

ANALYSING INCREASING FERTILITY DIFFERENCES WITHIN METROPOLITAN AREAS. THE CASES OF BARCELONA AND MADRID

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Introduction

In the late 1990s, Spanish fertility rates were one of the lowest in the world as its TFR was 1.15 children per women. In 2008, it recovered to 1.46. Foreigners partly contributed to this growth, as, during that decade, large numbers of them arrived to the country. However, the present economic crisis has had the reverse effect, putting an end to this phase. Therefore, figures have started to decrease once again. At the same time, fertility differences between central urban municipalities and their peripheries have progressively grown. While the former have increasingly delayed fertility and lowered their rates, the latter are relatively more fertile.

This paper intends to analyse the causes of these growing geographic fertility differences within urban areas using the two main Spanish metropolitan regions, Barcelona and Madrid, as case studies. Our main hypothesis is that growing geographical fertility differences are caused by metropolitan municipality spatial specialisation. This would be basically due to: 1) suburbanisation, 2) the impact of international immigration and 3) the fact that large metropolitan cores act as a “demographic filter” because the Second Demographic Transition has had a much stronger impact on them and, subsequently, have lower proportions of couples-with-children household compared to suburban municipalities.

Data and urban area delimitation

Urban area delimitations presently used are merely empirical, based on available data. For Barcelona we decided to use the whole province. It comprises 311 municipalities and 5.53 million inhabitants, 1.6 million residing in the core city. As for Madrid, we also considered that the whole province –or what is the same, the Autonomous Community of Madrid– is equivalent to its metropolitan area. It holds 179 municipalities and has 6.46 million inhabitants, 3.27 million of them central city dwellers. In sum, as both analytical units are provinces with a similar area (around 8,000 km²), comparisons are much easier.

Birth and Death Statistics (MNP) microdata published by the Spanish National Statistics Institute (INE), and more specifically births by age and nationality of the mother –

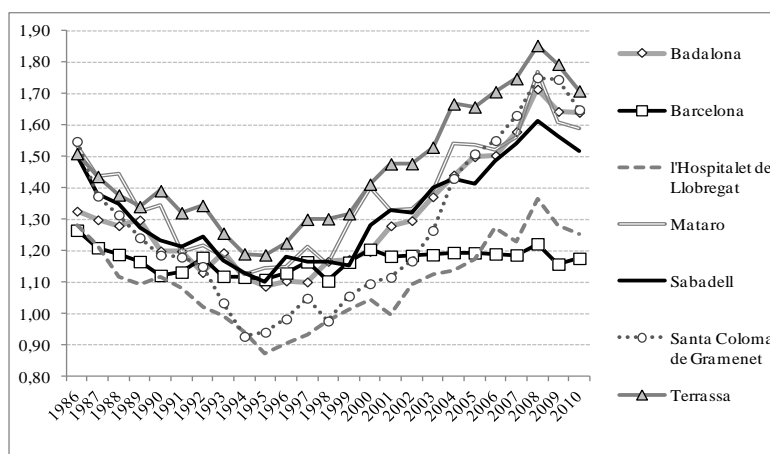
distinguishing, on the one hand, whether she was Spanish or foreign, and on the other, grouping alien's nationality by continent— and her municipality of residence, are used.

Fertility intensity between 2000 and 2011 is measured through Total Fertility Rates (TFR). Available data only allow to calculate it for municipalities which have more than 10,000 inhabitants. Finally, linear regression analysis is applied to measure the effect of several internal and international migration variables –including the proportion of foreign people– on the dependent variable, which is the TFR of each of the municipalities analysed.

Preliminary findings (I): Descriptive analysis

Descriptive analysis results would all seem to point in the same direction. Both within Madrid and Barcelona metropolitan areas, fertility differences have increased. This would also be applicable to the rest of large Spanish metropolitan areas. In fact, these differences would presently be larger than those found between provinces, as the latter would seem to be reducing. TFR changes within Barcelona province's largest municipalities would be a good example of fertility diversity within urban areas (fig. 1).

Fig. 1. TFR changes within Barcelona province' largest municipalities 1986-2010



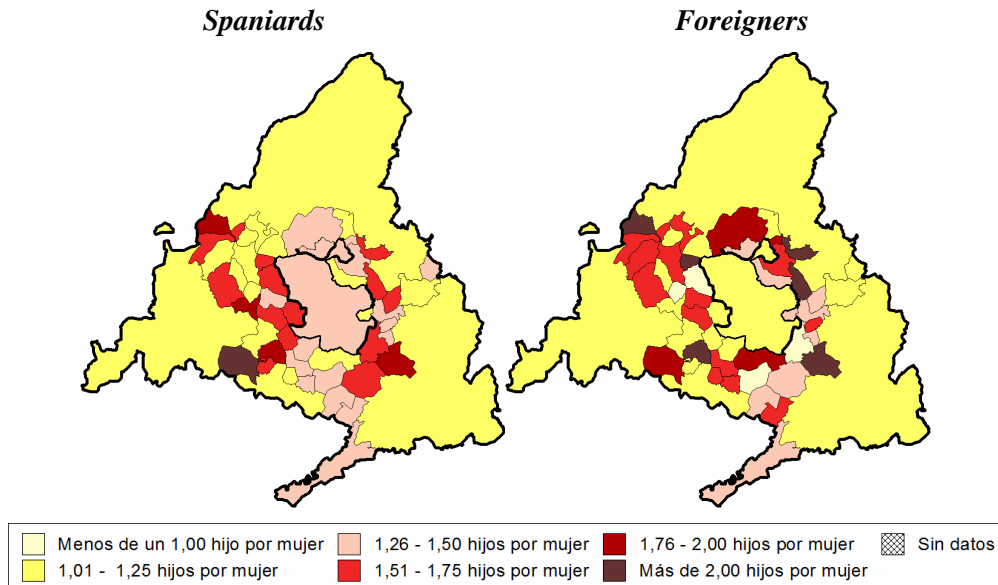
Source: MNP (INE) and population estimates (Idescat).

Secondly, when results from the two main metropolitan areas are compared and confronted to our initial hypothesis, it can clearly be observed that each of the three main elements differentiating fertility behaviour do not have the same relevance in both metropolitan areas. In Madrid, suburbanisation would have recently become the main explanatory factor as Spanish women who live in those periphery municipalities which have most grown in the 21st century have the highest fertility levels (fig.2, left). Foreigners have also recently incorporated to these suburbanisation trends and show similar geographic patterns to Spanish people (fig. 2, right). In Barcelona (fig3.), however, foreigner settlement patterns, particularly those of Africans –there are many more here than in Madrid–, would be the main explanatory element. Fig. 4 shows that, in the Catalan province, municipal TFR are strongly positively correlated with their African resident shares. This is not so for Madrid municipalities.

Finally, the “demographic filter” effect which some authors claim that large cities have, would be more significant in Barcelona than in Madrid. Latter city's area is 6 times larger than that of Barcelona, and it includes new peripheral neighbourhoods which from a sociodemographic, migratory and fertility point of view behave in a similar way to outer-ring suburban ones. Therefore, Madrid fertility combines core city and typically

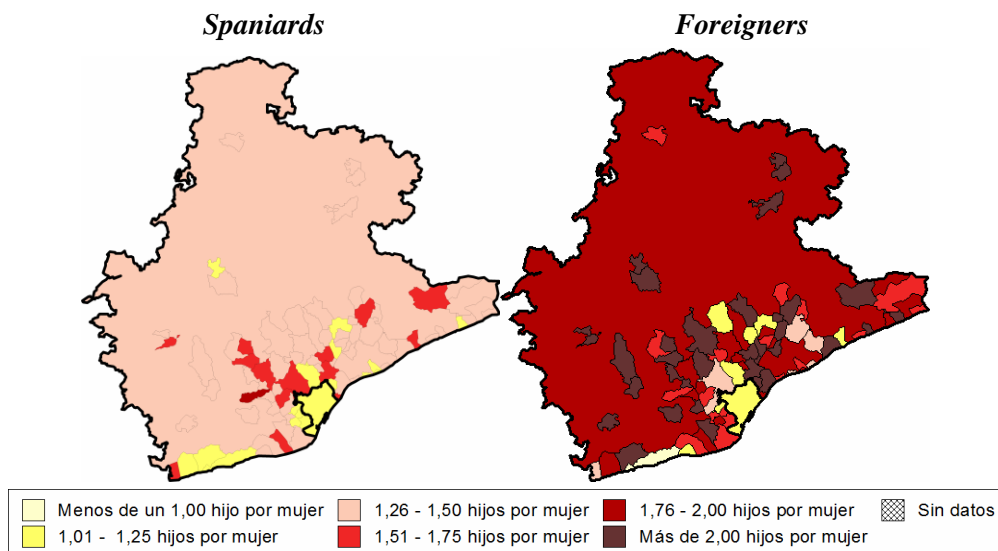
suburban features. The city of Barcelona, in contrast, only possess 100 Km² and does not have any more space to grow. Its main characteristic is that, for a long period of time, it has had late and quite stable fertility, remaining always low (see fig. 1 again) despite TFR fluctuations in the rest of the province.

Fig. 2. TFR for Madrid province municipalities (> 10,000 inhabitants), 2010



Source: MNP and Padrón data (INE) and Madrid Statistical Institute data.

Fig. 3. TFR for Barcelona province municipalities (> 10,000 inhabitants), 2010

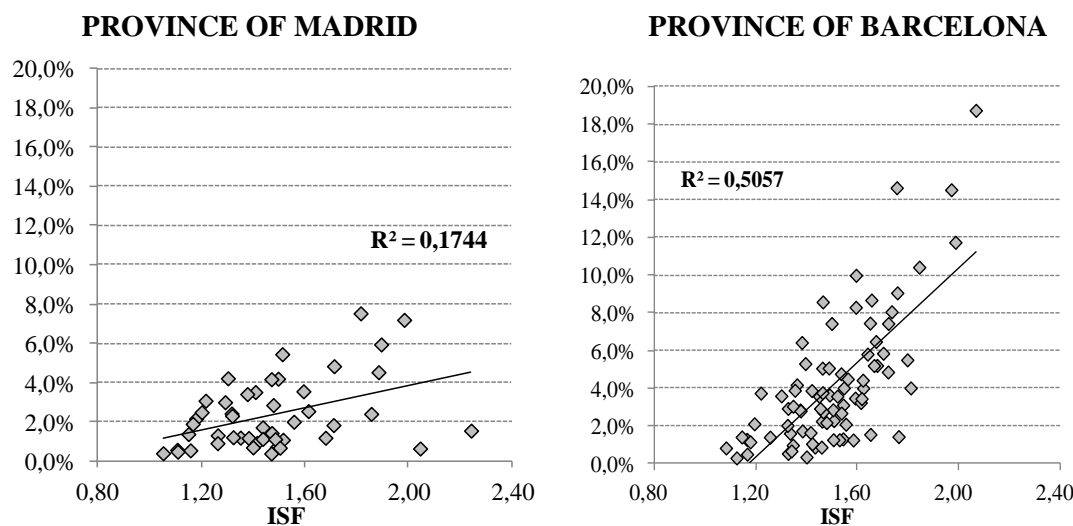


Source: MNP and Padrón data (INE) and Idescat data.

Out of the three elements which have been taken into account, the first two, suburbanisation and foreign immigration, have been heavily affected by the present economic crisis. Since the housing bubble burst, construction has diminished and loans have been restrained. These seem to be the main elements behind residential mobility diminution, together with a diminution in the size of cohorts leaving parental home. These processes are affecting residential mobility towards periphery municipalities, particularly those that are furthest away from the core city. Similarly, as international migration has fallen, fewer foreigners are arriving, affecting their fertility levels, which,

in some foreign communities, are particularly high just after the settlement, due to family reunification. Some of the high fertility levels observed before 2008 could actually be reflecting this and, in the same way, their recent and significant TFR reduction could partly be explained by this entry flow diminution.

Fig 4. Relationship between municipal TFR and African shares, 2010



Source: MNP and Padrón data (INE) and Madrid Statistical Institute and Idescat data.

Preliminary findings (II): Logistic regression results

Regression analysis (presently only available for Barcelona province) has shown that residential moves towards small and medium-size municipalities, together with foreigner settlement patterns (and their specific nationality) are the main elements currently explaining TFR differences among Barcelona province municipalities. These outcomes have, to a certain extent, confirmed our initial hypothesis, although results seem to be more complex than expected. Fertility rates by municipality changed from being partially explained by disposable household income levels (in 2001), to being so by a new model in which spatial fertility differences are explained, as we expected, by both internal and foreign migration. These flows would, on the one hand, be made up of young Spanish couples –who tend to settle in small and medium outer-ring localities– and, on the other, of certain foreign groups, particularly Africans, who have settled in specific municipalities increasing their fertility rates.

Regarding this last issue, foreign immigration seems to have a mixed role on fertility. Like Spanish people, foreigners might not regard Barcelona city as a suitable place to raise a family, as they would consider it has a lack of what they believe to be adequate housing –cheap several-room flats which their weak economies can afford. On the other hand, foreigners do also have an effect on inner-ring municipality fertility levels, but this impact depends on the nationality of the settlers. Fertility is much higher in municipalities that have received large numbers of Africans –positively and significantly related to fertility– and Asians than in localities that have more Latin-Americans or Europeans –who are negatively related to fertility, as the regression analysis has shown, even if results were not significant.

From a broader perspective, these results also confirm our argument that fertility differences among metropolitan municipalities are increasing due to growing productive and residential spatial specialisation, which would in turn lead to changing settlement preferences depending on people’s life cycle phase or/and nationality.