CONCENTRATION AND DIVERSITY OF SOUTH ASIAN POPULATION IN SPAIN[1]

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In the first decade of the 21ˢᵗ century, the spatial concentration of immigrants has become a hotly debated issue in many European countries. Basically, it is related to the exponential increase of international immigration to various European countries during this time (Schönwälder, 2007). Spain has remained in the top list of immigrant receiving countries in Europe. According to Eurostat, in 2010, there were 6.4 million foreign-born residents in Spain, corresponding to 14.0% of the total population. Of these, 4.1 million (8.9%) were born outside the EU and 2.3 million (5.1%) were born in another EU Member State. Along with its huge volume, the most important feature of this immigration was its level of diversity that it brings to Spanish society in terms of different origins and ethnic backgrounds of immigrants (Anderson, 2007).

In this huge flow of immigrants a small part was made by South Asians, including three most represented countries i.e. India, Pakistan and Bangladesh. Their number also multiplied dramatically during the last decades. The most distinguishing features of South Asian population (SAP) were its spatial concentration. It has fueled the debate over their residential segregation in major metropolitan cities of Spain. In this paper our main objectives are first to explore the flow and stock of SAP and their spatial distribution, secondly, empirical analysis of the level of concentration and segregation of SAP in Spain, thirdly, to test the concentration of SAP is coinciding with the areas of high population diversity or not.

To respond to all these questions this paper is divided into four sections: 1) an overview of SAP in Spain and their settlement patterns; 2) Spatial analysis of segregation (evenness and isolation) and 3) A comparative study on the levels of concentration of SAP and the existing population diversity in different regions of Spain. Finally, an open discussion has been initiated for future studies.

1. GROWTH AND SETTLEMENT PATTERENS OF SAP IN SPAIN, 2000-2014

1.1 The flow of South Asians to Spain

South Asia has a long history of migration to Spain. For a long time this migration flow was mainly dominated by traders and later on by semi-skilled and highly-skilled workers (Sala López, 2013). They first entered in Spanish territory in the last decades of the 19ᵗʰ century (Navarro, 1974). According to Residential Variance Statistics (EVR, 2000-2013) published by the INE, this flow of South Asian born immigrants increased exponentially during the last decade, from a mere 1,747 in the year 2000 to 28,593 in the year 2010 (graph 1). The most significant rise has been witnessed in the year 2004, when it multiplied 4 times to cross the mark of 14,865 immigrants from just 3,516 in the year 2003. This tremendous increase can be associated with two important events first related to data collection system and second of legal character. Firstly, in the year 2004, INE started making entries without the information of origin, which was generally referred as '*Altas por Omisión*'. It is probable that a small part of this huge increment comes from these entries. Secondly, due to the regularization process of immigrants, that took place at the year 2005, many immigrants who were already living in Spain before and for some reasons were not registered in their municipal registers, get started registering in municipal registers to reap the benefit of legalization process. It also worked as a 'call-effect' for people at the place of origin who was thinking about migrating, rushed to Spain during this period to get legalized as immigrant residents. Along with direct flow from South Asia many immigrants from neighbor countries, where they were living in an illegal state, also entered in Spain for legalization of their immigrant status. In the year 2006 this flow suffered a sharp fall, again it can be associated with 'exits' due to expiry '*Baja por Caducidad',* which was introduced by INE in the year 2006 to control the overestimation of the immigrant population. After this fall it revived in the coming years with the process of family reunification as many workers who legalized their status in the year 2005 start bringing their families to join them in Spain. Eventually, it reached to its peak 28,593 in the year 2010. From here it starts falling at a considerable rate to reach around 15,631 immigrants in the year 2013. This fall can be associated with the economic crisis and scarcity of jobs in the Spanish labour market. Along with its exponential growth, some other important features of this flow were its concentration in young adult age groups15-45 (as 80% lies in this group), and high level of masculinity (less than 25% of females in Pakistanis and Bangladeshis and 35% of Indians).

Graph1: The evolution of the flow of South Asian Immigrants to Spain, 2000-2013
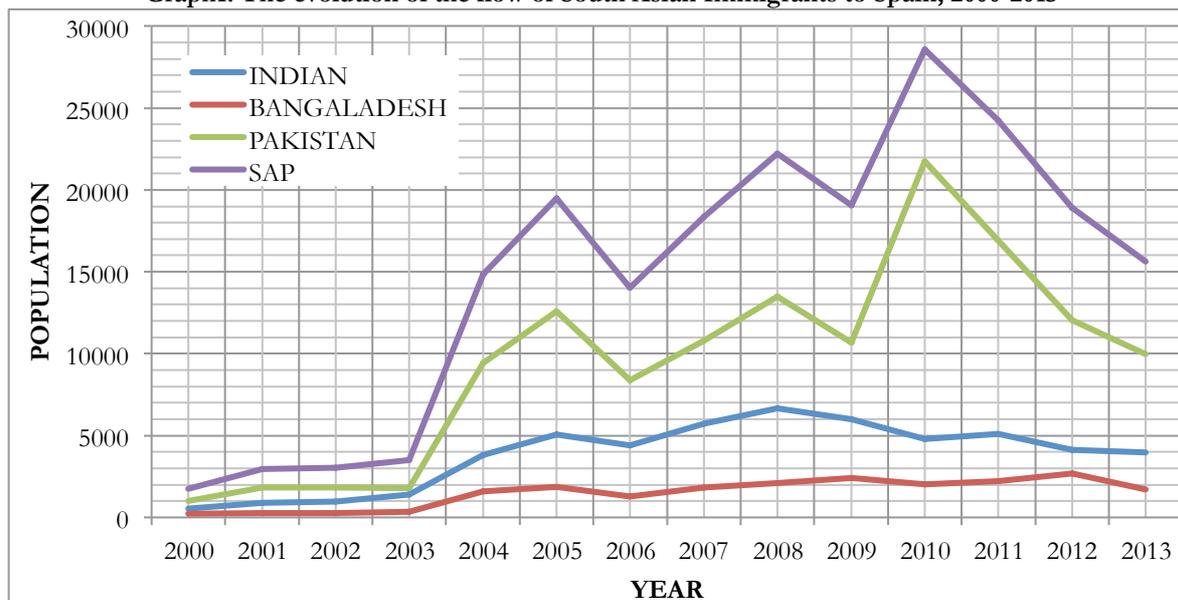

Source: Own elaboration with Residential Variance Statistics (EVR 2000-2013), INE.

1.2 Stock of South Asian Population in Spain

The stock of SAP has remained insignificant till the end of the 20th century. According to the data from municipal registers (*Padrón Continuo, 2000-2014)* provided by the INE, in 2000, their total number was 12,819 in which 57% were Indians, followed by 39% of Pakistanis and 4% of Bangladeshis. Due to its small size, it was only 0.87% of the total foreign population residing in Spain and 0.03% of the total population of Spain in 2000. It witnessed a dramatic increase in the first decades of the 21st century and multiplied itself more than 10 times to reach on its peak with 132,398 residents in 2013. In 2013, it was constituted of 60% of Pakistanis followed by 29.9% of Indians and almost 10.1% of Bangladeshis and its share in total foreign population and total population of Spain also increased to 1.99% and 0.28% respectively. But this process of regular growth halted in the year 2014 and the total number of SAP fell down (almost 1 %) to 131,230 in which the proportion of Pakistanis and Bangladeshis reduced to 59.5% and 10.04% respectively, while the proportion of Indians increased to 30.4%. This fall in the stock can be associated firstly with the decline in the new flow of immigrants from South Asia and secondly, due to the effects of the economic crisis on SAP which consequently led to their emigration to other diasporic locations like Germany, England and most recently Canada.

In 2000, the size of SAP was merely 12,819 which increased to 19,022 in 2001 that was a tremendous increase of 48% in one year (graph 2). It was the outcome of the regularization process of immigrants in the year 2000. After this sharp increase, it increased at a regular pace and reached to 72,451 in 2006 but in the coming year it increased only 1.6%, this low rate of growth was probably caused by the exits from the municipal registers caused by the expiry of registration '*Bajas por Caducidad'* introduced by INE in 2006, to control the overestimation of the foreign population. From 2008 onward the growth rate of SAP also reduced and eventually in 2013 it reached to its maximum of 132,398. In 2014, their number fell down and finally it reached to 131,230. Up to the year 2000, this population was dominated by Indian immigrants who were replaced by Pakistanis in 2001. During 2001 to 2014, the proportion of Pakistanis and Bangladeshis in SAP increased 23% and 6%, respectively; on the contrary the proportion of Indians reduced almost 29%.
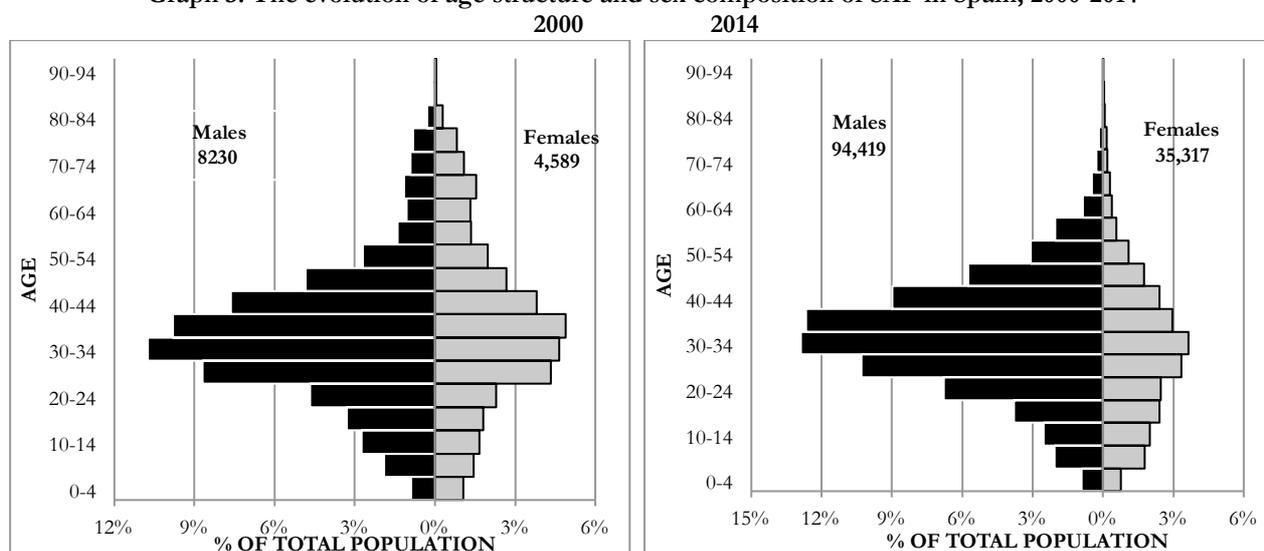
Graph 2: The evolution of the stock of SAP in Spain, 2000-2014
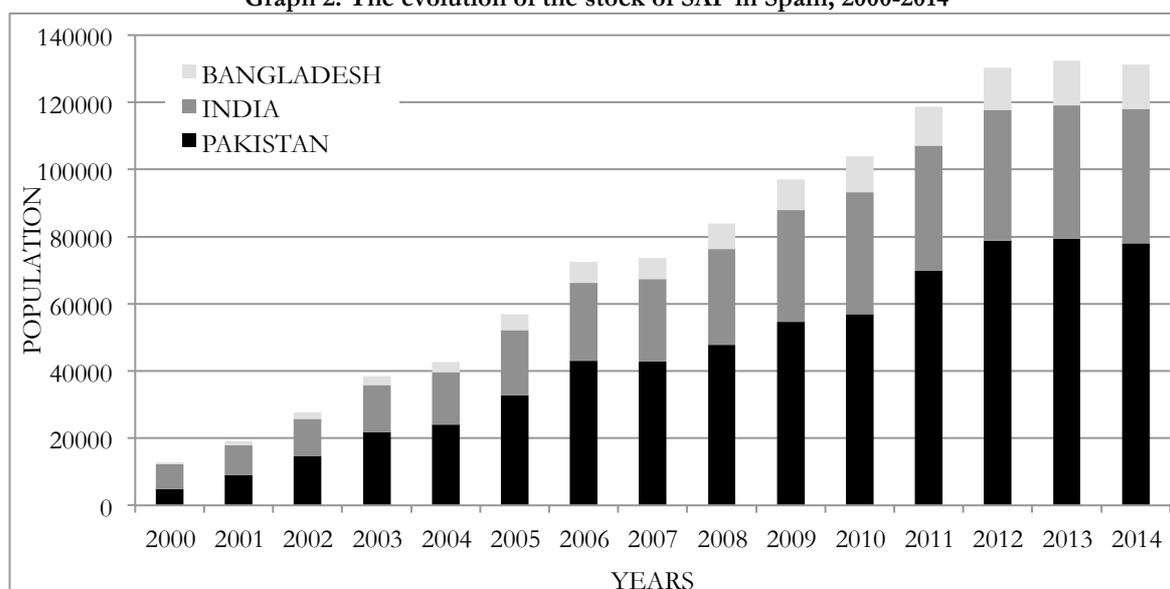
Source: Own elaboration with data from Municipal Register of Inhabitants (Padrón continuo) 2000-2014, INE

Throughout its history SAP was dominated by young males (graph 3), in the year 2000 there were 4,589 females for 8,230 males, this difference widened in the coming years and finally in the year 2014 there were 35,317 females for 94,419 males. Within the SAP the level of masculinity was highest in the Bangladeshi community (24 females for 100 males) followed by Pakistani (25 females for 100 males) and Indian (34 females for 100 males). Another important feature of this population was its concentration in young adult age group (between 25 to 39), in 2014 around 45% of the population lied in this age group.

Graph 3: The evolution of age structure and sex composition of SAP in Spain, 2000-2014

Source: Own elaboration with data from Municipal Register of Inhabitants (Padrón continuo) 2000-2014, INE

1.3 Spatial distribution and its evolution of SAP in Spain

After exploring the size and structure of SAP, it is crucial to know its territorial distribution for the better understanding of their living conditions and their level of residential concentration and segregation in Spain. The present territorial distribution of SAP was the result of different settlement strategies and timings of all major waves of immigrants (including traders, unskilled workers and highly skilled workers) from South Asia and other diasporic locations and secondly, due to the concentration of various economic activities including agriculture, mining, industries and services in some specific areas of Spain. In the last decades of the 19th century, the first settlement of SAP was limited to the Canary Islands, where they settled as traders to participate in international trade market. At that time

their number was limited and they were concentrated in the coastal zones and central market places. (López-Sala, 2013). They flourished in this region till the end of 1970´s and expanded to other southern cities of Spain, including Ceuta and Melilla and to a neighbor country, Andorra, in the north of Spain (Borra, 2006). Later on in 1980's, the majority of this population moved to the coastal cities of Mediterranean and big metropolitans like Barcelona, Valencia and Madrid.

In the late 1970's, a new flow of SAP entered into Spain with totally different profile and settlement strategies. This flow in the search of job opportunities moved to other regions of central and southern Spain, where there was the concentration of agriculture, industry and other primary activities like mining. These early settlements were induced by some very diversified but specific economic activities like the mining regions of the provinces of Teruel, Leon and Jaen for Pakistanis; regions with relevant intensive agricultural activities of La Rioja, Valencia, Catalonia and Murcia for Indians and Pakistanis and meat factories of Vic and Olot in Girona for Indians (Aubia and Roca, 2005; Farjas, 2006a, 2006b). This process of settlement in the internal rural and suburban zones led to the emergence of new areas of concentration for SAP. Later on, with a construction boom in Spain (mainly during 2002-2008) a major part of this population settled in the expanding cities and suburbs, where they get engaged in the construction business. Recently other important settlements have emerged with the concentration of ethnic businesses including souvenir shops (Indians), grocery stores and wholesale business of cloths and food products (Pakistanis and Bangladeshis) and the increased participation of SAP in Service sector in major cities like Barcelona, Madrid, Badalona, Lloret de Mar, Salou, Valencia, Benidorm, Alicante, Torrevieja and Malaga (Beltrán and Sáiz-López, 2002).

In the year 2014, the distribution of SAP was highly unequal in the favor of some municipalities (map 1). Only six municipalities, including Barcelona (21.5%), Madrid (6%), Badalona (5.62%), Valencia (5.6%), Hospitalet de Llobregat (4.6%) and Santa Coloma de Gramanet (3.6%) accounted for 47% of total SAP. Except two clusters of Madrid and northern Autonomous communities of La Rioja and Basque Country, the majority of SAP was concentrated on the Mediterranean coastal region (mainly in Catalonia with more than half of the total population) and island groups of Spain. Another distinguished feature of this distribution was the concentration of SAP along with the banks of the river Ebro passing through Vitoria (Basque Country), Logroño (La Rioja), Zaragoza (Aragon), Tortosa and Amposta (Catalonia). This concentration of population was resulted by the intensive agriculture, in the plains of the river Ebro, which was the main occupation of many South Asians in 1990s. If we draw a line dividing Spain longitudinally, the majority of SAP was settled in the eastern part while the western part was still unoccupied.

In 2014, at the level of Autonomous Communities the distribution of SAP was even more skewed. Only four Autonomous communities' i.e. Catalonia (53.8%), Valencia (13.6%), Madrid (7.9%) and Andalucía (4.9%) had 80% of the total SAP of Spain. Catalonia was leading with more than half of the total SAP. On the contrary Navarra, Cantabria, La Rioja and Extremadura were with least proportion of SAP (1.4%).

Map1: Territorial distribution of SAP in Spain, 2014
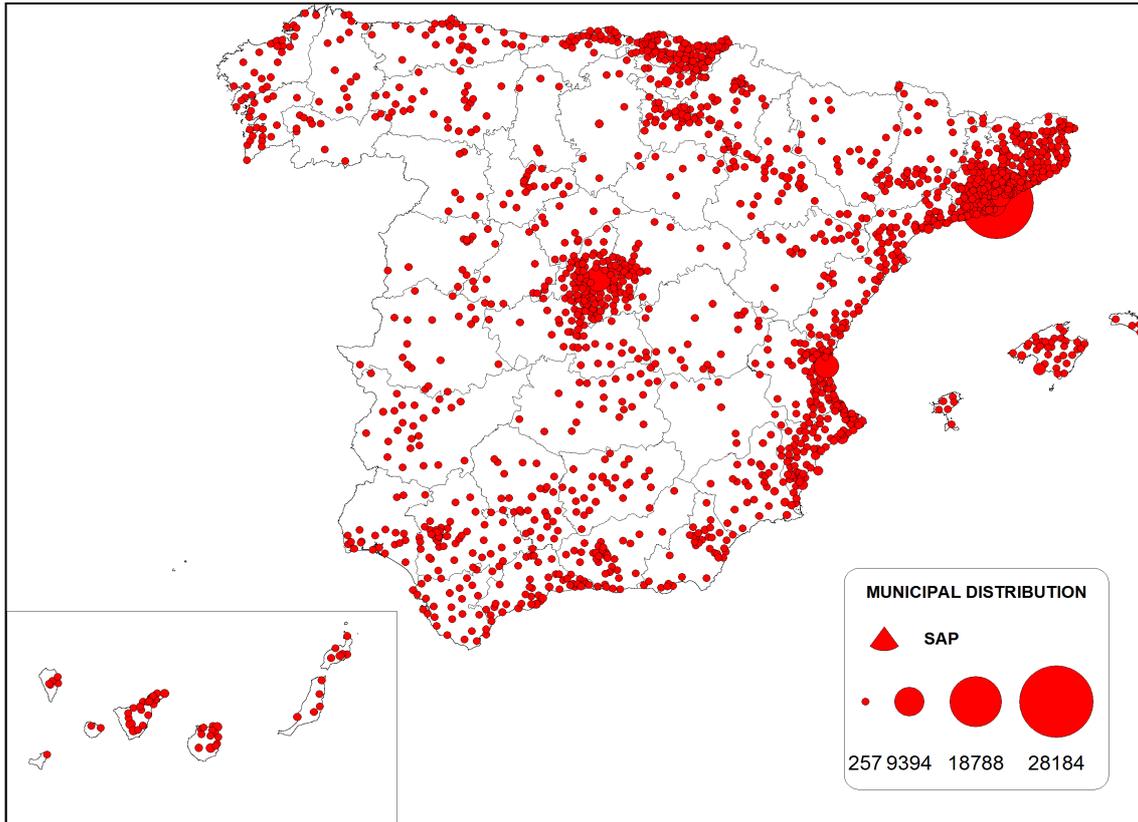
Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2014) INE

During 2000-2014, the territorial distribution of SAP was affected by new arrivals, expansion of economic activities, government policies and social or family networks. Barcelona always remained the center of attraction for South Asians. According to the data available from municipal registers *(Padrón Continuo 2000-2014),* in 2000 there were 2,422 (19%) South Asians in Barcelona municipality, this number increased to 28,184 (22%) in 2014. After Barcelona, in Badalona and Valencia it increased from 185 (1.4%) to 7,388 (5.6%) and 328(2.6%) to 7,358 (5.6%) respectively. Interestingly, in the case of Madrid population was increased from 980 in 2000 to 7,941 in 2014, but the proportion in the total

Graph 4: Municipalities with highest number of SAP in Spain, 2000- 2014
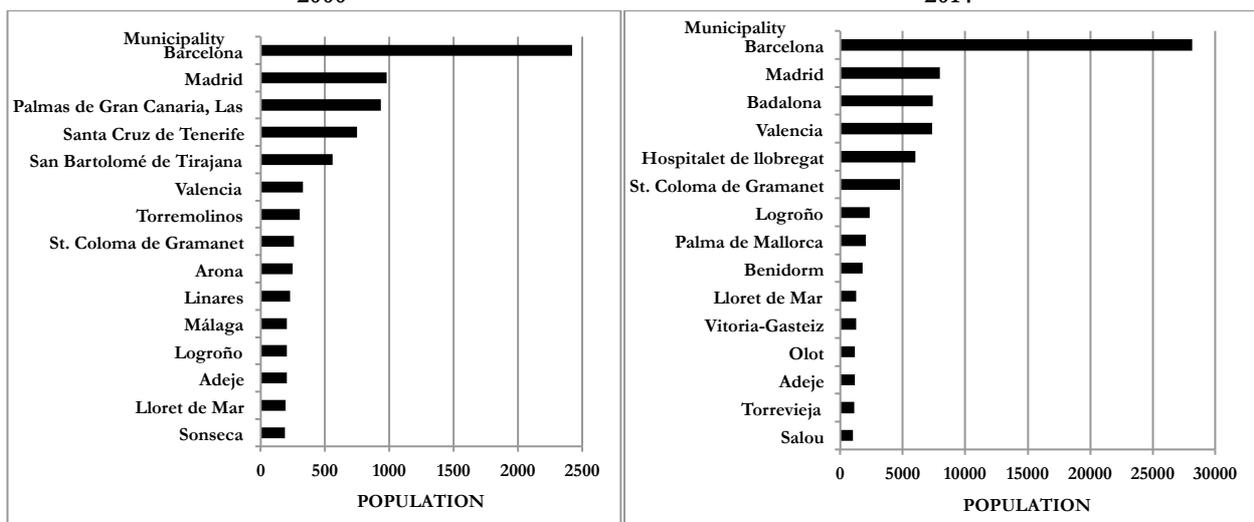
Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2000-2014) INE.

SAP has been reduced from 7.5% in 2000 to 6% in 2014. The major fall in SAP was witnessed in Canary Islands, where its relative proportion falls from 18% in 2000 to 3.4% in 2014. This fall was resulted by the absence of new arrivals, emigration and the exponential growth of population in other

parts of Spain. Hospitalet de Llobregat, Palma de Mallorca, Logroño, Benidorm, Alicante, Lloret de Mar, Vitoria, Torrevieja and Salou were emerging as new centers of concentration. During this period SAP has witnessed a large concentration in the eastern parts of Spain.

2. RESIDENTIAL SEGREGATION OF SAP IN SPAIN

The distribution of SAP in Spain remained highly uneven in the favor of metropolitan areas, like Barcelona, Madrid and Valencia. This pattern is also visible at the infra municipal level, with some areas of high concentration like El Raval in Barcelona, Russafa in Valencia and Lavapiés in Madrid. This residential concentration of population has an enormous effect on the changing physical landscape, diversification of neighborhoods and in the modification of the traditional functions of these boroughs.

Residential segregation is the physical separation of two or more groups into different neighborhoods (Massey; Denton, 1988). For the spatial analysis of residential segregation, we have opted for the territorial scale of municipalities with more than 1000 South Asians in 2014, firstly because it's the smallest individual political unit with separate identities and local administration, which is keenly interested in population settlement strategies and internal movements, sometimes for the administrative purposes and sometimes to deal with the demands of different minority groups. Secondly the availability of data up to the census section level from municipal registers (*Padrón continuo, 2014*) enabled us to go deeper at municipal level, which helps in micro level analysis of residential concentration and segregation. For the statistical calculation of the level of segregation, we are applying the most widely used measures of segregation i.e. Lieberson's Isolation index (P*) and the dissimilarity index (ID).

2.1 Degree of Isolation of SAP in different municipalities of Spain

Conceptually, Isolation Index (P*) measures "the extent to which minority members are exposed to one another," and is computed as the minority-weighted average of the minority proportion in each area (Lieberson 1961; 1981). It is an asymmetric index: what is true of one group of a pair is not true of its comparator. P* works on the principle that if in a city the majority population ('a') forms, say, 90 per cent of the population and the minority ('b') forms 10 per cent, than the 10 per cent is much more exposed to contact with the 90 per cent than the 90 per cent is exposed to the 10 per cent. The value of P* indicates the percentage probability of a member of group 'a' meeting a member of the group 'b' in the areas where group 'a' lives. To measure the internal differences of SAP in context of isolation, the indices of isolation are calculated for all the countries of this group separately.

2.1.1 INDIA:

The Indian population in Spain is highly concentrated in big metropolitan cities. The value of the isolation index for selected municipalities with a significant number of Indian population has increased from 0.78 in 2000 to 1.5 in 2014 (Graph 5.1). Interestingly the value of the isolation index for almost all the municipalities has been increased except Santa Cruz de Tenerife, where this value reduced from 3.32 in 2000 to 2.34 in 2014. In the year 2014, the maximum value of Isolation Index was recorded for the municipality of Santa Coloma de Gramanet (2.4), followed by Santa Cruz de Tenerife (2.3), Hospitalet de Llobregat (2) and Badalona (1.6) and minimum value (0.20) was for the municipality of Vitoria-Gasteiz. In the major metropolitan cities, Barcelona toped the ranking with the value of 1.3, followed by Valencia with 1.1 and Madrid with 0.36.

2.1.2 PAKISTAN

The exposure of Pakistani population to native Spanish population is also very low. On the average the value of the isolation index has been increased from 0.7 in 2000 to 3.8 in 2014 (Graph 5.2). During 2000-2014, the highest increase in the isolation index has been recorded in the municipality of Badalona (11.7), followed by Benidorm (5), Barcelona (4) and Santa Coloma de Gramenet (3.6). In the year 2014, Badalona has topped with highest Isolation score of 13 and the lowest is recorded in Santa Cruz de

Tenerife (0.36). In the metropolitan cities the level of isolation was highest in Barcelona (7.7) followed by Valencia (2.6) and least in Madrid (0.6).

2.1.3 BANGLADESH

The value of the isolation index for the selected municipalities on the average has been increased from 0.3 in 2000 to 2 in 2014 (Graph 5.3). The highest increase in the value of isolation index has been witnessed in the municipality of Madrid (5.9), followed by Barcelona (3.8) and Santa Coloma de Gramenet (3.4) and the lowest increase has been witnessed in Valencia (0.11). In 2014, the highest score of isolation was recorded in Madrid (7) Hospitalet de Llobregat (0.24), followed by Barcelona (4.5) and least in Torrevieja (0.3), Alicante and Palma de Mallorca (0.5).

The P* values calculated for the different countries of SAP in all municipalities have shown an increase in the level of isolation, which further interpreted as an increase in the level of segregation and low

Graph 5: The evolution of Isolation Index for SAP in different municipalities of Spain, 2000-2014.

5.1 India

5.2 Pakistan

5.3 Bangladesh
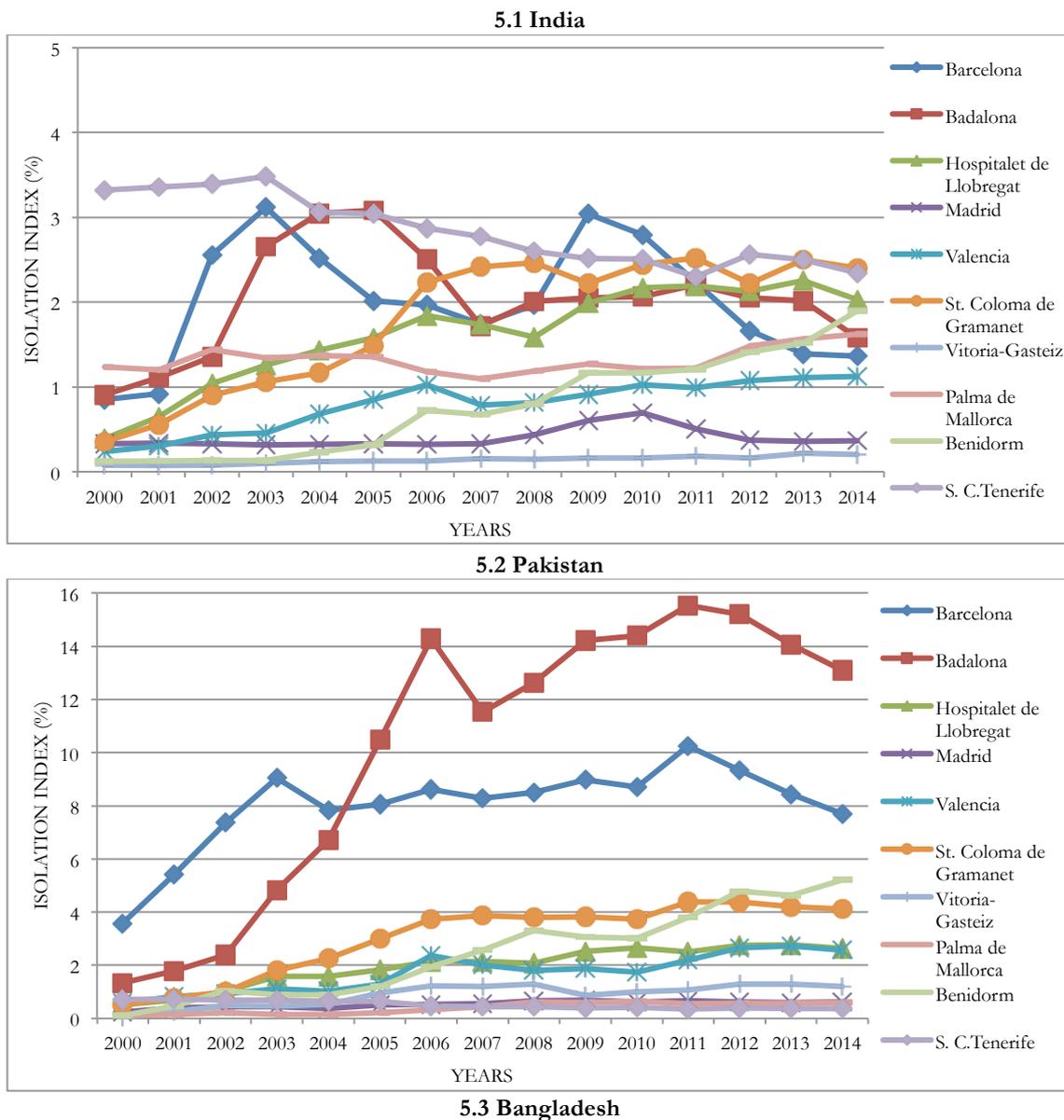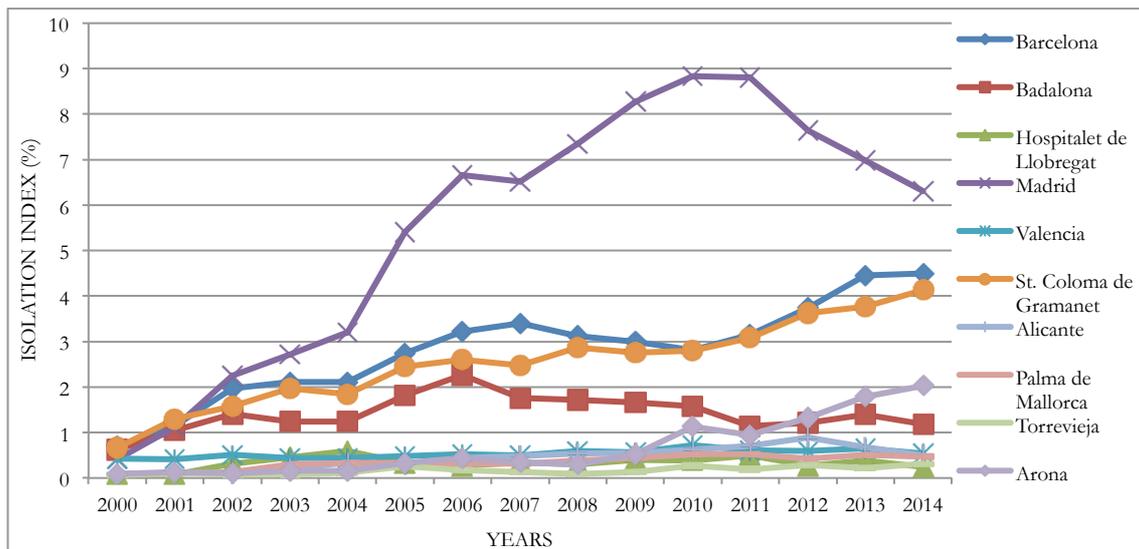
Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2000-2014) INE.

exposure to native population. But here it is important to mention that the P* is highly sensitive to the percentage changes of population, so a test is essential to overcome the effect of proportionate population growth on the P* values.

2.2 The Indices of Dissimilarity (ID) of SAP in different municipalities of Spain

Another important measure of residential segregation applied to study the evenness of the distribution of SAP in different municipalities is the 'dissimilarity index (ID)'. It measures the percentage of a group's population that would have to change residence for each neighborhood to have the same percentage of that group as the whole territory overall (Duncan and Duncan, 1955). The index ranges from 0 (complete integration) to 100 (complete segregation). It compares the residential distribution of pairs of population groups in cities. It has proved attractive because the theory underlying ethnic segregation studies is that there is an inverse relationship between the degree to which two populations are segregated from one another and the degree of assimilation or social interaction between the two. Values below 39 are taken as 'low'; 40-49 are taken as moderate, 50-59 as moderately high, 60-69 as 'high' and 70 and over as 'very high'.

2.2.1 INDIA

The dissimilarity index of Indian population shows that the level of unevenness has been declined significantly in all the selected municipalities. It declined from 87.6 in the year 2000 to 61.3 in 2014 (graph 6.1), which is still very high as per international standards. The highest fall has been witnessed in Hospitalet de Llobregat (40) and the lowest fall has been recorded in the Santa Cruz de Tenerife (4) but here it is relevant to mention that the fall in ID of Hospitalet de Llobregat can be related to the new entrance and settlement of Indian population in its different areas but this little fall in Santa Cruz de Tenerife is associated with the failure of the process of assimilation as it has the oldest settlements of Indian population in Spain and still the level of segregation is very high (ID more than 70). In the year 2014, the ID of all municipalities ranged in between 82.4 of Vitoria-Gasteiz to 49.6 of Hospitalet de Llobregat. Barcelona and Madrid were at the same ID in 2000 i.e. 85, but interestingly in 2014, in Barcelona it felled to 56 whereas in Madrid to 66, this difference of 10 points can be related to the relatively high number of immigrants to Barcelona as compared to Madrid during this time.
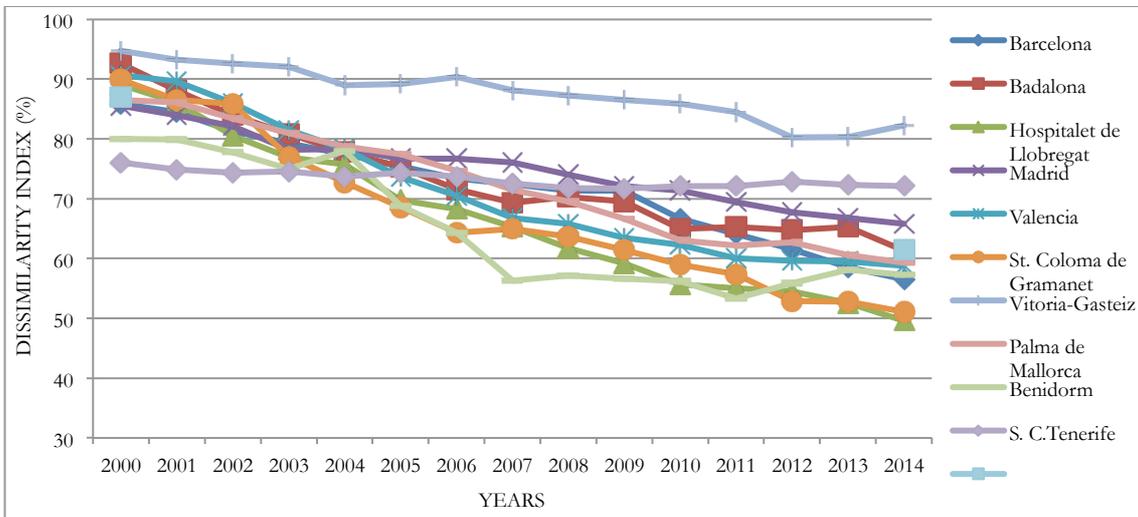
2.2.2 PAKISTAN

Their ID has also been declined significantly in the last decades from 87.4 on the average in 2000 to 60.1 in 2014, (graph 6.2), with the exception of Santa Cruz de Tenerife where it increased from 85.5 in 2000 to 86.2 in 2014. The highest fall has been witnessed in the municipality of Vitoria-Gasteiz (53) from 99.2 to 45.9, followed by Benidorm (43), Hospitalet de Llobregat (42) and Palma de Mallorca and Valencia (30). Among the big metropolitan cities, in 2014, the municipality of Madrid has the highest

level of segregation with ID of 82 followed by Barcelona (63.4) and Valencia (56.6). Interestingly, Valencia with a small absolute number of Pakistani populations as compared to Barcelona and Madrid has the least level of segregation among metropolitan cities.

Graph 6: The evolution of Dissimilarity Index of SAP in different municipalities of Spain, 2000-2014.
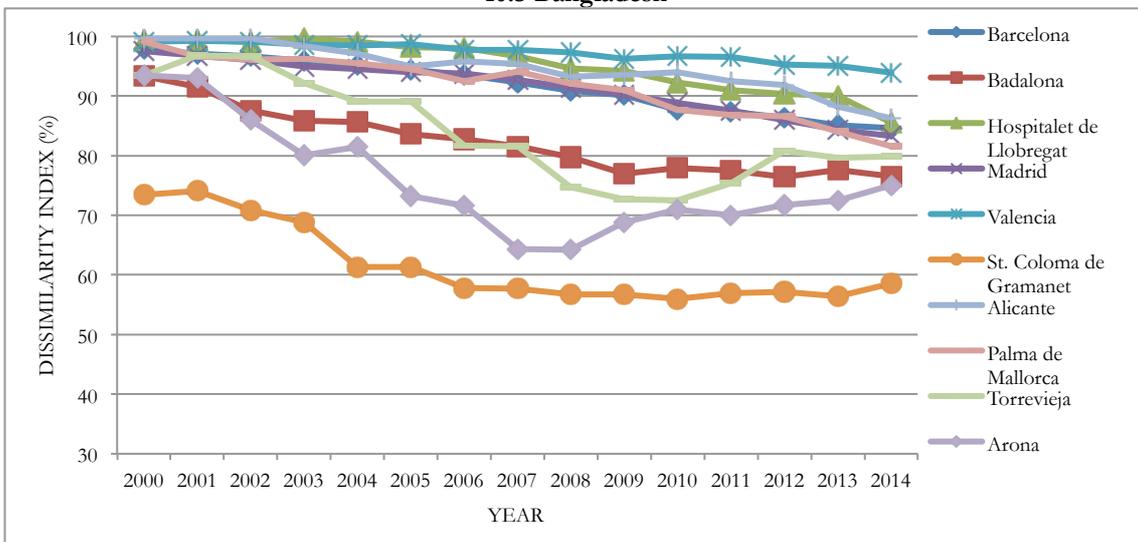
10.1 India

10.2 Pakistan
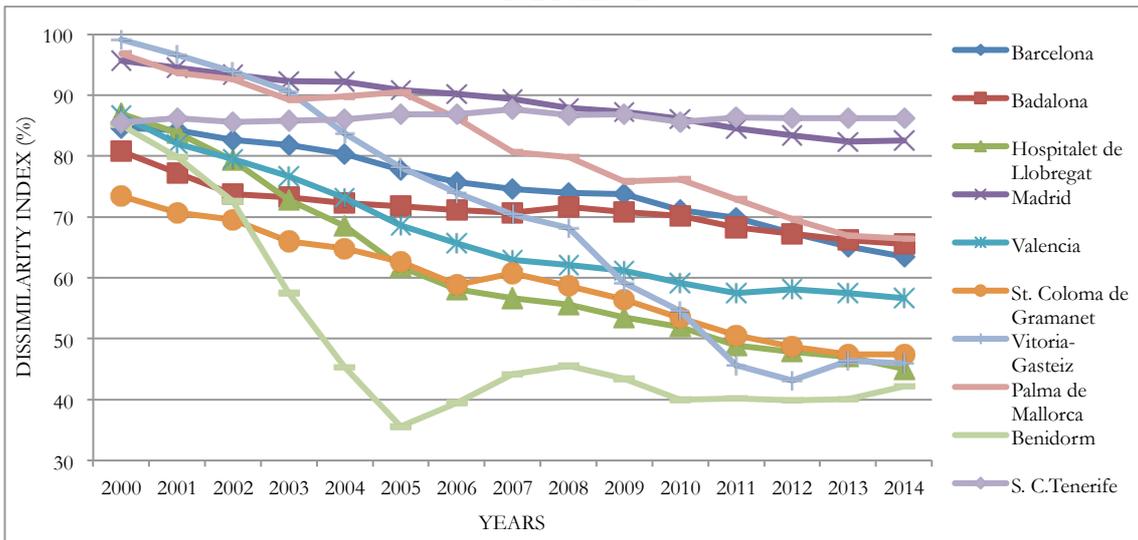
10.3 Bangladesh

Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2000-2014) INE

2.2.3 BANGLADESH:

It has a relatively small population among South Asians in Spain but the level of segregation is relatively higher than others countries of South Asia. The average value of ID has been reduced from 94.6 in 2000 to 80.5 in 2014 (graph 6.1), but still it is higher as compared to any other immigrant group in these municipalities. This highest fall in ID has been witnessed in the municipality of Arona (18.4) followed by Palma de Mallorca (17.6) and Badalona (16.8), but still it is more than 75 in all these municipalities, which is referred as very high segregation in international standards. In the year 2014, their lowest level of segregation has been recorded in Santa Coloma de Gramanet (56.4) and the highest in Valencia (93.8), this huge gap in the level of segregation is the outcome of the difference in the time of settlement and their size in both cities. Metropolitan cities like Madrid and Barcelona, where lives almost 50% of their total population, are also suffering from the high level of segregation of this community in relatively poor areas of the city, with the ID of 84.1 and 85.3 respectively.

The ID of SAP in all the selected municipalities has shown a considerable decline during 2000-2014. It indicates that the degree of segregation is reducing, but if we compare this with other immigrant groups in same municipalities, they still are in the high side of the segregation.

2.3 Comparison of both Indices of Segregation

After calculating the results of both the indices of segregation (i.e. P* and ID) we reached over a paradoxical situation. In which, on the one hand, ID is showing decreases in SAP's segregation while on the other hand, P* is showing increases in its Isolation. The explanation for this lies in the fact that P* is highly sensitive to a group's proportional size in a city population. While the ID is largely insensitive to the percentage size of population, hence it provides relatively more reliable results on the level of segregation.

2.3.1 TEST OF P* VALUES

The calculated P* values of SAP, show its increasing isolation in almost all selected municipalities of Spain, but in fact it is misleading, because the P* values are highly correlated with the proportion that immigrant groups form of the total population in these municipalities. Since the size of SAP has been increased by several times between 2000 and 2014, it is inevitable that P* values will increase. To control the effect of increasing proportion of population on P* value, it is divided by the per cent that the group forms of the whole population (Sin, 2002). If the group were randomly distributed, its percentage in every municipality would be the same as the percentage that it forms of the population of the whole country. If the distribution were random, P* divided by the group's county per cent would be 1. Thus any value above 1 would represent clustering or isolation. The increase in the values of isolation in all the municipalities is the result of increasing percentage of SAP in the total population of the municipality (table 1). It does not really correspond to the increasing level of segregation of SAP in these municipalities. For example the P* value for Pakistanis in Barcelona has increased from 3.58 to 7.7 but in relation to its proportion of population in Barcelona it decreased from 39.3 to 3.34. It is clear that the degree of isolation and hence segregation of SAP is high but it is reducing considerably with new arrivals and its expansion in new territories.

Table 1: Comparison of P* values for SAP in major municipalities of Spain, 2000-2014.

Year	2000			2014		
Index	P*	% POP (T)	P*/T	P*	% POP (T)	P*/T
Barcelona						
India	0.85	0.12	7.2201	1.36	1.39	0.977
Pakistan	3.58	0.04	85.173	7.70	0.36	21.5
Bangladesh	0.69	0.01	65.279	4.49	0.23	19.31
Madrid						
India	0.24	0.01	43.831	0.62	0.06	11.13
Pakistan	0.33	0.02	13.264	0.36	0.07	4.876
Bangladesh	0.41	0.01	70.372	6.31	0.16	39.12
Santa Coloma de Gramanet						

India	0.50	0.08	6.0374	4.12	1.96	2.104
Pakistan	0.35	0.03	12.124	2.40	0.95	2.525
Bangladesh	0.66	0.12	5.7049	4.12	1.30	3.179
Badalona						
India	1.33	0.05	28.571	13.09	2.97	4.403
Pakistan	0.91	0.02	39.291	1.58	0.47	3.341
Bangladesh	0.62	0.02	29.45	1.19	0.18	6.684
Hospitalet de Llobregat						
India	0.52	0.04	12.508	2.63	1.74	1.511
Pakistan	0.39	0.03	11.503	2.03	1.17	1.736
Bangladesh	0.07	0.00	148.29	0.24	0.03	7.706

Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2000-2014) INE.

3. CONCENTRATION OF SAP AND POPULATION DIVERSITY IN METROPOLITAN AREA OF BARCELONA

In this section our prime objectives are first to mark the areas of high concentration of SAP in Metropolitan Area of Barcelona, and secondly, to analysis its population diversity level, to determine that the areas of high concentration coinciding with the areas of high diversity or these areas are becoming the ethnic enclaves or ghettos of a certain group.

3.1 Concentration of SAP in Metropolitan Area of Barcelona

Concentration is the most important feature of SAP and it is visible in almost all metropolitan cities of Spain. The level of concentration has been increased in the past decade with huge arrivals of new immigrants through social and family networks and the increased concentration of economic activities in big cities. To show the level of concentration, we are using the data from municipal registers *(Padrón Continuo 2013),* which provides detailed information over spatial distribution of SAP in different census tracks of all municipalities. For the statistical calculations of the degree of concentration, we are applying the index of Coefficient of Localization (QL). It relates the proportion of a particular group in a census section to the proportion of this group in the whole territory. The value of QL is interpreted as if the value is below 0.85, it is considered as the situation of under representation, if the value is in between 0.85 to 1.2, neutral and if the value if over 1.2, as overrepresentation or high concentration (Brown and Chung, 2006).

For the detailed analysis of concentration at census section level, we are going to focus on Metropolitan Area of Barcelona (AMB). It is a territorial entity operating on the principle of metropolitan municipality composed of Barcelona and 34 adjacent municipalities around the city. It remained the center of attraction for SAP for the last century.

3.1.1 BARCELONA METROPOLITAN AREA (AMB):

It has the highest share of SAP in Spain, which is mainly concentrated in the boroughs of the old city centers, where they first settled in the initial stages of the migration process. Only in the AMB lives more than 40% of its total population in Spain, but interestingly you can find the two most distinctive types of neighborhoods, where they live. In first place is the central city area of El Raval, which is mainly occupied by the lower income daily wage workers, who are living in poor conditions in old substandard apartments and work mainly in the service sector. In the second place, we have found the ancient Spanish immigrant neighborhoods of La Verneda, Trinitat Vella, Trinitat Nova, parts of Poblenao and Santa Coloma de Gramanet. These areas were initially occupied by Spanish immigrants, but as now many of them have moved to other areas these cheap and substandard residential areas are occupied by South Asian immigrants.

In AMB, the areas with over representation of SAP include the districts of Ciutat Vella (El Raval) and Sants-Montjuic (Poble Sec) in the municipality of Barcelona, which is the most significant area in the context of immigrant population settlement (map 2). The borough of El Raval has the highest number of Pakistani immigrants followed by Indians and Bangladeshis, and after Raval another area which is emerging as a new center with over representation of SAP is the district of Poblenou. Second

important cluster includes the districts of Collblanc-Torrassa, La Florida-La Planes and Pubilla Casas-Can Serra in the municipality of Hospitalet de Llobregat. The district of Collblanc-Torassa is having a significant number of Indians, while in the Pubilla Cases and La Florida districts the concentration of Pakistanis is higher as compared to other South Asians. Third important cluster includes the districts of Gorg, Sant Roc, Congrés, Artigas, La Mora and El Remei in the municipality of Badalona. These areas are low income and poor housing zones of Badalona. Fourth area of over-representation includes the boroughs of Besos, La Verneda and La Mina in the municipality of Sant Adrià de Besos. Increasing concentration in these areas is the result of vacant chain of cheap houses left by Spanish immigrants, which has attracted many South Asians. The fifth cluster includes the Central borough of the Ditrict1 and Fondo of Santa Coloma de Gramanet. These areas have the highest proportion of Bangladeshis among South Asians. Central city areas of the municipalities of Sant Boi de Llobregat, Gavà, Montcada i Reixac and Ripollet also show over representation of SAP. This concentration is mainly related to the economic activities of SAP in these areas.

While comparing different countries of South Asia in relation to their QL in different parts of AMB, we can say that the Indian population is living in the most diverse neighborhoods in terms of socio-economic status which ranging from the poorest parts of the borough of El Raval, Besòs and Badalona to the richest parts of Castelldefels and Sant Cugat. This difference is an outcome of their economic activities, as the majority of Indians in the first type is wage workers of service sector and has poor economic conditions but the residents of Sant Cugat are generally highly qualified professionals who work in education sector and businesses. The municipalities of Gavà, Viladecans and Sant Boi de Llobregat also have a significant representation of Indians, who are mainly engaged in agricultural and service sector.

Map 2: The Coefficient of Localization (QL) of SAP and different countries of this group in the Metropolitan Area of Barcelona, 2013
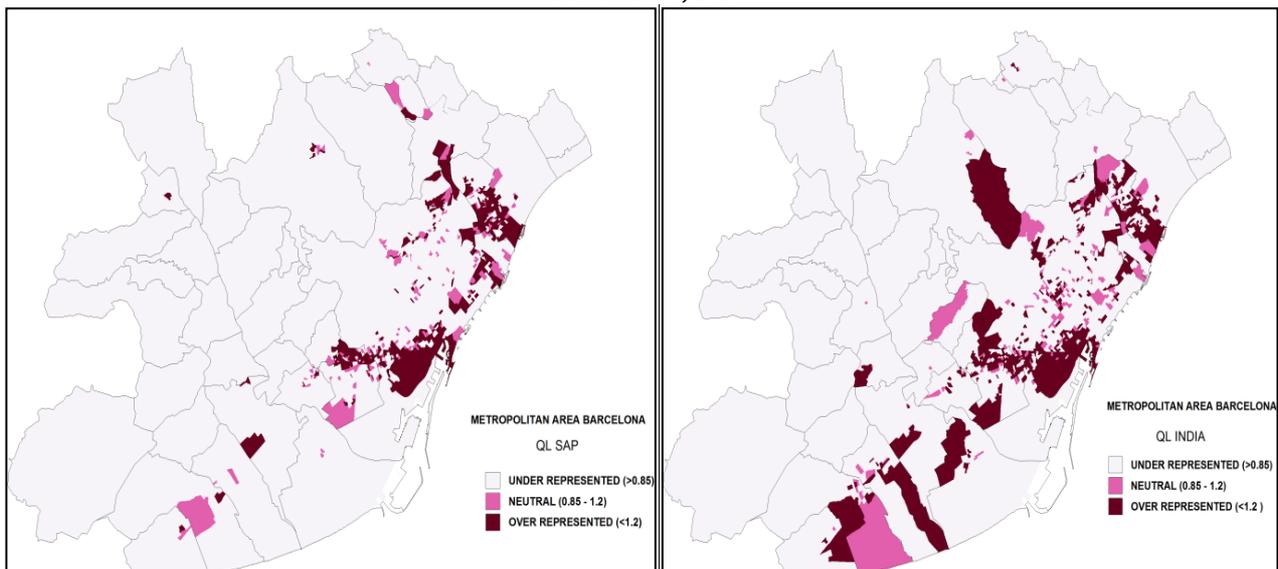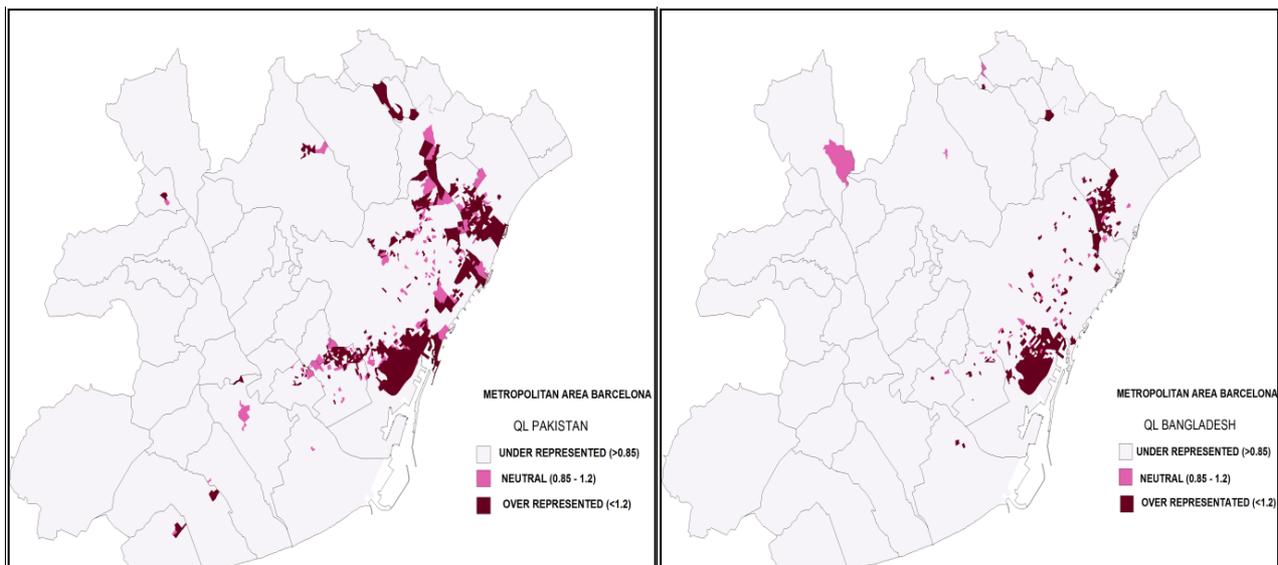
Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2013) INE.

The majority of Pakistanis and Bangladeshis are generally living in homogeneous neighborhoods in terms of housing conditions and socio-economic status, in the whole AMB; these areas are generally characterized by substandard housing and of low socio-economic status. It also depicts the homogeneous profile of these communities in AMB. They are over- represented in the central zones of several districts of the Barcelona municipality like El Raval in Ciutat Vella, Poble Sec in Sants-Muntjuic and Sant Marti in Besos, where they have established their small businesses and work in Service sector. El Raval is becoming an ethnic enclave for Pakistanis. The borough of Sant Roc and Gorg in Badalona, Fondo and central district 1 in Santa Coloma de Gramenet and the districts of Pubilla Casas-Can Serra in Hospitalet de Llobregat also show their high concentrations, which are generally the most deprived areas of these municipalities.

The concentration of SAP in AMB has increased in the last decade, firstly, because their population size and their percentage is increasing in all areas whether low or high density; secondly from social perspective, because of their younger age and cultural expectations of early marriage, new family formation is more rapid among the South Asian communities. At the same time, and particularly for the Pakistani and Bangladeshi population, there are strong pressures to keep the new families close to the parental homes. It further leads to their high concentration in some specific areas of the city (Beltran and López, 2007).

3.2 Population Diversity in Metropolitan Areas of Barcelona and SAP

To make a comparison of the existing population diversity and the concentration of SAP, it is essential to measure the level of population diversity in these areas. For the measurement of the level of diversity, we are applying the Simpson's Diversity Index (Simpson, 1949). To calculate the value of Simpson's Diversity Index, first the whole population is divided into different groups on the basis of place of birth e.g. Spanish, Latin Americans, Asians, Africans, East Europeans, West Europeans and Others, then the proportion of people in each immigrant group relative to the total population of that area is calculated and squared. The squared proportions for all immigrant groups are summed, and the reciprocal is taken. In the present study the level of diversity has been calculated for the above mentioned 7 major groups of population. This index takes into account both richness and equitability of population groups. For a given number of ethnic groups represented in an area the value of the index increases as equitability increases, and for a given equitability the value of the index increases as the number of ethnic groups' increases. Our main objective of this analysis is to explore that the over representation of SAP is coinciding with the richness of diverse neighborhood in major cities of Spain or not.

3.2.1 BARCELONA METROPOLITAN AREA:

In the first decade of the 21st century, large scale immigration has changed the population mosaic of AMB. The most significant feature of this immigration was not only its large volume, but the diversity of ethnic and national identities. As a result of this multi-origin and multi-ethnic immigration, Barcelona has become one of the most diverse cities of Spain. But this immigrant population is not equally distributed in the AMB hence the level of diversity also varies greatly from one part to another. In AMB, the most diverse region in terms of population diversity was the borough of El Raval (Ciutat Vella) in the municipality of Barcelona, followed by highly diverse central urban areas of the districts of Collblanc-Torrassa and Pubilla Casas-Can Serra in Hospitalet de Llobregat, the Central District 1 of Santa Coloma de Gramenet and few areas of El Besos in the municipality of Sant Adría de Besos (map 3).
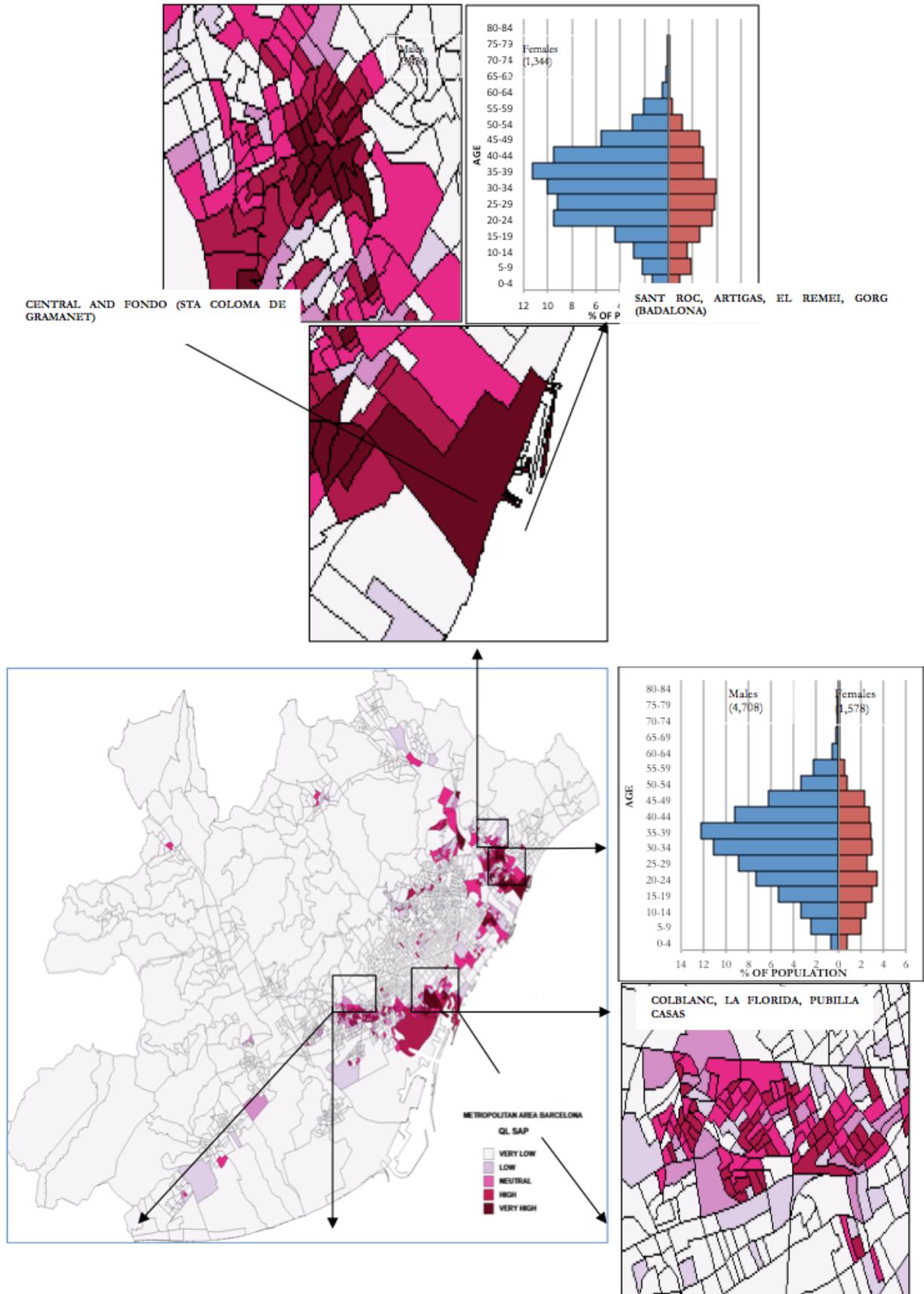
Map 3: The level of Population Diversity (Simpson's D) in AMB 2013
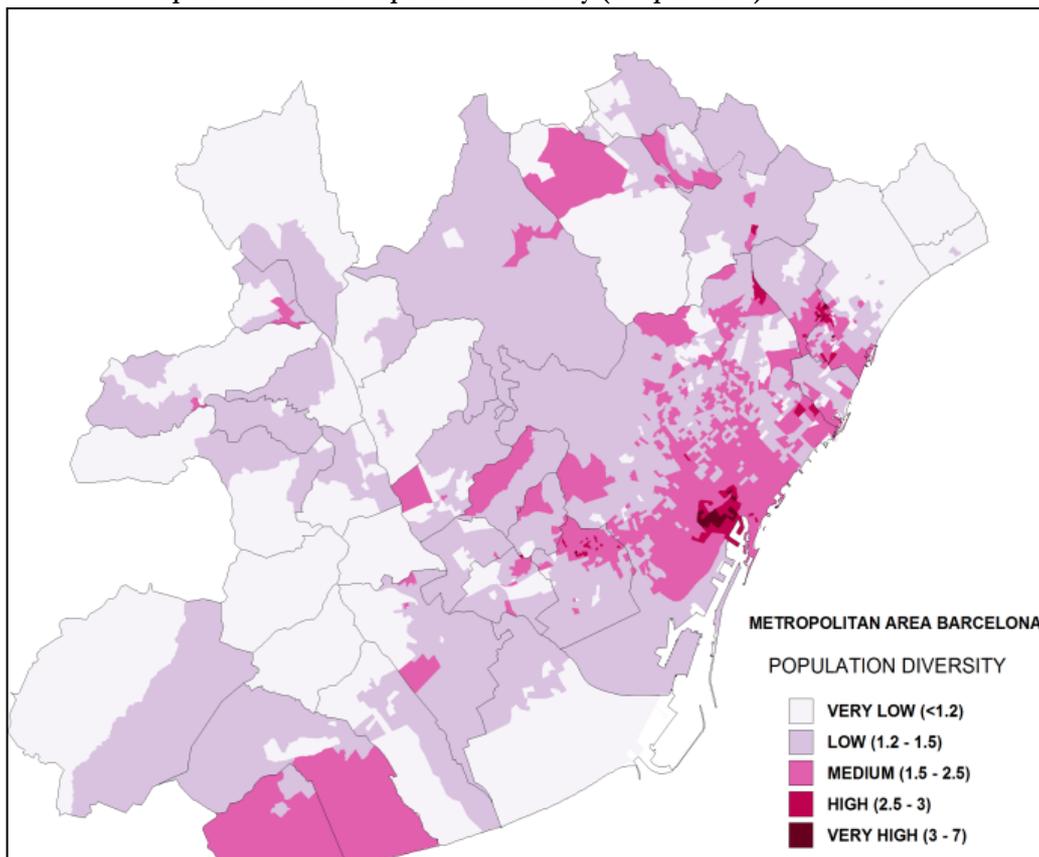
Source: Own elaboration with data from Municipal Registers (Padrón Continuo 2013) INE.

The medium level of population diversity can be found in the entire municipality of Barcelona, Gava, Castelldefells, Santa Coloma de Gramanet, parts of Sant Boi, Badia de valles, Barbera de valles and Badalona. Areas with the most homogeneous population include the municipalities of Sant Climent de Llobregat, Torrelles de Llobregat, Prat de Llobregat, Cervello, Castellbisbal, Tiana and Montgat.

Map 4: Age and sex composition of SAP in different boroughs of high concentration in AMB, 2013

3.3 SAP: moving towards multiculturalism

After making a comprehensive study of the concentration of SAP and the level of population diversity in the metropolitan Region of Barcelona, we reached at the conclusion that in these areas the SAP is not a segregated group rather it is settled in the most diverse neighborhoods in the above mentioned cities. It is quite clear that the level of concentration is comparatively higher as compared to other population groups, but the reasons for this concentration are more internal (family bonds and socioeconomic status) than the racial and ethnic discrimination.

In the light of spatial distribution it is quite clear that the SAP in Spain is having a pluralistic structure. From the very beginning of its immigration process, it was economically integrated into Spanish society, but remains socially encapsulated within its own ethnic groups (Sala López and Esteban Sanchez, 2009). This pattern is still prevails and the level of social participation is still very low in the South Asian community.

In spatial terms also the SAP has showed the prevalence of multicultural mosaic model. In this model the immigrant minorities participate in economic activities but remains socially invisible or encapsulated (Peach, 1997). The residential segregation of SAP remained high in all the settlement areas irrespective of their time of origin, with ID above 50. Another important argument in the favor of this model is that SAP has maintained its separate identity and social setup (unlike the assimilation model in which minorities lose their identities and mix with native majority) in the all new territories where they have settled. The age and sex composition of the SAP has also remained almost same in all the different cities irrespective of their time of settlement (map and graph 4), and in all these location it occupies homogeneous type of neighborhood. We can say that the SAP is expanding in the form of homogeneous clusters which are economically integrated to Spanish economy but socially isolated from native society.

4. DISCUSSION

During the last two decades, SAP in Spain has not only increased tremendously in numbers, but has also evolved in all socio-demographic and spatial aspects. Along with its skewed distribution, it has a high level of residential segregation in some specific areas of different municipalities. The level of segregation has been reduced considerably with its increasing size but still it is high as compared to other immigrant groups. During the economic crisis and hence the emigration of South Asians from Spain has also reduced their level of segregation, which otherwise was increasing through family reunification process. In future, it will be interesting to see how this segregation will evolve and what will be the consequences of this on the integration of SAP to native society.

Spatial concentration remained the most significant feature of SAP in Spain. But it was coinciding with the most diverse neighborhoods e.g. El Raval in Barcelona. It is worth mentioning that while living in highly diverse neighborhoods SAP has maintained its separate identity and tight social and family structure, which has helped this community to expand in the form of homogeneous clusters with common characteristics. In future it will be interesting to study the links between social and spatial mobility of SAP and its appropriation of territory. The two most important questions are, firstly, Is El Raval doing the role of a filter for SAP or is it a trap for new immigrants? Secondly, Is SAP transforming the functions of neighborhood in their high concentration boroughs?

An important form of the transformation of space in terms of concentration and segregation is 'Ghettos', depending upon the auto perception of the people living in these areas and the perception of people around these areas towards them. In this transformation a major role played by socio-cultural practices and kinship networks, which binds people close to each other. A detailed qualitative study is needed to explore these features of SAP.

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