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Conference Paper

Spatial behaviour of the new forms of distribution: An analysis of the metropolitan areas of Barcelona and Madrid

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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

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 (CAM\(^1\)) 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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Humanes de Madrid</td>
<td>17. Rozas de M.</td>
<td></td>
</tr>
</tbody>
</table>

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 km$^2$) is bigger than the MAB (475 km$^2$). The rest of the municipalities are:

<table>
<thead>
<tr>
<th>Surface Area</th>
<th>Number of municipalities MAM</th>
<th>Number of municipalities MAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 km$^2$</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>16-25 km$^2$</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>26-50 km$^2$</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>51-100 km$^2$</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>+ 100 km$^2$</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
**Unemployment**

Actually unemployment of MAB\(^2\) 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 Torrelodones are the municipalities that have less unemployment.

**Rent’s level**

Population stratums 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, Torrelodones and Paracuellos del Jarama.

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\(^2\) 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 m²
- **Self-service:** 100 - 599 m²
- **Supermarkets:** 600 - 1.499 m²
- **Hypermarkets:** 1.500 - 4.999 m²
- **Commercial Areas:** more than 5.000 m²

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 *Maremagusm* 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

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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

<table>
<thead>
<tr>
<th>Firm</th>
<th>City (Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCAMPO</td>
<td>• S.Boi Llob. (MAB)</td>
</tr>
<tr>
<td></td>
<td>• Madrid (MAM) 4 stores</td>
</tr>
<tr>
<td></td>
<td>• Getafe (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Leganés (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Alcalá Henares (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Alcorcón (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Torrejón Ardoz (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Fuenlabrada (MAM)</td>
</tr>
<tr>
<td>CAPRABO</td>
<td>• Gavà (MAB)</td>
</tr>
<tr>
<td>BON PREU</td>
<td>• Barcelona (MAB)⁴</td>
</tr>
<tr>
<td>CONTINENTE</td>
<td>• Badalona (MAB)</td>
</tr>
<tr>
<td></td>
<td>• Barcelona (MAB)</td>
</tr>
<tr>
<td></td>
<td>• Alcobendas (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Móstoles (MAM)</td>
</tr>
<tr>
<td></td>
<td>• Madrid (MAM) 2 stores</td>
</tr>
</tbody>
</table>

⁴ It has 4,334 m²
### 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>
<thead>
<tr>
<th>MAM</th>
<th>Hyperm</th>
<th>MAB</th>
<th>Hyperm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcalá de Henares</td>
<td>2</td>
<td>Badalona</td>
<td>1</td>
</tr>
<tr>
<td>Alcobendas</td>
<td>2</td>
<td>Barcelona</td>
<td>12</td>
</tr>
<tr>
<td>Alcorcón</td>
<td>2</td>
<td>Castelldefels</td>
<td>1</td>
</tr>
<tr>
<td>Coslada</td>
<td>1</td>
<td>Cerdanyola</td>
<td>1</td>
</tr>
<tr>
<td>Fuenlabrada</td>
<td>5</td>
<td>Hospital Llob.</td>
<td>2</td>
</tr>
<tr>
<td>Getafe</td>
<td>1</td>
<td>Molins</td>
<td>1</td>
</tr>
<tr>
<td>Leganés</td>
<td>3</td>
<td>Prat de Llob.</td>
<td>1</td>
</tr>
<tr>
<td>Madrid</td>
<td>23</td>
<td>Sant Boi Llob.</td>
<td>1</td>
</tr>
<tr>
<td>Majadahonda</td>
<td>1</td>
<td>Sant Cugat Vallés</td>
<td>3</td>
</tr>
<tr>
<td>Móstoles</td>
<td>6</td>
<td>Sant Feliu Llob.</td>
<td>1</td>
</tr>
<tr>
<td>Parla</td>
<td>1</td>
<td>Sant Joan Despí</td>
<td>1</td>
</tr>
<tr>
<td>Pozuelo Alarcón</td>
<td>1</td>
<td>Sta. Coloma Gr.</td>
<td>1</td>
</tr>
<tr>
<td>Rozas de M.</td>
<td>2</td>
<td>Viladecans</td>
<td>1</td>
</tr>
<tr>
<td>S.Fernando de H.</td>
<td>1</td>
<td>Total MAB</td>
<td>27</td>
</tr>
<tr>
<td>S.Sebastian Reyes</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torrejón Ardoz</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total MAM</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
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MAP 1
METROPOLITAN AREA OF BARCELONA
MAP 2
METROPOLITAN AREA OF MADRID
FIGURE 1
DENSITY OF POPULATION IN THE METROPOLITAN AREAS OF MADRID AND BARCELONA

 Alonso H.
 Alcalá H.
 Alcobendas
 Boadilla Monte
 Cornellà
 Esplugues
 Hospitalet Llob.
 Hospital Llob.
 Llob. Bar.
 Majadahonda
 Molins Humanes
 Montcada i R.
 Montgat
 Montcada i R.
 Montcada i R.
 Noli
 Pallejà
 Paracuellos
 Papiol
 Pinto
 Pozuelo
 Prat Llob.
 Parla
 Palafrugell
 Villaviciosa
 Majadahonda

 0 5 10 15 20 25 30
 0 5.000 10.000 15.000 20.000 25.000

 AMM AMB
Figure 2
LOCATION OF COMMERCIAL AREAS

Madrid

Alcobendas

Barcelona

Badalona

Alcalá de H.

Gavà

Leganés

Majadahonda

Parla

Prat Llob.

S.Boi Llob.

S.Cugat V.

S.Adrià B.

S.Fernando H.

Torrejón Ardoz

Móstoles

Pozuelo Alarcón

Getafe

Fuenlabrada