Changes in the Social Composition of the Neighborhoods of Barcelona and Madrid: An Approach Using Migration and Residential Flows

LÓPEZ GAY, Antonio
Centre d'Estudis Demogràfics
tlopez@ced.uab.es

ANDÚJAR LLOSA, Andrea
Universidad Pablo de Olavide
aandllo@upo.es

THIS IS A PRELIMINAR VERSION PREPARED FOR THE POPULATION ASSOCIATION OF AMERICA CONFERENCE 2019

Abstract

Numerous neighborhoods in Barcelona and Madrid are currently undergoing intense transformation of their social composition. Exclusive (and excluding) areas have seemed to expand within the context of the resurgence of central spaces. The literature suggests that in parallel with this expansion, the most vulnerable population is being displaced and concentrated in suburban areas with worse access to all types of services. These changing processes in social composition at the intraurban scale cannot be understood without underlining the key role of migration and residential mobility. This article analyzes annual data on migration and residential mobility based on the population register of both cities. For the first time in the country, we have been able to include the variable *level of studies* to the dataset, which allows us to dissect the processes of substitution, polarization and segregation of the population.

Keyword: Residential mobility, skilled migration, displacement, gentrification, suburbanization of poverty

Introduction

The neighborhoods of Barcelona and Madrid are undergoing intense transformations of their social composition due to a genuine struggle by residents to reside in certain areas of the city. In many neighborhoods, housing market prices, especially those of rental properties, exceed the prices reached at the end of the last expansive stage of the Spanish property market and have markedly increased since 2015. In major Western cities, exclusive spaces are rapidly expanding within urban areas, which are associated with increasingly qualified immigration, more global labor realities, and the context of resurgence of the central spaces linked to the location of new productive activities (Hutton, 2009) as well as the concentration of cultural, creative and innovative spaces (Musterd, 2006). Likewise, the indications reflect that the most vulnerable population is being displaced and concentrated in more peripheral spaces with worse access to all types of services (Musterd et al., 2017).

These changing processes of social composition at an intra-urban scale cannot be understood without underlining the key role of migration and residential mobility as mechanisms capable of sustaining and accentuating the socioeconomic differences that already exist in the area. The dissemination, by some municipalities, of migration data and residential mobility that includes a socioeconomic variable, such as the level of studies, allows for deepening the understanding

of the processes of polarization, segregation and substitution based on the mobility of the population within the cities. This approach allows us, for the first time, to analyze the population that actually changes residence on a very detailed geographical scale and to dissect the processes of population substitution typical of phenomena such as gentrification.
The present work is essentially quantitative, and the results are structured based on the following research questions:

(1) What is the extent of the transformative potential of migration and residential mobility on the composition of the population at the intra-municipal level?
(2) What role does immigration, and more specifically, skilled immigration play?
(3) How does socio-spatial mobility work within cities?
(4) How are the processes of sociodemographic renewal at the neighborhood scale developed?
(4a) Is there an expansion of traditionally more selective areas?
(4b) Are there population substitution processes? In what areas?
(4c) Is the population of the central cities being displaced? Is poverty suburbanizing?

1. SOURCES AND METHODOLOGY

The scarcity of statistical socio-economic data that provides high geographical detail for migratory and residential flows largely explains the lack of studies on the implications of mobility and migration in the sociodemographic transformation of neighborhoods in Spanish cities. Until now, little was known about the socio-economic characteristics of people moving within cities. Only through the census can certain features of newcomers be learned; however, the census data does not include geographical detail or places of departure. Furthermore, the Spanish Statistics of Residential Variations has never considered intra-municipal movements (which, in the case of the two cities studied, represent more than 70% of the movements), nor does it include any socio-economic variables. The data provided for this research allowed us to overcome these two typical limitations because we obtained geographical detail and we included a socioeconomic variable such as the level of education. Educational level is a good indicator of individual cultural capital, a relevant agent in the development of gentrification processes (Bridge, 2006), and is highly correlated with socioeconomic condition in the case of Spanish cities (Rubiales, 2017).

This work is supported by a database extracted from the population registers that includes all the flows moving in, moving out of, and moving within the central cities of Barcelona and Madrid between 2011 and 2016. The data comprises approximately 1.4 million records in the case of Barcelona and 2.7 million in the case of Madrid, all of them including the variables *sex*, *age*, *nationality* (Spanish/foreign), *area of origin* or *destination* and *educational level*[1] of the person moving. The neighborhood is the unit of analysis (73 neighborhoods in Barcelona and 128 in Madrid[2]). Because this work is focused on flow records and not on the static population, we ensure that the educational level is correctly collected as declared at the time of formalizing the residential change. Thus, the typical limitation associated with the difficulty of updating the educational variable in the population register was overcome.

[1]The group *level of education* has been subject to the specific categories that each municipality establishes to collect the information. Although the general scheme for the final grouping into three large educational groups is the same, the fact that the original categories are not identical could generate minor discrepancies between the two cities.
[2]Our unit of analysis, neighborhoods, have a similar average population, approximately 22,000 people in Barcelona and 25,000 in Madrid. The main discordant element between the two municipalities is the area (about 600 km^2 in Madrid compared to 100km^2 in Barcelona).

Several methodological strategies were adopted to measure the phenomena addressed. The patterns of displacement and urban spaces in which the best-positioned people locate themselves were identified by analyzing the proportion of people with higher education arriving and abandoning the neighborhoods. In turn, to analyze intra-municipal socio-spatial mobility, the 73 neighborhoods of Barcelona and the 128 neighborhoods of Madrid were grouped into five categories (quintiles) of similar population size based on a composite income indicator constructed for 2015. This indicator combines two large dimensions, the net family income and the housing price. The net family income has been extracted from the database of urban indicators published by the National Statistics Institute *(Instituto Nacional de Estadística-INE)* for 2015 at the neighborhood[3] scale. The net income value at the neighborhood scale has been corrected to avoid the heterogeneous distribution of household size in the city[4]. Thus, neighborhoods with a greater presence of one person households increase their rental value. The corrected rent value has been normalized on a scale of 0 to 1, where 0 was assigned to the neighborhood with the lowest income and 1 to the neighborhood with the highest income. The other dimension, housing price, has been extracted from neighborhood-scale data (sale price (€/m^2) in the second-hand market) published by the two municipal statistics departments on their websites. This value has also been normalized. Finally, when generating the composite indicator, a weight of 75% was assigned to the normalized rental value and 25% to the house price. This analysis allows us to propose and assess the following statement: if individuals of a better socioeconomic status abandon neighborhoods of lower income and, in turn, those individuals of worse socioeconomic condition leave the more affluent neighborhoods, such a pattern would perpetuate and sharpen inequalities in the territory.

2. MIGRATION AND RESIDENTIAL MOBILITY: DRIVERS OF SOCIODEMOGRAPHIC CHANGES

To understand the mechanisms that intervene in these neighborhoods' population changes, the roles of migration and residential mobility must be emphasized. Although residential mobility can reproduce and modify inequalities in the social composition of the urban space (Andújar, 2016), this agent is an essential part of broader urban transformation processes, being key for understanding the changes in the socioeconomic composition of the population in urban areas, as well as social mobility *in situ* and the life cycle of people (Hochstenbach and van Gent, 2015). In fact, the definition of one of the most studied change processes in urban areas, gentrification, takes selective migration as one of its conceptual pillars (Atkinson & Wulff, 2009). The displacement of lower-income social groups due to the arrival of higher-income groups has been the point of convergence between the definitions of various disciplines that have deepened the study of gentrification processes for more than 50 years (Glass, 1964, Lees et al., 2008). Despite this strong implication, the analytical focus of empirical work on the subject has rarely been the flows of people, instead mostly focusing on population stocks. Focusing on the characteristics of the population that moves across the area in flows, we ensure that we approach the main agents that can trigger socio-demographic changes in the neighborhoods (Freeman, 2005; Atkinson et al., 2011; Doring and Ulbricht, 2018).

The initial question of this section asks: What is the extent of the transformative potential of migration and residential mobility on the population composition in our neighborhoods? We know that the frequency of residential mobility in Spanish cities is noticeably lower than that

[3]In the case of neighborhoods in which the INE offers a greater territorial detail, a weighted average has been created based on the population as of 1-1-2015. In the few cases in which the INE has joined neighborhoods, the same value has been used for the different units united.

[4]Corrected income = Net family income * (1 + (proportion of households in which only one adult resides))

of many cities in Europe and North America, a trend associated, among other aspects, with the strong prevalence of property taxes (Strassmann, 2001). The speed at which processes of population substitution are experienced is reduced by this fact, a distinctive feature of the gentrification processes of southern Europe.

To answer this question, the volumes of the annual inflow and outflow of each neighborhood according to resident population have been relativized. As expected in two mature central cities, the inflows and outflows have very similar values, an aspect that emphasizes the idea of population replacement. Only in the expanding neighborhoods of northern Madrid do the inflows far exceed the outflows. Migratory inflows and outflows from the neighborhoods of Barcelona and Madrid represent, on average, approximately 9% of the resident population. As an indicator of the transformative potential of these flows for the population composition, we can say that, with these values, if the individuals participating in residential mobility were random, in approximately 12 years, two-thirds of the population of the neighborhoods would be replaced. We know that mobility is not random (López-Gay, 2008), but this value illustrates the transformative potential. In turn, there is strong intra-municipal heterogeneity. In Barcelona, in the neighborhoods of the district of Ciutat Vella, this value exceeds 15%, a figure that is similar to Madrid neighborhoods located in the districts of Centro and Tetuán. Following the previous example, it would take approximately 8 years to replace 66% of the population. In contrast, in neighborhoods of the districts of Sarrià-Sant Gervasi or Horta-Guinardó in Barcelona, or Moratalaz and Vicálvaro in Madrid, where there is a strong prevalence of ownership, inflows or outflows do not represent more than 7% of the resident population. In these places, population replacement occurs slowly.

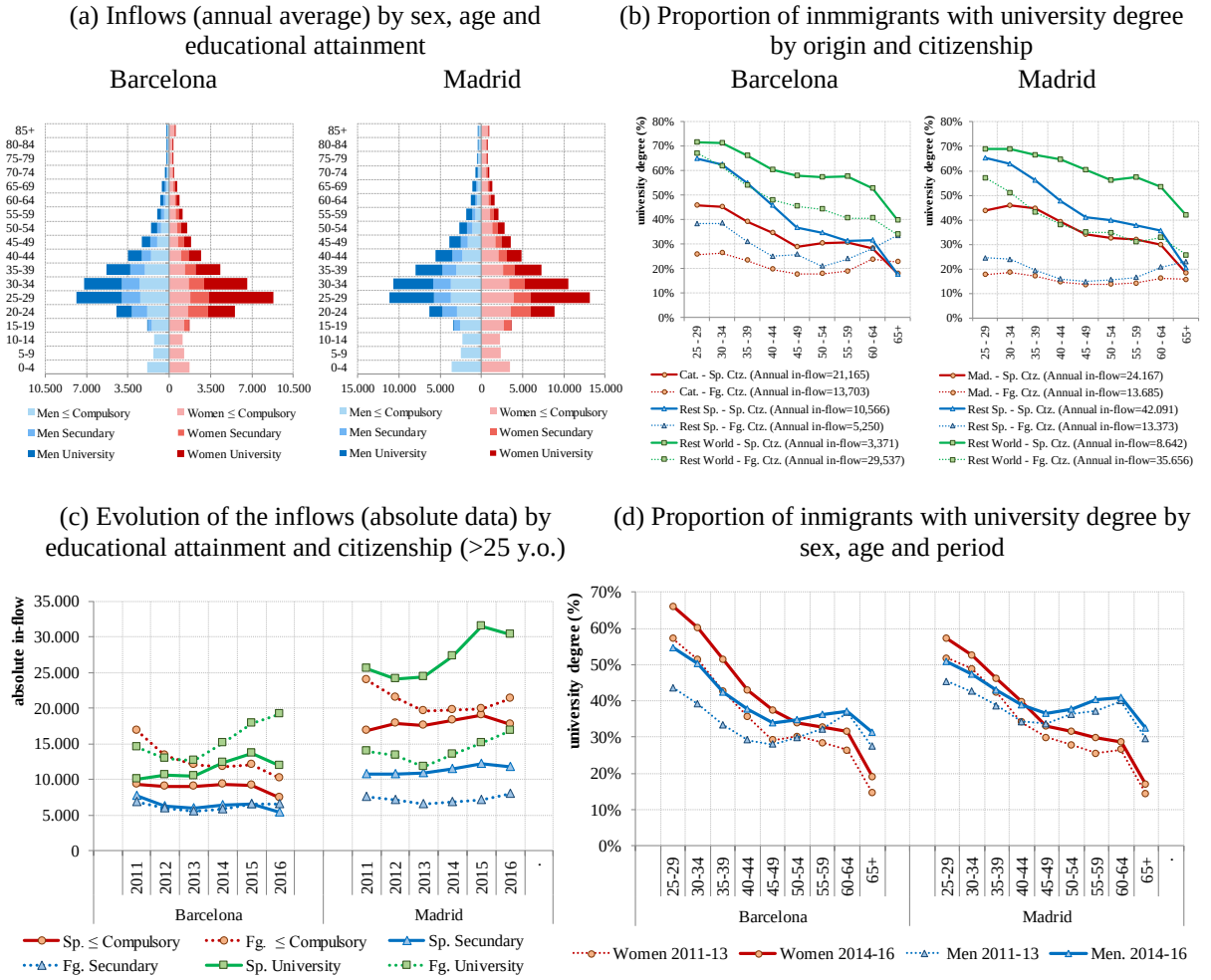
3. SKILLED MIGRATION

In recent years, the mobility of the skilled population has been an important focus of the literature. In the early 2000s, several authors encouraged Western cities to attract qualified professionals, often summarized as the creative class, as a basis for their prosperity and economic success (Landry, 2000, Florida, 2002). Shortly after, warnings were given regarding the impact of this type of flow, on the destination areas, which increased the tension in the housing market and intensified gentrification processes (Peck, 2005; Atkinson and Easthope, 2009). Florida has recently expressed the link between the concentration of talent and greater social inequality in the city (Florida, 2017). In addition, urban areas are the spearhead of the growing diversity and complexity in the relationship between migratory movements, the workplace and residence in increasingly global cities (Sassen, 2011). The settlement of these groups in certain urban areas and, in turn, the impact of higher global salaries over local ones can mark tensions in markets such as housing (White and Hurdley, 2003).

The arrival of qualified population has been increasing in recent years in the two main Spanish cities, both in absolute and in relative values (Figure 1). Thus, migratory selection is being reinforced in favor of the higher profiles within the socioeconomic hierarchy that have characterized the Spanish central cities in previous decades (López-Gay and Recaño, 2009). In Barcelona, the inflow of population with higher education has increased by 30% from 2011-2012 and 2015-2016, with a stronger increase of foreign population. In contrast, in Madrid, the growth of this type of flow has been 22%, and the total entry of qualified Spanish population continues to be double that of foreign origin. Relatively speaking, the presence of qualified population is increasingly important among people who arrive in both cities. Fifty-eight percent of the population between 25 to 39 years of age who arrived in Barcelona in 2016 had a university education, while in Madrid, this figure reached 52%. Meanwhile, 15 years ago, in

2001, the proportion of university-educated population for the two cities was approximately 38%. Of the immigrants with higher qualifications who come from abroad, approximately two-thirds are college-educated. The Spanish population arriving from local communities is also well-educated, while the less-trained group corresponds with foreigners who come from other Spanish municipalities.

Figure 1. Educational profile of immigration in Barcelona and Madrid. (2011-2016)

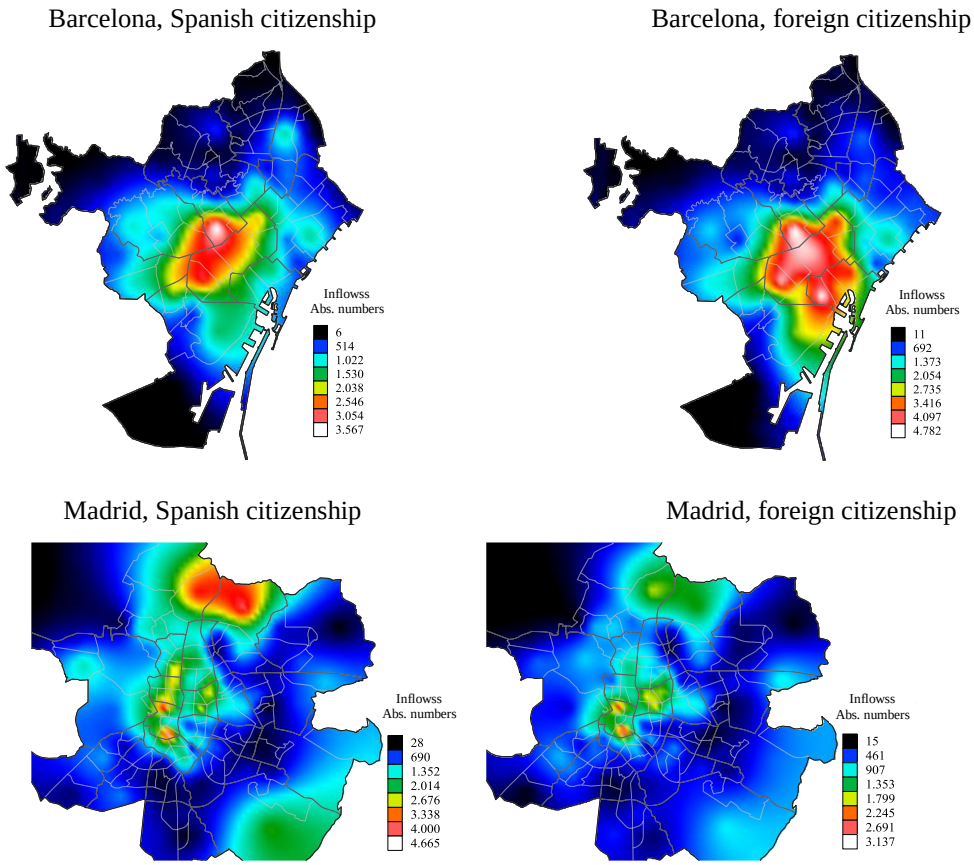


Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

Some international studies have also focused on the analysis of differential residential behaviors according to the origin of the population. Thus, in the Netherlands, different patterns are observed between the settlements of the local qualified population and those of the foreign qualified population (Sleutjes and Boterman, 2016), which are relevant to understanding tensions in markets such as housing. The preference for the most central neighborhoods is shared by Spaniards and foreigners in both Barcelona and Madrid, but interesting contrasts are observed depending on nationality (Figure 2). While the most educated foreigners are concentrated mainly in historic city centers, Spaniards expand their residential zone beyond this sector. Thus, in Barcelona, Spaniards have a lower preference for the district of Ciutat Vella, whereas in Madrid, the qualified foreign population has a lower preference, compared to that of Spaniards, for the neighborhoods of Chamberí, in southern Tetuán, Arganzuela and the new urban developments in the northern sector of the city, mainly in Valdefuentes and Valverde.

The neighborhoods in which both groups meet are Universidad and Embajadores in the Central district and in the neighborhoods of the Salamanca district.

Figure 2. Localization of the population with university degree arriving in Barcelona and Madrid according to nationality. Population from 25 to 49 years of age, 2011-2016

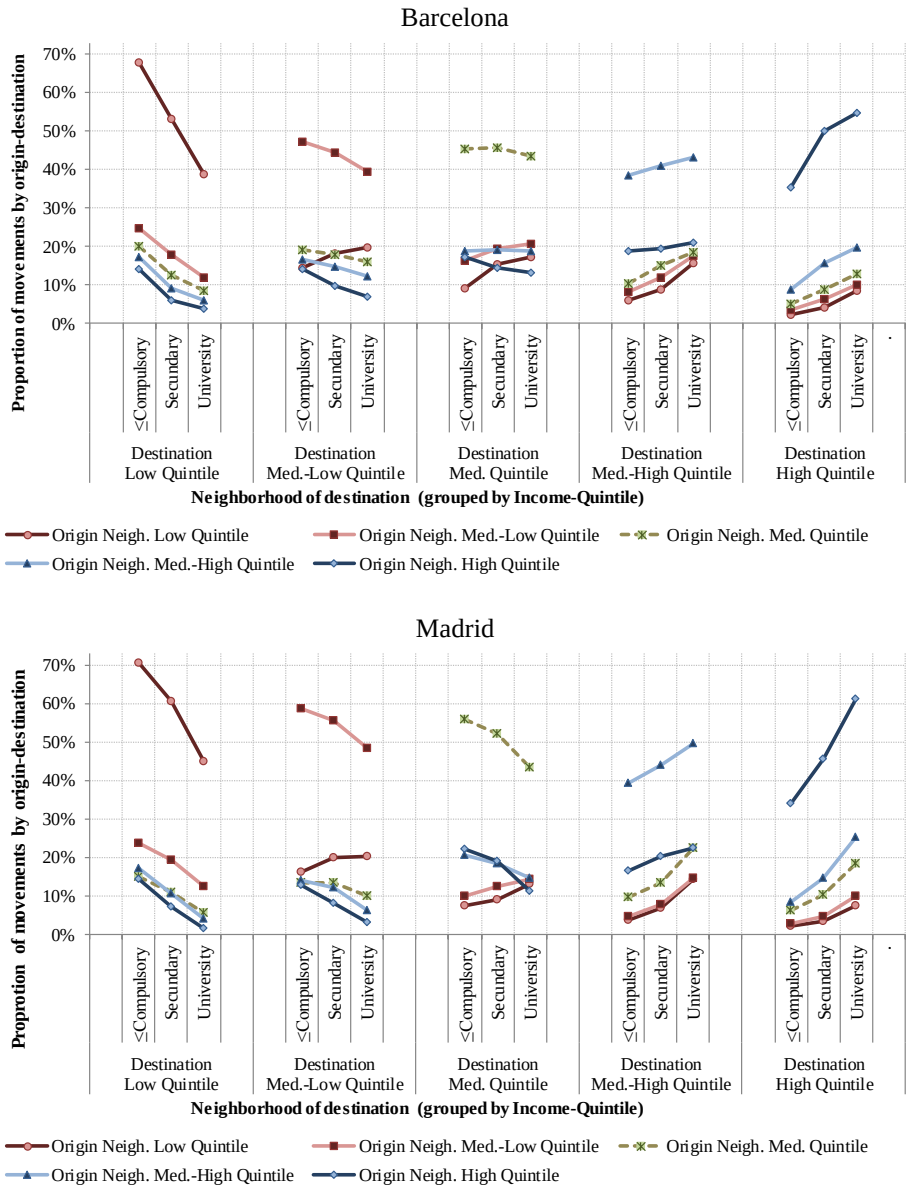


Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

4. INTRA-MUNICIPAL RESIDENTIAL MOBILITY AND EDUCATIONAL LEVEL

The analysis of immigration shows that Barcelona and Madrid are attracting an increasingly educated population that settles in the most central sectors of these cities. However, what about intra-municipal residential movements? The quantitative exercise proposed aims to deepen the understanding of the relationships of intra-municipal socio-spatial mobility. Recent works point, without hesitation, towards an increase of the socioeconomic inequalities in the internal spaces of the main European metropolises (Musterd et al., 2017), which would represent, internally, the polarization of the population in socioeconomic terms (Piketty, 2014).
As discussed in the methodological section, to analyze these trends in Madrid and Barcelona, a classification of the neighborhoods of both cities was carried out based on two large dimensions: net family income and housing price. Based on this classification, the distribution of all residential movements was calculated for the period 2011-2016 (population between 25 to 49 years old), depending on the type of neighborhood of origin and destination, as well as the educational level of the individual (Figure 3).

Figure 3. Origin and destination of intra-municipal residential movements according to socioeconomic typology of the neighborhood of origin and destination. (Population 25 to 49 years old, 2011-2016)



Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

The results show very similar patterns in the two cities: as the income level of the neighborhood of origin increases, the probability of residential movements to the poorest socioeconomically positioned neighborhoods decreases dramatically. As expected, this trend also occurs in reverse, such that the population that comes from the neighborhoods with the lowest income levels is less likely to reach those neighborhoods that are better off. The results gain in detail when the educational level of the population is included. The resulting educational gradient is very marked in most of the origin-destination combinations. In both Barcelona and Madrid, the population with a compulsory education from lower-income neighborhoods has a 70% probability of having the new residence in the same group of neighborhoods, compared to 40% of the population with higher education. In other words, the population with a university education in lower-income neighborhoods is twice as likely to have the new residence in a less vulnerable neighborhood than the population with compulsory education (60% versus 30%)

and almost three times as likely to be located in the two groups of most privileged neighborhoods (25% against 9%). The educational gradient is reproduced in all income groups of origin; as the level of education increases, the probability of moving to lower-income neighborhoods decreases. In Madrid, it is especially unlikely to change residence to one of the two most vulnerable groups of neighborhoods when an individual has a university education and comes from the neighborhoods with the best income (less than 5%, while Barcelona is 10%).

In contrast, the chances of reaching high-income neighborhoods increase as the level of education increases. In addition, the analysis shows that the only university graduates with better chances of reaching the lower middle-income neighborhoods than people without a university education are those who come from lower-income neighborhoods. This behavior suggests that, in the final destination of residential mobility, it is not only the individual socioeconomic characteristics that are significant but also those of the environment of origin, which would be fundamentally explained by the intergenerational transmission of wealth. There are some differences among the population of the middle-income neighborhoods: in Madrid, the most educated people are more likely to make residential movements to more affluent neighborhoods. According to the results, it seems that, although the difficulties of ascending socio-spatially are great in both cities, in Barcelona, it is more probable for the most qualified people to make socio-spatially descending residential movements.

5. CHANGE IN POPULATION COMPOSITION: AN INTRA-MUNICIPAL APPROACH

After having separately analyzed immigration and intra-municipal residential mobility, we then proceed to conduct an integrated analysis that also incorporates emigration to deepen the understanding of the processes of transformation on population composition and of their spatial localization. This analysis was conducted through three main axes: (i) identifying the extension of traditionally privileged areas, (ii) identifying where the most intense population substitution processes occur and (iii) using the quantitative approach to the dichotomy *permanence-displacement* in the area associated with residential mobility.

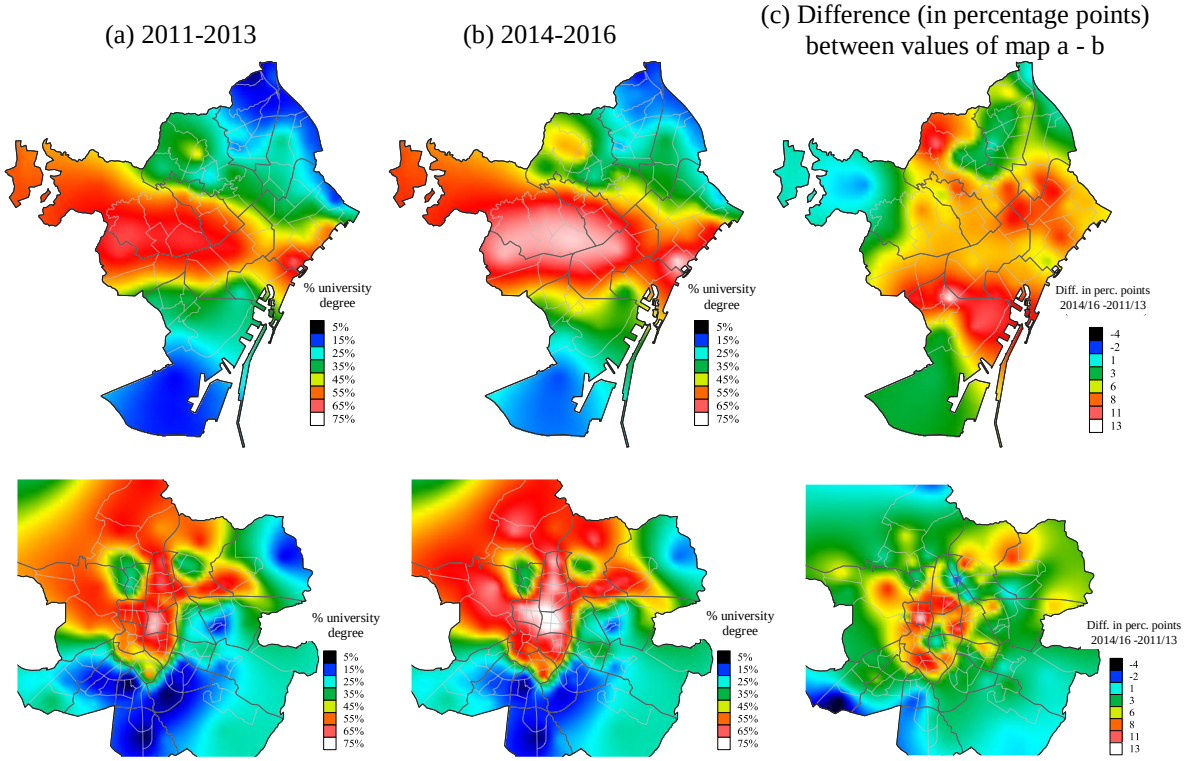
5.1. Who is moving into the neighborhood? Intensification of migratory selectivity

Based on the proportion of people with university education arriving in each neighborhood[5], we delve into the patterns of localization of the population in the city according to their social profile and the evolution over time of these patterns (Figure 4). Both municipalities show a strong diversity of behaviors that reproduce the intense socio-economic segregation existing in the two cities. In some sectors, more than 70% of the newcomers aged 25 to 49 have a university education, while in others the proportion is below 15%. In Barcelona, the areas with the highest proportions of educated population trace the route of Avenue Diagonal, especially in its upper section towards the west (districts of Les Corts and Sarrià Sant-Gervasi), its central region (Eixample and Gràcia) and in its lower section to the east (barrios marítimos de Sant Martí). In Madrid, the most selective neighborhoods are those of Almendra Central, delimited by the M-30, next to the expansions of the northern sector of the city. The neighborhoods of the northwest of the district of Tetuán and Pinar del Rey in Hortaleza would be the exceptions. The proportion of the most educated population is especially high in the neighborhoods of the districts of Chamberí and Salamanca. In contrast, with proportions below 15%, the neighborhoods of the district of Nou Barris, ribera del Besòs, and Marina de Port and Marina del Prat Vermell (south

[5] The inflow from outside each municipality and from other neighborhoods is included.

of the city) correspond to those in Barcelona. In Madrid, the eastern neighborhoods, especially those in the south, barely attract a qualified population.

Figure 4. Evolution of the proportion of university-educated people related to the overall entry to each neighborhood. (25 to 49 years)



Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

The migratory selection favoring the access of the most educated population has intensified and expanded over the six years analyzed. This trend is parallel to the sharp increase in housing prices (Figure 4b). In Barcelona, there is a clear expansion of the areas where more than half of the population that enters, from 25 to 49 years old, has a university education. This trend is present in neighborhoods such as Sants, Clot, Guinardó or Barceloneta. In Madrid, there is an expansion of strong central selectivity towards the eastern districts of the district of Tetuán and to the south through the district of Arganzuela. The M-30 is still a very marked border on the map for the period 2014-2016. In comparative terms, it seems that in Madrid, the intensification of central selectivity predominates over its expansion, while in Barcelona, both dynamics are produced with similar intensity. Finally, Figure 5c highlights the areas of the city where the profile of newcomers has changed profoundly between 2011-2013 and 2014-2016. The highest values, which exceed 10 percentage points of difference, draw the perimeter of traditionally more privileged areas of both cities. These areas have experienced the most intense changes in the profile of newcomers. Finally, the most vulnerable neighborhoods of both cities experience, in general, only a slight increase in the education of the arriving population. This trend is not observed in the southernmost neighborhoods of the municipality of Madrid.

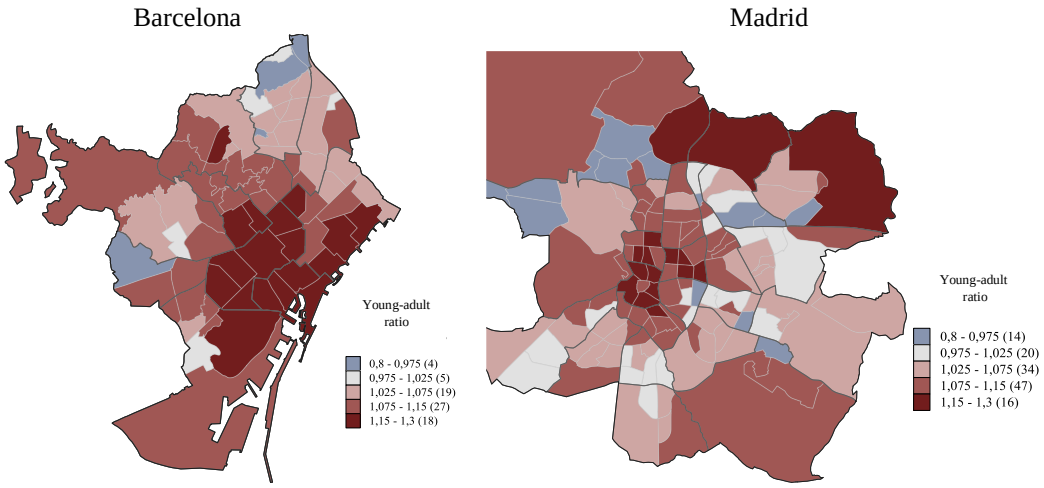
5.2. Substitution of population in neighborhoods

Although the relationship between the characteristics of the population entering or leaving a certain territory is one of the pillars that define the processes of gentrification, there are few quantitative works that analyze this relationship (Atkinson et al., 2011). In this section, we want to advance in that objective, making a first contribution to the analysis of the displacement of

the population of low socioeconomic strata due to the arrival of higher classes. Two sociodemographic variables were compared that are repeated throughout the gentrification literature: *age* and *educational level*. For the areas experiencing this phenomenon, we expect a rejuvenation of their structure by age and an increase in the most qualified population. For the calculation of the age indicator, the two types of entry (immigration and arrival from another neighborhood) and exit (emigration and departure to other neighborhoods) were included for each neighborhood. In turn, for the educational level, only departures to other neighborhoods were included. Departures to other municipalities were not included because we suspect that the records were not updated for this category.

Migratory and residential dynamics promote a rejuvenation of the population in most of the neighborhoods of Barcelona and Madrid (Figure 5). This process is especially intense in the central neighborhoods of both cities, especially in Barcelona. There, all the neighborhoods of the Ciutat Vella and Eixample districts, as well as Poble Sec, Poble Nou and the south of the Gràcia district, register the migratory and residential dynamics most favorable to rejuvenation. In Madrid, the districts of the Centro district and others of Chamberí and Salamanca register a similar situation. Urban development in the northern zone also favors rejuvenation as a consequence of migratory flows.

Figure 5. Substitution of population and age: relationship between the proportion of young-adult population (20 to 39 years) moving into and out of the neighborhood. (2014-2016)

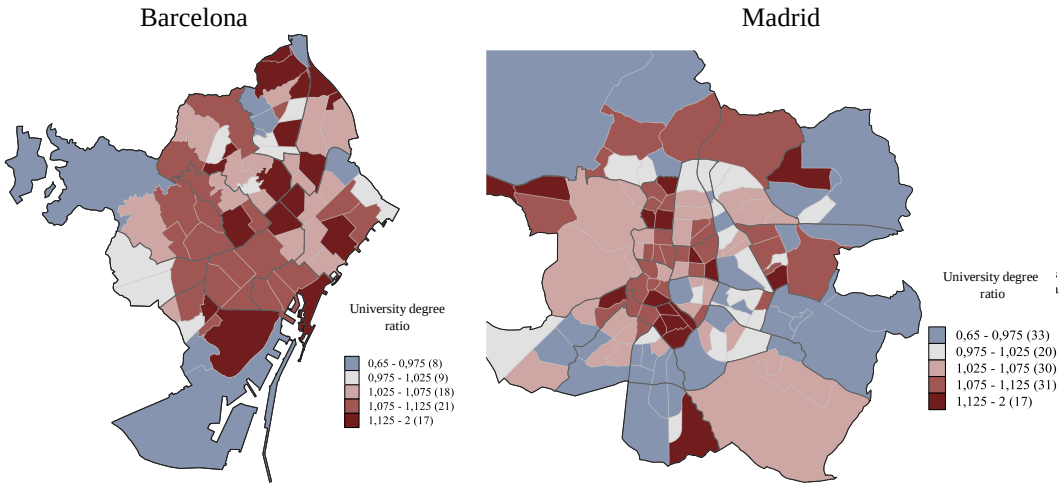


Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

Regarding educational level, in almost all the neighborhoods of Central Almendra in Madrid and throughout the municipality of Barcelona, the arriving population is more educated than the people who leave (Figure 6). This relationship is especially intense, that is, the population that arrives is noticeably more educated than the people who depart. This trend is clear in the neighborhoods that surround the traditional areas of greater exclusivity, where the migratory and residential selectiveness had previously not manifested so intensely. La Barceloneta, Raval, Poble Sec, Poblenou, the Clot, Camp del Arpa del Clot, the Guinardó and Sagrera are examples for Barcelona, while for Madrid, this trend is evident in most neighborhoods of the districts of Arganzuela, Embajadores, Cuatro Caminos and Bellas Vistas, among others. Some of these sectors also coincide with areas where migratory and residential flows show higher transformative capacity due to their intensity. The strongest manifestation of the processes of substitution associated with gentrification was observed in these places. In the analysis of the educational variable, we have not included the proportion of residential movements abandoning

the municipal border because of the quality of that data. Previous studies confirm that in both cities, the population that leaves the central municipality is less educated than the people who make a change of address within the city (López-Gay and Recaño, 2009). Thus, the results of this exercise would show, in most cases, a minimum value of the intensity of the population substitution that favors the most educated.

Figure 6. Substitution of the population and educational level: relationship between the proportion of university-educated people (25 to 49 years old) entering or abandoning the neighborhood. (2014-2016)



Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

5.3. Permanence and displacement

This last section aims to evaluate if the reinforcement of the migratory selectivity previously identified in most of the neighborhoods of Barcelona and Madrid could be generating a greater difficulty of developing residential strategies to remain in the neighborhood and in the city. This exercise is another way to approach a complex phenomenon such as displacement. Recent studies identify a general trend towards the suburbanization of poverty linked to the abandonment of central cities by lower-income households (Hochstenbach and Musterd, 2017).

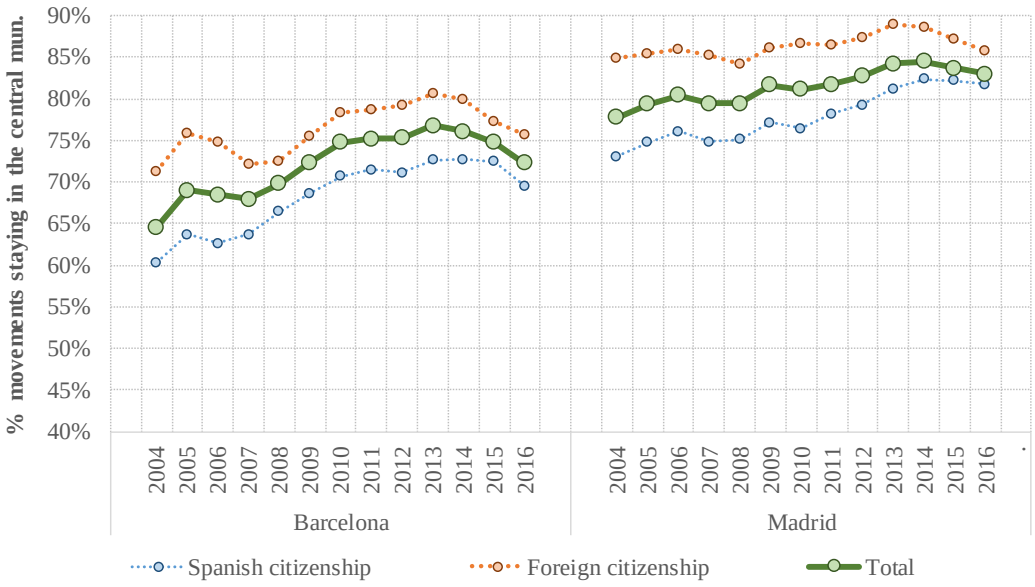
Moving out of the central city has been another residential strategy adopted for decades. However, changes in the trend of this pattern over time contribute clues regarding the greater or lesser difficulty of remaining within the neighborhood and within the central city. The proportion of intra-municipal residential movements has experienced a slight decrease since 2013-2014 (Figure 7), which is pronounced in the case of Barcelona. The pattern is repeated among the population of both Spanish and foreign nationality, although the decrease is earlier and more pronounced in the case of the foreign group.

The lack of good stock data associated with educational level makes it impossible to calculate emigration rates according to education and to identify which socioeconomic groups are leaving the city. However, it is possible to identify the neighborhoods in which this flow is increasing. To accomplish that, we have calculated the variation in the propensity to leave the city between a scenario of high permanence, the period 2013-2014, and the most recent, 2015-2016 (Figure 8). The results show that in both Barcelona and Madrid, the probability of leaving the central city has increased more in low- and middle-income neighborhoods. The variation decreases as the income of the neighborhood increases. In the case of Madrid, the inhabitants of the

neighborhoods with the highest income have not seen an increase in the probability of leaving the municipality.

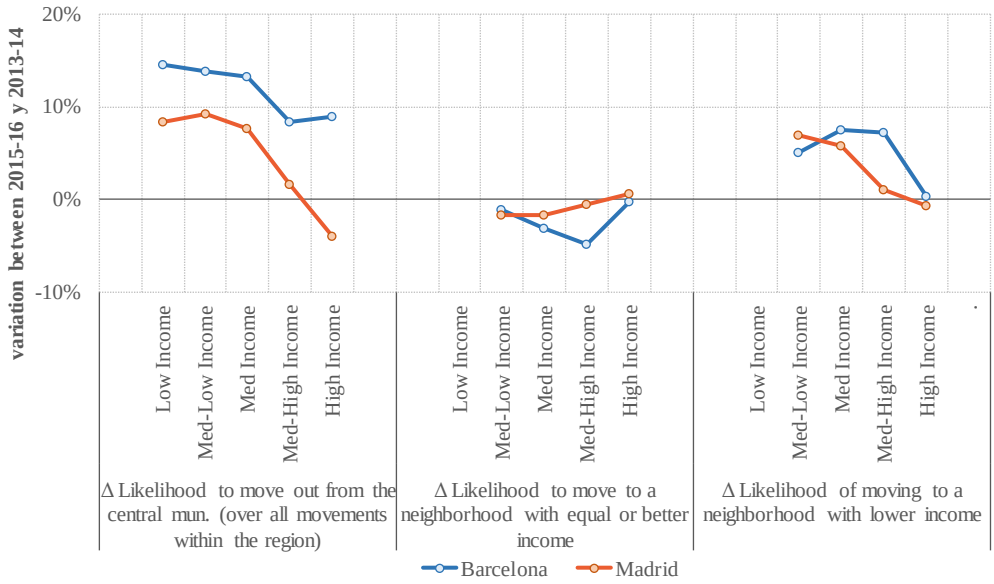
Other parameters were calculated related to the permanence and socio-spatial mobility associated with residential mobility. The probability of reaching a neighborhood with an income equal to or greater than the previous one has decreased for all neighborhood groups, except for the best situated. In turn, the probability of moving to a neighborhood with lower income has increased for all types of neighborhood, except for those with the highest income. The results show, therefore, a greater capacity of people living in higher-income neighborhoods to remain in their privileged environment despite the strengthening of migratory selectivity in the central city and the greater propensity of the inhabitants of lower-income neighborhoods to leave the city or to worsen their position.

Figure 7. Proportion of intra-municipal residential movements (in relation to the overall residential movements within the rest of the community) according to nationality. 2004-2016



Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

Figure 8. Variation of the probability of leaving the municipality and other indicators of permanence according to the type of neighborhood of origin. Population 25 to 49 years old. (2013-2014 and 2015-2016)



Source. Own elaboration. Population Register. Barcelona and Madrid city councils.

6. CONCLUSIONS

This paper has taken advantage of the richness of the permanent census mobility records to analyze socio-spatial changes and processes of population substitution that are occurring in Barcelona and Madrid. The aim of this study is to provide empirical evidence for broader debates on the processes of gentrification, segregation and inequality, fields of research of extreme validity and social relevance in the context of current cities.

The central municipalities of Barcelona and Madrid, like those of many Western cities, are experiencing important changes in their sociodemographic composition. The international literature has provided evidence of multiple local processes (gentrification, displacement, exclusion) that end up generating an intense transformation in the metropolitan configuration, territorially distancing the different social groups (Hochstenbach and Musterd, 2017). The results of this work allow us to ratify the existence of dynamics that point in this same direction. The socio-demographic selection has been strengthened by a context of revaluation of the central spaces; of immigration with a growing weight of the more educated population that has increasingly heterogeneous and global labor realities; and of an endogenous demand that, although it is not high, does reach historical levels of educational training and once more views urban centers as a place of residence. These processes cannot be dissociated from the escalation of housing prices since 2014, the high residential insecurity of Spanish households (Módenes, 2017) and new phenomena that we need to incorporate into the analysis to understand the transformation of some areas, such as conversion of permanent residential housing to temporary housing and tourism homes (López-Gay and Cócola, 2016).

In this context, the struggle to reside in certain neighborhoods of both cities is notorious. The most exclusive areas of the city have intensified their selective capacity and have expanded throughout the period studied. The edges of the traditional selective neighborhoods currently show the biggest differences between the profile of the people who arrive today compared to

those who arrived a few years ago and to the individuals who leave these sectors. Displacement is a complex phenomenon and, as such, its measurement is very complicated. The aim of the article was to delve into this dimension, and it was found that the reinforcement of the migratory selectivity has brought a lower generalized probability of making socio-spatially ascending residential changes and an increase in the probability of leaving the central municipality for the neighborhoods with the lower income. These latter neighborhoods, generally located in more peripheral sectors, do not experience advanced gentrification processes, but they do seem to indirectly suffer their consequences, perhaps in the form of a domino effect related to the increase in the difficulty of accessing neighborhoods with higher income. Barcelona and Madrid share, with some specificities, these major trends and should face common challenges in the search for a less polarized and segregated distribution of their population.

BIBLIOGRAFÍA

Andújar, A. (2017) Movilidad residencial y (re)composición social del espacio urbano en el municipio de Madrid. *Papers. Revista de Sociología.* 102(4). 761-792

Atkinson, R. & Easthope, H. (2009). The Consequences of the Creative Class: The Pursuit of Creativity Strategies in Australia's Cities. *International Journal of Urban and Regional Research, 33,* 64–79

Atkinson, R. & Wulff, M. (2009). Gentrification and displacement: a review of approaches and findings in the literature. *Australian Housing and Urban Research Institute, 115,* 1-29

Atkinson, R. Wulff, M. Reynolds, M. & Spinney, A. (2011). Gentrification and displacement: the household impacts of neighbourhood change. *Australian Housing and Urban Research Institute, 160,* 1-89.

Bridge, G. (2006). It's not just a question of taste: gentrification, the neighbourhood, and cultural capital. *Environment and Planning A, 38(10),* 1965-1978.

Döring, C. & Ulbricht, K. (2018). *Gentrification Hotspots and Displacement in Berlin. A Quantitative Analysis*. In Helbrecht, I. (Eds.) *Gentrification and Resistance*. Wiesbaden: Springer, 9-35

Florida, R. (2002). *The rise of the creative class: and how it's transforming work, leisure, community and everyday life.* New York: Basic Books.

Florida, R. (2017). *The new urban crisis: How our cities are increasing inequality, deepening segregation, and failing the middle class and what we can do about it*. New York: B. Books.

Freeman, L. (2005). Displacement or succession? Residential mobility in gentrifying neighborhoods. *Urban Affairs Review, 40(4),* 463-491.

Glass, R. (1964). *Introduction: aspects of change*. In *London: Aspects of Change*. Centre for Urban Studies, London: MacKibbon and Kee.

Hochstenbach, C. & Van Gent, W. P. (2015). An anatomy of gentrification processes: Variegating causes of neighbourhood change. *Environment and planning A, 47*(7),1480-1501.

Hochstenbach, C. & Musterd, S. (2017). Gentrification and the suburbanization of poverty: changing urban geographies through boom and bust periods. *Urban* Geography, 39 (1), 26-53.

Hutton, T. A. (2009). *The new economy of the inner city: restructuring, regeneration and dislocation in the 21st century metropolis*. New York: Routledge.

Landry, C. (2000) *The creative city: a toolkit for urban innovators*. London: Comedia.

Lees, L. Slater, T. & Wyly, E. (2013). *Gentrification*. New York: Routledge.

López-Gay, A. (2008) *Canvis residencials i moviments migratoris en la renovació poblacional de Barcelona*. Barcelona: CTESC

López-Gay, A. & Recaño, J. (2009). The role of central cities in urban sociodemographic changes in Southern Europe: an analysis of individuals moving into, out of and within inner cities in Spain. *Papers de Demografia,*357

López-Gay, A. & Cócola Gant, A. (2016). *Cambios demográficos en entornos urbanos bajo presión turística: el caso del barri Gòtic de Barcelona*. En Domínguez-Mújica, J. & Díaz Hernández, R. (Eds), *Población y territorio en la encrucijada de las ciencias sociales*. Fuerteventura: Asociación de Geógrafos Españoles, 399–413
Módenes Cabrerizo, J. (2017). La inseguridad residencial por problemas económicos en España comparada con el entorno europeo. Papers. Revista De Sociologia, 102(4), 673-703.
Musterd, S. (2006). Segregation, urban space and the resurgent city. *Urban Studies, 43(8),* 1325-1340.
Musterd, S. Marcińczak, S. Van Ham, M. & Tammaru, T. (2017). Socioeconomic segregation in European capital cities. Increasing separation between poor and rich. *Urban Geography, 38(7),* 1062-1083.
Peck, J. (2005). Struggling with the creative class. *International journal of urban and regional research, 29(4),* 740-770.
Piketty, T. (2014). *Capital in the Twenty-first Century.* Harvard University Press.
Rubiales, M. (2017). Patrones socioterritoriales de las clases altas en las regions metropolitanas de Barcelona y Madrid (2001-2015). Departament de Geografía de la Universitat de Barcelona. Tesis doctoral. Mimeo
Sassen, S. (2011). *Cities in a world economy.* Thousand Oaks: Pine Forge Press
Sleutjes, B. & Boterman, W. R. (2016). Stated r*esidential preferences of highly-skilled international migrants*. En Musterd, S. et al (Eds), *Skills and Cities*. London: Rout.,145-169
Strassmann, W. P. (2001). Residential mobility: contrasting approaches in Europe and the United States. *Housing studies, 16(1),* 7-20.
White, P. & Hurdley, L. (2003). International migration and the housing market: Japanese corporate movers in London. *Urban Studies, 40(4),* 687-706.