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ETHNIC SEGREGATION AND THE HOUSING MARKET IN TWO CITIES IN NORTHERN AND SOUTHERN EUROPE: THE CASES OF AMSTERDAM AND BARCELONA

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ETHNIC SEGREGATION AND THE HOUSING MARKET IN TWO CITIES IN NORTHERN AND SOUTHERN EUROPE: THE CASES OF AMSTERDAM AND BARCELONA

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Key words: Ethnic segregation, housing, micro-spatial analysis.

Abstract

Uneven urban geographies of different immigrant or ethnic groups have received ample attention across the world; however in Southern Europe the picture is as yet unclear. Most Southern European countries recently experienced a new phase in their modern history because they became net immigrant receivers after having been net 'deliverers' of migrants for many decades. This opens the question what direction this migration will take and what the implications for the segregation in cities will be. One of the crucial questions in that respect is what the implications will be for the functioning of the housing market. Will some parallels develop with what occurred in Northern Europe? Or will there be a development with an own character. In this article we aim to contribute to answering these questions through a comparison of the segregation and housing relation in the cities of Amsterdam and Barcelona.

1. Introduction

Residential segregation of ethnic groups is an 'issue' in many European countries and cities. In some contexts, there is fear for lack of integration because of segregation; in others there are worries about xenophobic reactions against ethnic minorities by parts of the population. On the other hand, since the last years of the 1980s and above all since the 1990s international migration flows shifted relatively from Northern toward Southern European countries and metropolises, and were changing the European migration map (King, 2002, King 1993, Carella & Pace, 2001). Cities in Southern Europe have rapidly become more diverse; but they do not necessarily follow the Northern European pathways.

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There is a literature that points at the different segregation patterns in cities of northern and southern Europe (Malheiros 2002, King 2002, King 1993). We argue that it is important to further investigate these differences. In the same way as some authors who have defended the idea about the American segregation models as not valid for the understanding of segregation in western European cities (Kempen & Ozüekren, 1998; Musterd, 2005; Wacquant, 2007) some authors are defending an original ethnic segregation model for Southern-European cities as opposed to Western-European models (Malheiros, 2002; Arbaci, 2004, 2007).

There is a need for more in-depth understanding of the segregation patterns, how they developed, and how they impact upon integration in both the northern and southern contexts. In this article we intend to shed more light on this issue by focusing mainly on the relationship between segregation and housing. Our addition to the existing knowledge is twofold: first, the recent shifts in migration have created new segregation relations in the South, which are – as yet – hardly addressed in the literature; and two, our analyses of the relation between segregation and housing is not only based upon recent data, but also very fine-grained, thus allowing micro-spatial analyses.

As we will set out in a short literature section, as well as in the empirical section (3), the relationship between segregation and housing is more complicated than many assume. The arguments for selecting Amsterdam and Barcelona as our case studies are threefold. First, we investigate these two cases because there seem to be some parallels between the migration histories of the two cities and metropolitan areas, albeit that Amsterdam experienced immigration way before Barcelona did; secondly, both cities can be labelled as 'multiethnic cities'. A third reason, however, is that the housing markets of the two cities are clearly different and since we intend to focus our attention on the role of housing in shaping segregation, this may help us to improve the understanding of the relation between segregation and housing.

At the same time there are major differences between the two cities in terms of their wider contexts. The migration flows and the social and urban contexts are different and there also is more regulation with regard to migration flows towards the North, compared to the South. In addition, the Northern European welfare states are stronger, which implies the availability of more and diverse support systems for those in need in general and migrants in particular; the stronger welfare state is often also expressed in higher percentages of social housing; meanwhile in southern Europe the share of ethnic groups is increasing and the percentage of illegal migrants is getting higher. In most Southern European countries the interference of the state, or more generally, the welfare state, is weaker and the percentage of social housing is smaller. It is within these contexts that we will try to give answers to the following question: to what extent are residential segregation patterns of ethnic groups different between Amsterdam and Barcelona and to what extent are these patterns related to housing and to the functioning of the housing markets in the respective cities? This question can be subdivided into five more detailed questions:

- How segregated are different categories of ethnic groups in Amsterdam and Barcelona?
- What is the difference between the two cities in terms of the characteristics of the housing stock?
- How are the two cities characterised in terms of the functioning of the housing markets?
- To what extent is segregation related to the characteristics of and functioning of the housing market?
- Can we interpret the differences between the two cities and their respective relations between segregation and housing within the wider frameworks of both cities?

2. A review of literature on segregation and housing

One of the returning ideas regarding segregation and housing is that the characteristics of the housing stock and the functioning of the housing market 'cause' segregation. Therefore, in many current political debates on segregation there is a strong call for urban restructuring in which the housing stock will have to be made more diverse and mixed with the purpose to reduce levels of segregation. However reality appears to be more complicated than perhaps initially thought since the associations between these characteristics and ethnic segregation or concentration differ in different time-periods and differ per geographical context. This is best illustrated by referring to the relation between segregation and the tenure of the housing stock.

2.1 Time

About two decades ago there was a relatively strong belief that the then existing moderate level of ethnic segregation in Dutch cities was related to the large share of public housing in the stock. That large supply would give opportunities for spatial dispersal of ethnic groups, since housing allocation mechanisms would enable the control of that process. However, about three decades ago Dutch cities appeared to have similar levels of segregation while migrants were living in lodging housing and private rented dwellings. In most recent years the discourse is, nevertheless, again tenure related, but now public housing is blamed as a cause of ethnic segregation. Sometimes it is stated that public housing as a whole will collect the poorest – and thus also many immigrant – households. This is related to the fact that in many societies private property is increasingly celebrated as the mainstream tenure and the withdrawal of the state in general is becoming the dominant philosophy. Under these circumstances public housing is thought to be for the socio-economically weakest categories of society. Indeed we can see that there is evidence for this process of impoverishment or residualisation of the public housing sector (Meusen & Van Kempen, 1994 and Murie & Musterd, 1996).

The new rationale seems to be that in situations in which public housing is more homogeneous and associated with the 'bottom' of the housing market, this may be reflected in stronger segregation following the spatial patterns of the housing stock. However, we should point at the fact that these processes only occur to some extent. The association between segregation and the tenure of the housing stock is not self-evident. In more recent years the evidence became stronger that also within the public housing stock segregation of ethnic groups may occur (Peach & Byron 1993, Murdie 1994, Musterd & Deurloo 1997). One should be aware that, until today, segregation also occurs within the public housing stock (see below) probably because some sections of that stock have a stronger position in the housing market than other sections. In short, the debate seems – thus far – unsettled.

2.2 Geography

There are also differences between different places. In countries where other tenures are predominant, there may be other types of housing that are seen as potential cause for segregation. Segregation in the US or in South American cities cannot be explained by public housing (alone), because that sector is very small. In Belgian cities, another example, segregation seems to be associated with a section of the private rented sector, the so-called 'residual sector', where those who are most in need of housing can find shelter which is not too expensive and also readily available (Kesteloot, 1998). Of course there may be stronger associations between the level of segregation and the housing stock according to other criteria, such as the size of the dwelling and the price of the housing, but here too, conclusions should not be drawn too quickly. These associations require more in-depth analyses as well.

Another aspect of geography, which is especially relevant for this paper, is the difference between north and south within Europe. Following Malheiros (2002) the spatial organization of ethnic groups in Southern-European cities is different due to both a different migration process and different socio-urban contexts. These differences are based on a more problematic access to housing in the south, which generates more informal housing situations, poorer living conditions and higher levels of vulnerability for ethnic groups. Simultaneously, however, the levels of residential segregation in the south are smaller compared to northern and western European cities. However, this is not to be explained by a higher level of integration; the reason is that in Southern-European cities the settlement complexity is greater due to patterns of socio-economic and cultural diversity among nationalities. This complexity produces lower levels of segregation. Malheiros (2002), points out that social segregation in southern cities is leading to socio-ethnic segregation; migrants tend to reproduce their socioeconomic position in the urban social stratification. The author even states that segregation is not a problem in itself. However, it would be the coexistence of negative elements such as exclusion and marginality in areas where ethnic groups are concentrated, even when not severely segregated, which causes the real societal problems.

This is not the only interpretation for lower levels of segregation. Arbaci (2004, 2007) takes the structural differences of southern and western societies as explanatory factors. Following her approach, the southern context has some structural attributes that facilitate foreigner's insertion. First, one of the factors is the already mentioned ethnic group's diversity that generates diverse skills and educational levels; that will improve the insertion of certain groups in the city. Secondly, the presence of niches of informal labour and housing markets also provide explanations for migrants' settlement patterns. Some of these niches are dispersed across the city and thus contribute to lower levels of segregation. However, others are more concentrated in space, such as informal housing in the inner city. On top of that, some ethnic groups (above all those that have particular religious bonds) tend to aggregate spatially. The latter two explanations would work out in favour of segregation.

There also is a literature on Barcelona in particular. Bayona (2007), following Malheiros's (2002) and Arbaci's (2004, 2007) approaches, concludes that the insertion of migrants has been similar to that in other Southern-EU cities. Similar conclusions are drawn by Martori & Hoberg (2004), while they were analysing different indicators of segregation in Barcelona. Fullaondo (2003), however, identifies different settlement patterns and different levels of segregation for different nationalities. There clearly is no consensus about levels and processes of segregation. Checa & Arjona (2006) argue that the migration processes have produced increasing residential segregation. In any case the immigration dynamics almost certainly have contributed to a clearly changing social morphology of Spanish cities (Leal, 2007). This has serious impacts on social cohesion in the urban fabric. However, the immigration process is not homogeneous in all Spanish cities. Fullaondo (2007) concluded that the dynamics of recent years have produced different typologies of settlement models in different Spanish metropolises; these differences are also related to different origins of the immigrants, which result in various relationships with the city of settlement.

In short, there are different levels of segregation between cities in Northern and Southern Europe, but there is not a uniform judgement about the levels and the direction of change. Also, there are differences in terms of the interpretation about the level differences. In addition, the association between segregation and housing does not seem to be really clear and differences between north and south are mainly complicating this issue. This implies that, before policy interventions are being developed, a confrontation with knowledge about the relation between segregation and housing, and in general a better understanding of the functioning of the housing markets is highly important. To us it seems too early to conclude that segregation levels are generally alarming and, more importantly, that changes in the housing structure are

the accurate political instruments to change the levels of segregation with. Even though many housing suppliers, planners and politicians feed the dominant Western European discourse that says there is a strong relation between the level of segregation and the characteristics of the housing stock and even though they subsequently aim at the implementation of housing mix policies, aimed at mixing tenures and house prices, a lot of questions in this sphere require firmer answers before real interventions should be developed.

A quick and first hypothetical conclusion based on superficial observation may be that most migrants are forced to find themselves a place to live in the worst sections of the housing stock. This may seem plausible, since in many cities migrants are among the most recently settled inhabitants, and many of them have not yet gained strong positions in the societies where they settled. However, this may be misleading as well. Migrants – the demand category – cannot be referred to as a homogeneous category. Their country of origin, their educational backgrounds, their language skills, and their knowledge of the country and city of settlement will differ, but also migrants will differ according to the time they already are living in the city. So there are affluent migrants from richer countries, who have a lot of skills and who have settled long ago; and there are poor migrants from developing countries of whom many were forced to search for better opportunities because of economic or political reasons and perhaps few will have the skills or education that are required in the urban economy where they settled. In reality there will be many different categories in between these extremes. The other side of the coin – the supply side – will differ in many respects too. There may be insufficient dwellings. The structure of the housing stock may be in balance with demand or be unbalanced. There may or may not be governmental support systems to bridge the gaps between demand and supply, and so on.

3. The context of Amsterdam and Barcelona

The cities of Amsterdam and Barcelona represent two opposite housing markets and stocks due to two main and structural factors: the land ownership and the housing policy. These factors have produced two types of housing markets and urban developments, which represent the general differences between northern and southern European housing markets: northern countries with a stronger welfare state and a higher percentage of rent tenure and southern countries with a weaker welfare and dominated by owner occupier tenures (Arbaci, 2007; Trilla, 2002).

First of all, public ownership of most of the land available in Amsterdam has facilitated the development of regulated social housing, initially also by the municipality, but today completely organized by housing associations. Housing associations are now the owner of over 50 per cent of total stock and almost the 80 per cent of the new housing. Moreover, also part of the private rented stock is highly regulated and 'controlled' by the local authorities. In Barcelona the housing market is mainly a free market with a high percentage of private property, both in terms of land and in terms of the dwellings on it. Consequently, the Amsterdam housing market is partly a 'pseudo' market, whereas Barcelona is much more a 'real' market. This results in different access to different housing in both cities. In Amsterdam access may be more complicated due to the regulation but at the same time the living conditions, access to good quality social housing and affordability may be better due to regulation and the welfare state (with housing benefit systems, individual rent subsidies, etc.). In Barcelona, reality may be the opposite, the access may be easier due to less regulation, but at the same time life conditions are worse due to the inexistence of any regulation and any protection by the administration. Moreover, the tensions on the housing markets are not just produced by these institutional differences, but mainly a function of the demand-supply balance. In this respect there may be additional differences between the two cities.

Amsterdam and Barcelona also represent the differences between ethnic cities in northern and southern European countries. Amsterdam has a long history as an immigration country. Guest workers – including many Spanish – settled in the city from the 1960s onwards and when later also migration from former colonies Surinam and the Antilles developed, as well as a substantial migration from other Western countries, and also many political and economic refugees entered the country, followed by family reunification migration and family formation migration, the city of Amsterdam turned into a real multi-ethnic city. In contrast, Barcelona is a young immigration city. Rapid immigration from a range of poorer countries and most recently also serious immigration from other Western countries have contributed to a fast growth of the share of migrants in the capital of Catalonia. Barcelona is characterised by a large share of illegal migrants. This contributes to overcrowding problems in lodgings and to a big informal room-rent market.

The number of migrants from developing countries is almost similar in both cities, but in Amsterdam the share relative to the total population is more than double compared to Barcelona.

4. Methodology

If one intends to compare urban housing markets in different cities almost the first reflex will be that this will be extremely difficult since the differences are usually so big. This is even more the case when an international comparison is aimed at. It is true that local housing markets function differently in different contexts. Institutional structures, structural differences between the markets in terms of demand and supply, varying pressures in the housing market as well as the historically grown different housing cultures will contribute to a certain 'own' identity or character of individual metropolitan and local housing markets. This is also true for the housing markets in Amsterdam and Barcelona. However, these differences do not imply that it is impossible to make these comparisons. It just implies that comparisons should be made taking the various contexts into account. This is what we intend to do in the rest of this paper.

Key concepts in this paper are segregation and housing. Here we will briefly explain how these concepts will be applied. Segregation can be measured through various tools; most commonly used is the segregation index. This is a helpful instrument to compare different cities or similar cities over time as far as the relative distribution of a population category compared to other population categories. However, in practice, many debates on segregation actually refer to different concentrations of immigrants in sections of the city. This is where we will focus our attention to most. Concentrations are defined as population categories that are a certain level higher than the average share in the city as a whole. For Amsterdam we applied the binomial standard deviations because of the smaller sizes of the areas involved (16.968 six digits). We called a concentration 'serious' when there would be an overrepresentation of at least two standard deviations above the mean (clear overrepresentation); for strong concentrations we required scores at least four standard deviations above the mean (strongly overrepresented). On the other hand, for Barcelona the standard deviation is smaller because of the bigger size of the areas involved. Therefore, concentrations were regarded to be serious when there would be an overrepresentation of one standard deviation above the mean (clear overrepresentation) and strong concentration as at least two standard deviations above the mean (strongly overrepresented).

The selection of population categories, we focus the attention on, is driven by the wish to compare segregation and housing for 'all migrants from non-western environments', in Barcelona defined as non-EU migrants, relative to the majority (Dutch, respectively Spanish) and more specifically for the most important ethnic categories. In Amsterdam, we selected

migrants with a Surinamese and with a Moroccan background separately (based on country of birth or country of birth of at least one of the parents); in Barcelona we selected migrants from Ecuador (main nationality) and Moroccans (third nationality). The two selected specific ethnic categories represent more than half of the migrants in Amsterdam and almost 20 per cent of the immigrant population in Barcelona.

When comparing spatial patterns and indexes that are calculated on the basis of information of sub areas in a spatial system, the selection of units is important, since the calculated indexes are not independent of the size of the units. For the calculation of segregation indices we therefore used units which are fairly comparable. In Amsterdam, for this purpose we applied five digit postcode data (on average with 700 inhabitants); in Barcelona we used census tracks (on average with slightly over 1.000 inhabitants).

The housing dimension is measured through a series of variables indicating tenure, age of dwellings, size of the dwellings and an indicator for the quality of housing. The latter variable is most complicated and definitely to be regarded as a relative indication, which only suits the local situation. For Amsterdam this indicator is derived from the real estate tax value; in Barcelona the indicator is derived from an index that refers to the living conditions, calculated by the National Institute of Statistics of Spain (Census 2001). The other variables, however, are also just used to construct local differentiation as regard the housing market supply side. While we are showing differences between the two cities per variable with these variables, we mainly focus on the 'combined' information these variables produce. For that purpose we used a K-means cluster analysis with the housing variables included. The larger sizes and complexities of the spatial units we used for Barcelona urged us to first apply a principal component analyses to reduce the information; thereafter we performed a cluster analysis on the first two components. In Amsterdam we could perform the cluster analysis directly on the variables.

5. Segregation and concentration

How segregated or concentrated are different categories of ethnic groups? In Table 1 some basic information is provided about the levels of segregation in both cities. We should consider that the average unit size used in Amsterdam is still a bit smaller than for Barcelona; therefore, the index values are a bit too high. In addition, the Barcelona figure for non-EU migrants also includes 'western migrants', who often will live in different areas compared with non-western migrants; this will have an extra downward effect on the segregation index for that category in Barcelona. If we take all that into account, we may conclude that the segregation levels between the two cities are actually not very different. This seems to contrast with other findings on differences between southern European and northern European cities; however, the reason may be the fact that we could use very detailed geographical data. The existing literature is based on more aggregated spatial units.

In both cases the levels of segregation of Moroccans is clearly highest. Compared to the Surinamese, respectively Ecuadorians, the cultural distance, including language, between inhabitants who come from Morocco may be larger.

Table 1. Number and share of ethnic categories and indexes of segregation²

	Nº	Per cent of all population	SI
Amsterdam			
Non westerns	251.568	34,48	0,43
Surinamese	70.734	9,69	0,37
Moroccans	63.015	8,64	0,48
Barcelona			
Non-EU (25)	201.416	13,80	0,27
Ecuadorians	30.417	1,78	0,35
Moroccans	13.522	0,89	0,53

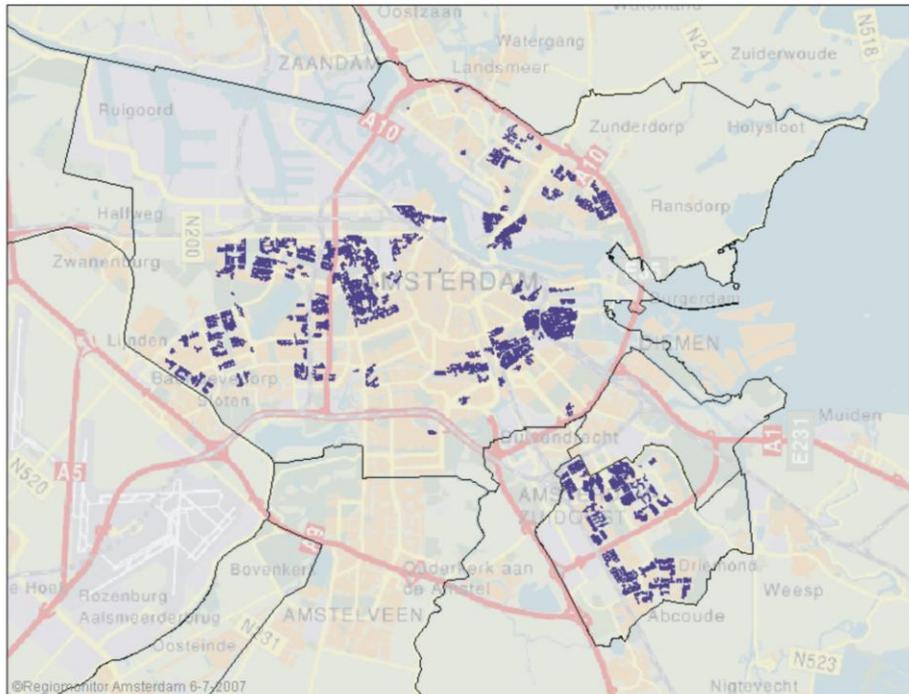
Sources: O+S Bureau of Statistics Amsterdam. National Institute of Statistics of Spain, processed by the authors.

With regard to the relative concentrations of ethnic categories in Amsterdam and Barcelona (Table 2), we can reveal stronger concentrations of ethnic groups in Amsterdam compared to Barcelona (also Figures 1 and 2). For example, when we detect areas with a strong overrepresentation of non-western migrants in Amsterdam (at least two binomial standard deviations above the mean, which is at least 63 per cent), we can show that more than 46 per cent of all non-western migrants are living there; Moroccans reach the highest score; of these almost 53 per cent is living in areas with a strong concentration of non-western migrants. In Barcelona only 20 per cent of the non-EU migrants live in strong concentrations of non-EU migrants; there Moroccans reach the level of 35 per cent.

These differences between the cities are also evident when more specific population categories are shown. For example, in Amsterdam we find 72,4 per cent of all Moroccans in so-called Moroccan concentrations where Moroccans are clearly overrepresented. These are areas where at least 17 per cent of the population is from Moroccan origin. In Barcelona the comparable figures are 54,1 per cent that live in clear Moroccan concentrations; here an area is already called a clear concentration if at least 2,27 per cent of the population is Moroccan. In short, although the percentage of migrants in both cities is very different still, the tendency to cluster in relative concentrations is present in both cities. That tendency is somewhat stronger in Amsterdam than in Barcelona. In both cases the Moroccan population shows more concentration than the other categories (all migrants, Ecuadorians, Surinamese).

$$^2 IS = \frac{1}{2} \sum_{i=1}^n \left| \frac{x_i}{X} - \frac{t_i - x_i}{T - X} \right|$$

Figure 1. Non-western overrepresentation areas in Amsterdam (2004)



Source: O+ S Bureau of Statistics Amsterdam, processed by the authors.
Figure 2 .Non-EU overrepresentation areas in Barcelona (2006)



Source: National Institute of Statistics of Spain, processed by the authors.

Table 2. Percentage distribution of each population group by concentration areas

Amsterdam (2004)	Concentration range per cent	Dutch	Non western migrants	Surinamese	Moroccans
Non westerns migrants					
<i>Strongly overrepresented</i>	>63,26	6,03	46,32	44,29	52,85
<i>Clearly overrepresented</i>	>48,77	12,45	62,02	59,78	71,37
<i>Other areas with Non westerns</i>	<48,77	78,5	37,98	40,22	28,63
<i>Areas without Non westerns</i>		9,05	0	0	0
Surinamese					
<i>Strongly overrepresented</i>	>27,64	3,45	19,18	36,93	4,52
<i>Clearly overrepresented</i>	>18,63	8,68	31,4	54,67	14,43
<i>Other areas with Surinamese</i>	<18,63	57,45	57,69	45,33	71,88
<i>Areas without Surinamese</i>		33,87	10,91	0	13,69
Moroccans					
<i>Strongly overrepresented</i>	>25,61	4,86	24,85	10,99	53,97
<i>Clearly overrepresented</i>	>17,07	9,97	36,83	19,35	72,37
<i>Other areas with Moroccans</i>	<17,07	30,91	38,64	45,01	27,63
<i>Areas without Moroccans</i>		59,11	24,53	35,64	0
Barcelona (2006)	Concentration range per cent	Spanish	Non EU migrants	Moroccans	Ecuadorians
Non EU foreigners					
<i>Strongly overrepresented</i>	>27,71	5,71	20,08	34,79	11,77
<i>Clearly overrepresented</i>	>19,82	11,51	30,96	49,64	24,01
<i>Other areas with Non EU migrants</i>	<19,82	88,42	69,04	50,36	75,94
<i>Areas without Non EU migrants</i>		0,00	0,00	0,00	0,00
Ecuadorians					
<i>Strongly overrepresented</i>	>5,14	5,43	10,44	11,57	20,08
<i>Clearly overrepresented</i>	>3,46	12,41	20,63	24,03	36,60
<i>Other areas with Ecuadorians</i>	<3,46	87,59	79,37	75,97	63,40
<i>Areas without Ecuadorians</i>		3,11	1,67	1,35	0,00
Moroccans					
<i>Strongly overrepresented</i>	>3,72	5,42	17,69	38,45	9,30
<i>Clearly overrepresented</i>	>2,27	10,15	26,15	54,09	18,87
<i>Other areas with Moroccans</i>	<2,27	89,85	73,85	45,91	81,13
<i>Areas without Moroccans</i>		21,27	13,05	0,00	13,39

Sources: O+S Bureau of Statistics Amsterdam. National Institute of Statistics of Spain, processed by the authors.

These differences between the cities are also evident when more specific population categories are shown. For example, in Amsterdam we find 72,4 per cent of all Moroccans in so-called Moroccan concentrations where Moroccans are clearly overrepresented. These are areas where at least 17 per cent of the population is from Moroccan origin. In Barcelona the comparable figures are 54,1 per cent that live in clear Moroccan concentrations; here an area is already called a clear concentration if at least 2,27 per cent of the population is Moroccan. In short, although the percentage of migrants in both cities is very different still, the tendency to cluster in relative concentrations is present in both cities. That tendency is somewhat stronger in

Amsterdam than in Barcelona. In both cases the Moroccan population shows more concentration than the other categories (all migrants, Ecuadorians, Surinamese).

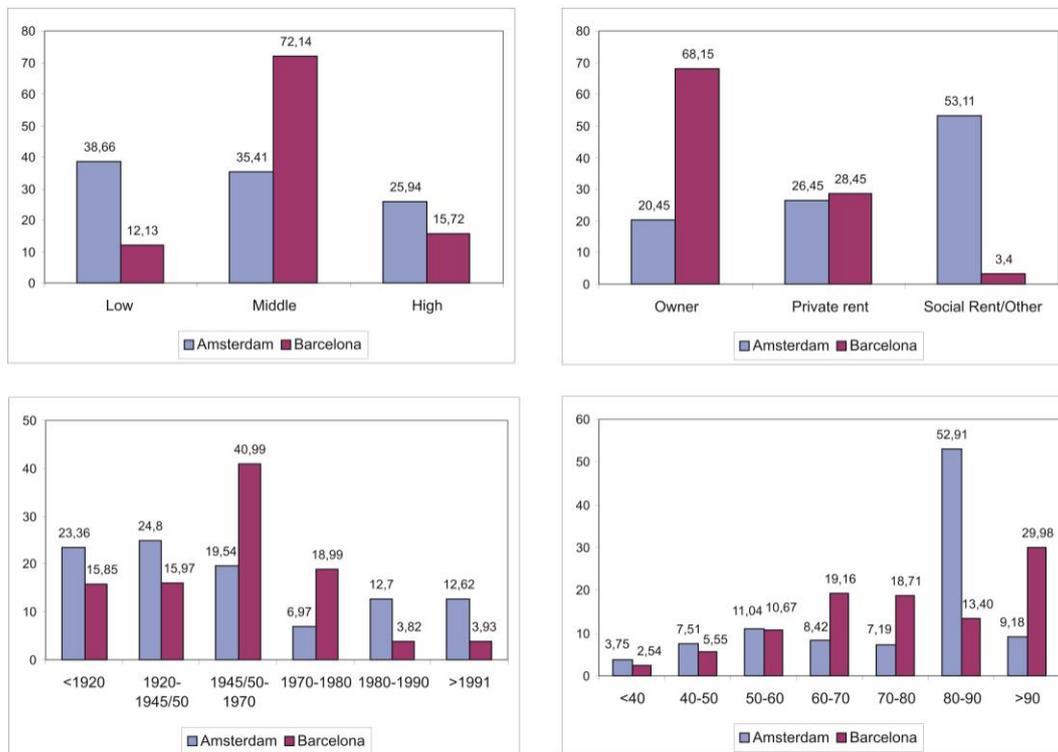
One remarkable finding is that in Barcelona there are no areas without Non-EU migrants, whereas in Amsterdam 9 per cent of the Dutch is living in areas with no non-western migrants at all. The more detailed territorial level which has been used for the analysis seems responsible for this outcome.

6. The housing situation

Housing in both cities clearly differs from each other, both in terms of the stock (question 2) and in terms of the functioning of the housing market (question 3). Figure 3 shows us some basic differences between the two cities.

The dates of both cities show the big differences between the two housing stocks. Amsterdam has newer and older stock than Barcelona. In Amsterdam approximately 50 per cent was built before 1945 and 25 per cent after 1980; in Barcelona 50 per cent of the stock has been built in the period 1950-1980 and only 8 per cent after 1980. Thus, Amsterdam has a more polarised age structure compared with Barcelona. This difference is to be ascribed to rigorous urban renewal in Amsterdam during the 1980s and 1990s. This relates to the quality indicator we used. In Amsterdam, the percentage of low-middle-high quality dwellings (as indicated by price differences) are quite similar, although almost 38 per cent is characterized as of relatively low quality and 35 per cent with middle quality. In Barcelona, the relative quality of the stock is more homogeneous: 72 per cent belongs to the middle category, 15 per cent to the highest class and 12 per cent to the lowest class. If we would compare Amsterdam with Barcelona with the same criterion as applied in Barcelona, probably almost all Amsterdam housing would be in the middle or higher quality class as well.

Figure 3. Housing in Amsterdam (2004) and Barcelona (2001): tenure, size, quality and age



Source: O+S Bureau of Statistics Amsterdam.
National Institute of Statistics of Spain, processed by the authors

The Barcelona's stock is more diverse in terms of size and shows larger dwellings. In Amsterdam 52 per cent of the dwellings has a size between 80-90 m², 11 per cent less than 50 m² and 9 per cent more than 90 m²; in Barcelona 51 per cent of the stock has between 60-90 m², almost 30 per cent more than 90 m² and only 8 per cent less than 50 m².

The biggest difference, however, is the tenure, related with the differences in terms of the wider functioning and institutional structure of both housing markets. In Amsterdam only 20 per cent is owner occupied whereas in Barcelona is 68 per cent, besides Amsterdam's has 53 per cent of rental social housing stock and 26 per cent private rent, whereas in Barcelona rental public housing stock is residual and the private rental sector represents 28 per cent of the stock (although it is a high percentage for the Spanish context).

With regard to the question how the respective housing markets are functioning we can conclude that the Amsterdam housing market is much more regulated; there are more rules; there is more rent control; there is a balanced housing allocation system; there is a range of facilities in terms of subsidies and allowances, etc. Barcelona is more characterized by free market processes and less regulation. Both markets are regarded to be rather tense. However, if we look at the price development in the two cities under consideration there appear to be rather significant differences between the two. In Amsterdam both the rent levels of social housing and the m² price of housing for sale are surprisingly stable, whereas Barcelona shows big dynamics, and also much higher price level (Table 3).

Table 3. Development of prices (€) per square meter of sold owner occupier dwellings and rent levels of social and private rented housing in Amsterdam and Barcelona

	2001	2002	2003	2004	2005
Amsterdam					
Price per m ²	3.084	3.081	2.993	2.922	2.981
Average rent private housing	427		425		
Average rent social housing	300		336		
Barcelona					
Price per m ²	2.388	2.765	3.179	3.672	4.311
Average rent private housing	587	648	678	752	820

Source: Amsterdam: Onderzoek en Statistiek; Amsterdam in Cijfers 2006.
Barcelona: Council of Barcelona, processed by the authors

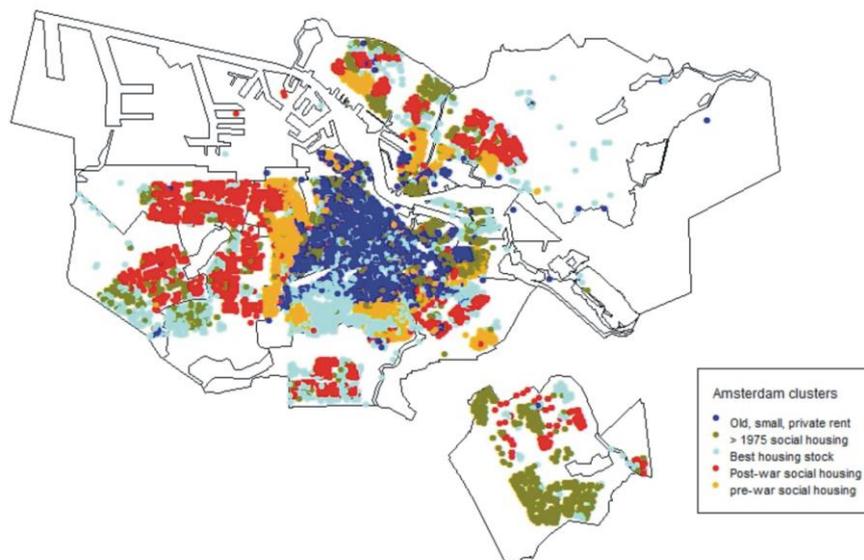
By taking the individual characteristics together using a cluster analysis of the micro-units based on the different characteristics of the housing stock simultaneously, we are able to provide a more comprehensive picture of the housing supply in both cities. Tables 4 and 5 are showing the cluster profiles and Figures 4 and 5 show the spatial patterns of the clusters for Amsterdam and Barcelona.

Table 4. Amsterdam housing cluster profiles

Cluster meaning		CL 1: Oldest, smallest and private rent stock	CL 2: >1975 social housing, middle value	CL 3: Best housing stock, big and owner occupied	CL 4: Post-war social housing	CL 5: Pre-war social housing, low value	Amsterdam
<i>Number of clusters</i>		3,766	3,039	2,736	3,869	2,788	16,198
Quality indicator	Low	31.66	33.31	0.69	65.70	40.15	35.26
	Middle	34.10	49.96	6.51	31.18	49.54	33.93
	High	28.54	16.15	88.52	1.79	9.58	27.23
Construction period	<1919	91.14	2.67	18.98	0.16	1.22	25.80
	1920-39	3.17	0.83	37.41	0.18	97.09	23.47
	1940-1974	1.21	0.40	13.60	99.26	0.74	26.34
	>1975	3.94	95.68	26.32	0.30	0.74	23.45
Tenure	Owner	21.07	11.54	53.34	11.81	7.84	20.41
	Social rent	30.81	78.39	6.62	77.29	63.59	51.24
	Private rent	48.12	10.06	40.04	10.90	28.57	28.35
Nº rooms	1-2 rooms	52.75	30.06	6.87	20.49	26.93	28.53
	3 rooms	30.21	32.89	17.82	33.38	51.73	32.63
	> 4 rooms	16.05	36.99	74.87	45.91	21.14	38.38

Sources: O+S Bureau of Statistics Amsterdam, processed by the authors

Figure 3. Amsterdam housing cluster profiles



Source: O+S Bureau of Statistics Amsterdam, processed by the authors

The city of Amsterdam reveals a very clear spatial structure with regard to the five clusters we found. **Cluster 1** represents areas with the oldest dwellings (91 per cent built before 1919), a high percentage of private rental tenure (48 per cent) and small dwellings (53 per cent with 1 or 2 rooms). Practically all of those dwellings are located in the centre and old town.

Cluster 2 is characterised by social housing (96 per cent) and dwellings built after 1975 (78 per cent); half of the dwellings has a middle value. Many areas in this cluster can be found in the Bijlmermeer area, in the South-east of the city, but also some concentration areas can be found in the east (Zeeburg) and there is some dispersal around the centre, west and north of the city.

Cluster 3 includes the best parts of the housing stock of the city, many of them built between 1920 and 1939, but also some newly developed areas belong to this cluster; 88 per cent of the dwellings in this cluster are of high value, 53 per cent are in the owner-occupier sector, which is extremely much for Amsterdam standards, and 40 per cent of the dwellings can be found in the private rented sector. The tenure distribution is reflected in the larger size of the dwellings: 75 per cent of the dwellings has four or more rooms. The main concentration of this cluster is located in the south but close to the centre (Amsterdam Oud Zuid) but also in some areas in the east and west.

Cluster 4 represents early post-war social housing built among 1940-1974 (99 per cent). More than three quarter of the stock is social rented; the dwellings are big (46 per cent with four rooms or more) but not expensive. 66 per cent of the dwellings is of the lowest value. The biggest concentration can be found in the western part of Amsterdam, but we can also find some areas in the south, east and north.

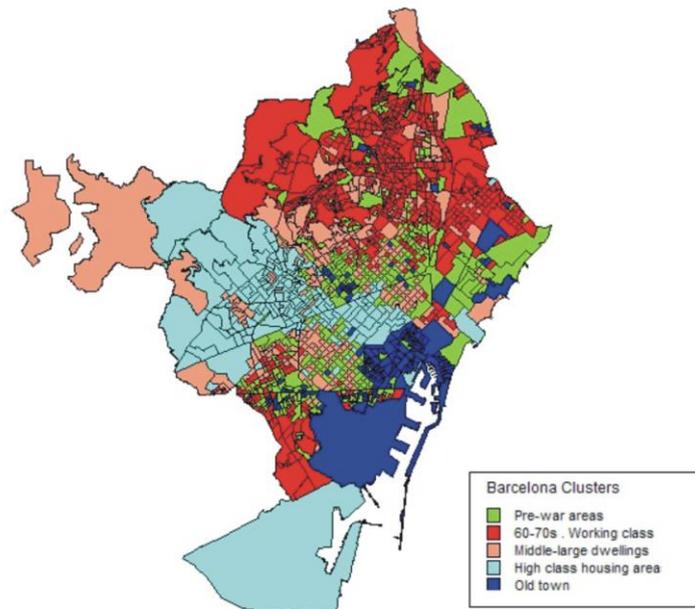
Finally, **cluster 5**; this cluster represents the inter-bellum, the period between the First and the Second World War. Most of the stock is cheap and social rented housing; 97 per cent has been built between 1920 and 1940. The location is typically found between the inner city and the post-war housing areas.

Table 5. Barcelona's housing cluster profiles

Cluster meaning		CL 1: Pre-war areas	CL 2: 60-70s urban areas. Working class areas	CL 3: Middle-large dwellings	CL 4: High class housing areas	CL 5: Oldest and/or worst and rent housing stock. Old town	Barcelona
<i>Number of clusters</i>		331	563	266	178	153	1,491
Construction period	<1900	11.01	1.19	4.66	9.14	39.79	8.90
	1901-1940	30.01	4.95	15.36	17.49	35.00	16.95
	1941-1960	22.15	20.90	22.97	24.99	14.07	21.33
	1961-1980	28.75	66.02	46.73	38.46	7.30	44.99
	1981-1990	2.84	3.27	6.15	5.43	0.63	3.67
	1991-2001	4.94	3.50	3.93	2.47	2.57	3.68
Building problems	Ruin or bad conditions	6.86	3.61	2.25	2.26	18.55	5.46
	Some deficiency	20.62	7.98	8.61	5.52	32.20	13.09
	Good condition	72.53	88.40	89.13	92.22	49.24	81.45
Size	<49	11.34	5.88	4.41	3.44	23.19	8.31
	50-59	12.20	13.83	5.81	3.18	15.85	10.97
	60-89	51.69	64.33	44.48	19.73	43.10	50.48
	90-109	18.10	13.40	31.19	23.60	11.83	18.67
	110-139	4.43	1.83	9.59	20.50	3.57	6.20
	140-179	1.43	0.47	2.97	14.96	1.54	2.97
	>180	0.81	0.27	1.55	14.58	0.92	2.39
Tenure	Owner	60.41	80.03	68.73	60.67	43.91	67.64
	Private rent	36.42	16.82	27.42	33.67	53.31	28.82
	Other	3.17	3.15	3.85	5.66	2.78	3.54

Source: National Institute of Statistics of Spain, processed by the authors

Figure 5. Barcelona housing cluster profiles



Source: National Institute of Statistics of Spain, processed by the authors

The spatial pattern of the clusters we found for Barcelona is also rather clear. **Cluster 1** is perhaps the most dispersed cluster; this cluster represents the sections built after 1900 and before 1940, in other words, these are areas developed before the Spanish civil war and the beginning of Barcelona's urban expansion. Table 5 shows that 30 per cent of the dwellings were built in that period, some of them (20 per cent) have some deficiency, are small in size (<60 m²) and the share of private rented housing is clearly higher than the city's figure (36 per cent). Figure 5 reveals that some areas belonging to this cluster can be found in the central districts (Eixample, Gracia and Sants), the first areas which were developed in the beginning of Barcelona's urban growth); however, some other areas can be found in more peripheral location (the old industrial area of Poble Nou as well as in Nou Barris).

Cluster 2 typically is a working class area; this is developed around the 1960s and 70s, that is during the main urban development period in Barcelona. Two thirds of the dwellings were built in this period. Most of the housing stock (88 per cent) is in good condition, are medium-sized (64 per cent of all housing has a size between 60 and 90 m²) and the percentage of owner-occupied housing is bigger than for Barcelona as a whole (80 per cent). This is a big cluster, with 563 spatial units belonging to it. Most are located in the peripheral neighbourhoods to the east and west (Nou Barris, Horta, Sant Andreu, Sant Martí, Sants). Many of these areas were built to provide housing for Spanish immigrants who arrived in the city during those decades.

Cluster 3 is in fact a reflection of the average stock of Barcelona, with one exception: an overrepresentation of medium-large dwellings (31 per cent). Figure 5 does not show a clear territorial pattern, except for that few areas can be found in the old town districts. In cluster 4 we find the largest dwellings and a large share of housing in good condition. The dwellings are big (73 per cent larger than 90 m²) and 92 per cent are in good condition. The map shows that this cluster represents the upper social class areas and neighbourhoods, that is the central area of Eixample, Paseo de Gracia, and districts like Sarrià and Sant Gervasi.

Finally, **cluster 5**, which represents the oldest housing stock (39 per cent built before 1900), in worst conditions, small sized housing and a high percentage in rent. In other words, this is the cluster that defines Barcelona's old town as well as the lowest dwelling quality. This cluster includes the Ciutat Vella district as well as some areas of Gracia (former village) and Poble Nou (the industrial area east of Ciutat Vella, currently undergoing urban renewal).

7. Ethnic groups spatial distributions and housing

The question now is to what extent the patterns of segregation, or actually the patterns of spatial concentration can be related to the spatial patterns and characteristics of the housing supply? For this purpose we produced Table 6 in which we investigated the association between various levels of overrepresentation of different ethnic categories with the housing clusters we just presented.

Some interesting conclusions can be drawn from that analysis. First of all, in Amsterdam 80 per cent of all non-western migrants are living in clusters that are dominated by social housing (clusters 2, 4 and 5). Non-western migrants who are living in areas with a clear or strong overrepresentation of non-western migrants are even more often found in these three clusters: 95 per cent. The segregation pattern of non-western migrants currently is clearly related to the spatial distribution of social housing. Just over 50 per cent of all non-western migrants are living in low value social housing clusters (clusters 4 and 5) and 28 per cent in the middle value social housing cluster 2. The spatial patterns of different ethnic categories as well as their relations with the housing stock are not at all similar, though. Surinamese are typically concentrated in late-post-war social housing (in the South-East of the city); whereas Moroccan typically

associate with early-post-war social housing in the Western parts of the city. Also where these categories are clearly or strongly overrepresented, this division is very clear. Even though both had access to social housing, they appeared to settle in different districts.

In Barcelona, 25 per cent of all Non-EU migrants are living in areas that are characterised by old and/or the worst housing, mostly in the rental sector (typically cluster 5). Where non-EU migrants are clearly or strongly overrepresented, even 69 per cent till 82 per cent of them are living in this cluster. Almost 78 per cent of Moroccans who live in areas where Moroccans are strongly overrepresented, are living in that cluster. Of Ecuadorians, who are living in areas with a strong overrepresentation of Ecuadorians, only 21 per cent is living in cluster 5; they are typically found in working class areas of the 1960s and 1970s. Here we find more owner occupation.

Table 6. Distribution of each nationality by each area and cluster

Amsterdam (2004)		CL 1: Oldest, smallest and private rent stock	CL 2: >1975 social housing, middle value	CL 3: Best housing stock, big and owner occupied	CL 4: Post-war social housing	CL 5: Pre-war social housing, low value	Total
Non westerns foreigners							
<i>Total</i>		12,27	27,87	6,95	36,85	16,06	100
<i>Strongly overrepresented</i>	>63.26	3,21	27,39	1,73	57,06	10,6	100
<i>Clearly overrepresented</i>	>48.77	5,58	28,93	2,17	49,76	13,55	100
<i>Other areas with Non westerns</i>	<48.77	23,13	26,14	14,72	15,87	20,14	100
Surinamese							
<i>Total</i>	>27.64	9,62	41,37	7,97	28,58	12,46	100
<i>Strongly overrepresented</i>	>27.64	1,55	59,9	4,13	31,33	3,1	100
<i>Clearly overrepresented</i>	>18.63	4,11	54,86	5,03	29,47	6,54	100
<i>Other areas with Surinamese</i>	<18.63	16,26	25,15	11,51	27,51	19,57	100
Moroccans							
<i>Total</i>		12,11	17,73	3,65	45,8	20,7	100
<i>Strongly overrepresented</i>	>25.61	6,28	11	1,96	62,78	17,98	100
<i>Clearly overrepresented</i>	>17.07	8,86	24,46	2,58	54,96	20,06	100
<i>Other areas with Moroccans</i>	<17.07	20,62	28,67	6,45	21,86	22,39	100
Dutch population		23,7	20,53	21,62	17,42	16,73	100
Barcelona (2006)		CL 1: Pre-war areas	CL 2: 60-70s urban areas. Working class areas	CL 3: Middle-large dwellings	CL 4: High class housing areas	CL 5: Oldest and/or worst and rent housing stock. Old town	Total
Non EU foreigners							
<i>Total</i>		23,29	31,79	12,70	6,91	25,31	100
<i>Strongly overrepresented</i>	>27.71	8,11	9,15	0,00	0,00	82,74	100
<i>Clearly overrepresented</i>	>19.82	15,92	13,31	0,78	0,26	69,73	100
<i>Other areas with Non EU foreigners</i>	<19.82	26,60	40,07	18,04	9,89	5,40	100
Ecuadorians							
<i>Total</i>		23,08	48,48	10,21	3,10	15,13	100
<i>Strongly overrepresented</i>	>5.14	16,20	59,12	3,71	0,00	20,97	100
<i>Clearly overrepresented</i>	>3.46	19,65	57,54	3,24	0,41	19,16	100
<i>Other areas with Ecuadorians</i>	<3.46	25,05	43,24	14,24	4,66	12,81	100
Moroccans							
<i>Total</i>		23,05	26,99	6,22	2,61	41,14	100
<i>Strongly overrepresented</i>	>3.72	9,81	11,23	0,00	1,33	77,63	100
<i>Clearly overrepresented</i>	>2.27	15,77	16,53	0,88	0,95	65,87	100
<i>Other areas with Moroccans</i>	<2.27	31,62	39,30	12,51	4,57	12,00	100
Spanish population		21,40	40,40	18,64	11,67	7,89	100

Sources: O+S Bureau of Statistics Amsterdam.

National Institute of Statistics of Spain, processed by the authors

In short, there are not only differences between the two cities as regard the relationship between the housing situation and the spatial distribution of ethnic groups, but there are also evident differences between different population categories, even when they are most likely in approximately similar socio-economic circumstances.

8. Conclusion

How can the relations we found be understood within the wider framework of the two cities? The analysis we did for both cities were based on a standard methodology, while we were able to use almost similar variables for both cities. One general, and at first sight not very surprising outcome is: migrants from non-western countries are settled in sections of the housing stock that are known as relatively least in demand. However, more in-depth analysis shows some important differences about the relationship between ethnic groups' concentrations and the housing market in both cities.

Amsterdam, which has a very large social housing stock, is embedded in a relatively strong welfare state; the city houses a relatively large number of migrants, especially when compared with Barcelona; the segregation levels, however, are not really different. In Barcelona the housing stock is much more private, and the welfare state is weaker compared with the Dutch; the share of migrants is substantially lower than in Amsterdam, but rapidly increasing.

From the analyses, we could derive a general conclusion, which is that more social housing and stronger welfare state neither relate to lower, nor to higher levels of segregation compared to contexts where the welfare state and the housing market are clearly different. In Amsterdam, social housing is important for housing ethnic groups, but within the social housing stock there are clear territorial differences as regards which ethnic category is living where. In Amsterdam, roughly said, Surinamese are living in social housing in the South-East and Moroccans live in social housing in Amsterdam-West. Also, ethnic concentrations are not *per se* implying worse life conditions or higher social exclusion. In Amsterdam, there is segregation, but most migrants are living in good quality social housing with an affordable rent.

In Barcelona, migrants have to rely on the free housing market. This also implies that more families are forced to enter the lodging and informal housing markets. In fact, this was also the reality for the first generation of guest workers in the city of Amsterdam. Before they could get access to social housing, they had to find housing in the private rented sector as well.

In Barcelona, as in Amsterdam, Moroccans appeared to be more segregated than non-western migrants in general. However, here too, higher segregation does not necessarily imply worse living conditions. Initially migrants in Barcelona tried to access dwellings that matched their economic possibilities; that is, they accessed cheaper dwellings. However, the rapid immigration now has used up the worst and cheaper stock; therefore, migrants have to access more expensive areas. This results in renting rooms instead of entire dwellings, and also this result in overcrowding situations.

The analyses we carried out have revealed a very important fact, which is that there is not a clear and one-to-one relationship between patterns of residential segregation and concentration and the housing stock. This implies that it will be very difficult, if not impossible to change the segregation patterns through a change of the housing stock. The current ideas, in several Western European countries, to change the tenure mix – that is, to reduce social housing and to create greater mix of tenures – in order to change the social and ethnic composition of an area, seems not very viable. Segregation patterns seem to be much more related to the relative demand profiles of sections of the housing markets. In meritocratic societies these relative

differences will always exist, irrespective of the tenure, the sizes, the ages of the dwellings and the years they were built in. If there is a fear for the development of 'worlds apart' in a city, perhaps a more effective way of intervention is to provide direct support and opportunities in education and employment to those who have a weaker position. That may result in an improvement of individual's situations and that will pave the way to better lives elsewhere for those who benefited from these interventions. As long as such dynamics can be developed, this is a more effective instrument to elevate the quality of life in cities than making efforts to change the housing stock.

On the other hand, the segregation analysis by micro territorial level also has revealed that there are no big segregation differences among Amsterdam and Barcelona. In a way it questioned Malheiros (2002) and Arbarci's (2007) idea about lower ethnic segregation levels in southern European cities.

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