map of clusters.

Figure 8

Global Moran's I for population density, 2019



Source: Own elaboration.

Figure 9 shows the 4 types of clusters that have been formed according to the population density indicator: high-high, low-low, low-high, high-low.

The municipalities that are shaded in red indicate the presence of a high-high spatial autocorrelation; i.e. municipalities with a high population density are also surrounded by municipalities with a high population density. There are 48 municipalities that present this type of high-high spatial autocorrelation, these municipalities are located in the province of Valencia, in particular in the city of Valencia and its metropolitan area.

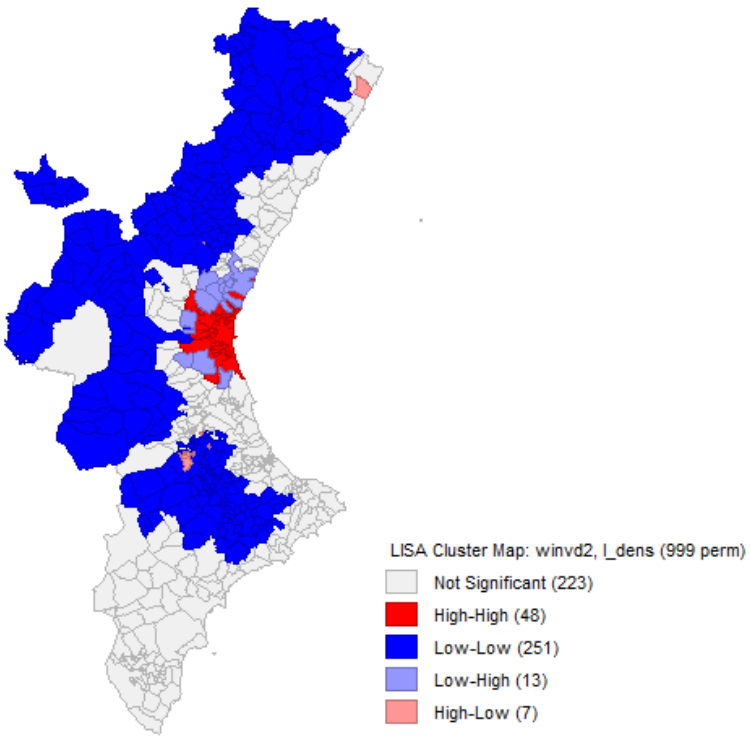
On the other hand, municipalities with low-low spatial autocorrelation are shaded in dark blue, meaning that these low population density municipalities are also surrounded by municipalities with low population density. It is observed that 251 municipalities have a low-low spatial autocorrelation. These clusters are mostly concentrated in the interior of the provinces of Castellón (including some coastal towns such as Torreblanca and Alcalá de Xivert) and Valencia (with the exception of Requena). A large clustering is also observed in the province of Alicante, especially in the regions of El Comtat, l'Alcoià, and the interior of Marina Baixa.

In light blue are the municipalities that have a low-high spatial autocorrelation, and which, therefore, are municipalities with low population density that are surrounded by municipalities with a high population density. In total there are 13 municipalities with a low-high spatial autocorrelation, all belonging to the province of Valencia and most of them located in the counties of Camp de Morvedre (Albalat dels Tarongers, Gilet, Sagunt, Estivella), Camp de Túria (Bétera, Náquera, Riba- Roja del Túria and Serra), and L'Horta Nord (Museros and El Puig).

Finally, 7 municipalities shaded in pink show a high-low spatial autocorrelation, indicating that they are high-density municipalities surrounded by other low-density municipalities. It may be seen that in the province of Castellón (Benicarló and Geldo), and in the province of Valencia (Senyera, Llocnou d'en Fenollet, Canals, L'Alcudia de Crespins) there are high-low clusters.

Figure 9

Spatial concentration of population density (LISA maps), 2019



Source: Own elaboration.

4.2. Population growth

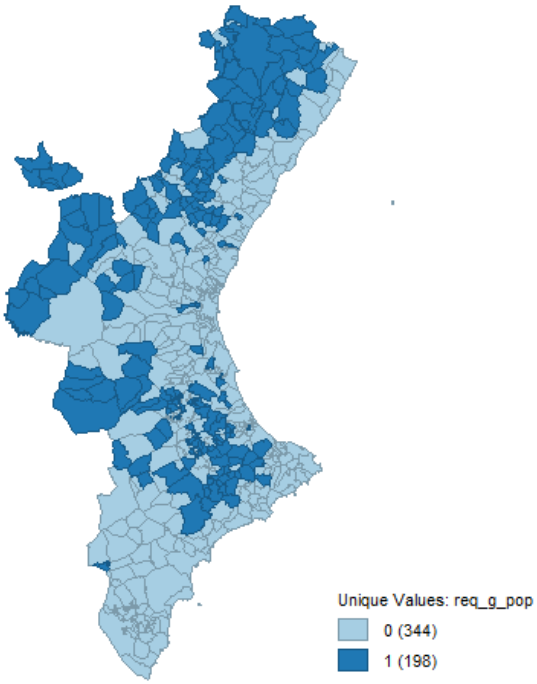
The population growth indicator shows the variation in population that has occurred in each municipality in the last 20 years, in this case referring to the period 1999-2019. According to the AVANT document (GVA, 2017), a municipality meets this requirement for depopulation when its population growth has been zero or negative.

In Figure 10, the dark blue shading indicates the presence of 198 municipalities with a population growth rate ≤ 0%, equivalent to 36.53% of the municipalities in the community. In the province of Castellón, the counties of Els Ports, L'Alt Maestrat, the interior of El Baix Maestrat, and L'Alcalatén stand out. In the province of Valencia, the counties of Rincón de Ademuz, Els Serrans, the west of Plana d'Utiel-Requena and the Valle de Cofrentres-Ayora. Finally, in the province of Alicante, the counties of El Comtat and the interior of La Marina Alta.

The municipalities with the most drastic growth rates are mainly in the inland of the province of Castellón with municipalities such as Herbés, (-60.75%), Villamalur (-58.11%), and Matet (-42.07%). Some towns in the inland of the Province of Valencia such as Millares (-47.17%), Casas Bajas (-43.84%), and Vallanca (-41.35%) among others with a lower rate located in the inland north of the Province of Alicante such as Benimassot (-42.7%), Confrides (-39.48%), and La Vall d'Ebo (-36.84%). On the other hand, the municipalities with the highest growth rates are Guardamar de la Safor (662.32%) and San Antonio de Benagéber (273.42%), both located in the province of Valencia, and Daya Vieja (323.31%), located in the province of Alicante.

Figure 10

Population growth, 1999-2019



Source: Own elaboration.

In figure 11, the global Moran's I index, defined by means of the expression [1], is represented, being its value I= 0.230. The positive sign indicates that municipalities with low (high) population growth are surrounded by municipalities with low (high) population growth. To verify this autocorrelation, the GeoDa software performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

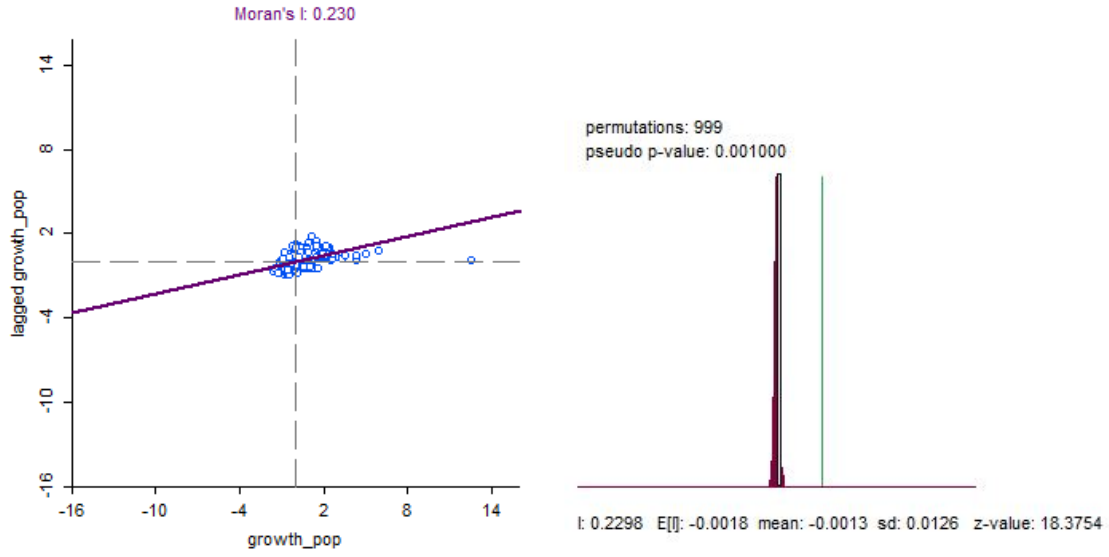
$$\begin{cases} H_0: \text{Spatial randomness} \\ H_1: \text{Spatial autocorrelation} \end{cases}$$

For 999 permutations a p-value of 0.001 is obtained, which is less than the significance level (α = 5%). Therefore, with a 95% confidence level there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the presence of spatial autocorrelation at the global level has been indicated, its presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran's I Index to obtain a map of clusters.

Figure 11

Global Moran's I for population growth, 1999-2019



Source: Own elaboration.

Figure 12 shows the 4 different clusters have been formed according the population growth indicator: high-high, low-low, low-high, high-low.

Municipalities with high-high spatial autocorrelation, shaded in red, indicate that they are municipalities with high population growth, surrounded by municipalities that also have high population growth. Ninety municipalities show this type of spatial autocorrelation. These municipalities correspond mainly to the province of Alicante, especially the towns located in the south, such as the Baix Vinalopó and Baix Segura regions. Next, in the province of Valencia there are some municipalities such as those located in the Camp de Túria region. Finally, in the province of Castellón, the towns of Castelló de la Plana and Benicàssim stand out.

The dark blue shaded areas indicate the existence of a low-low spatial autocorrelation, meaning the presence of municipalities with low population growth surrounded by municipalities with low population growth. It may be observed that 193 municipalities show a low-low spatial autocorrelation. These areas correspond to the entire inland part of the province of Castellón, also noting Els Serrans (localities such as Alpuente, Aras

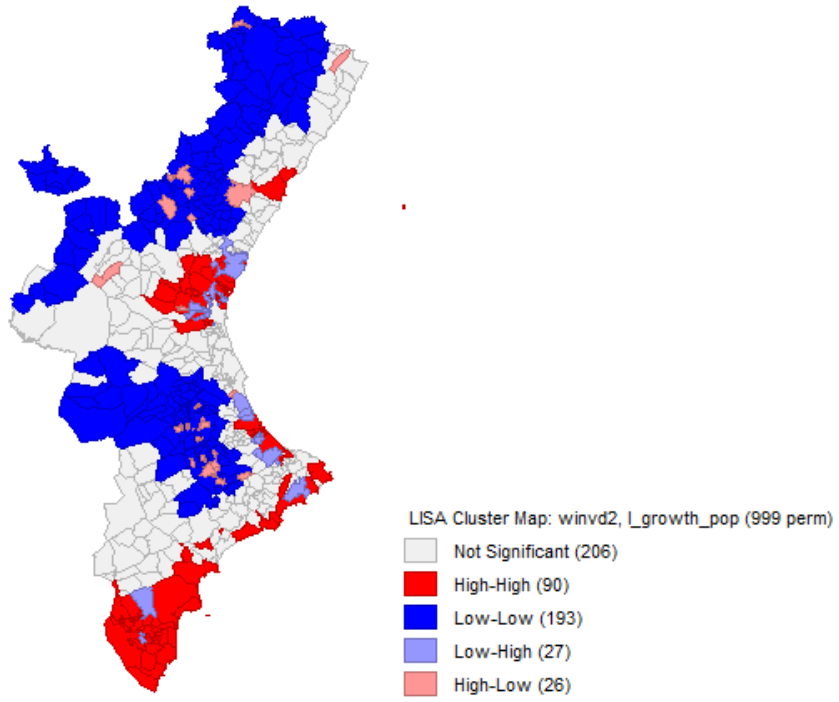
de los Olmos, Benagéber, Titaguas and Tuéjar), La Plana de Utiel-Requena (Utiel, Villagordo del Cabriel, Caudete de las Fuentes, Fuenterrobles and Sinarcas), Racó de Ademús (Casas Altas, Casas Bajas, Puebla de San Miguel, Torrebaja and Vallanca), Canal de Navarrés (Anna, Bicorp, Bolbaite, Enguera, Navarrés, Quesa and Chella), and La Ribera Alta, which belong to the province of Valencia, and the region of L'Alcoià (Alcoi, Ibi and Benifallim) and El Comtat (L'Orxa, Benasau, Beniarrés, Facheca, Gorga, Planes and Quatretondeta), which belong to the province of Alicante.

Shaded in light blue are municipalities that have a low-high spatial autocorrelation, indicating that they are municipalities with low population growth but are surrounded by municipalities with high population growth. There are 27 municipalities with this type of autocorrelation: around the city of Valencia the localities of Sagunt, Segart, Moncada, Godella, Burjassot, Manises, Quart de Poblet, Mislata, Xirivella, Alaquás, and Benetússer; on the south coast of the province of Valencia we find Xeraco, Xeresa, and Tavernes de la Valldigna; in the north-east of the province of Alicante appear Pego, Adsubia, Sagra, and Benissa, and in the south, Crevillent and Benejúzar.

Finally, the 26 municipalities shaded in pink show a high-low spatial autocorrelation; these municipalities have a high population growth and are surrounded by other municipalities with low population growth. These municipalities are scattered throughout the community: in the province of Castellón are Onda, Montanejos, Palanques, Sant Jordi, Montanejos, Fuente la Reina, Navajas and Viver; in the province of Valencia are Loriguilla, Favar, Senyera, San Juan de Nova and Genovés; in the province of Alicante are the towns of Muro de Alcoi, Gaianes, Alcocer de Planes, Millena and Tollos.

Figure 12

Spatial concentration of population growth (LISA maps), 1999-2019



Source: Own elaboration.

4.3. Vegetative growth rate

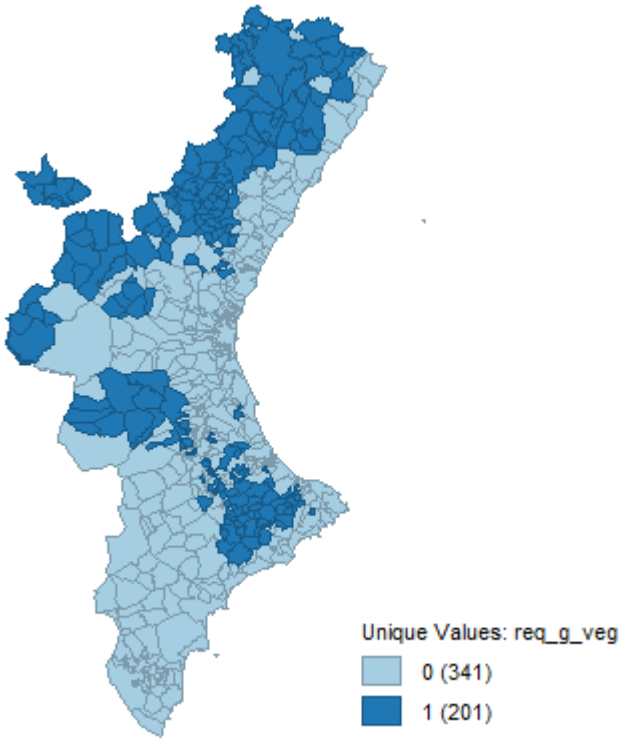
The vegetative growth rate indicates the difference between births and deaths over the total population in the last 20 years, in this case referring to the period 1999-2019. According to AVANT (GVA, 2017), a municipality meets this requirement for depopulation when its vegetative growth rate has been ≤ -10%.

In Figure 13, shaded in dark blue, are the municipalities that have experienced a vegetative growth rate of less than or equal to -10% in the period 1999-2019. Of the 542 municipalities that make up the Valencian Community, 201 municipalities meet this requirement; i.e. 37.08% of the municipalities in the entire community have a vegetative growth rate below the established limit. These localities are located mainly in the interior of the province of Castellón, some inland areas of the province of Valencia such as the regions of Rincón de Ademuz, Els Serrans and Canal de Navarrés, and the regions of El Comtat, the interior of La Marina Baixa and the interior of La Marina Alta belonging to the province of Alicante.

The municipalities with the worst figures include Vallanca (-108.63%) in the province of Valencia, and Matet (-78.57%), Villamalur (-61.29%), and Herbés (-59.52%) in the province of Castellón. On the other hand, we find the municipalities of Beniflá (14.44%), Emperador (13.24%), Albal (12.63%), and La Pobla de Vallbona (12.03%) located in the province of Valencia, these municipalities have the highest vegetative growth figures in the entire Valencian Community.

Figure 13

Vegetative growth rate, 1999-2019



Source: Own elaboration.

In figure 14, the global Moran's I index, defined through the expression [1], has been plotted, being its value I= 0.468. The positive sign indicates that municipalities with low (high) vegetative growth are surrounded by municipalities with low (high) vegetative growth. To verify this autocorrelation, the GeoDa software performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

H_0: Spatial randomness

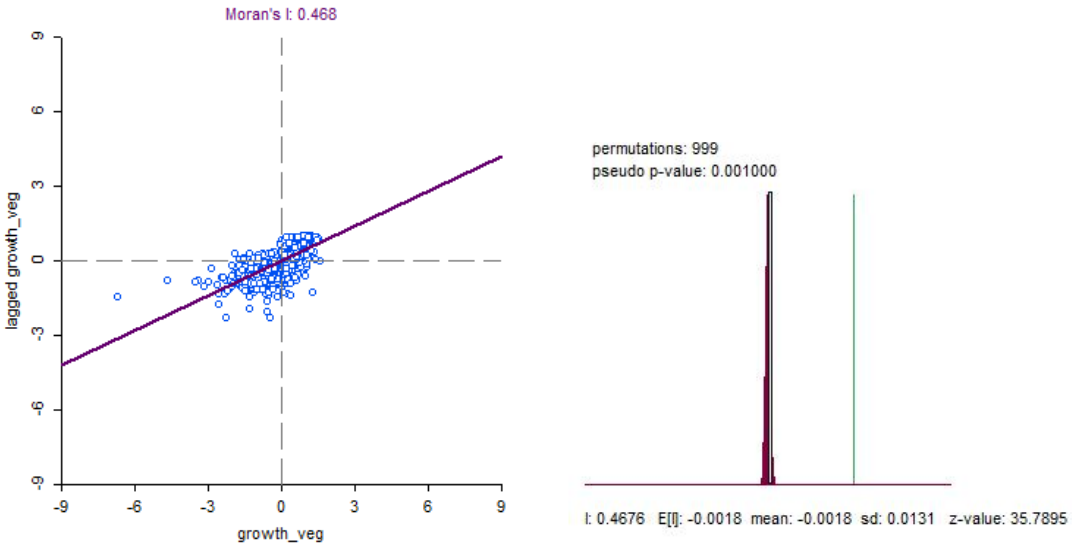
H_1: Spatial autocorrelation

For 999 permutations a p-value of 0.001 is obtained, which is less than the significance level (α = 5%). Therefore, with a confidence level of 95% there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the presence of spatial autocorrelation at the global level has been indicated, its presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran's I index to obtain a map of clusters.

Figure 14

Global Moran's I for vegetative growth, 1999-20



Source: Own elaboration.

Figure 15 shows the 4 clusters that have been formed according to the vegetative growth indicator: high-high, low-low, low-high, high-low.

The municipalities shaded in red have a high-high spatial autocorrelation; i.e. municipalities with high vegetative growth are also surrounded by municipalities with high

vegetative growth. There are 184 municipalities with this type of high-high spatial autocorrelation. In the province of Castellón we find the capital Castelló de la Plana and its surroundings Almassora, Benicàssim, Sant Joan de Moró, Borriana, Vila-real, and Alquerías del Niño Perdido. In the province of Valencia, the entire coastal area stands out, particularly the regions of Camp de Morvedre, Horta de València, Ribera Alta and Ribera Baixa. In Alicante, a large part of the province stands out, especially the regions of l'Alcoiá, l'Alacantí, Baix Vinalopó, Baix Segura, and Vinalopó Mitjà.

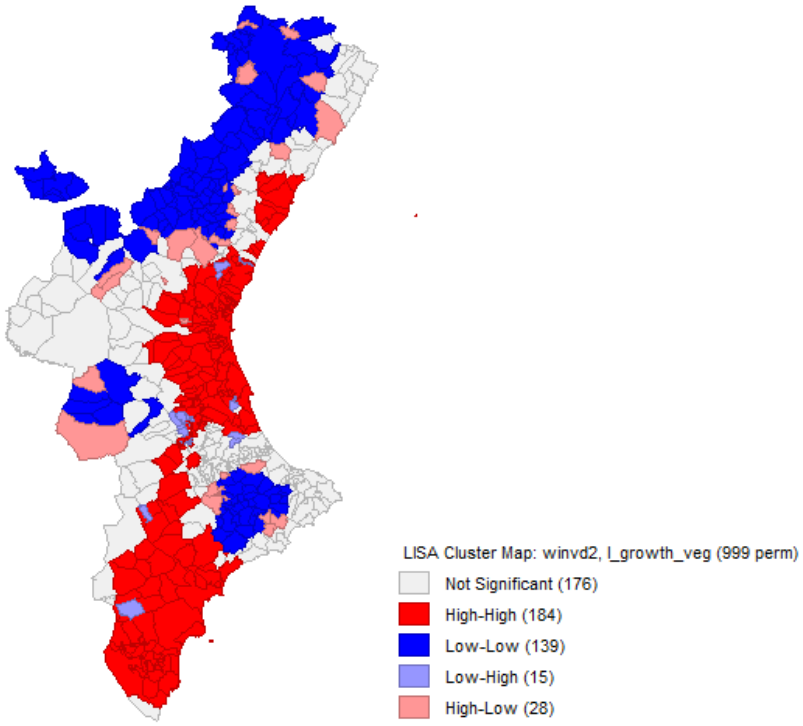
The dark blue shaded areas indicate a low-low spatial autocorrelation, meaning the presence of municipalities with low vegetative growth that are surrounded by municipalities with low vegetative growth. It may be seen that 139 municipalities show a low-low spatial autocorrelation. The inland area of the province of Castellón, the regions of Els Ports, Alt Maestrat, l'Alcalatén, Alt Millars, and Alt Palancia stand out; in the province of Valencia, the region of Els Serrans, Rincón de Ademuz, and the north of the Cofrentes-Ayora Valley; and in the province of Alicante, the region of El Comtat.

In light blue are the municipalities that have a low-high spatial autocorrelation, and that, therefore, are municipalities with low vegetative growth that are surrounded by municipalities with high vegetative growth. In total there are 15 municipalities that have a low-high spatial autocorrelation. These municipalities are in the province of Alicante (Camp de Mirra and Fondó de les Neus) and Valencia (Estivella, Segart, Antella, Pinet).

Finally, with a high-low spatial autocorrelation, there are 28 municipalities shaded in pink, these municipalities have a high vegetative growth and are surrounded by other municipalities that have a low vegetative growth. In the province of Castellón we have the municipalities of Alcalá de Xivert, Castellfort, Sant Mateu, Segorbe, and Altura, in the province of Valencia the municipalities of Loriguilla, Domenyo, Cofrentes, and Ayora, and in the province of Alicante we find Concentaina, Muro d'Alcoi, Polop, and Castell de Guadalest.

Figure 15

Spatial concentration of vegetative growth (LISA maps), 1999-2019



Source: Own elaboration.

4.4. Aging index

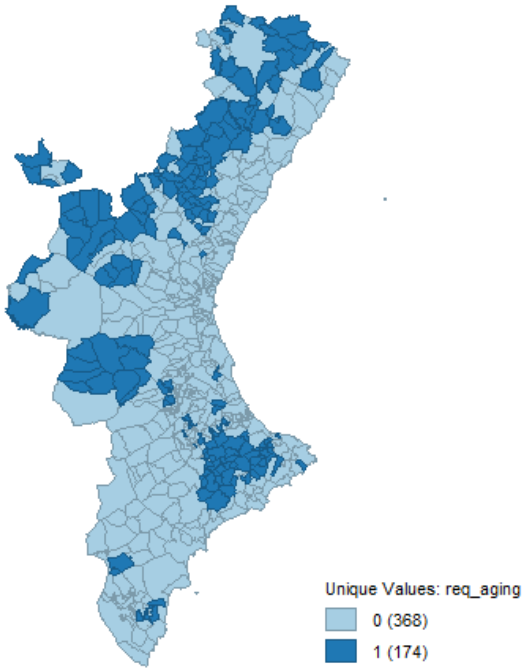
The aging index indicates the percentage of the adult population over 64 years of age out of children and young people under 16 years of age. The AVANT document (GVA, 2017), establishes that a municipality meets this requirement for depopulation when the indicator takes a value ≥ 250%.

Figure 16 shows that 174 municipalities out of the 542 that make up the Valencian Community; i.e. 32.10% shows a high rate of aging. These localities, shaded in dark blue, are mainly located in the interior of the province of Castellón and some municipalities in the interior of the provinces of Valencia and Alicante.

On the one hand, Castell de Cabres, Sempere, and Higueras have the most drastic situation in the whole Valencian Community because there are no young people in its population. On the other hand, the municipalities with the lowest aging index are San Antonio de Benagéber (43.70%), Emperador (50.65%), and Guardamar de la Safor (54.90%).

Figure 16

Aging index, 2019



Source: Own elaboration.

In figure 17, the global Moran's I index, defined through the expression [1], has been plotted, being its value I= 0.167. The positive sign indicates that municipalities with a low (high) aging index are surrounded by municipalities with a low (high) aging index. To verify this autocorrelation, the GeoDa software performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

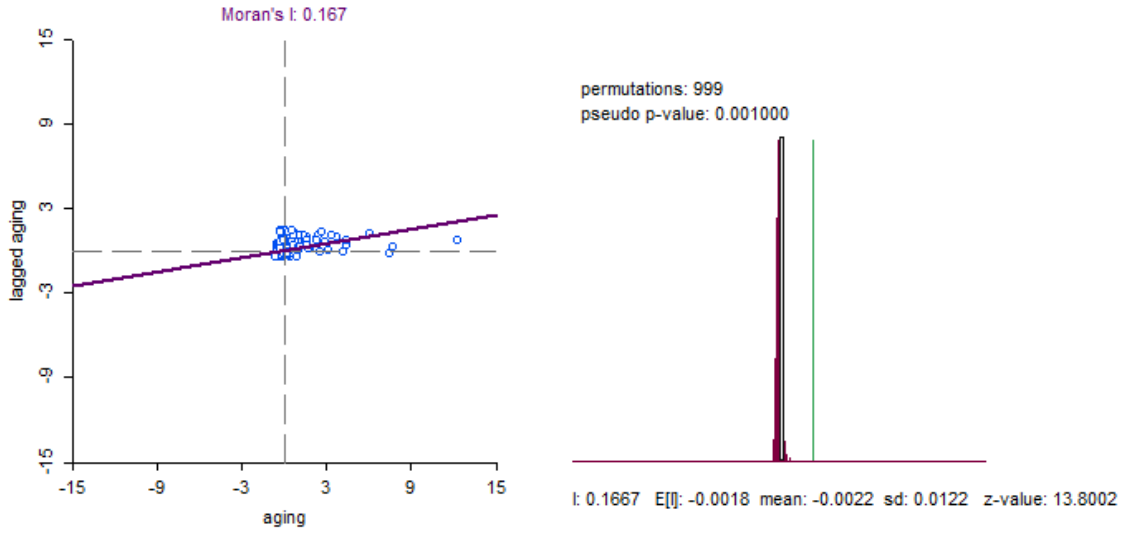
$$\begin{cases} H_0: \text{Spatial randomness} \\ H_1: \text{Spatial autocorrelation} \end{cases}$$

The p-value was 0.001, which is less than the significance level ($\alpha = 0.05$), therefore, with a confidence level of 95% there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the presence of spatial autocorrelation at the global level has been indicated, its presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran's I index to obtain a map of clusters.

Figure 17

Global Moran's I for the aging index, 2019



Source: Own elaboration.

Figure 18 shows the 4 clusters that have been formed according to the aging index: high-high, low-low, low-high, high-low.

The red shaded municipalities indicate the presence of a high-high spatial autocorrelation, meaning that municipalities with a high aging rate are surrounded by municipalities with a high aging rate. There are 64 municipalities with this type of spatial autocorrelation. The counties of Els Ports and L'Alt Millars in the province of Castellón and the county of El Comtat in the province of Alicante stand out.

The dark blue shaded areas indicate the existence of a low-low spatial autocorrelation, meaning the presence of municipalities with a low aging index surrounded by municipalities with a low aging index. There are 180 municipalities that show a low-low spatial autocorrelation. These municipalities correspond to the city of Castelló and surrounding areas (Vila-real, Almazora, Burriana, Benicàssim, Oropesa del Mar, etc.). In

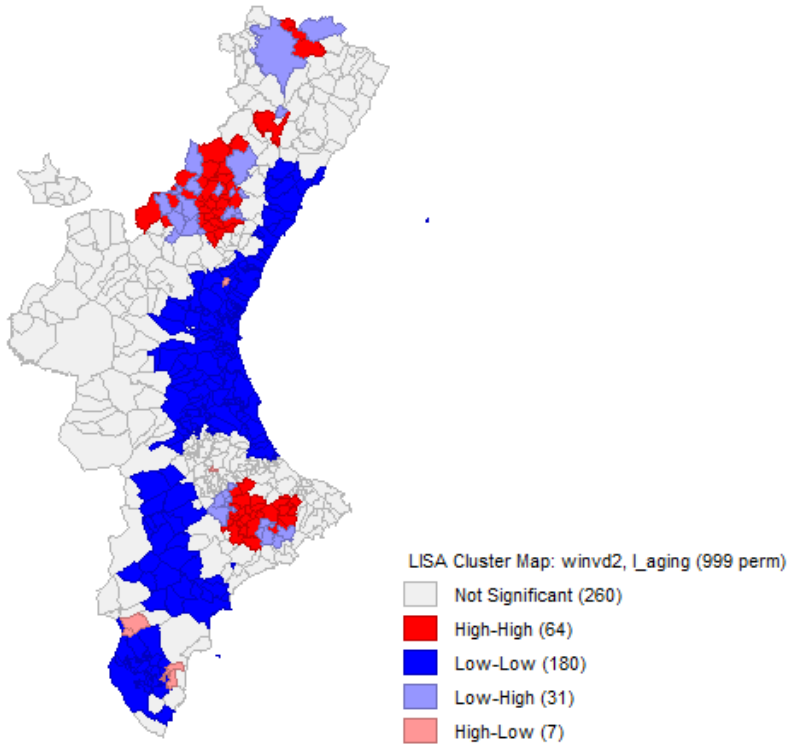
the province of Valencia the entire coastline stands out, and in the province of Alicante the regions of l'Alcoià, l'Alacantí, and Baix Segura.

In light blue are the municipalities that have a low-high spatial autocorrelation, and which, therefore, are municipalities with a low aging index that are surrounded by municipalities with a high aging index, in total there are 31 municipalities that have a low-high spatial autocorrelation. Els Ports and l'Alt Palància regions, and municipalities like Concentaina, Pego, and Muro d'Alcoy in the province of Alicante stand out.

Finally, with a high-low spatial autocorrelation, there are 7 municipalities shaded in pink, these municipalities have a high aging index and are surrounded by other municipalities with a low aging index. These municipalities are scattered in the south of the province of Valencia (Segart and Sempere), and Alicante (Fondó de les Neus, Rojales and San Flujencio).

Figure 18

Spatial concentration of the aging index (LISA maps), 2019



Source: Own elaboration.

4.5. Dependency ratio

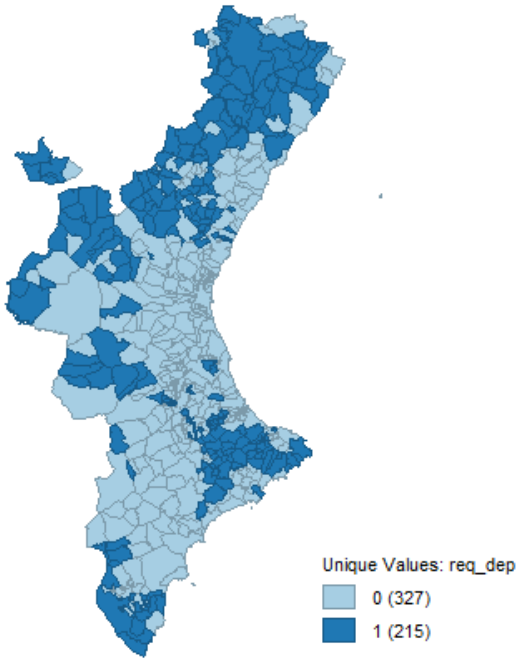
Is the ratio of dependent persons to the active population. The document AVANT (GVA, 2017) establishes that a municipality meets this requirement for depopulation when this indicator takes a value ≥ 60%.

In figure 19, the municipalities with a dependency ratio ≥ 60% in 2019 are shaded in dark blue. Of the 542 municipalities that form part of the Valencian Community, 215 municipalities meet this requirement; i.e. 39.67% of the municipalities in the entire community have a dependency ratio that exceeds the established limit. These localities are mainly located in the interior of the province of Castellón, in the regions of Los Serranos and Rincón de Ademuz, El Comtat, Marina Alta, and Baix Segura.

The municipalities with the highest dependency rate in the whole community are Tollos (171.73%), Montán (115.12%), and Zarra (112.43%), while the municipalities with the lowest dependency rate are Castell de Cabres (21.43%), Fuente la Reina (26.83%), and Pavías (29.79%).

Figure 19

Dependency ratio, 2019



Source: Own elaboration.

In figure 20, the global Moran's I index, defined through expression [1], has been plotted, being its value I= 0.234. The positive sign indicates that municipalities with a low (high) dependency index are surrounded by municipalities with a low (high) dependency index. To verify this autocorrelation, the GeoDa software performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

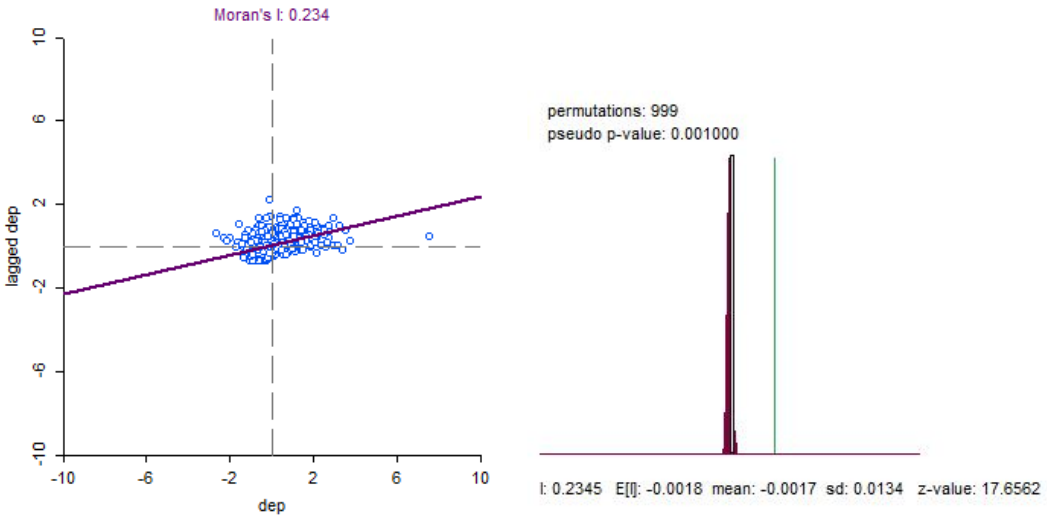
$$\begin{cases} H_0: \text{Spatial randomness} \\ H_1: \text{Spatial autocorrelation} \end{cases}$$

The p-value obtained was 0.001, which is less than the significance level (α = 5%); i.e. with a confidence level of 95% there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the presence of spatial autocorrelation at the global level has been indicated, presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran's I index to obtain a map of clusters.

Figure 20

Global Moran's I for the dependency ratio, 2019



Source: Own elaboration.

Figure 21 shows the 4 different clusters that have been formed according to the dependency indicator: high-high, low-low, low-high, high-low.

Municipalities with a high-high spatial autocorrelation, shaded in red, indicate that they have a high dependency ratio and that they are surrounded by municipalities with a high dependency ratio. There are 89 municipalities with this type of autocorrelation, the most important of which are Els Ports, Alt Maestrat, L'Alcalatén, Alto Palancia, Rincón de Ademuz, Los Serranos, Valle de Cofrentes-Ayora, and El Comtat.

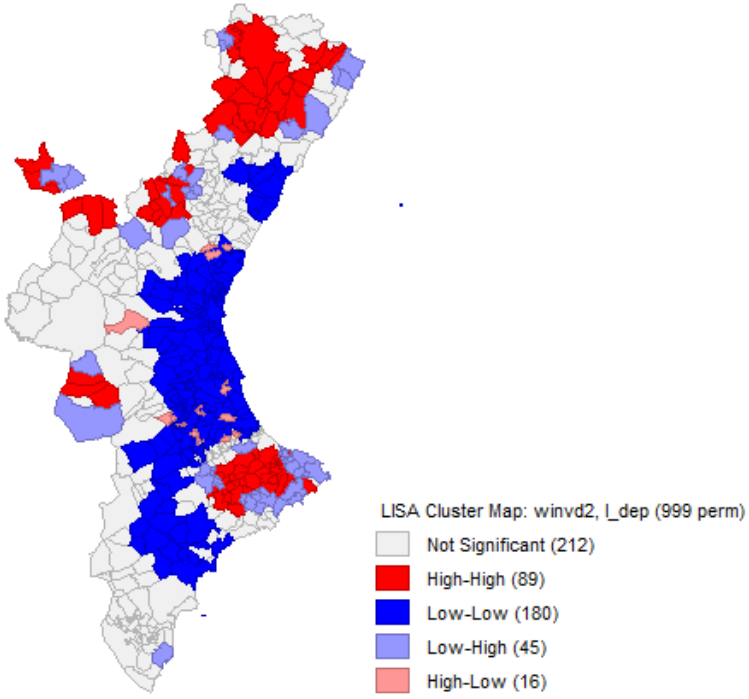
The dark blue shaded areas indicate a low-low spatial autocorrelation, meaning the presence of municipalities with a low dependency ratio that are surrounded by municipalities that have a low dependency ratio. It may be seen that 180 municipalities present this low-low spatial autocorrelation. The city of Castellón and its surroundings, the eastern half of the province of Valencia and the regions of l'Alacantí and l'Alcoià in the province of Alicante stand out.

In light blue are the municipalities that have a low-high spatial autocorrelation, and therefore are municipalities with a low dependency ratio that are surrounded by municipalities with a high dependency ratio, in total there are 45 municipalities that have a low-high spatial autocorrelation. They are scattered throughout the community such as Vinaroz, Altura, Ademuz, Ayora, Denia, and Torrevieja.

Finally, with a high-low spatial autocorrelation, 16 municipalities are shown shaded in pink, these municipalities have a high dependency ratio and are surrounded by other municipalities that have a low dependency ratio. These municipalities are scattered throughout the province of Valencia, such as Estivella, Buñol and Benicolet.

Figure 21

Spatial concentration of the dependency ratio (LISA maps), 2019



Source: Own elaboration.

4.6. Migration rate

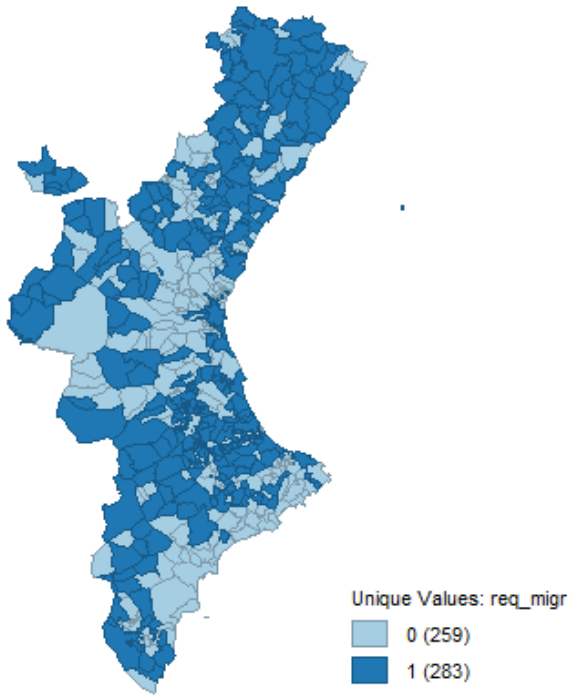
The migration rate expresses the migration balance of the last ten years over the total number of population in the last year. According to AVANT (GVA, 2017), a municipality meets this requirement for depopulation when this indicator takes a value ≤ 0%.

In Figure 22, shaded in dark blue, are the municipalities that have a migration rate ≤ 0% in 2019. Of the 542 municipalities that form part of the Valencian Community, 283 municipalities meet this requirement; i.e. 52.21% of the municipalities have a migration rate of 0 or negative.

These municipalities are located in the north of the province of Castellón, the interior and coast of the province of Valencia, and the interior of the province of Alicante. The municipalities with the most drastic migration rates are Confrides (-55.08%), Vallat (-51.02%), and Puebla de San Miguel (-45.16%). On the other hand, the municipalities with the highest migration rates are Villahermosa del Río (48.26%), Benicolet (45.34%), and San Fulgencio (33.38%).

Figure 22

Migration rate, 2009-2019



Source: Own elaboration.

In figure 23, Moran's global I index, defined through the expression [1], has been plotted, being its value I= 0.101. The positive sign indicates that municipalities with a low (high) migration rate are surrounded by municipalities with a low (high) migration rate. To verify this autocorrelation, the GeoDa software performs a simulation that allows a significance analysis and, therefore, a hypothesis test to be carried out:

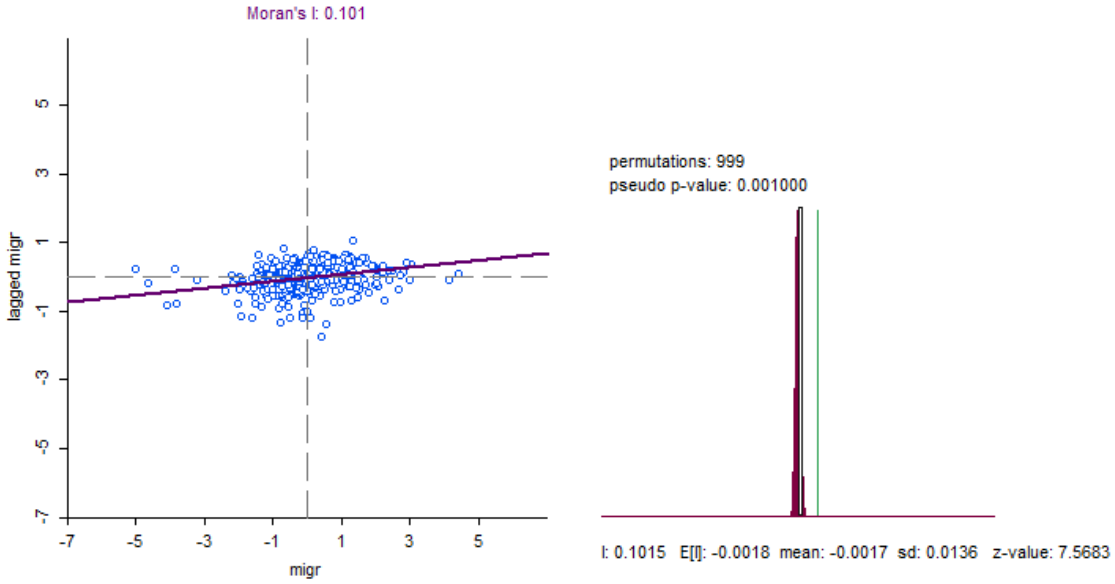
$$\begin{cases} H_0: \text{Spatial randomness} \\ H_1: \text{Spatial autocorrelation} \end{cases}$$

The p-value is 0.001, which is less than the significance level ($\alpha = 0.05$), indicating that with a 95% confidence level there is sufficient statistical evidence to reject the null hypothesis of spatial randomness and conclude that there is positive spatial autocorrelation.

Once the existence of spatial autocorrelation at the global level has been indicated, its presence at the local level is studied by means of the Local Indicators of Spatial Association (LISA), in this case with the local Moran's I index, which results in a map of clusters.

Figure 23

Global Moran's I for migration rate, 2009-2019



Source: Own elaboration.

Figure 24 shows the 4 clusters that have been formed according to the migration rate: high-high, low-low, low-high, high-low.

The municipalities with a high-high spatial autocorrelation, shaded in red, indicate that they have a high migration rate and that they are surrounded by municipalities with a high migration rate. Ninety-eight municipalities with this type of correlation are located around the city of Valencia and along the coast of Alicante.

The areas shaded in dark blue indicate a low-low spatial autocorrelation, meaning the presence of municipalities with a low migration rate surrounded by municipalities with a low migration rate. There are 72 municipalities with this correlation, mostly located in the north of the province of Castellón in the regions of Els Ports and Alt and Baix Maestrat,

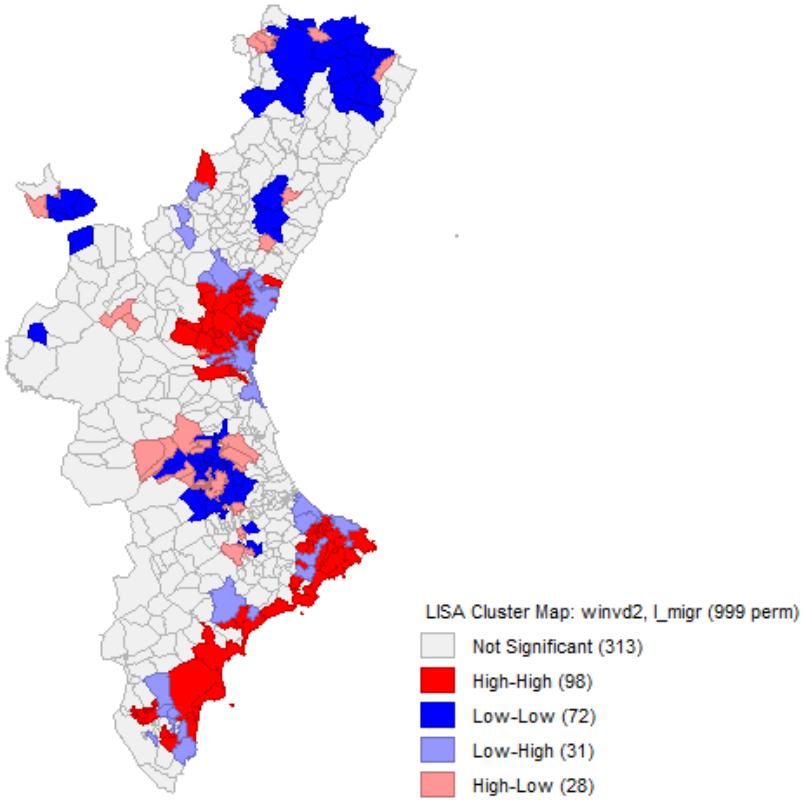
and in the south of the province of Valencia in the regions of Vall d'Albaida and Ribera Alta.

With a low-high spatial autocorrelation, we find the municipalities shaded in light blue. These municipalities that have a low migration rate are surrounded by municipalities with a high migration rate, in total there are 31 municipalities that have a low-high spatial autocorrelation. These municipalities are scattered along some coastal areas of the provinces of Valencia and Alicante, such as the city of Valencia and Denia.

Finally, with a high-low spatial autocorrelation, there are 28 municipalities shaded in pink, these municipalities have a high migration rate and are surrounded by municipalities with a low migration rate. The southern area of the province of Valencia stands out, such as the region of Canal de Navarrés, Concentaina in the province of Alicante and Castell de Cabres or Forcall in the province of Castellón.

Figure 24

Spatial concentration of migration rate (LISA maps), 2009-2019



Source: Own elaboration.

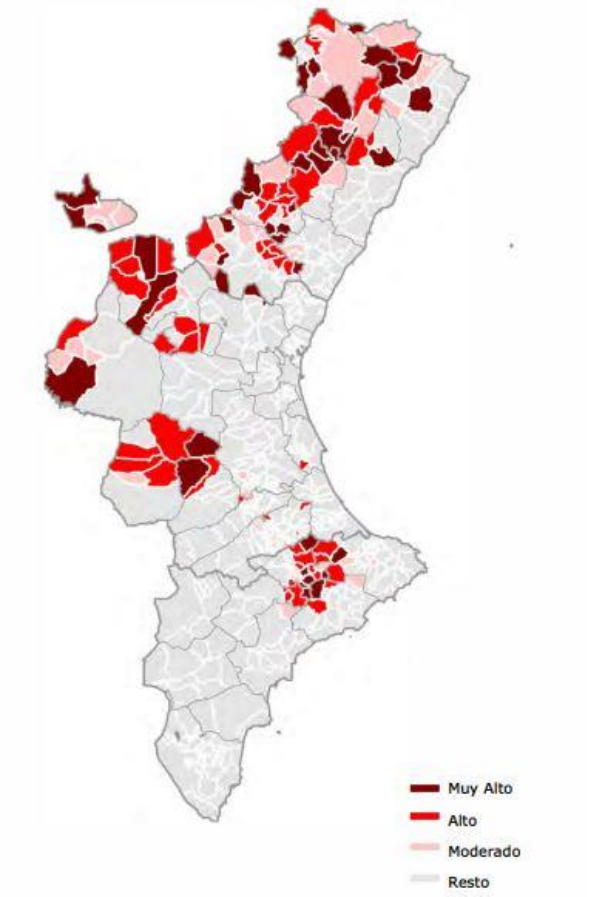
5. RESULTS

Demonstrated the existence of spatial dependence for each indicator, this section includes the results obtained by classifying the municipalities based on their level of depopulation risk (GVA, 2017).

Figure 25 shows the 157 municipalities at risk of depopulation as determined by the AVANT document (GVA, 2017) for the year 2016 in the Valencian Community.

Figure 25

Municipalities at risk of depopulation, 2016



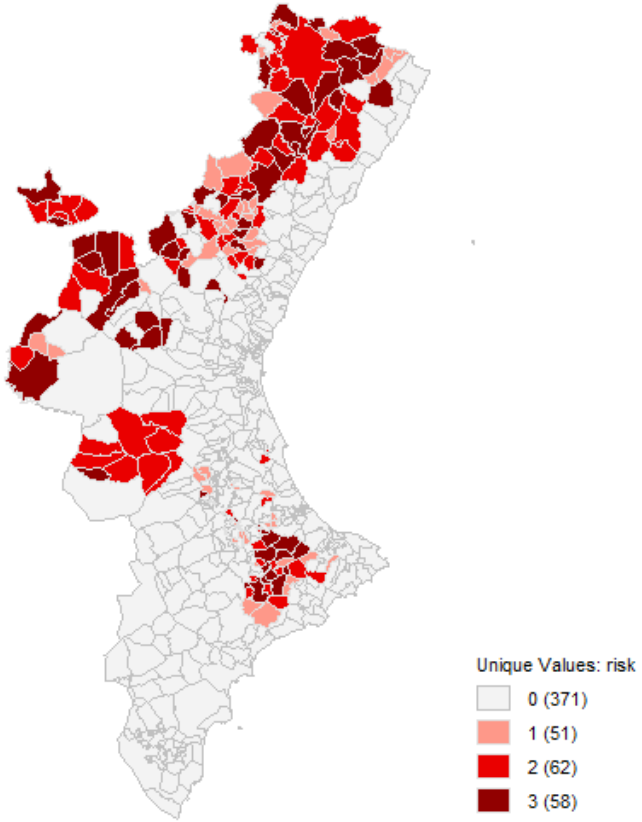
Source: AVANT classification (GVA, 2017).

According to Figure 26, in 2019 there are a total of 171 municipalities at risk of depopulation in the Valencian Community, that figure corresponds to 31.55% of its municipalities. The brown shading (3) refers to the 58 municipalities that have a very high risk of depopulation; i.e. 10.70% of the municipalities of the community are in a situation

of very severe depopulation; the red shading (2) indicates the municipalities that have a high level of risk, 62 municipalities are at this level, equivalent to 11.43% of the municipalities of the community, and, finally, in pink (1), the 51 municipalities that present a moderate risk of depopulation are indicated, this figure being 9.41% of the Valencian localities.

Figure 26

Municipalities at risk of depopulation, 2019



Source: Own elaboration.

Looking at its distribution, the province of Castellón has 63.70% of its municipalities at risk of depopulation, specifically 86 of the 135 localities in Castellón are at some level of risk, making it the province with the highest number of municipalities at risk of depopulation. According to Table 2, 28 municipalities are at very high risk, 32 at high risk, and 26 at moderate risk. These figures represent 15.87% of the municipalities in the Valencian Community. The most affected regions are El Alto Mijares, Els Ports, and l'Alt Maestrat, where all or practically all of their municipalities are at risk; followed by the

regions of l'Alcalatén, El Alto Palancia, and El Baix Maestrat, which have more than half of their municipalities at risk of depopulation.

Table 2

Regional concentration of municipalities in Castellón at risk of depopulation

PROVINCE OF CASTELLÓN	No. Municipalities	Municipalities at risk					% mun. at risk in the region	% mun. at risk in the Valencian Community
		Total	Very high	High	Moderate	Rest		
El Alto Mijares	22	22	6	6	10	0	100.00	4.06
El Alto Palancia	27	20	6	9	5	7	74.07	3.69
El Baix Maestrat	18	10	4	2	4	8	55.56	1.85
Els Ports	13	12	5	5	2	1	92.31	2.21
L'Alcalatén	9	6	3	3	0	3	66.67	1.11
L'Alt Maestrat	9	8	4	3	1	1	88.89	1.48
La Plana Alta	17	5	0	4	1	12	29.41	0.92
La Plana Baixa	20	3	0	0	3	17	15.00	0.55
Total province	135	86	28	32	26	49	63.70	15.87

Source: Own elaboration

The province of Valencia has 21.05% of its municipalities at risk; i.e. 56 of the 266 localities that make up this province. According to Table 3, this province has the second highest number of municipalities at risk: 19 municipalities are at very high risk, 20 at high risk, and 17 at moderate risk; representing 10.33% of municipalities in the Valencian Community. In terms of counties, El Rincón de Ademuz stands out with all of its municipalities at risk, followed by Plana de Utiel-Requena, Valle de Cofrentes-Ayora, and Los Serranos, where more than half of its municipalities are at risk of depopulation.

Table 3

Regional concentration of municipalities in Valencia at risk of depopulation

PROVINCE OF VALENCIA	No. Municipalities	Municipalities at risk					% mun. at risk in the region	% mun. at risk in the Valencian Community
		Total	Very high	High	Moderate	Rest		
El Camp de Morvedre	16	0	0	0	0	16	0.00	0.00
El Camp de Túria	16	1	1	0	0	15	6.25	0.18
El Rincón de Ademuz	7	7	2	4	1	0	100.00	1.29
El Valle de Cofrentes-Ayora	7	5	1	4	0	2	71.43	0.92
L'Horta Nord	22	0	0	0	0	22	0.00	0.00
L'Horta Oest	9	0	0	0	0	9	0.00	0.00
L'Horta Sud	12	0	0	0	0	12	0.00	0.00
La Canal de Navarrés	8	3	0	3	0	5	37.50	0.55
La Costera	19	2	1	0	1	17	10.53	0.37
La Hoya de Buñol	9	1	0	1	0	8	11.11	0.18
La Plana de Utiel-Requena	9	7	3	2	2	2	77.78	1.29
La Ribera Alta	35	4	0	0	4	31	11.43	0.74
La Ribera Baixa	12	1	0	1	0	11	8.33	0.18
La Safor	31	3	0	0	3	28	9.68	0.55
La Vall d'Albaida	34	10	2	3	5	24	29.41	1.85
Los Serranos	19	12	9	2	1	7	63.16	2.21
València	1	0	0	0	0	1	0.00	0.00
Total province	266	56	19	20	17	210	21.05	10.33

Source: Own elaboration.

Lastly, the province of Alicante has 20.57% of its municipalities at risk of depopulation, of the 141 municipalities that make up the province, 29 are at risk, representing 5.35% of the municipalities in the Valencian Community. As shown in Table 4, of these 29 municipalities, 11 have a very high risk of depopulation, 10 a high risk, and 8 a moderate risk. Unlike the province of Castellón, where all its regions have some municipality at risk, in the province of Alicante the comarca of El Comtat stands out with 14 of its 24 municipalities at risk of depopulation, followed by La Marina Baixa, El Alcoià, and La Marina Alta, however its figures do not reflect such a drastic situation as in other regions.

Table 4

Regional concentration of municipalities in Alicante at risk of depopulation

PROVINCE OF ALICANTE	No. Municipalities	Municipalities at risk					% mun. at risk in the region	% mun. at risk in the Valencian Community
		Total	Very high	High	Moderate	Rest		
L'Alt Vinalopó	7	0	0	0	0	7	0.00	0.00
El Baix Vinalopó	3	0	0	0	0	3	0.00	0.00
El Comtat	24	14	6	6	2	10	58.33	2.58
El Vinalopó Mitjà	11	0	0	0	0	11	0.00	0.00
L'Alacantí	10	1	0	0	1	9	10.00	0.18
L'Alcoià	8	2	1	1	0	6	25.00	0.37
La Marina Alta	33	6	3	1	2	27	18.18	1.11
La Marina Baixa	18	6	1	2	3	12	33.33	1.11
El Baix Segura	27	0	0	0	0	27	0.00	0.00
Total province	141	29	11	10	8	112	20.57	5.35

Source: Own elaboration.

In terms of the size of the municipalities, it is the smallest municipalities that are most at risk of depopulation. As shown in Table 5, of the 171 municipalities at risk of depopulation

in the Valencian Community, 111 have less than 500 inhabitants, being 63 of them are located in the province of Castellón (21 very high risk, 22 high risk and 20 moderate risk), 30 in the province of Valencia (11 very high risk, 9 high risk, and 10 moderate risk), and 18 in the province of Alicante (8 very high risk, 6 high risk, and 4 moderate risk). In addition, another 38 municipalities at risk of depopulation have between 501 and 1,000 inhabitants, belonging 16 of them belong to the province of Valencia (5 very high risk, 7 high risk, and 4 moderate risk), 14 to the province of Castellón (5 very high risk, 6 high risk, and 3 moderate risk), and, finally, 8 to the province of Alicante localities (3 very high risk, 3 high risk and 2 moderate risk).

Table 5

Number of municipalities at risk of depopulation by size of municipality

PROVINCE		Municipalities at risk					
		Total	Very high	High	Moderate	Rest	Total
Alicante	≤ 500	18	8	6	4	16	34
	501 - 1,000	8	3	3	2	10	18
	1,001 - 1,500	3	0	1	2	4	7
	1,501 - 50,000	0	0	0	0	74	74
	> 50,000	0	0	0	0	8	8
	Total	29	11	10	8	112	141
Castellón	≤ 500	63	21	22	20	3	66
	501 - 1,000	14	5	6	3	10	24
	1,001 - 1,500	5	2	2	1	4	9
	1,501 - 50,000	4	0	2	2	30	34
	> 50,000	0	0	0	0	2	2
	Total	86	28	32	26	49	135
Valencia	≤ 500	30	11	9	10	18	48
	501 -1,000	16	5	7	4	19	35
	1,001 - 1,500	10	3	4	3	24	34
	1,501 - 50,000	0	0	0	0	144	144
	> 50,000	0	0	0	0	5	5
	Total	56	19	20	17	210	266
Total	≤ 500	111	40	37	34	37	148
	501 -1,000	38	13	16	9	39	77
	1,001 - 1,500	18	5	7	6	32	50
	1,501 - 50,000	4	0	2	2	248	252
	> 50,000	0	0	0	0	15	15
	Total	171	58	62	51	371	542

Source: Own elaboration.

6. CONCLUSIONS

The Valencian Community is immersed in a continuous process of depopulation in which the inefficient and scarce policies employed by governments have not served as a solution to combat this problem.

Currently, the Valencian Community has 31.55% of its municipalities at risk of depopulation, in other words, of the 542 municipalities that make up the region, 171 are at risk: 58 are at very high risk of depopulation, 62 are at high risk, and 51 are at moderate risk. Thanks to the spatial analysis carried out for each of the six demographic indicators, it has been possible to demonstrate that there is a spatial dependence between neighboring municipalities; i.e. the phenomena that cause depopulation are not random processes, but follow a tendency towards clustering. Therefore, the existence of spatial dependence indicates that in order to stop depopulation it is necessary to employ actions that take into account the characteristics of each territory, avoiding the use of general measures.

With regard to the spatial distribution of the municipalities at risk, it may be seen that the areas most affected are the more rural areas located in the interior of the community, where the smallest municipalities predominate. The province of Castellón is the most affected by this phenomenon, 63.70% of its municipalities are at risk of depopulation. The provinces of Valencia and Alicante, have 21.05% and 20.57% of their municipalities at risk of depopulation respectively; but despite having areas which are also very affected such as the regions of El Rincón de Ademuz and El Comtat, these provinces are not at the same level of depopulation as the province of Castellón.

If we compare these data with those published by AVANT 2017, we may observe a deterioration of the situation for the entire Valencian territory. In 2016, there were a total of 157 municipalities at risk of depopulation, of which 43 suffered a very high risk, 59 a high risk, and 55 a moderate risk. In 2019, data show an increase of 14 municipalities at risk of depopulation, as well as a redistribution of the degree of depopulation of these, going from 43 municipalities at very high risk in 2016 to 58 in 2019, from 59 to 62 for high risk, and from 55 to 51 for medium risk. As for the distribution by provinces, the province of Castellón has gone from 79 municipalities at risk in 2016 (25 very high, 26 high and 28 moderate risk) to 86 in 2019 (28 very high, 32 high and 26 moderate risk), the province of Valencia has gone from 49 municipalities at risk (10 very high, 20 high and 19 moderate risk) to 56 (19 very high, 20 high and 17 moderate risk), and the province of Alicante has remained at 29 municipalities, although its distribution has changed from 2016 (8 very high, 13 high and 8 moderate) to 2019 (11 very high, 10 high and 8 moderate).

In order to prevent this situation become worsening and to halt depopulation, governments and administrations must adopt urgent and efficient measures that take into account citizen participation, adapt to the specific needs of each region, and provide municipalities with the necessary public services and infrastructures for their development.

REFERENCES

Alamá-Sabater, L., Budí, V., Roig-Tierno, N., & García-Álvarez-Coque, J. M. (2021). Drivers of depopulation and spatial interdependence in a regional context. *Cities*, *114*, 103217.

Alamá-Sabater, L., Budí, V., Roig-Tierno, N., & García-Álvarez-Coque, J. M. (2019). Using mixed research approaches to understand rural depopulation. *Economia Agraria y Recursos Naturales*, *19*(01).

Anselin, L. (1988). *Spatial Econometrics: Methods and models*. Kluwer Academic Publishers, The Netherlands.

Anselin, L. (1995). Local indicators of spatial association—LISA. *Geographical analysis*, *27*(2), 93-115

Benito, B. (2020). *Culturas y ruralidades. Una introducción*. Pensar y hacer en el medio rural. Prácticas culturales en contexto. Ministerio de Cultura y Deporte (Madrid).

Bucheli, G. E. H. (2019). Uso del Índice de Moran y LISA para explicar el ausentismo electoral rural en Ecuador. *Revista Geográfica*, (160), 91-108.

Camarero, L. (1992). *Del éxodo rural y del éxodo urbano: ocaso y renacimiento de los asentamientos rurales en España* (Doctoral dissertation, UNED. Universidad Nacional de Educación a Distancia (España)).

Camarero, L., Cruz, F., González, M., del Pino, J.A., Oliva, J., & Sampedro, R. (2009). *La población rural en España. De los desequilibrios a la sostenibilidad rural.* Fundación La Caixa: Barcelona.

Celemín, J. P. (2009). Autocorrelación espacial e indicadores locales de asociación espacial. Importancia, estructura y aplicación. *Revista Universitaria de Geografía*, *18*, 11-31.

Collantes, F., Pinilla, V., Sáez, L. A., & Silvestre, J. (2014). Reducing depopulation in rural Spain: the impact of immigration. *Population, Space and Place*, *20*(7), 606-621.

De la Torre, I. M. (2018). La despoblación en España: un análisis de la situación. *Informe comunidades autónomas*, (2018), 66-87.

Delgado Urrecho, J. M. (2018). Más allá del tópico de la España Vacía: Una Geografía de la Despoblación. *Informe España 2018*, 232-295.

Dols, P. M., & Martí, J. S. (2020). Transporte público y despoblación en el medio rural: el caso del interior castellonense. *Cuadernos de geografía*, (105), 29-50.

Estrada, E. M. (2020). Discursos, certezas y algunos mitos sobre la despoblación rural en España. *Panorama social*, (31), 33-45.

Febré Diciena, N. (2019). *Estrategias para la sostenibilidad demográfica del medio rural: la despoblación en el territorio* (Doctoral dissertation).

GVA (2017). *Agenda Valenciana Antidespoblament (AVANT)*. *Propuesta de Sistema de Indicadores*. Gabinet del President. Generalitat Valenciana.

GVA (2021). *Portal Estadístico de la Comunitat Valenciana*. Available at: <https://pegv.gva.es/es/temas/demografiaypoblacion> [Accessed: 7 February 2021].

Martín Cubas, J., Velasco Mentgod, J., Ojeda Izaguirre, I., Granell Oteiza, X., & Requena, I. C. (2020). Gobernanza democrática para el desarrollo: las estructuras de cooperación en los municipios en riesgo de despoblación de la Comunitat Valenciana. *Economía Agraria y Recursos Naturales-Agricultural and Resource Economics*, *19*(2), 135-164.

Moran, P. A. (1948). The interpretation of statistical maps. *Journal of the Royal Statistical Society: Series B (Methodological)*, *10*(2), 243-251.

Pinilla, F., & Collantes, V. (2020). La verdadera historia de la despoblación de la España rural y cómo puede ayudarnos a mejorar nuestras políticas. *Documentos de trabajo de la Asociación Española de Historia Económica*, (20), 1.

Pinilla, V., & Sáez, L. A. (2017). La despoblación rural en España: génesis de un problema y políticas innovadoras. *Informes CEDDAR*, *2*.

Recaño, J. (2017). The Demographic Sustainability of Empty Spain. *Perspectives Demogràfiques,* (7), 1-4.

Rivero, M. S. (2008). Análisis espacial de datos y turismo: nuevas técnicas para el análisis turístico. Una aplicación al caso extremeño. *Revista de estudios empresariales. Segunda época*, (2).

ANNEX

Annex 1. *Municipalities with very high risk of depopulation*

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Province of Alicante								
El Comtat								
Balones	131	11.64	-27.62	-29.77	400.00	61.73	-13.74	6
Benasau	151	16.70	-22.56	-26.49	800.00	91.14	-15.23	6
Quatretondeta	122	7.30	-32.97	-45.90	544.44	90.63	-13.11	6
Famorca	47	4.83	-27.69	-38.30	2100.00	88.00	-42.55	6
Orxa, l' / Lorcha	578	18.20	-25.71	-23.18	518.42	68.51	-15.74	6
Planes	693	17.83	-14.76	-21.93	445.28	71.53	-8.08	6
L'Alcoià								
Penàguila	292	5.85	-20.22	-13.36	328.57	69.77	-4.79	6
La Marina Alta								
Vall d'Alcalà, la	167	7.31	-6.70	-17.37	393.33	79.57	-0.60	6
Vall d'Ebo, la	216	6.66	-36.84	-34.72	987.50	67.44	-14.35	6
Vall de Gallinera	571	10.65	-4.19	-23.29	411.63	62.68	-4.55	6
La Marina Baixa								
Confrides	187	4.68	-39.48	-35.83	641.67	90.82	-55.08	6
Province of Castellón								
Els Ports								
Herbés	42	1.55	-60.75	-59.52	2100.00	110.00	-16.67	6
Portell de Morella	197	3.99	-26.49	-26.90	470.59	97.00	-9.14	6
Vallibona	69	0.76	-25.81	-33.33	1250.00	64.29	-1.45	6
Villores	39	7.35	-40.91	-53.85	700.00	69.57	-2.56	6
Zorita del Maestrazgo	114	1.66	-15.56	-21.05	253.85	67.65	-11.40	6
L'Alt Maestrat								
Catí	721	7.04	-17.88	-20.25	277.65	80.25	-1.80	6
Culla	495	4.27	-37.66	-40.00	853.85	100.40	-7.68	6
Tírig	419	9.90	-24.64	-36.28	339.53	82.17	-6.68	6
Torre d'En Besora, la	158	12.84	-25.47	-32.91	660.00	92.68	-1.27	6
El Baix Maestrat								
Canet lo Roig	674	9.81	-26.26	-29.82	313.89	79.26	-14.84	6
Cervera del Maestre	575	6.17	-19.13	-27.30	600.00	81.96	-7.83	6
Rossell	937	12.51	-15.66	-16.97	257.94	69.13	-16.54	6
Xert	701	8.50	-23.22	-30.39	393.10	68.92	-9.27	6
L'Alcalatén								
Atzeneta del Maestrat	1 276	17.93	-12.90	-21.39	293.43	73.13	-3.13	6
Llucena / Lucena del Cid	1 302	9.50	-17.65	-17.20	282.84	65.02	-13.52	6
Vistabella del Maestrat	339	2.25	-27.41	-27.14	521.74	72.96	-6.19	6
El Alto Palancia								
Algimia de Almonacid	263	12.93	-8.36	-38.78	666.67	77.70	-10.27	6
Bejís	380	8.97	-0.78	-22.63	354.05	79.25	-0.53	6
Chóvar	288	15.73	-26.15	-27.08	419.05	60.89	-4.51	6
Pina de Montalgrao	111	3.51	-33.93	-42.34	562.50	91.38	-4.50	6
Teresa	242	12.17	-32.59	-44.21	552.94	84.73	-3.72	6
Toro, El	256	2.33	-25.80	-29.30	383.33	82.86	0.00	6
El Alto Mijares								
Arañuel	150	7.83	-6.25	-28.67	1375.00	64.84	-13.33	6
Ayódar	159	6.53	-37.89	-34.59	1250.00	103.85	-22.01	6
Ares del Maestrat	186	1.57	-30.60	-36.02	583.33	78.85	-7.53	6
Ludiente	141	4.50	-38.16	-48.23	850.00	67.86	-8.51	6
Puebla de Arenoso	158	3.72	-7.60	-30.38	335.29	88.10	-15.82	6
Villamalur	62	3.18	-58.11	-61.29	966.67	106.67	-22.58	6
Province of Valencia								
El Rincón de Ademúz								
Casas Bajas	164	7.24	-43.84	-46.95	375.00	86.36	-21.34	6
Castielfabib	317	2.98	-39.27	-42.90	379.31	78.09	-22.08	6
Los Serranos								
Alcublas	628	14.43	-26.29	-27.39	588.89	65.26	-17.83	6
Alpuente	633	4.58	-33.02	-26.54	351.56	84.01	-15.17	6
Aras de los Olmos	381	5.01	-2.31	-20.73	351.35	78.04	-1.57	6
Bugarra	727	18.04	-13.14	-23.52	441.82	69.46	-12.52	6
Calles	355	5.47	-16.47	-35.21	366.67	76.62	-9.86	6
Chelva	1 489	7.82	-29.26	-28.34	340.00	70.56	-11.15	6
Chulilla	665	10.76	-13.07	-17.74	356.14	64.20	-15.04	6
Gestalgar	556	7.97	-20.11	-24.46	432.50	62.10	-14.93	6
Titaguas	453	7.17	-18.23	-22.52	266.67	70.30	-7.06	6
El Camp de Túria								
Gátova	378	12.43	-24.70	-32.28	590.91	67.26	-10.05	6
La Plana de Utiel-Requena								
Camporrobles	1 191	13.31	-14.44	-19.98	291.30	60.73	-10.16	6
Chera	474	9.54	-16.25	-32.70	540.63	76.21	-18.99	6
Venta del Moro	1 207	4.43	-24.18	-23.94	349.14	75.95	-12.76	6
El Valle de Cofrentes-Ayora								
Zarra	359	7.22	-15.53	-31.48	691.67	112.43	-4.74	6
La Costera								
Estubeny	121	18.85	-19.87	-12.40	487.50	63.51	-3.31	6
La Vall d'Albaida								
Aielo de Rugat	155	19.79	-19.69	-10.32	335.71	64.89	-10.97	6
Sempere	34	8.89	0.00	-23.53	no youths	70.00	-11.76	6

Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Annex 2. *Municipalities with high risk of depopulation*

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Province of Alicante								
El Comtat								
Alcoleja	173	11.88	-36.16	-37.57	492.86	92.22	4.62	5
Almudaina	113	12.81	1.80	-25.66	440.00	91.53	-3.54	5
Beniarrés	1 118	55.31	-20.93	-19.59	361.96	61.33	-11.27	5
Benilloba	724	75.91	-21.30	-22.10	475.00	70.35	-1.10	5
Benimassot	106	11.14	-42.70	-22.64	600.00	65.63	2.83	5
Facheca	106	10.42	-13.82	-18.87	571.43	79.66	4.72	5
L'Alcoià								
Benifallim	105	7.67	-28.57	-29.52	414.29	52.17	-0.95	5
La Marina Alta								
Castell de Castells	449	9.78	-3.44	-36.97	480.56	87.08	5.79	5
La Marina Baixa								
Sella	580	14.98	-1.69	-19.14	335.85	66.19	5.17	5
Tàrbena	646	20.40	-7.98	-24.30	403.64	75.07	-1.24	5
Province of Castellón								
Els Ports								
Castellfort	183	2.74	-21.79	-6.56	318.18	101.10	-26.23	5
Cinctorres	391	11.15	-26.64	-20.46	231.11	61.57	-18.16	5
Forcall	465	11.86	-18.42	-32.04	279.17	64.31	8.39	5
Morella	2 430	5.88	-10.63	-20.95	232.40	64.63	-4.65	5
Olocau del Rey	119	2.71	-19.59	-15.13	246.67	77.61	-4.20	5
L'Alt Maestrat								
Albocàsser	1 241	15.08	-9.28	-18.53	227.04	72.12	-6.29	5
Benassal	1 068	13.42	-23.17	-19.94	247.97	66.88	-12.92	5
Vilar de Canes	169	10.62	-10.11	-16.57	257.14	79.79	8.28	5
El Baix Maestrat								
Pobla de Benifassà, la	202	1.49	-12.93	-10.89	261.11	47.45	-42.08	5
Salzadella, la	704	14.10	-12.87	-19.46	235.96	73.83	-8.66	5
L'Alcalatén								
Benafigos	142	3.99	-32.06	-42.96	1220.00	86.84	4.93	5
Xodos / Chodos	112	2.53	-28.21	-25.89	700.00	55.56	0.00	5
Useres, les / Useras	962	11.92	-4.94	-25.36	324.44	65.86	8.21	5
La Plana Alta								
Coves de Vinromà, les	1 823	13.36	-0.71	-17.94	196.53	72.80	-5.76	5
Sierra Engarcerán	976	11.91	-8.96	-22.95	358.14	67.70	5.33	5
Torre d'en Doménec, la	180	56.50	-23.08	-39.44	1580.00	87.50	-4.44	5
Vilanova d'Alcolea	584	8.54	-10.02	-30.99	345.83	57.84	-5.31	5
El Alto Palancia								
Almedíjar	254	12.15	-7.30	-29.13	750.00	67.11	17.72	5
Azuébar	315	13.46	-9.22	-25.40	425.00	66.67	6.98	5
Castellnovo	917	47.75	-11.06	-14.50	304.44	65.82	-8.40	5
Caudiel	664	10.64	-5.01	-17.17	262.50	64.76	3.01	5
Gaibiel	188	10.40	-7.39	-38.83	623.08	100.00	1.60	5
Matet	84	5.64	-42.07	-78.57	583.33	95.35	14.29	5
Sacañet	67	2.20	-28.72	-7.46	1250.00	67.50	-13.43	5
Sot de Ferrer	415	48.03	-2.35	-14.46	288.37	67.34	-2.89	5
Torás	223	13.29	-12.20	-26.46	431.25	61.59	5.38	5
El Alto Mijares								
Castillo de Villamalefa	107	2.84	-13.01	-40.19	1500.00	81.36	16.82	5
Cirat	201	4.89	-26.10	-43.28	1300.00	53.44	-5.97	5
Fanzara	267	7.63	0.75	-22.47	369.57	67.92	-35.58	5
Fuentes de Ayódar	87	7.92	-10.31	-11.49	366.67	47.46	-16.09	5
Villanueva de Viver	61	10.26	-23.75	-55.74	2800.00	90.63	21.31	5
Zucaina	171	3.32	-20.09	-24.56	500.00	72.73	6.43	5
Province of Valencia								
Los Serranos								
Tuéjar	1 116	9.15	-13.49	-26.25	327.78	70.64	5.20	5
Yesa, La	229	2.70	-18.79	-31.00	758.33	81.75	4.37	5
El Rincón de Ademuz								
Ademuz	1 042	10.38	-11.39	-17.47	184.78	60.55	-8.64	5
Casas Altas	131	8.21	-17.09	-29.01	209.09	107.94	-17.56	5
Puebla de San Miguel	62	0.98	-21.52	-14.52	2000.00	51.22	-45.16	5
Vallanca	139	2.46	-41.35	-108.63	407.14	104.41	0.72	5
La Plana Utiel-Requena								
Sinarcas	1 125	10.98	-9.57	-14.04	198.61	61.87	-1.07	5
Villargordo del Cabriel	589	8.23	-17.04	-15.28	249.32	76.35	-8.32	5
El Valle de Cofrente-Ayora								
Cortes de Pallás	814	3.49	10.00	-15.23	960.00	64.11	-24.08	5
Jalance	830	8.76	-24.41	-38.55	718.18	76.60	0.60	5
Jarafuel	754	7.31	-20.38	-27.59	289.29	76.58	7.29	5
Teresa de Cofrentes	636	5.74	-10.42	-29.56	744.44	91.57	1.42	5
La Ribera Baixa								
Llaurí	1 170	85.87	-7.36	-13.76	290.16	68.59	-7.44	5
La Canal de Navarrés								
Bicorp	533	3.90	-21.85	-25.33	442.22	84.43	1.69	5
Millares	345	3.27	-47.17	-38.84	706.25	59.72	-20.58	5
Quesa	670	9.16	-15.93	-20.30	300.00	73.58	1.19	5
La Vall d'Albaida								
Bellús	304	31.87	-23.04	-21.38	303.45	62.57	-5.92	5
Pinet	157	13.21	-29.91	-37.58	612.50	57.00	-14.65	5
Rugat	158	49.31	-18.97	-12.03	463.64	64.58	-15.82	5
La Hoya de Bunyol								
Dos Aguas	376	3.09	-6.23	-17.82	366.67	50.40	-4.79	5

Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Annex 3. *Municipalities with moderate risk of depopulation*

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Province of Alicante								
El Comtat								
Benillup	**97**	28.71	3.19	-3.09	228.57	31.08	-2.06	1
Tollos	**57**	3.57	32.56	-35.09	3500.00	171.43	12.28	4
La Marina Alta								
Alcalalí	1 278	88.76	35.81	-14.63	589.25	100.63	-6.49	4
Vall de Laguar, la	846	36.70	-7.64	-51.65	385.19	86.75	24.70	4
La Marina Baixa								
Beniardá	232	14.74	11.00	-17.67	190.63	66.91	-4.31	4
Benifato	140	11.78	1.45	-11.43	271.43	59.09	-15.00	4
Relleu	1 160	15.09	43.92	-15.00	342.06	68.85	29.66	4
L'Alacantí								
Torre de les Maçanes, la	661	18.12	-8.70	-19.97	412.50	59.28	4.54	4
Province of Castellón								
Els Ports								
Mata, la	166	10.95	-12.17	-19.28	112.50	44.35	-7.23	4
Palanques	**30**	2.09	25.00	10.00	140.00	66.67	-3.33	3
L'Alt Maestrat								
Villafranca del Cid	2 200	23.44	-17.11	-14.00	235.36	66.92	-5.41	4
El Baix Maestrat								
Castell de Cabres	**17**	0.55	-22.73	-5.88	no youths	21.43	5.88	3
Jana, la	675	34.61	-17.38	-27.56	210.53	77.63	-8.59	4
San Rafael del Río	469	22.17	3.08	-12.15	271.43	79.69	-5.97	4
Traiguera	1 378	23.06	-13.55	-13.86	242.13	79.19	-12.99	4
La Plana Alta								
Serratella, la	101	5.37	9.78	-20.79	525.00	98.04	15.84	4
La Plana Baixa								
Aín	127	10.33	-18.59	-23.62	650.00	54.88	7.09	4
Alcudia de Veo	190	6.20	10.47	-25.79	369.23	47.29	-1.05	4
Suera / Sueras	525	23.63	-4.37	-11.43	198.51	61.54	-12.19	4
El Alt Palancia								
Higueras	**54**	4.56	45.95	-16.67	no youths	50.00	22.22	3
Geldo	635	1127.20	-7.97	-13.07	248.65	68.44	-3.15	4
Jérica	1 548	19.78	-0.83	-16.15	226.63	63.46	1.23	4
Pavías	**61**	4.23	7.02	-31.15	366.67	29.79	11.48	3
Vall de Almonacid	269	12.74	-6.92	-28.62	376.19	59.17	18.22	4
El Alto Mijares								
Argelita	118	7.63	-2.48	-25.42	1800.00	47.50	22.03	4
Cortes de Arenoso	318	3.95	-25.87	-17.61	183.72	62.24	1.89	4
Espadilla	**71**	5.93	-5.33	-28.17	375.00	36.54	8.45	4
Fuente la Reina	**52**	6.93	85.71	-21.15	175.00	26.83	13.46	2
Montán	370	10.85	5.71	-47.03	692.00	115.12	25.95	4
Toga	100	7.39	-6.54	-27.00	428.57	58.73	11.00	4
Torralba del Pinar	**69**	3.26	0.00	-21.74	950.00	43.75	26.09	4
Torrechiva	**81**	6.84	10.96	-18.52	283.33	39.66	11.11	3
Vallat	**49**	9.79	0.00	-4.08	225.00	36.11	-51.02	3
Villahermosa del Río	489	4.49	6.77	-30.88	580.65	75.90	48.26	4
Province of Valencia								
El Rincón de Ademuz								
Torrebaja	411	87.13	-6.38	-16.06	286.36	70.54	4.38	4
Los Serranos								
Higueruelas	500	26.60	-12.43	-18.80	387.50	63.93	3.40	4
La Plana de Utiel-Requena								
Caudete de las Fuentes	700	20.23	-13.37	-18.86	245.05	81.35	-11.29	4
Fuenterrobles	682	13.79	-3.67	-17.89	161.29	55.35	-1.17	4
La Ribera Alta								
Antella	1 175	66.84	-22.08	-20.34	281.42	57.93	-17.19	4
Ènova, l'	887	115.59	-15.20	-13.64	240.37	71.90	-7.44	4
Sellent	389	27.78	-18.96	-15.17	415.38	52.55	-12.60	4
Sumacàrcer	1 096	54.56	-20.00	-16.88	267.57	59.30	-10.40	4
La Costera								
Torrella	146	127.56	-18.89	-13.01	238.89	71.76	-21.92	4
La Vall d'Albaida								
Beniatjar	223	19.61	-5.91	-27.35	387.50	53.79	0.90	4
Bufali	161	50.44	-24.77	-25.47	292.86	51.89	-3.11	4
Carrícola	**94**	20.44	25.33	-14.89	227.27	62.07	15.96	2
Otos	434	39.21	-17.33	-12.67	236.00	63.16	-6.45	4
Terrateig	278	44.02	37.62	-13.67	296.67	74.84	-9.71	4
La Safor								
Almiserà	262	35.21	-1.87	-4.20	284.62	61.73	-9.54	4
Barx	1 277	79.30	4.59	-28.35	295.49	70.04	-3.68	4
Llocnou de Sant Jeroni	546	84.35	-2.85	-13.92	179.73	61.06	-2.01	4

Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.

Annex 4. *Municipalities with no risk of depopulation*

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Province of Alicante								
Atzúbia, l'	632	43.08	13.26	-14.08	527.27	77.53	30.70	3
Agost	4 758	71.40	17.39	0.97	125.40	54.88	1.49	0
Agres	565	21.87	-12.94	-15.58	210.29	59.60	-6.90	3
Aigües	963	52.13	66.32	-2.08	164.80	52.37	-7.68	1
Albatera	12 279	199.52	41.77	10.15	77.83	51.00	1.12	0
Alcocer de Planes	230	52.43	86.99	-8.70	286.36	58.62	13.04	1
Alcoi / Alcoy	58 994	454.29	-2.45	-2.22	139.38	56.15	-0.14	2
Alfafara	410	20.73	5.67	-6.10	191.84	53.56	1.71	0
Alfàs del Pi, l'	20 482	1063.47	54.86	-0.05	200.07	64.49	5.93	1
Algorfa	2 935	158.90	140.57	1.16	253.17	83.44	2.79	2
Algueña	1 336	72.48	-8.43	-9.28	190.16	65.96	-11.23	3
Alacant / Alicante	334 887	1663.90	22.92	3.38	119.19	53.09	2.07	0
Almoradí	20 803	487.26	52.90	9.36	77.46	53.58	3.59	0
Alqueria d'Asnar, l'	493	454.92	18.51	-1.01	92.11	42.07	-2.23	1
Altea	22 290	647.44	51.52	1.18	140.71	52.88	13.82	0
Aspe	20 714	293.52	25.60	5.43	94.13	53.32	0.17	0
Banyeres de Mariola	7 068	140.58	3.21	1.39	131.30	57.45	-1.13	1
Beneixama	1 685	48.30	-6.18	-7.12	177.33	58.81	0.06	1
Benejúzar	5 402	579.12	6.61	-0.87	122.86	55.59	2.54	0
Benferri	1 942	157.09	89.28	9.06	97.50	57.76	-0.62	1
Beniarbeig	2 092	282.58	73.61	-2.25	138.68	56.94	6.60	0
Benigembla	490	26.55	25.96	-19.18	433.33	96.00	14.08	3
Benidoleig	1 095	146.31	34.03	-11.60	293.10	71.36	0.37	3
Benidorm	68 721	1784.50	30.04	0.97	148.54	50.76	0.08	0
Benijófar	3 322	761.93	100.73	-1.60	247.22	75.95	21.79	1
Benimantell	483	12.73	15.27	-11.18	231.48	58.88	2.28	2
Benimarfull	409	73.51	0.74	-25.92	352.78	66.26	4.16	3
Benimeli	418	119.26	27.05	-35.17	275.00	87.44	19.14	3
Benissa	11 005	157.87	13.61	-4.63	179.10	60.94	12.42	1
Poble Nou de Benitatxell, el	4 276	337.92	100.66	-5.64	292.77	84.31	-1.89	3
Biar	3 671	37.40	3.79	2.29	128.14	57.89	-2.02	1
Bigastro	6 733	1642.94	39.43	9.36	87.11	50.66	-5.58	1
Bolulla	420	30.95	32.91	-15.00	400.00	58.49	7.86	2
Busot	2 978	88.00	84.40	0.94	170.05	62.47	13.57	1
Calp	22 725	966.65	45.63	0.54	165.63	59.93	11.93	0
Callosa d'En Sarrià	7 373	212.71	15.84	-1.26	113.50	53.25	-2.43	1
Callosa de Segura	19 038	766.69	24.50	8.45	78.64	55.44	2.56	0
Campello, el	28 349	512.94	61.40	2.97	134.85	55.76	12.00	0
Camp de Mirra, el	415	19.02	7.51	-9.40	167.31	50.36	4.10	1
Cañada	1 220	63.13	8.83	-3.52	123.56	61.59	0.33	1
Castalla	10 124	88.34	32.67	2.52	124.38	51.31	2.83	0
Catral	8 639	431.77	73.51	8.04	102.10	58.11	-1.41	1
Cocentaina	11 511	217.42	8.88	-3.64	139.56	53.07	4.06	0
Cox	7 297	436.69	25.68	8.88	80.04	51.52	1.77	0
Crevillent	28 952	276.92	18.62	8.19	92.97	53.53	-0.93	1
Daya Nueva	1 737	244.87	52.50	-2.53	172.98	63.87	-8.18	2
Daya Vieja	690	219.54	323.31	-3.91	464.91	87.50	21.01	2
Dénia	42 166	637.15	42.52	2.50	122.52	50.78	-4.11	1
Dolores	7 470	399.44	19.73	5.25	103.10	56.11	-0.09	1
Elx / Elche	232 517	712.15	20.37	7.32	98.83	50.78	0.56	0
Elda	52 618	1149.15	2.71	0.14	141.50	55.33	-3.18	1
Finestrat	6 715	158.92	243.65	5.41	95.91	45.82	32.73	0
Formentera del Segura	4 191	967.51	98.53	-0.43	134.01	55.74	27.01	0
Gata de Gorgos	6 049	297.51	20.91	-1.59	133.44	54.31	5.98	0
Gaianes	452	47.22	55.33	-15.71	198.33	65.57	21.90	2
Gorga	249	27.34	-3.11	-21.69	431.25	51.83	17.67	3
Granja de Rocamora	2 580	359.89	31.50	5.12	86.38	51.41	9.34	0
Castell de Guadalest, el	217	13.60	23.30	-7.83	445.45	38.22	-2.76	3
Guardamar del Segura	15 348	452.25	73.52	1.15	152.88	61.49	3.23	1
Fondó de les Neus, el / Hondó	2 544	36.95	58.60	-9.63	352.44	77.78	-1.77	3
Hondón de los Frailes	1 198	95.49	116.64	-8.93	437.38	92.30	12.94	2
Ibi	23 489	375.68	10.90	4.25	123.56	52.10	-2.02	1
Jacarilla	2 022	165.68	31.30	-0.69	142.38	56.74	-1.68	1
Xaló	2 739	79.19	36.88	-4.78	210.47	69.91	5.84	1
Xàbia / Jávea	27 604	402.45	25.50	-1.40	159.18	61.12	0.33	1
Xixona / Jijona	6 865	41.92	-7.68	-7.71	163.45	56.81	-1.19	2
Llíber	935	42.63	78.44	-7.27	403.45	88.13	8.45	2
Millena	237	24.25	64.58	-16.46	576.92	59.06	22.78	2
Monforte del Cid	8 165	102.68	57.69	6.99	76.88	45.16	9.77	0
Monòver / Monóvar	12 167	79.86	2.17	-4.76	144.52	57.42	-2.46	1
Mutxamel	25 352	532.01	79.97	5.78	80.05	48.38	9.62	0
Murla	470	80.85	45.96	-17.23	537.84	100.85	15.11	3
Muro de Alcoy	9 324	308.29	29.61	6.13	98.36	54.14	2.81	0

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Novelda	25 651	338.74	8.39	2.82	114.92	50.20	-4.95	1
Nucia, la	18 603	870.87	137.31	4.82	104.63	53.10	10.71	0
Ondara	6 894	662.03	31.41	3.52	107.74	52.12	4.44	0
Onil	7 507	155.07	10.77	3.04	119.38	53.11	-2.09	1
Orba	2 174	122.62	37.07	-13.94	309.30	94.45	7.31	3
Orxeta	736	30.59	71.56	-7.88	186.81	54.95	13.45	0
Orihuela	77 414	211.84	49.88	1.34	154.58	61.48	-8.06	2
Parcent	929	78.93	12.47	-10.87	430.38	82.16	10.87	3
Pedreguer	7 699	260.26	29.59	-3.05	148.74	58.87	3.12	0
Pego	10 128	191.65	-0.57	-4.88	196.00	65.09	-0.31	3
Petrer	34 276	329.29	21.45	8.85	93.74	48.54	-2.92	1
Pinós, el / Pinoso	7 966	62.98	31.37	1.49	116.81	53.40	3.35	0
Polop	4 965	220.09	145.31	1.13	94.79	49.50	24.25	0
Rafal	4 498	2772.60	44.03	10.89	70.62	50.54	3.00	0
Ràfol d'Almúnia, el	653	133.88	69.17	-6.89	331.88	83.94	2.30	2
Redován	7 869	832.89	45.78	3.32	79.74	49.83	4.61	0
Rojales	16 963	611.75	138.95	-4.21	437.78	98.72	-14.44	3
Romana, la	2 434	56.22	22.19	-6.82	219.67	66.83	-1.89	2
Sagra	408	72.61	2.51	-19.61	515.63	93.36	1.96	3
Salinas	1 601	25.94	34.76	0.12	137.92	55.44	1.50	0
Sanet y Negrals	667	169.22	24.21	-10.64	318.57	78.34	4.80	3
San Fulgencio	7 855	379.45	132.12	-7.46	404.67	98.16	33.38	2
Sant Joan d'Alacant	23 915	2481.13	41.43	6.10	102.74	53.08	7.84	0
San Miguel de Salinas	6 034	110.02	63.48	-3.93	213.28	73.04	-16.42	2
Santa Pola	32 306	555.46	76.99	4.17	109.62	51.17	14.37	0
Sant Vicent del Raspeig	58 385	1439.80	55.76	9.14	80.29	47.57	5.42	0
Sax	9 845	155.08	14.45	4.39	113.07	51.41	-2.52	1
Senija	584	122.01	23.73	-10.62	173.17	62.22	4.97	2
Teulada	11 112	344.56	24.84	-2.93	227.27	73.11	12.77	1
Tibi	1 614	22.93	37.24	-2.42	194.42	56.09	1.67	0
Tormos	340	63.43	16.44	-13.82	330.56	83.78	21.76	3
Torrevieja	83 337	1161.33	97.12	0.60	154.95	59.74	-11.78	1
Verger, el	4 640	568.70	28.53	-4.68	143.99	57.08	10.84	0
Vila Joiosa, la / Villajoyosa	34 673	585.22	48.56	3.50	110.61	48.82	2.30	0
Villena	33 964	98.34	7.14	0.23	108.91	52.37	-3.89	1
Poblets, els	2 705	747.08	82.15	-7.69	382.53	92.25	3.81	2
Pilar de la Horadada	21 905	281.36	104.28	7.13	129.66	61.47	16.03	1
Montesinos, Los	4 968	331.41	96.67	2.78	156.87	60.36	4.17	1
San Isidro	1 986	169.76	59.01	8.06	84.52	42.88	5.14	0
Province of Castellón								
Alcalà de Xivert	6 680	39.87	29.71	-2.34	165.42	59.01	-7.46	1
Alcora, l'	10 405	109.32	16.45	2.57	121.91	53.04	-7.62	1
Alfondeguilla	866	30.57	-4.84	-7.97	218.63	60.07	3.70	2
Almassora	26 270	796.69	58.17	8.14	77.28	49.27	0.04	0
Almenara	5 998	217.11	19.94	1.18	121.53	52.23	1.48	0
Altura	3 528	27.23	12.21	0.09	133.22	60.80	-9.16	2
Artana	1 947	53.59	6.51	-5.44	149.65	57.27	1.23	0
Barracas	162	3.84	1.25	-9.26	176.00	74.19	-3.70	3
Betxí	5 645	263.30	5.73	0.62	131.82	50.49	-2.57	1
Benafer	152	8.92	1.33	-18.42	246.67	52.00	-7.89	3
Benicarló	26 912	562.26	37.73	5.29	108.31	54.37	-0.26	1
Benicàssim / Benicasim	18 192	502.14	61.16	6.96	106.47	49.21	-2.56	1
Benlloc	1 033	23.74	24.01	-12.39	141.98	61.15	-1.84	3
Borriol	5 360	87.07	57.42	6.25	81.77	46.65	3.28	0
Borriana / Burriana	34 683	738.03	31.76	4.58	100.27	53.36	-5.66	1
Cabanes	2 958	22.47	23.77	-8.72	153.62	61.02	1.86	1
Càlig	1 950	71.00	11.94	-8.77	168.38	59.84	-6.67	1
Castelló de la Plana	171 728	1542.58	22.92	4.79	113.95	52.94	-5.01	1
Costur	524	23.89	12.21	-7.63	148.65	54.12	-6.68	1
Chilches / Xilxes	2 679	197.26	20.24	1.12	149.06	52.65	-4.14	1
Eslida	759	41.88	-1.17	-6.72	153.85	64.29	-20.95	3
Figueroles	523	43.26	-7.10	-13.19	185.48	51.16	-4.40	3
Llosa, la	951	94.79	2.04	-4.73	155.00	60.10	3.89	1
Moncofa	6 525	449.10	71.85	2.97	127.57	51.29	4.03	0
Montanejos	572	15.13	34.59	-11.89	232.79	55.01	5.24	2
Navajas	716	90.77	33.58	-12.99	200.00	61.63	8.52	2
Nules	13 103	259.29	14.50	2.67	112.01	57.17	-2.76	1
Onda	24 859	229.75	30.08	5.88	93.54	50.72	-4.97	1
Orpesa / Oropesa del Mar	9 076	343.51	167.57	10.56	105.66	51.54	-23.90	1
Peníscola / Peñíscola	7 612	96.39	78.77	2.97	142.93	60.49	-1.89	2
Pobla Tornesa, la	1 211	47.14	124.26	7.10	72.76	54.07	6.19	0
Ribesalbes	1 174	137.47	-8.50	-5.88	166.87	58.86	-10.56	2
Sant Jordi / San Jorge	972	26.63	69.93	-8.74	277.14	68.75	10.49	2
Sant Mateu	1 963	30.38	9.24	-7.39	139.38	65.65	-7.95	2
Santa Magdalena de Pulpis	768	11.55	7.87	-7.03	185.59	70.29	-5.73	3
Segorbe	8 978	84.63	15.58	-3.19	143.33	58.65	-0.18	1
Soneja	1 447	49.72	4.63	-8.85	169.52	64.25	-1.31	2
Tales	825	56.80	6.45	-7.52	133.58	61.13	-3.39	2

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Todolella	155	4.56	5.44	-11.61	190.00	59.79	14.19	2
Torreblanca	5 528	185.42	19.91	-6.06	159.15	57.18	-6.35	1
Vall d'Alba	2 807	53.05	45.21	-4.42	132.95	55.68	-2.96	1
Vall d'Uixó, la	31 660	471.97	9.28	3.41	123.46	55.26	-2.20	1
Vilafamés	1 842	26.11	26.77	-2.55	129.23	54.66	-8.14	1
Vila-real	50 893	923.26	24.33	5.88	93.03	51.07	-1.83	1
Vilavella, la	3 157	513.65	-6.49	-1.68	177.22	62.73	-5.57	3
Vinaròs	28 682	300.48	28.80	2.49	114.85	53.98	2.47	0
Viver	1 536	30.77	21.42	-9.51	195.54	63.58	-8.33	2
Alqueries, les	4 449	352.83	25.11	1.60	115.36	57.60	2.58	0
Sant Joan de Moró	3 159	110.21	81.45	8.77	71.43	51.08	3.45	0
Province of Valencia								
Ador	1 508	109.18	32.28	-4.97	183.33	48.57	0.66	0
Atzeneta d'Albaida	1 165	192.37	-5.28	-2.92	174.21	59.81	-6.95	2
Agullent	2 410	148.41	8.90	3.57	125.50	48.49	-2.24	1
Alaquàs	29 561	7576.58	12.92	6.31	113.11	53.92	-2.09	1
Albaida	5 900	166.60	1.55	0.58	129.56	53.25	-6.49	1
Albal	16 399	2236.79	41.64	12.63	67.63	46.37	1.84	0
Albalat de la Ribera	3 360	234.15	-4.03	-3.96	138.68	52.73	-3.99	2
Albalat dels Sorells	3 977	859.91	12.76	-0.75	119.78	54.33	3.07	0
Albalat dels Tarongers	1 232	57.72	80.38	-4.46	122.95	49.51	11.36	0
Alberic	10 526	392.87	15.04	2.94	104.03	55.16	-6.03	1
Alborache	1 160	42.44	28.46	-3.45	163.46	54.87	0.95	0
Alboraia / Alboraya	24 454	2932.25	54.59	10.22	84.10	49.03	4.39	0
Albuixech	4 017	909.10	31.79	-3.88	139.74	57.10	6.95	0
Alcàsser	10 039	1114.96	36.72	6.18	87.31	50.44	5.33	0
Alcàntera de Xúquer	1 291	388.27	-9.34	-3.10	161.45	56.87	-5.58	2
Alzira	44 352	401.41	9.67	3.07	112.23	52.51	0.79	0
Alcúdia, l'	12 009	507.41	14.37	3.26	103.77	54.06	3.31	0
Alcúdia de Crespins, l'	5 157	997.87	24.99	-0.17	120.18	51.19	-0.54	1
Aldaia	31 864	1985.16	31.14	9.08	79.00	49.62	2.69	0
Alfafar	20 890	2080.48	8.77	3.17	118.62	55.09	-0.83	1
Alfauir	437	70.25	22.41	-4.58	216.67	53.33	-0.46	1
Alfara de la Baronia	557	47.57	10.30	-8.62	155.95	62.87	9.52	1
Alfara del Patriarca	3 310	1671.20	21.42	2.27	99.81	45.62	9.46	0
Alfarp	1 544	75.03	18.50	2.66	115.14	53.78	1.30	0
Alfarrasí	1 225	192.01	1.66	0.41	132.64	57.86	-3.67	1
Algar de Palancia	481	36.57	13.71	-8.11	264.00	60.87	-10.40	3
Algemesí	27 331	661.77	9.13	4.04	100.52	54.90	-4.12	1
Algímia d'Alfara	1 011	69.95	20.50	-11.08	168.21	66.83	5.04	2
Alginet	13 380	555.83	12.46	3.74	103.79	51.96	0.86	0
Almàssera	7 349	2682.62	30.21	3.84	102.76	51.43	1.66	0
Almoines	2 414	1139.66	42.25	4.60	82.26	51.63	-2.94	1
Almussafes	8 967	833.18	25.91	5.11	94.39	50.60	6.65	0
Alqueria de la Comtessa, l'	1 476	685.46	4.24	-4.13	135.65	58.03	-0.81	1
Andilla	319	2.23	5.28	-11.29	955.56	42.41	18.50	3
Anna	2 628	122.52	2.94	-7.91	207.94	66.22	1.45	1
Aielo de Malferit	4 618	172.71	16.59	5.05	97.08	50.67	-1.21	1
Ayora	5 312	11.89	-3.68	-3.95	166.80	59.28	-0.40	3
Barxeta	1 601	56.14	-1.54	-4.75	155.95	56.96	-0.62	2
Bèlgida	673	38.99	-0.15	4.61	154.55	59.86	-8.32	2
Bellreguard	4 608	1615.87	22.75	0.00	123.08	51.48	0.69	0
Benagéber	192	2.75	1.05	-13.54	1325.00	42.22	29.17	3
Benaguasil	10 988	432.66	19.98	1.29	121.95	51.41	0.13	0
Benavites	619	144.97	-3.43	-8.40	198.75	62.89	2.26	2
Beneixida	651	203.68	0.62	-3.84	153.85	43.71	-7.53	1
Benetússer	14 799	19006.61	8.35	1.57	124.55	54.25	-1.16	1
Beniarjó	1 765	641.55	49.70	2.55	89.87	51.50	-1.36	1
Benicolet	569	50.39	19.04	-31.99	233.77	82.37	45.34	2
Benifairó de les Valls	2 186	503.10	11.19	-0.78	128.86	57.83	4.30	0
Benifairó de la Valldigna	1 571	77.78	-4.38	-6.43	205.79	58.69	-0.83	2
Benifaió	11 962	593.54	-0.76	0.16	141.09	55.90	-1.90	2
Beniflá	457	731.22	191.08	14.44	64.20	41.05	3.50	0
Benigànim	5 841	174.68	7.15	3.05	128.74	50.42	-7.40	1
Benimodo	2 268	181.13	28.14	2.38	108.79	50.40	-0.49	1
Benimuslem	653	156.58	17.66	-1.07	125.51	51.16	-4.75	1
Beniparrell	1 952	539.58	24.81	3.59	106.45	48.78	-2.41	1
Benirredrà	1 592	4095.72	46.59	-6.66	160.71	57.94	4.15	0
Benissanó	2 260	989.15	29.96	-0.58	112.83	54.37	3.50	0
Benissoda	430	106.44	43.81	0.70	113.64	48.79	11.63	0
Benisuera	194	91.53	2.11	-17.01	276.19	68.70	3.09	3
Bétera	24 272	323.21	87.92	7.89	70.54	50.33	14.14	0
Bocairent	4 195	43.26	-7.70	-3.15	178.04	59.02	-4.39	2
Bolbaite	1 356	33.58	-3.97	-9.66	204.88	58.41	-7.01	2
Bonrepòs i Mirambell	3 691	3499.12	60.55	9.37	66.67	53.73	2.38	0
Buñol	9 408	83.70	0.53	-2.48	141.97	62.88	-4.32	2
Burjassot	38 024	11040.85	9.05	3.56	111.75	50.84	0.79	0
Canals	13 587	621.56	5.02	2.58	121.26	49.97	-1.30	1
Canet d'En Berenguer	6 697	1742.54	202.21	2.61	85.35	50.66	16.75	0
Carcaixent	20 358	343.57	-0.63	-1.96	120.90	52.36	0.07	1

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Càrcer	1 862	251.45	-10.00	-8.38	150.75	56.47	-6.02	2
Carlet	15 598	341.90	11.09	-2.84	105.64	58.02	4.19	0
Casinos	2 777	66.94	15.85	-1.98	144.66	56.98	0.29	0
Castelló de Rugat	2 274	119.54	10.93	1.76	126.48	54.69	-5.50	1
Castellonet de la Conquesta	147	27.06	-0.68	-7.48	221.43	44.12	-5.44	2
Catadau	2 777	78.32	20.69	-0.97	134.31	53.09	2.23	0
Catarroja	28 120	2137.28	35.90	8.88	82.62	54.04	0.34	0
Cerdà	331	217.47	11.82	1.51	113.21	51.83	-14.20	1
Cofrentes	1 130	10.95	13.23	-7.96	260.68	59.60	19.73	2
Corbera	3 100	152.94	0.71	-1.84	130.75	60.04	-5.90	2
Cotes	333	52.64	-7.24	-9.91	227.78	54.88	-9.01	2
Quart de les Valls	988	117.24	-8.69	-7.79	164.14	63.31	-4.45	3
Quart de Poblet	24 760	1255.43	-6.24	-2.08	152.23	56.30	-0.55	2
Quartell	1 636	514.81	18.90	-9.35	183.41	65.75	20.72	1
Quatretonda	2 212	50.79	-12.50	-13.16	225.42	54.58	-6.10	3
Cullera	22 145	411.46	8.24	-2.85	153.57	54.95	-4.50	1
Chella	2 435	55.99	-3.68	-12.16	169.25	58.84	0.82	2
Cheste	8 494	118.89	22.99	0.02	114.22	54.10	4.13	0
Xirivella	29 623	5774.46	14.12	4.70	109.03	51.64	-5.19	1
Chiva	15 123	84.61	62.14	5.23	87.90	46.70	9.16	0
Daimús	3 117	990.92	101.88	-3.43	136.10	51.02	13.15	0
Domeño	708	10.32	43.32	0.56	155.66	62.01	-1.69	3
Eliana, l'	18 235	2078.68	44.13	3.44	109.68	52.80	9.57	0
Emperador	687	26644.43	238.42	13.25	50.65	50.99	4.22	0
Enguera	4 752	19.66	1.21	-7.34	170.24	53.79	-6.02	2
Estivella	1 456	69.61	32.97	-14.29	157.33	66.02	15.66	2
Faura	3 538	2162.10	24.27	2.94	125.67	55.11	-0.08	1
Favara	2 518	266.35	49.35	0.28	136.10	56.49	13.74	0
Fontanars dels Alforins	971	13.00	-0.41	-2.16	149.64	54.37	-0.41	3
Fortaleny	1 026	224.58	3.12	-1.46	165.15	51.78	-2.24	1
Foios	7 367	1136.90	38.90	5.32	98.79	55.39	6.85	0
Font d'En Carròs, la	3 794	383.30	19.31	-0.32	133.28	56.32	-1.82	1
Font de la Figuera, la	2 038	24.17	-2.95	-6.04	150.96	63.04	0.00	3
Gavarda	1 038	129.97	-15.54	-9.06	167.61	57.75	-4.14	2
Gandia	74 562	1225.65	27.07	4.85	111.04	50.94	-7.55	1
Genovés, el	2 842	187.44	20.88	6.86	101.02	52.71	-2.25	1
Gilet	3 324	294.64	124.59	6.17	73.66	45.22	8.54	0
Godella	13 088	1557.47	18.36	1.73	107.47	57.46	1.61	0
Godelleta	3 533	94.34	62.51	5.52	104.01	56.19	5.07	0
Granja de la Costera, la	285	342.79	-17.15	-19.30	246.67	57.46	0.00	3
Guadasséquies	468	143.56	24.14	3.63	103.49	59.73	-3.21	1
Guadassuar	5 893	166.75	10.54	-2.77	134.16	58.71	-0.12	1
Guardamar de la Safor	526	478.82	662.32	5.32	54.90	42.93	24.33	0
Xeraco	5 655	279.72	15.69	1.26	135.59	49.80	-2.53	1
Xàtiva	29 231	381.78	15.24	0.61	117.96	50.68	0.55	0
Xeresa	2 168	128.69	15.38	-0.78	108.17	54.42	-0.09	1
Llíria	23 253	102.00	42.66	4.10	108.01	53.18	7.73	0
Loriguilla	2 025	27.96	101.89	4.84	70.34	47.17	24.59	0
Losa del Obispo	507	41.67	11.18	-13.81	154.79	57.94	4.14	1
Llutxent	2 345	58.45	-2.05	-0.13	129.27	56.44	-8.78	2
Llocnou d'En Fenollet	916	597.89	19.58	1.09	123.19	50.66	10.37	0
Llocnou de la Corona	118	2818.25	18.00	-5.93	143.75	49.37	11.02	0
Llanera de Ranes	1 055	113.76	2.63	-6.26	113.37	60.82	1.80	1
Llombai	2 685	48.31	18.65	-0.30	117.16	54.67	-3.09	1
Llosa de Ranes, la	3 575	501.70	-1.24	-2.10	152.72	51.04	-10.66	2
Macastre	1 283	34.07	28.30	-1.87	178.62	52.74	4.44	0
Manises	30 919	1573.25	19.32	6.05	100.37	50.38	1.60	0
Manuel	2 428	401.43	-1.30	-4.90	150.14	55.14	-5.97	2
Marines	1 828	51.17	35.61	-0.60	113.19	50.58	0.93	0
Massalavés	1 596	213.27	8.57	-3.01	132.79	56.32	-2.76	1
Massalfassar	2 469	974.29	84.94	5.63	76.15	48.38	1.98	0
Massamagrell	15 952	2588.55	28.40	3.89	101.47	52.21	5.87	0
Massanassa	9 667	1728.64	26.65	2.66	102.42	53.03	5.65	0
Meliana	10 822	2286.74	18.77	3.37	106.51	52.85	1.43	0
Miramar	2 634	1030.48	123.41	-0.23	127.00	52.61	13.74	0
Mislata	43 691	21499.36	7.80	4.06	121.96	51.15	1.25	0
Moixent / Mogente	4 302	28.64	1.20	-1.88	140.68	53.37	-1.70	1
Moncada	21 935	1385.81	18.70	1.94	118.34	49.96	0.59	0
Montserrat	7 878	172.86	154.95	8.02	68.99	45.65	14.61	0
Montaverner	1 630	220.32	-3.03	-0.31	128.80	54.06	-8.04	2
Montesa	1 164	24.19	-6.13	-6.36	167.13	48.85	-14.09	2
Montitxelvo / Montichelvo	584	71.53	-4.58	-7.19	168.18	67.82	-3.08	3
Montroi / Montroy	2 867	91.33	88.74	2.62	112.84	47.86	0.84	0
Museros	6 458	518.54	55.02	6.55	84.97	47.92	6.83	0
Nàquera/Náquera	6 577	169.92	155.52	11.45	61.79	41.05	4.84	0
Navarrés	2 968	63.10	8.05	-6.20	155.90	63.17	-5.90	2
Novetlè / Novelé	837	568.74	24.18	-0.72	106.92	47.36	-5.38	1
Oliva	25 101	418.84	21.52	-0.06	129.25	56.26	-9.34	1

Municipality	Population 2019	Population density 2019 (hab/km²)	Population growth 1999-2019 (%)	Vegetative growth rate 1999-2019 (%)	Aging rate 2019 (%)	Dependency rate 2019 (%)	Migration rate 2009-2019 (%)	No. requirements met
Olocau	1 771	47.36	117.03	-0.17	129.41	54.40	18.58	0
Olleria, l'	8 281	256.98	17.11	1.76	128.32	53.49	-0.05	1
Ontinyent	35 347	281.81	12.11	3.84	117.76	51.17	-6.31	1
Paiporta	26 088	6592.94	46.71	11.69	75.72	49.58	3.92	0
Palma de Gandía	1 631	117.16	7.09	-8.03	181.60	57.74	-2.76	1
Palmera	1 024	1047.21	95.42	11.04	71.78	51.26	0.20	0
Palomar, el	590	76.05	18.24	-4.07	161.33	49.75	6.27	0
Paterna	70 195	1957.94	48.75	10.65	67.67	50.95	3.31	0
Pedralba	2 778	47.21	34.33	-5.18	171.63	53.40	-4.07	1
Petrés	997	531.81	33.65	1.50	126.42	56.51	6.52	0
Picanya	11 513	1599.23	30.96	2.23	105.59	49.77	6.75	0
Picassent	20 942	244.12	33.32	5.98	93.37	52.13	4.38	0
Piles	2 685	681.37	36.78	1.82	110.69	49.33	-5.85	1
Polinyà de Xúquer	2 472	269.37	13.34	-1.48	119.13	57.75	-2.47	1
Potries	1 046	340.50	11.87	-10.04	212.26	46.29	5.16	1
Pobla de Farnals, la	7 978	2207.11	51.50	6.07	100.07	51.36	7.48	0
Pobla del Duc, la	2 543	134.77	4.65	-2.04	185.11	58.44	0.35	0
Pobla de Vallbona, la	24 433	738.08	119.88	12.03	58.26	47.25	13.29	0
Pobla Llarga, la	4 452	441.09	1.64	-3.62	141.62	55.28	-2.07	1
Puig de Santa Maria, el	8 630	321.69	22.53	2.35	126.68	57.05	2.58	0
Puçol	19 495	1079.43	37.18	4.69	94.97	51.09	0.81	0
Rafelbunyol	8 941	2129.65	65.36	8.50	82.36	51.75	6.32	0
Rafelcofer	1 345	661.43	-5.01	-7.66	165.41	57.49	-7.96	2
Rafelguaraf	2 335	143.59	-4.30	-5.05	163.21	55.87	-4.50	2
Ráfol de Salem	462	106.82	22.87	-5.41	131.71	69.85	0.00	2
Real de Gandia, el	2 461	405.33	36.42	-0.37	101.76	48.43	11.26	0
Real	2 154	117.61	20.27	-2.00	137.04	55.41	0.79	0
Requena	20 254	24.88	6.84	-1.22	135.82	57.17	0.08	0
Riba-roja de Túria	22 264	387.28	81.75	8.85	69.54	45.60	8.80	0
Riola	1 759	314.69	11.05	-1.31	122.89	56.22	-2.79	1
Rocafort	7 240	3093.18	44.57	8.99	69.31	47.91	6.41	0
Rotglà i Corberà	1 138	181.88	11.02	-6.41	145.51	50.73	-3.25	1
Rótova	1 294	169.03	-1.97	-6.11	188.30	61.55	2.63	2
Sagunt / Sagunto	66 140	499.66	16.37	0.45	132.41	57.43	-0.60	1
Salem	424	49.27	-8.82	-5.90	170.18	57.04	-11.08	2
Sant Joanet	504	271.31	42.78	4.76	87.64	49.55	-1.59	1
Sedaví	10 333	5638.63	24.69	2.80	110.84	55.24	4.05	0
Segart	163	24.53	-22.38	-9.82	642.86	46.85	17.79	2
Senyera	1 136	559.44	23.34	6.34	91.28	48.89	-11.00	1
Serra	3 124	54.52	70.25	0.35	103.33	45.44	6.59	0
Siete Aguas	1 154	10.43	-10.05	-4.33	192.03	53.66	-11.96	3
Silla	18 771	750.26	19.48	3.08	112.58	51.59	-2.11	1
Simat de la Valldigna	3 329	86.49	6.77	-6.58	158.30	57.40	3.84	0
Sollana	4 861	123.94	8.77	-4.32	136.08	53.20	1.09	0
Sot de Chera	369	9.52	13.54	-16.80	320.00	39.77	4.07	3
Sueca	27 479	297.02	9.16	-1.22	136.00	54.70	1.06	0
Tavernes Blanques	9 120	12386.68	8.49	3.79	117.68	50.94	-2.53	1
Tavernes de la Valldigna	17 201	349.38	5.53	-0.06	131.62	56.20	-2.58	1
Torrent	82 208	1187.38	29.23	6.62	86.86	51.51	1.36	0
Torres Torres	637	54.11	51.31	-4.40	207.35	48.83	16.64	0
Tous	1 263	9.90	5.34	-10.93	157.46	58.47	5.46	2
Turís	6 646	82.55	42.77	1.13	111.28	54.38	1.31	0
Utiel	11 531	48.67	-2.46	-6.21	169.21	59.69	-3.09	2
València	794 288	5701.39	7.42	0.45	144.33	54.60	-0.88	1
Vallada	3 039	49.42	-0.82	-6.65	185.64	59.53	-8.03	2
Vallés	157	127.08	46.73	-7.01	75.68	70.65	8.92	1
Vilallonga/Villalonga	4 270	98.57	17.92	-2.86	128.81	53.32	-2.72	1
Vilamarxant	9 717	136.71	65.76	4.11	102.28	51.03	10.14	0
Villanueva de Castellón	7 049	347.20	1.72	-4.24	141.01	52.51	-5.79	1
Villar del Arzobispo	3 554	87.31	3.28	-6.58	163.28	64.84	-6.27	2
Vinalesa	3 420	2237.43	49.08	6.14	87.76	57.10	4.82	0
Yátova	2 067	17.19	4.03	-7.11	189.68	54.60	2.61	1
San Antonio de Benagéber	9 089	1039.80	273.42	11.24	43.70	54.42	31.87	0
Benicull de Xúquer	1 012	289.42	20.76	-1.43	113.07	47.52	2.27	0

Source: Own elaboration with data of Statistical Portal of the Generalitat Valenciana.