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Spatial behaviour of the new forms of distribution: An analysis of the
Metropolitan Areas of Barcelona and Madrid

ABSTRACT

In this paper I examine how affect the recent economic, politic and social changes thus the modifications in the firms to the structure of the big cities. The appearance of technological innovations within the industry and telecommunications, the supply's increase of final products and the change in the consumers habits, have put the city into the ideal frame of economics restructuring. Nevertheless, cities don't want to be only the frames of this restructuring. They want to adopt new rolls, as they become players of the same economic process by offering themselves as a city/product or city/firm. Cities assume challenges of the adaptations to the technological changes and the evolution of the productive systems. All this changes are inducing simultaneously a transformation process of the commercial activity with a strong impact on the territory. The aim of this paper is establishing an approach to the spatial dynamic of the new ways of distribution. To do so, we study the location of department stores and malls in the Metropolitan Areas of Barcelona and Madrid.

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I. METHODOLOGY

The aim of this paper (that is involved into a big line of research) is establish an empirical approach to the spatial dynamic of the new ways of distribution. We are going to study the Metropolitan Areas of Barcelona and Madrid and the location of their hypermarkets and commercial areas.

For Barcelona we have adopted as spatial delimitation the 27 municipalities (table 1) that appear in the Regional Plan of 1953 (it's the most used delimitation in the majority of papers). This 27 municipalities belong to 4 catalan regions: "Barcelonés" (5 municipalities), "Baix Llobregat" (16 municipalities), "Maresme" (2 municipalities) and "Vallés Occidental" (4 municipalities). These 27 municipalities represent the 48'16 per cent of the catalan population and the 1'49 per cent of the territory. They constitute, as we have said, the Metropolitan Area of Barcelona (MAB) or central part of the Metropolitan Region (map 1).

Table 1
Municipalities of Barcelona's Metropolitan Area

1.Badalona	10.Montcada i Reixac.	19.Sant Cugat Vall.
2.Barcelona	11.Montgat	20.Sant Feliu Llob.
3.Castelldefels	12.Pallejà	21.Sant Joan Despí
4.Cerdanyola	13.Papiol	22.Sant Just
5.Cornellà	14.Prat de Llob	23.Sant Vicenç
6.Esplugues	15.Ripollet	24.Sta.Coloma Cervelló
7.Gavà	16.Sant Adrià	25.Sta.Coloma Gramanet
8.Hospitalet Llob.	17.Sant Boi	26.Tiana
9.Molins de Rei	18.Sant Climent	27.Viladecans

For the Metropolitan Area of Madrid (MAM) we have adopted the limitation of the 24 municipalities (table 2) that appear in the Autonomic Community of Madrid. Those 24 municipalities bring together the 90,73 per cent of the population of the Autonomic Community of Madrid (CAM¹) and the 20,57 per cent of the territory. They make up as we have said the Metropolitan Area of Madrid (map 2).

Table 2
Municipalities of Madrid's Metropolitan Area

1. Alcalá de Henares	10. Madrid	19. San Sebastian R.
2. Alcobendas	11. Majadahonda	20. Torrejón Ardoz
3. Alcorcón	12. Móstoles	21. Torreloaños
4. Boadilla del Monte	13. Paracuellos del J.	22. Tres Cantos
5. Coslada	14. Parla	23. Valdemoro
6. Fuenlabrada	15. Pinto	24. Villaviciosa Odón
7. Getafe	16. Pozuelo de Alarcón	
8. Humanes de Madrid	17. Rozas de M.	
9. Leganés	18. San Fernando de H.	

II. Characteristics of Metropolitan Areas: Surface size, population, rent's level and unemployment rate.

At first we have to say that we can not compare both Metropolitan Areas because they are quite different, as we will see. If we want to compare them we have to take the first Region of the Area of Barcelona.

¹ Comunidad Autónoma de Madrid

Population

The majority of municipalities that form the Metropolitan Area of Barcelona are medium-small size, nine of twenty-seven (33,3 per cent) have more than 50.000 inhabitants and only four of them have more than 100.000. Barcelona, with 1.630.867 million of inhabitants, is the biggest municipality. We can say that is the nucleus of the rest of the cities.

Even thought of this high population's density, only five municipalities exceed 10.000 inhabitants per square meter and they correspond to the old dormitory towns. In that cities concentrated majority of immigrants: Hospitalet, Sta. Coloma of Gramanet, Barcelona, Cornellà and finally Esplugues (Figure 1).

If we look at the Metropolitan Area of Madrid we can find that a 54,16 per cent have more of 50.000 inhabitants and only seven of the municipalities are bigger than 100.000. Madrid with 2.866.850 inhabitants is the biggest municipality (it is has as much inhabitants as the MAB), we can say that it is the concentrated nucleus of the rest of the villages.

Even this high rate of population only one municipality has more than 5.000 inhabitants per square kilometre this is Coslada. Five municipalities are between 4.000 and 5.000 (figure 1).

Surface area

Metropolitan Area of Madrid is three and a half times the surface of Barcelona's Area. Just the city of Madrid (606 km²) is bigger than the MAB (475 km²). The rest of the municipalities are:

	Number of municipalities MAM	Number of municipalities MAB
0-15 km ²	1	17
16-25 km ²	3	5
26-50 km ²	12	1
51-100 km ²	7	1
+ 100 km ²	1	0

Unemployment

Actually unemployment of MAB² represents proximally 50 per cent (49.51 per cent) of the total of Catalonia. The municipality with more unemployment respect the MAB is Barcelona (50.70 per cent), the rest of municipalities of the Area don't reach the 10 per cent. Only two of them, Badalona and Hospitalet exceed the 5 per cent, others ones are down of 4 per cent of unemployment respect to the Metropolitan Area. Nevertheless when you look in relation to the total of Catalonia, Barcelona decrease its percentage (25.10 per cent) and nor of the twenty-six remaining cities surpass the 5 per cent of unemployment rate, this shows the lack of equilibrium that exist in the Autonomy Community of Catalonia.

Madrid, as it was Barcelona, is the city that has the highest rate (57.06 per cent) of unemployment in the Metropolitan Area of Madrid. We were expecting that result because Madrid is also the biggest city of the MAM with a big difference from the rest of the Area. Eleven municipalities have a rate between 1 and 6 per cent. The rest of the cities have a rate under 1 per cent respect the total of the MAM. Paracuello de Jarama and Torreldones are the municipalities that have less unemployment.

Rent's level

Population stratum of the Metropolitan Area of Barcelona with high levels of rent are in the areas that become residential zones for groups of medium-high rent. The population interval with small levels of rent are in the popular residential zones, municipalities that receive migration like Sant Adrià Besos, Sta. Coloma of Gramanet, Cornellà and Badalona.

The municipalities of the MAM with a *high rent's* level are first of all Madrid with more than 4 billions of pesetas. After Madrid highlights six municipalities with more than 200 millions of pesetas those are Móstoles, Leganés, Fuenlabrada, Alcalá de Henares, Getafe and Alcorcón. The *low rent's* level towns with less than 30 millions of pesetas are Boadilla del Monte, Villaviciosa Odón, Humanes de Madrid, Torreldones and Paracuellos del Jarama.

² Metropolitan Area of Barcelona

III. EVOLUTION OF COMMERCIAL DISTRIBUTION

III.1 Ways of commercial distribution

To define the types of establishment we have used the squared meters of selling area, in order of the criteria defined in the Distribution Anuarium³:

Traditional stores:	less than 100 m ²
Self-service:	100 - 599 m ²
Supermarkets:	600 - 1.499 m ²
Hypermarkets:	1.500 - 4.999 m ²
Commercial Areas:	more than 5.000 m ²

The new forms of distribution, the Malls (big commercials intricate formed by small shops with restaurants, cinemas and place to practice sport) have normally included a hypermarket or a commercial area. But not all the malls have a commercial area or hypermarket as a hooking for his throwing, there are another ones that are only groups of shops in a single building, with an offer of restaurants etc, like *Maremagnum* and *Pedralbes Centre* located in Barcelona.

III.2 Evolution of Commercial Areas

Since 1973 until now it has opened nine commercial areas in the Metropolitan Area of Barcelona and from 1982 it has been opened in the MAM twenty-nine (figure 2).

As we will see in the table below those commercial areas are located in the case of the MAB in municipalities very close to Barcelona. All of them are bigger than 9.000 m² of selling area and three of them are located in Barcelona. The biggest one is the Commercial centre located in S.Cugat Del Vallés inaugurate in 1996.

As always it has said that Catalonia is a region traditionally compose of small and familiar commercial establishments, these ones also have evolved and they are opening new commercial sites of big capacity, for example Bon Preu S.A located in Barcelona downtown. This store become being a familiar shop, for that reason we have included this store in here, now it has a commercial site of 4.334 m² of selling area that was inaugurate

³ Anuario de la Distribución

in 1990 and it has a project of opening two hypermarkets one of them located in Sant Joan Despí (2.400 m² selling area each one). Since the beginning of 1996 the net of big commercial areas called Esclat and the supermarkets Bon Preu, all of them belonged to the firm Bon Preu have for the clients an electronic service for buying through Internet.

Events like those are appearing more often in Catalonia competing with the big distribution brands.

In the Metropolitan Area of Madrid we can see that more than half of the municipalities has a commercial area (13 from 24 towns). Madrid is the city that has more; it has eleven commercial areas. The biggest one is an Alcampo, it is located in Alcorcón and was inaugurated in 1994. There have been inaugurated in 1998 three new commercial areas, those are Alcampo in Fuenlabrada, Continente in Madrid and Eroski also in Madrid.

Table 3

Firms that operated in the Metropolitan Areas of Madrid and Barcelona

Firm	City (Area)
ALCAMPO	<ul style="list-style-type: none"> • S.Boi Llob. (MAB) • Madrid (MAM) 4 stores • Getafe (MAM) • Leganés (MAM) • Alcalá Henares (MAM) • Alcorcón (MAM) • Torrejón Ardoz (MAM) • Fuenlabrada (MAM)
CAPRABO	<ul style="list-style-type: none"> • Gavà (MAB)
BON PREU	<ul style="list-style-type: none"> • Barcelona (MAB)⁴
CONTINENTE	<ul style="list-style-type: none"> • Badalona (MAB) • Barcelona (MAB) • Alcobendas (MAM) • Móstoles (MAM) • Madrid (MAM) 2 stores

⁴ It has 4.334 m²

Firm	City (Area)
	<ul style="list-style-type: none"> • Parla (MAM) • Getafe (MAM)
PRYCA	<ul style="list-style-type: none"> • Prat Llob. (MAB) • S.Adrià B. (MAB) • S.Cugat V.(MAB) • Majadahonda (MAM) • S.Fernando H. (MAM) • Madrid (MAM) 2 stores • Pozuelo Alarcón (MAM) • Alcobendas (MAM)
EROSKI	<ul style="list-style-type: none"> • Madrid (MAM) • Alcobendas (MAM)
ALCOSTO	<ul style="list-style-type: none"> • Fuenlabrada (MAM)
HIPERCOR	<ul style="list-style-type: none"> • Barcelona (MAB) • Alcorcón (MAM) • Pozuelo Alarcón (MAM) • Madrid (MAM) 2 stores

III.3 Evolution of Hypermarkets

The number of hypermarkets vary there are double number in the Metropolitan Area of Madrid than in Barcelona. As it happen with the commercial areas Madrid has half of the hypermarkets of the MAM (23 stores). In that case Móstoles is the second city with six stores. If we do a rate between the population and the number of hypermarkets Getafe is the one that has the highest rate, 143.153 people/store. The lowest rate is Torrejón de Ardoz with 29.607 people/store.

Table 4

Number of hypermarkets in the Metropolitan Areas of Madrid and Barcelona

MAM	Hyperm	MAB	Hyperm
Alcalá de Henares	2	Badalona	1
Alcobendas	2	Barcelona	12
Alcorcón	2	Castelldefels	1
Coslada	1	Cerdanyola	1
Fuenlabrada	5	Hospitalet Llob.	2
Getafe	1	Molins	1
Leganés	3	Prat de Llob.	1
Madrid	23	Sant Boi Llob.	1
Majadahonda	1	Sant Cugat Vallés	3
Móstoles	6	Sant Feliu Llob.	1
Parla	1	Sant Joan Despí	1
Pozuelo Alarcón	1	Sta. Coloma Gr.	1
Rozas de M.	2	Viladecans	1
S.Fernando de H.	1	Total MAB	27
S.Sebastian Reyes	1		
Torrejón Ardoz	3		
Total MAM	55		

In the Metropolitan Area of Barcelona there are only 27 hypermarkets and half of them are located in Barcelona. If we also do the rate between population and the number of hypermarkets for each municipality we have that Badalona has the highest rate with 210.987 people/store. This rate is higher than the maximum rate of MAM. If we look for the lowest rate this is located in S.Cugat del Vallés (15.737 people/store). As we see in the MAB the rates are so dissimilar because the lowest is almost half of the rate of the lowest one in the Metropolitan Area of Madrid but the higher is superior.

IV. Final Considerations

As we have seen we can not do it a comparative analysis of both Metropolitan Areas because of as I said they do not have the same superficies and the same population. It will be so interesting to compare both but to do that we have to extend the Metropolitan Area of Barcelona to what we called the first or the second region.

For what we could see from the study of them separately in the Metropolitan Area of Barcelona there is less number of commercial areas but they started first (in 1973). There are only 13 municipalities that have at least one hypermarket, if we

separate the city of Barcelona that is the one that has more. The firm Caprabo is the one that has more presence in those towns.

For the Metropolitan Area of Madrid we can say that has more commercial areas but the oldest one is from 1982. Almost half of the commercial areas are concentrated in Madrid but as we have seen it has as much population as the all-Metropolitan Area of Barcelona. The firm that has more commercial areas in the MAM is Alcampo. There are fifteen municipalities that have at least one hypermarket (we do not count Madrid) and Alcosto is the firm that has more presence in those towns.

REFERENCES

Aragones, R., *Estrategias de la "gran" distribución. La loca carrera por el control de un negocio en expansión.* in *Distribución y Consumo* año 2, nº6, oct-nov 1992.

Anuario de la Distribución, 1997. Ed. Distribución Anual S.L, Madrid.

Atlas Comercial de España, V.I, V.II, V.III, V.V. 1977.

Cancelo, A., *Reflexiones sobre el comercio moderno en la economía actual* in *Estudios Empresariales*, nº85, 1994/2 pp. 12-15.

Carreras, C., *Los nuevos espacios del consumo en Barcelona* in *Estudios Geográficos*, vol.XXIX, nº2 july-setembre1995, pp. 69-77.

Casares, J. y Rebollo, A., *Innovación y adaptación en distribución comercial. Ideas nuevas en "odres" viejos.* in *Distribución y Consumo*, año 6, nº27, April-may 1996, pp.7-23.

Costa, A. y Goma, C., *El Comerç a Catalunya: principals trets estructurals i resultats econòmics* in *Revista Nota d'Economía*, nº45, Generalitat de Catalunya, 1993.

Estadística Comarcal i Municipal 1995-96, Generalitat de Catalunya. Institut Estadística de Catalunya.

Insa Ciriza, Raquel, *New forms of distribution and regional development. The Metropolitan Area of Barcelona*, 1997.

Insa Ciriza, Raquel, *Application of Fuzzy logic in the location of Big Commercial Areas.* Dpto. Política i Estructura Económica i Mundial. Working Paper 1197. November 1997.

Lawrence R. Klein Institute, *"Anuario Comercial de España 1998"*. Caixa d'Estalvis i Pensions de Barcelona ("La Caixa") Ed. 1998.

Merry del Val, A., *La nueva distribución* en Dirección y Progreso nº137, 1994, pp. 62-64.

Mugica, J.M., *La nueva organización del mercado* en Distribución y Consumo, año 2, nº7, dec.92-january 93, pp.13-30.

Tarragó, M., *Geografía comercial de España. Cataluña* in Distribución y Consumo, December 1994/january 1995, pp. 32-54.

Tello, R., *Barcelona post-olímpica: de ciudad industrial a escenario de consumo*, in Estudios Geográficos, vol.LIV nº212, july-setembre 1993, p.517.

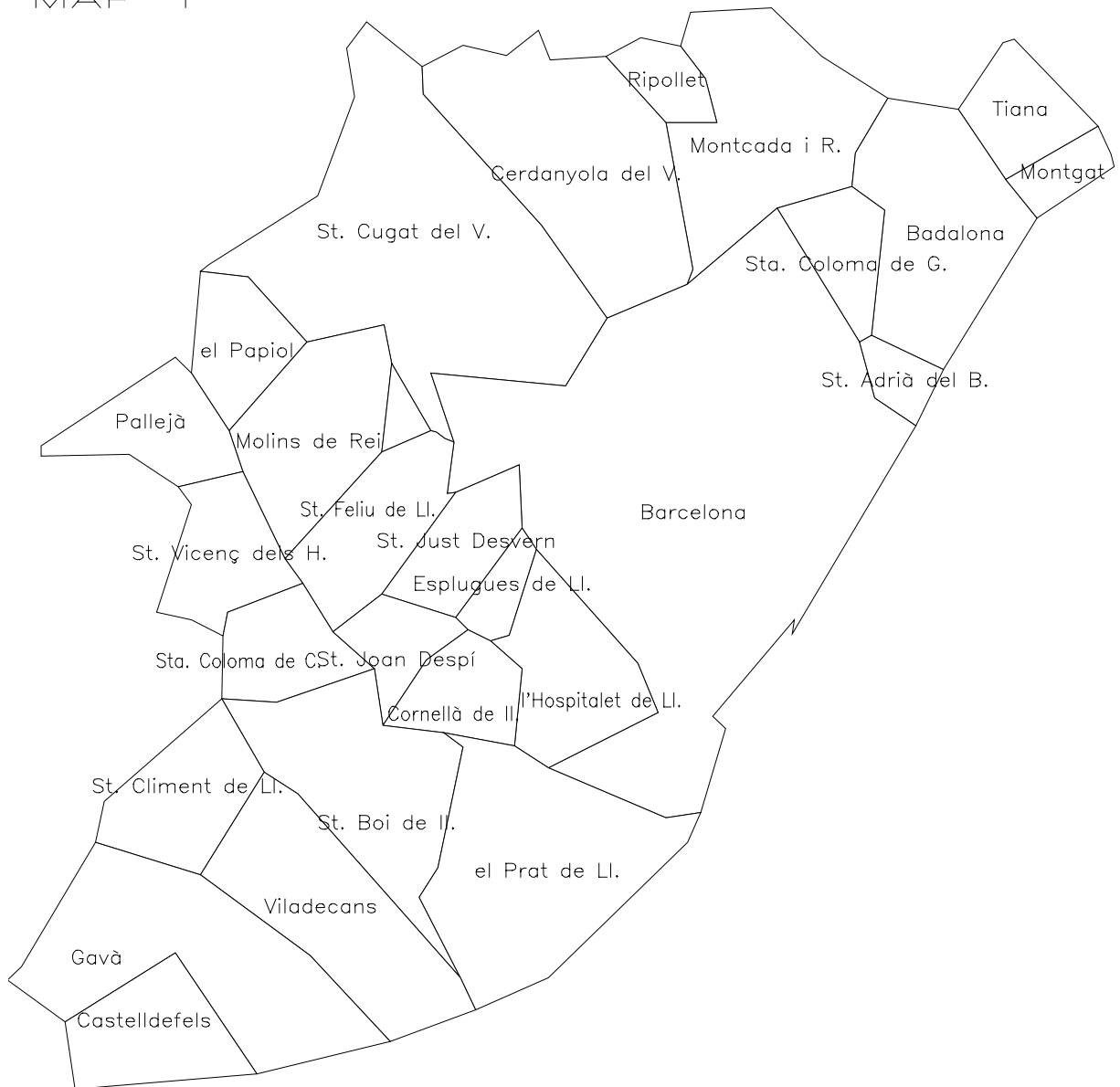
Serra, T. y Puelles, J.A., *Las marcas de distribución en el mercado de alimentación*, in Distribución y Consumo año 4, nº14, February-march 1994, pp. 97-105.

ANNEX

MAP 1

METROPOLITAN AREA OF BARCELONA

MAP 1



MAP 2

METROPOLITAN AREA OF MADRID



FIGURE 1
 DENSITY OF POPULATION IN THE METROPOLITAN AREAS OF MADRID AND BARCELONA

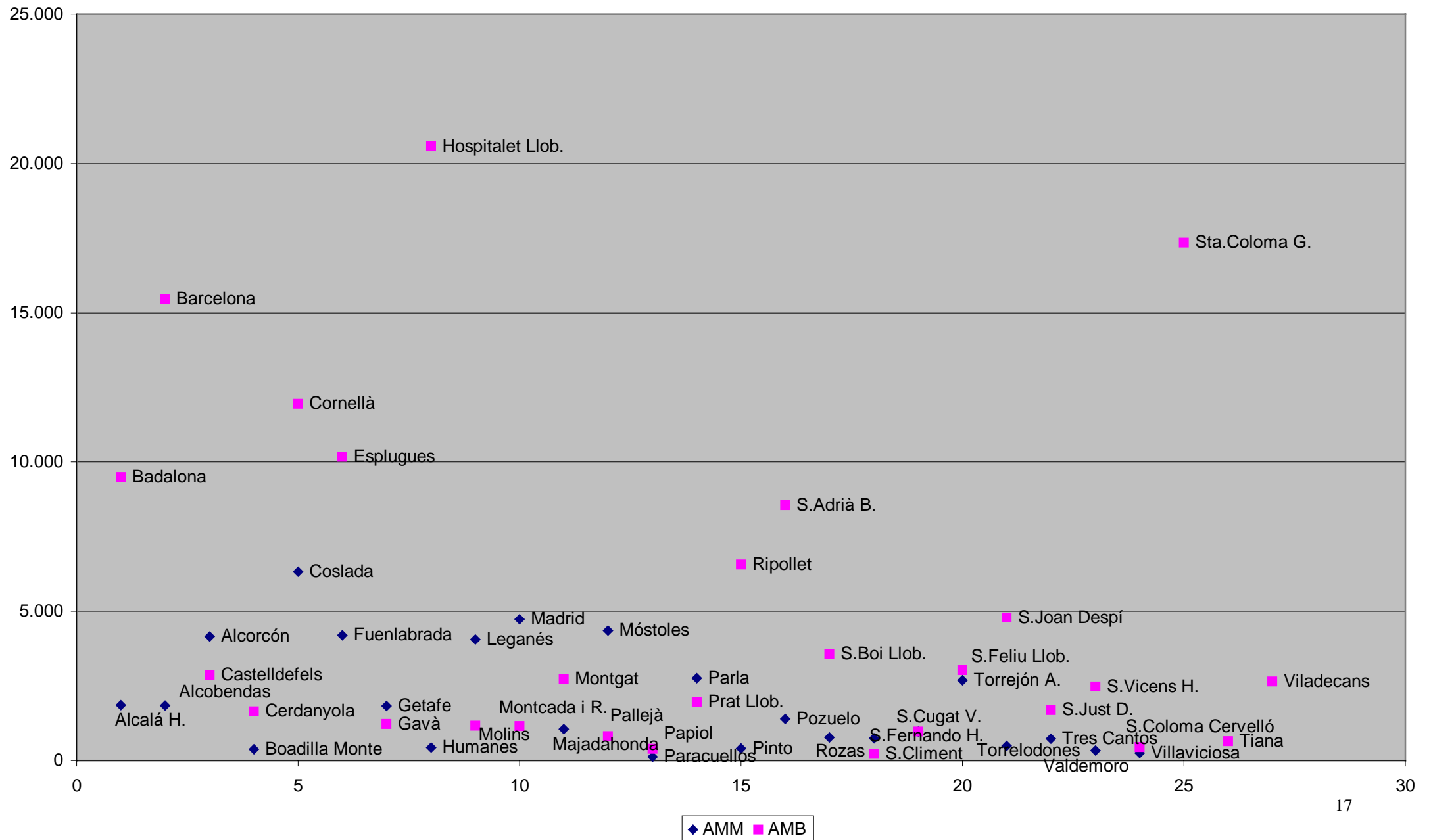


Figure 2
LOCATION OF COMMERCIAL AREAS

