

SOCIO-DEMOGRAPHIC AND SPATIAL ANALYSIS OF LABOUR MOBILITY IN CANARY ISLANDS

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I. INTRODUCTION

Among the daily journeys that people make, the most frequent and relevant are the displacements between home and work. The socio-demographic, economic and cultural features of the population largely determine their mobility. The displacement capacity depends on the age, marital status, gender, educational level, and the kind of job where you work. And it has been argued that the most important change processes affecting metropolitan areas are related to their socio-demographic, economic and cultural structures.

The concept of labor mobility (*commuting*) can be divided into two: internal labor mobility (IM) or, what is the same, employed people living and working in the same municipality, and external labor mobility (EM), related to population employed or working in a municipality other than that in which they reside. From these definitions, the objective of the paper is twofold. On the one hand, knowing the essential economic characteristics of labor mobility in the Canaries and, on the other, establishing a grouping of canary municipalities regarding the external labor mobility, which helps to explain the characteristics of municipalities with high, medium or low external labor mobility.

Obviously, the fact that Canary Islands is a discontinuous territory, composed of 7 islands, and such that the administration is shared by the two main cities placed in the two central islands, could explain, in principle, the appearance of distinctive features with respect to the national territory. However, only the quantitative analysis of the available information may confirm these initial guesses.

II. LABOUR MOBILITY AS OBJECTS OF STUDY

The study of daily labor mobility from residence to work from a single viewpoint requires data that in the Canary Islands, as in other communities, have not been available until the

Census of Population and Housing 2001. Unfortunately, in the last Census, 2011, obtaining disaggregated data at the municipal level is not possible, so we have been unable to update our analysis with the new Census data. The methodology applied in the new Census, whose information is obtained from a large sample survey to determine the characteristics of individuals and households, prevents us to obtain information as displeasing as with the 2001 Census because of the statistical secrecy.

With data from questions about daily mobility work, we analyze the sociodemographic characteristics of mobility residence to work in Canary islands by distinguishing between the province of Las Palmas (LPGC), composed of 3 eastern islands –Gran Canaria, Lanzarote and Fuerteventura–, and Santa Cruz de Tenerife (SCTF), consisting of the remaining 4 Western isles –Tenerife, Gomera, La Palma and El Hierro. Specifically, it asks whether there are significant differences between the internal and external mobility based on some demographic characteristics of the population –gender, age, educational level and kind of job– compared to national data, and establishes homogeneous groups of municipalities in terms of their internal labor mobility in order to identify the main features of canary municipalities with a certain level of external labor mobility.

Obtaining the necessary data to address this study requires combined information on internal and external labor mobility with the aforementioned demographic characteristics for the 87 canary municipalities, and this option is available on the website of the National Statistics Institute (INE). However, as it was said above, this information is only available for the 2001 Census. Once the information in absolute terms is obtained, the relevance of socio-demographic characteristics on the internal and external labor mobility is determined by calculating the percentage of EM and IM for each of the modalities considered. That is, for instance, the value of EM for the case of the Canary female workers was calculated by dividing the total number of such workers whose job is placed outside their municipality of residence by the total number of canary female workers.

III. ANALYSIS SOCIODEMOGRAPHIC OF LABOUR MOBILITY IN CANARY BY ISLANDS

Overall, the total Canary EM in 2001 was 262,736 (Table 1), which means that 38% of employed working outside their municipality of residence, while the IM reached 427,720 occupied, that is, the remaining 62%.

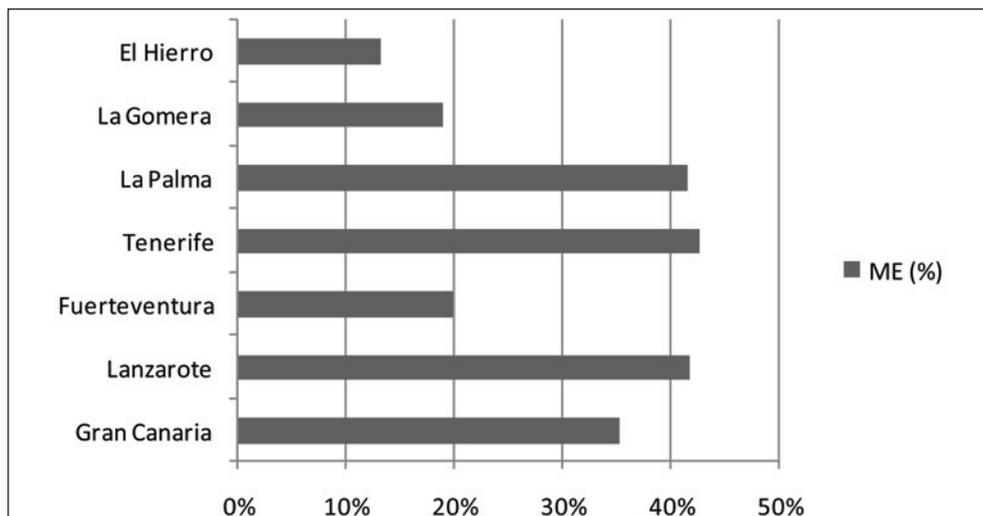
Table 1
EXTERNAL AND INTERNAL COMMUTING IN CANARY ISLANDS

	Employed population	EM (%)	IM (%)	EM/IM
CANARIAS	690.456	262.736 (38)	427.720 (62)	0,61
LP	367.366	128.159 (35)	239.207 (65)	0,54
SCTF	323.090	134.577 (42)	188.513 (58)	0,72

Source: Authors. Municipal information obtained from the Population Census 2001.

Regarding the different islands, the larger islands (except Fuerteventura), that is, Tenerife, Gran Canaria, Lanzarote and La Palma have greater ratios of external mobility, as shown in Figure 1. However, it is worthwhile to mention that Gran Canaria, despite being one of the largest islands, with more population and the largest number of employees (288.280), is not which has the greatest ratio of external mobility. At the opposite extreme are El Hierro, La Gomera and Fuerteventura.

Figure 1
EXTERNAL COMMUTING IN CANARY ISLANDS BY ISLANDS



Source: Authors. Municipal information obtained from the Population Census 2001.

1. Labor mobility by gender: The Canary female workers show lower external labor mobility

The uneven performance between men and women in terms of mobility is a known fact because, although there have been significant social changes that have affected the distribution of responsibilities and roles in families, it remains a higher percentage of women whose familiar role is confined exclusively to domestic tasks, limiting their job mobility. In fact, the value of Canary male EM is superior to the female's one (40% vs. 34%), which means that the number of men whose work place is outside their municipality of residence is greater than the corresponding for women, in such a way that this circumstance takes place in all the islands except El Hierro. Both EM male and female rates are higher in Gran Canaria, Lanzarote, La Palma and Tenerife, being at the opposite end El Hierro, La Gomera and Fuerteventura, with EM male and female ratios not exceeding 22% and 18 %, respectively.

2. Labor mobility by age: Greater external mobility among young canary workers

As regards the age of the Canary workers, you can see that external labor mobility in the Canary Islands is very similar for the groups of 15 to 29 years and 30 to 49, but it decreases

after 50 years. In fact, 80% of journeys due to external labor mobility in Canary Islands are made for workers less than 50 years old. If we do this analysis by islands, we again observe a pattern very similar to that obtained in case of the gender, that is, EM ratios by any age group are higher in Gran Canaria, Lanzarote, La Palma and Tenerife, being at the opposite end El Hierro, La Gomera and Fuerteventura, with external mobility ratios not exceeding 20%, except in the case of La Gomera for the age group between 15 and 29 years (24%).

3. Labor mobility by level of education: the higher is the training, the higher is the external labor mobility

In the Canary case, 4 mode of training have been posed: «illiterate and uneducated» «first degree», «second grade» and «third degree.» The mode «first degree» includes people who have done the basic or primary education; the «second level» refers both to individuals who have completed secondary education, current ESO or former EGB and those having secondary education or job training; and modality «third degree» is related to those with university studies (graduates, doctors...). The greatest EM corresponds to occupied with more training, and this behavior does not depend on the different islands, becoming particularly high in the cases of El Hierro, La Gomera and Fuerteventura, with an external mobility that exceeds 70%.

4. Labor mobility and industry: the greater external mobility occurs in the industry

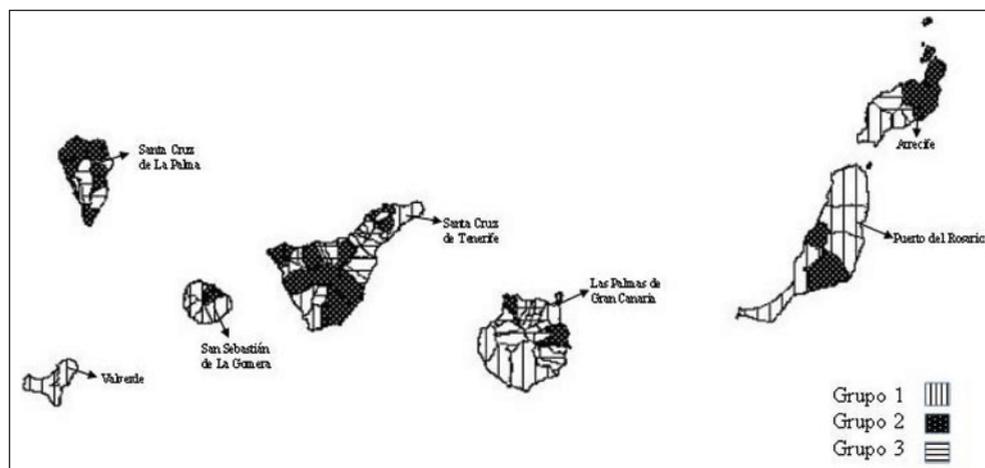
The sectors chosen for studying labor mobility have been the primary sector -agriculture, livestock and fishing-, industry, construction and services. The fact that the Canary external mobility is clearly higher in the industrial sector is confirmed, but this branch only represents 7% of the working population. The reason this happens is that companies in this sector have their activity placed around certain industrial sites located in determined municipalities. On the contrary, the primary sector is characterized by a little outward mobility. Construction is a sector that maintains the balance between external and internal mobility, fact which does not happen at the national level where the external mobility is much higher, mainly due to the concentration of construction in certain places. Finally, the service sector as a whole maintains an internal mobility greater than the external one.

IV. ASSOCIATION OF CANARY MUNICIPALITIES REGARDING FOREIGN LABOR MOBILITY

A close examination of the percentages of socio-demographic characteristics related to external labor mobility considered in this article leads us to consider the possible existence of groups of canary municipalities with a similar ratio of external mobility. However, to demonstrate the existence of these possible groups of canary municipalities it is necessary to apply a multivariate statistical. The variables chosen for this analysis are the percentage values of external labor mobility by municipality relating to each of the modalities of socio-demographic characteristics analyzed throughout the article, in addition to the overall percentage of Municipal EM, which finally provides an information matrix with 21 variables and 87 municipalities.

In this case study, it has been chosen, as a result of applying the method of Ward, the distance level generated by 3 groups of municipalities. The reason for choosing this level of grouping is because the proposed grouping of municipalities is based, in fact, on a single variable—external labor mobility in the municipality, labor, approached from different socio-demographic characteristics of this municipality, from which it seems reasonable to make a classification of municipalities with low, medium or high external labor mobility. Thus, the quantitative study of the results presented in Table 8 reveals that each differs from the others by having a distinct percentage level of external labor mobility. In this sense, for municipalities in Group 1 the external labor mobility is lower in percentage; Group 2 consists of municipalities whose external labor mobility is average; and 37 municipalities with the highest external mobility belong to Group 3 (Figure 2).

Figure 2
CANARY MUNICIPALITIES BY MOBILITY GROUPS



Source: INE and own calculations with Quantum GIS.

More precisely, Group 1 is made up of the 22 municipalities of lower average external labor mobility (less than 20%), and higher average workforce. But knowing the Canary reality, it can be concluded that the municipalities belonging to this group can be classified, in turn, into two subsets, so that the conclusions drawn from Table 4 should be undertaken with caution.

The municipalities in the first subgroup component are either provincial capitals or towns with a significant tourism. In both cases, the offer of employment is high. More specifically, the provincial capitals, Santa Cruz de Tenerife and Las Palmas de Gran Canaria belong to this first subgroup of municipalities. Their low external mobility is due to the fact that their occupied work mainly in their municipality of residence, since they have a high offer of employment. In addition, canary university centers are located in or close to these main cities, which also explains why it is the group with the highest percentage of workers with high formation of second or third grade. The southern municipalities of the island of Tenerife

–Adeje, Arona and Santiago del Teide– and Gran Canaria –Mogán and San Bartomé– also belong to this subgroup, and it due to their strong tourist activity which allows their residents working in the same municipality in which they reside.

The second subgroup of municipalities consists mainly of municipalities of smaller islands –La Gomera and El Hierro–, where poor communications, or those typical of a discontinuous field, forcing people to move their residence, in case you get a job, to one in which employment is offered. These municipalities have low labor supply, which is absorbed by the population of the town itself, or are characterized by very rural economies. In this subgroup appear smaller municipalities, almost all of La Gomera and El Hierro, and the little daily mobility is the result of having rural economies of self-contained labor or, even, of the fact that though existing a certain tourism, it is not too relevant and therefore the number of offered jobs is also reduced. This second feature is applicable to almost all towns in Fuerteventura and the South of Lanzarote.

Group 2 is composed of the municipalities with an intermediate external mobility. Such municipalities are present in all the islands except El Hierro, the smallest and westernmost island of the archipelago. Municipalities included in this group have economic activities of some importance, such as La Laguna, Icod, La Orotava and Guía de Isora in Tenerife, and Telde and Santa María de Guía on the island of Gran Canaria. In fact, in these municipalities there is economic activity enough so that only 40% of their resident workers have to travel to another town to do their daily work activities.

Finally, Group 3 contains municipalities with a high external mobility, being characterized by geographical areas in which lies a large part of the population without a job offer. In these municipalities there has been considerable urban development due, on the one hand, to the increasing of population and the economic growth on the islands and, on the other, to the increase in land prices in the traditional urban areas. This fact explains how towns close to urban areas with high labor supply become municipalities where the primary land use is residential. In fact, most of these municipalities were rated municipalities with a mainly residential function in the study published by the ESC of the Canary Islands, already quoted, and where local labor markets in the Canaries and their conditions of mobility and accessibility were studied within and between them, making in that case more emphasis on the accessibility indices, the employment and the sectorial structures of productive activity. This group is characterized by a higher percentage of workers in the construction sector (18%), which joining with the highest percentage of workers with no education or only basic training, explains why this is the group with the largest foreign labor mobility. Indeed, it is explained by the need to look for jobs for less skilled workers in that sector where less academic rigor is required and wherever you look what is demanded. Municipalities near the capital Santa Cruz de Tenerife, such as the northern municipalities of Santa Ursula, La Victoria de Acentejo, La Matanza de Acentejo, Tacoronte, Tegueste o El Sauzal, and the southern of El Rosario, Candelaria and Arafo belong to this group, and certain areas of them have the so-called «bedroom communities» features. Also located in this group and for very similar reasons –attraction of the economic activity in the capital of Gran Canaria, Las Palmas de Gran Canaria– are the municipalities of Santa María de Guía, Arucas, Gáldar, Teror, and Santa Brigida, among others, with many workers whose employment is in the capital city. There are also towns in this third group in La Palma and Lanzarote, since a further develop-

ment of the tourism sector and a significant improvement of the road infrastructure on these islands, in recent years, have allowed the increase of the external labor mobility, although being smaller islands with a limited economic activity.

V. CONCLUSIONS

The daily labor mobility is a complex phenomenon, with many socio-demographic variables, among other causes, which can help you to understand this growing phenomenon. Thus, this study has attempted an approach to the socio-demographic features of the population in the Canary Islands according to their daily external and internal labor mobility, taking into account the particularities of this discontinuous territory: the Autonomous Community of the Canary Islands is an archipelago. Furthermore, a classification of municipalities considering their external labor mobility, with the information extracted from the Population Census (INE, 2001), is made. Roughly speaking, the external mobility in Canary Islands has similar characteristics to the external mobility in the whole country. As we have seen throughout the article, the external and internal mobility between places of residence and work, vary according to the socio-demographic characteristics of the population in the same way showed by studies done for the whole country and for other regions. In fact, analyzing the relevance of external mobility by gender, age, education and type of economic activity, it can be concluded that the profile of external mobility in the Canaries is: A 50-year-old minor man, highly educated, and dedicated to economic activities of construction, tourism, transportation, education or health. The socio-demographic and spatial characteristics analyzed influence the labor mobility in the Canaries so much as they do in the rest of the country. The only important difference to note is the largest external mobility exhibited by the sector of hospitality in the islands, an issue that could be expected due to the tourism is the main economic activity in the islands. It implies that the worker needs moves to the tourist center from their place of residence, usually in a nearby town used as a residence. In the study of the external mobility you can see a pattern of similar behavior in Gran Canaria, Tenerife, Lanzarote and La Palma, where higher rates of external mobility are observed while La Gomera, El Hierro and Fuerteventura have lower rates. The analysis discussed in the last section of this article proves that space singularities of the municipality in which you reside have a special influence on the external labor mobility. The type of labor supply of each municipality and the neighboring ones largely determine the daily labor mobility of workers. In the case of the islands, because of the obvious geographic barriers, many of the smaller islands inhabitants are forced to move its residence to one of the largest or main islands, to take a job because daily displacements between islands are not feasible, unlike what happens in a continuous geographic area. But you can also do the opposite reading: precisely because it is a discontinuous geographic space, each island «works» as an «independent country» in which the most economically active regions are «attractors» for workers living in regions with fewer job options, so rather than talking about a single canary behavior in labor mobility, seven different behaviors should be considered.