

MAPPING MARSHALLIAN INDUSTRIAL DISTRICTS IN SPAIN¹

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ABSTRACT

A Marshallian Industrial District (MID) is a socio-territorial entity which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area (Becattini 1990). The aim of this research is to identify potential Marshallian Industrial Districts in Spain using the Italian methodology in two stages designed by the ISTAT (1996 and 1997). The first stage is the identification of Local Labour Markets using inter-municipality commuting data and an iterative algorithm of aggregation in five steps. In the second stage we apply four nested specialization coefficients on occupation data to identify manufacturing local systems of small and medium enterprises with a strong specialization in some manufacturing sector. In this step some changes are introduced in order to avoid the bias caused by one of the coefficients and filtering non-relevant concentrations.

Despite Spain and Italy show closed industrial and urban structures, it is the first time that this methodology can be applied to Spain since local commuting and local data on firm dimension were not previously available. Results show 237 specialized local systems with characteristics of Marshallian Industrial Districts. They contain 47% of the Spanish manufacture where 15% is in the MID's more specialized industry. Territorial distribution of the Spanish MID's shows a shape of “#” mainly distributed in corridors across the Centre and the East of Spain and forming specialized clusters. Results are also compared with the map of MID's for Italy (Sforzi-Istat 1996, 1997 and 2005) and another adaptation to the United Kingdom (De Propris 2005).

Although mapping MID's is the main objective of this paper, they are intermediate actors and tools for the design and implementation of a new strategy of industrial policy for Spain where small and medium enterprises and territory become important actors for the growth of productivity. However, although MID's are a correct interpretative paradigm for a share of the Spanish industrial framework, empirical implementation of policies seems to be more difficult given that institutional mechanisms are adapted to affect firms but no socioeconomic and territorial entities. A brief discussion is provided about advances on this issue.

KEYWORDS

Marshallian industrial districts; small and medium enterprises; industrial policy.

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1. INTRODUCTION

In 1979 was published in the *Rivista di Economia e Politica Industriale* an article of Giacomo Becattini that is considered the beginning of a new line of research on the process of industrialization. It is based on the early observation of Alfred Marshall (1920) about the existence of a feasible productive form which is alternative to the large firms vertically integrated, and originally observed by Marshall in the “industrial districts” of some English industrial cities. In these industrial districts, the concentration of small and medium sized firms, specialized in the several phases of a productive process, generates increasing returns by means of economies that are external to the firm but internal to the industrial district.

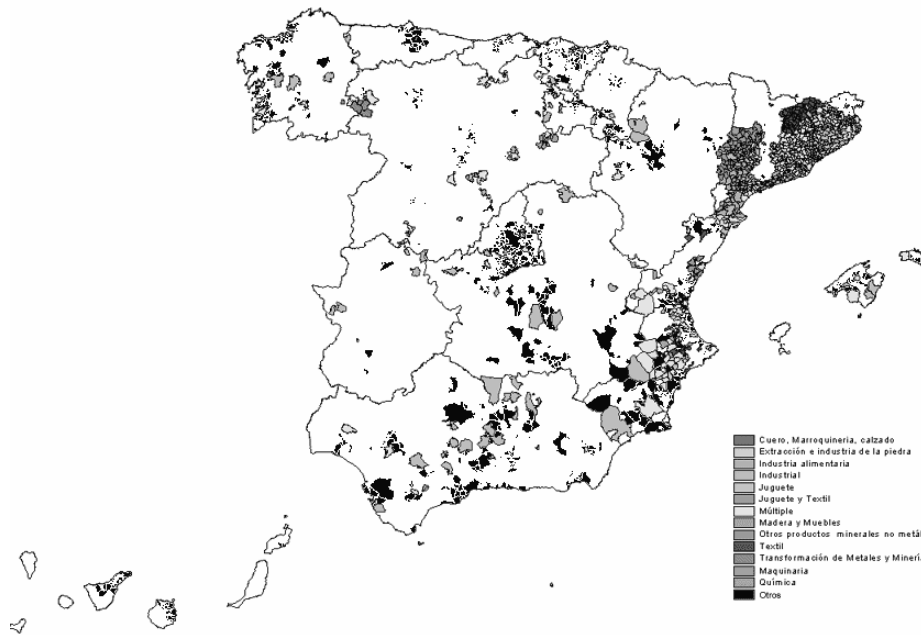
After some decades where the sector was considered the relevant unit of analysis, Becattini (1979) remarked that “the economist who embarks on an inquiry into industrial activity at the level neither of the system as a whole nor of the single productive process, is faced, even before he begins his work, by the problem of identifying an intermediate entity capable of presenting an object of meaningful study”². For some policy issues, this unit is the “industrial district”, defined by Becattini (1991) as a “socio-territorial entity which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area. In the district, unlike in other environments, such as the manufacturing towns, community and firms tend to merge”. Sforzi (1987 and 1990) provided the first rigorous attempts to find criteria to identify industrial districts, revised and updated by the Italian Institute of Statistics (ISTAT) in 1996, 1997 and 2005. The operational approach by Sforzi provides objective criteria for describing and comparing the characteristics of different local productive systems.

The translation of the 1979s Becattini’s article opening the first number of the *Revista Econòmica de Catalunya (Catalonian Economic Review)* in 1986 marked the official beginning of the modern theory of the Marshallian Industrial district in Spain. Since then, several studies have tried to identify industrial districts in Spain and its importance as a source of advantages in the production. At regional level, there are several researches for the Comunidad Valenciana (Ybarra 1991; Tomás Carpi 1997; Camisón and Molina 1998; Soler 2000; Giner and Santa María 2002); Catalonia (Costa 1988; Trullén 2002a and 2002b); Balearic Islands (Bibiloni and Pons 2001); Madrid (Celada,1999); and Castilla-León (Juste 2001). Other studies focused on the identification of specialized local systems with characteristics very similar to the industrial districts: Caravaca et al. (2000) for Andalusia, Climent (2000) for La Rioja, Larrea (2000) for the Basque Country and Hernández et al. (2005) for Catalonia. At country level, we find the studies of Vázquez Barquero (1987), Costa (1992), MICYT (1993) and Santa María et al. (2004).

Nevertheless, none of these works were comparable with the different procedures of identification of industrial districts used in Italy, especially with the Sforzi-ISTAT one (1996, 1997 and 2005). Even if the urban structure and the Spanish and Italian industrial system showed very similar trends, this methodology had not been applied to Spain because of the lack of commuting data (travel to work) between the municipalities and the lack of a territorially disaggregated industrial census. This application is now possible thanks to the existence of intercity commuting data in the 2001 Population Census and the use of data of the DIRCE (Central Directory of Enterprises), that allows approximating the dimension of the industrial establishments by sector and municipality.

The objective of the present research is the identification of the Local Labour Systems (LLS) in Spain and potential Industrial Districts (ID) using the methodology developed by the ISTAT (1995 and 1996). This identification produces the first map of Spanish Marshallian industrial districts which is already being used as one of the tools for the new industrial policy in Spain. The map, moreover, allows comparing with the results for the other countries where some version of this methodology has been applied, at this moment Italy (ISTAT 1995, 1996 and 2005) and United Kingdom (De Propriis 2005), contributing to enhance the evidence on the quantitative dimension of the Marshallian industrial districts.

² The original article has been recently reviewed and published in Becattini (2004).



Source: Our elaboration from Costa (1988 y 1992), Ybarra (1991), MICYT (1993), Camisón and Molina (1998), Celada (1999), Soler (2000), Bibiloni and Pons (2001), Juste (2001), Trullén (2002a), Santa María et al. (2004), y Hernández et al. (2005).

Figure 1. Industrial districts and local production systems in Spain (1988-2005). A synthesis of several researches

2. METHODOLOGY

2.1 Methodologies for the identification of Marshallian industrial districts in Italy

Several methodologies has been employed in Italy to identify Marshallian industrial districts getting different results: (1) 199 districts identified by the ISTAT (1996) and the 156 in the revision of the methodology and data for 2005; (2) 160 districts identified by the regions (IPI 2005); (3) 65 districts by *Il Sole 24 Ore* (1992); (4) 100 districts by *Il libro della piccola impresa* (Fondazione G. Brodolini 1995); (5) 84 districts by Cnel/Ceris-Cnr (1997); (6) 110 by Club Distretti (2005); (7) 52 districts by Censis (2001); (8) the Southern districts of the Made in Italy (Viesti 2000); (9) 199 districts and typologies of the multivariate methodology by Cannari and Signorini (2000); (10) 223 districts by Fondazione Edison (2004) adding 24 large firm districts to the original ISTAT districts; (11) and 148 districts by Iuzzolino (2003).

2.2 The Sforzi-Istat Methodology

All these procedures and variations were valued in the previous phase of this research. We finally decided to use the quantitative methodology applied for the ISTAT (1996 and 1997)³. The main reasons are: (1) the dimension of the country (Spain) suggests the use of a quantitative methodology in the initial stages of the process; (2) it uses the local labour market (local labour systems / travel to work areas) as the base for the territorial unit of analysis; (3) the methodology is simple, transparent and easy to apply, allowing for

³ It is noticed that the ISTAT's note of 2005 does not describe all the changes incorporated in the methodology. The detailed methodology will be explained in a new volume that the ISTAT is preparing about the LLM and industrial districts in Italy. The application of the reviewed methodology will produce some changes in the results provided in our application.

the control of the results in all the phases of the algorithm; (4) the possibility to compare with other countries (Italy, United Kingdom) and to extend it to other countries since data requirements are not extreme. However, the limitations of the methodology have been kept in mind (Sforzi and Lorenzini 2002; Boix and Galletto 2004 and 2006), so that it is necessary to underline that the map obtained supposes only a first quantitative approach to the industrial districts in Spain, which must be completed with further in depth qualitative investigations⁴.

The ISTAT's (1995 and 1996) methodology consists of two phases:

1. In the first phase, the **Local Labour Systems (LLS)**, which are the territorial unit of reference for the study of MIDs, are delimited (ISTAT 1997). The identification of the LLSs takes place through an algorithm that consists of five steps. The first one consists in the identification of municipalities candidate to concentrate jobs; in the second step, the municipalities that concentrate jobs are consolidated; in the third one, the local proto-systems are identified; in the fourth step, the Local Labour Systems are formed and, finally, a calibration of the confinements is carried out and it is assigned the name to the LLS⁵.

2. Once obtained the Local Labour Systems, a battery of nested coefficients of specialization is used for identifying those LLS showing characteristics of Marshallian industrial district (ISTAT 1996; Sforzi and Lorenzini 2002). This algorithm consists of four steps (Table 1):

- 2.1. In the first one, manufacturing local systems are identified.
- 2.2. In the second, the manufacturing local systems of small and medium enterprise (SME) are identified.
- 2.3. In the third, the more specialized industry in every manufacturing local system of SME is identified.
- 2.4. In the fourth, the manufacturing local systems of SME whose main industry is compound by SME are selected.

2.3 Modifications in the application to Spain

Nevertheless, in the Spanish case the straight application of the second coefficient (specialization of the system in SMEs) would introduce an important bias in the results. The problem derives from the fact that 598 of the 806 LLSs do not have any establishment of large enterprise. The few existing establishments of large enterprise tend to locate in the traditional zones of industrialization that are the same locations of the industrial districts. In this situation, the inclusion of few establishments greater than 250 employees is enough so that the LLS appears as not specialized in SME regarding the national average, despite the big share of the occupation of the LLS is in SME. To solve this drawback, maintaining the original orientation of the filter, we preferred to change the location coefficient (weighted by the local and national base) for a coefficient of specialization (weighted only by the local base). This coefficient informs about the percentage of employment in the LLS in establishments below 250 workers. If this percentage is above 50%, we conclude that it is a system of small and medium enterprise. In this way it is avoided the severe distortion that introduces to calculate the specialization after having filtered by dimension. In De Propriis (2005) the industry specialization is calculated before the TTWA firm dimension so that it can reduce the final number of industrial districts although it does not distorts the results of specialization.

A second modification is related to the composition of the industrial aggregates (sectors) utilized in the analysis. The DIRCE database uses two digits information while the ISTAT uses an approach to the national productive *filière* that requires three digits information. In our application NACE Rev 1.1 aggregates were used instead of the ISTAT's ad hoc *filière* (Table 2). This produces some slight differences in the definition of Machinery and equipment (NACE 22.3 and 27.5 where not included); Basic metals and fabricated metal products (27.7 was included); and Pulp, paper, publishing and printing (22.3 was included). Greater differences can be found in the definition of Products for the house (36.1

⁴ Boix and Galletto (2004 and 2006) introduced a revision of these limitations and their possible effects on the final results.

⁵ The Italian algorithm is based on the United Kingdom's Travel-To-Work areas (TTWA). A complete description of the Italian algorithm can be found in ISTAT (1997) and Boix and Galletto (2006).

furniture industry was not included) and Manufacturing furniture and manufacturing n.e.c (36.1 was included)⁶.

Finally, to avoid distortions derived from the small dimension of some local systems, it is required that the industrial district should have at least 250 employees in the more specialized industry; except for those micro-districts contiguous to another district with the same specialization⁷.

Table 1. Nested specialization coefficients

	ISTAT (1996 and 1997)	Boix and Galletto (2004)	De Propris (2005)
Step 1 ↓	$LQ_a = \left(\frac{W_{ma}}{W_a} / \frac{W_m}{W} \right) > 1$		
Step 2 ↓	$C_{250,a} = \left(\frac{W_{250,ma}}{W_{ma}} / \frac{W_{250,m}}{W_m} \right) > 0,5$	$C_{250,a} = \left(\frac{W_{250,ma}}{W_{ma}} \right) > 0,5$	$LQ_p = \max \left(\frac{W_{sa}}{W_{ma}} / \frac{W_s}{W_m} \right)$
Step 3 ↓	$LQ_p = \max \left(\frac{W_{sa}}{W_{ma}} / \frac{W_s}{W_m} \right)$		$C_{250,a} = \left(\frac{W_{250,ma}}{W_{ma}} / \frac{W_{250,m}}{W_m} \right) > 0,5$
Step 4	$I_p = \max \left(\frac{W_{250,pa}}{W_{pa}} \right) > 0,5$		

Where W = jobs (localized employment); m = manufacturing; a = local labour system; 250 = small and medium enterprises (less than 250 employees); s = sector; p = main specialization (“district-industry”).

Table 2. Manufacturing aggregates used in the Spanish adaptation. NACE Rev. 1.1.

NACE Rev 1.1	NACE Rev 1.1
Food products, beverages and tobacco (DA)	Basic metals (27)
15 Food products and beverages	27 Basic metals
16 Tobacco products	Mechanical industry (28+DK+DL)
Textiles and textile products (DB)	28 Fabricated metal products, except machinery and equipment
17 Textiles	29 Machinery and equipment n.e.c.
18 Wearing apparel; dressing and dyeing of fur	30 Office machinery and computers
Leather and leather products; Footwear (DC)	31 Electrical machinery and apparatus
19 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	32 Radio, television and communication equipment and apparatus
Products for the house (DD+DI)	33 Medical, precision and optical instruments, watches and clocks
20 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Transport equipment (DM)
26 Manufacture of other non-metallic mineral products	34 Motor vehicles, trailers and semi-trailers
Pulp, paper and paper products; publishing and printing (DE)	35 Other transport equipment
21 Pulp, paper and paper products	Manufacturing n.e.c. (DN)
22 Publishing, printing and reproduction of recorded media	36 Manufacture of furniture; manufacturing n.e.c.
Petrochemicals (DF+DG+DH)	37 Recycling
23 Coke, refined petroleum products and nuclear fuel	
24 Manufacture of chemicals and chemical products	
25 Manufacture of rubber and plastic products	

⁶ Recycling (37 NACE Rev. 1.1) was also included to form the total number of manufacturing workers. All these differences will affect mainly the comparability of the results between countries.

⁷ The criterion of 250 workers is inspired in the Eurostat’s criterion to define a large enterprise establishment. The exception of the contiguity (or extreme proximity) is introduced on the basis that the local labour system could not exactly coincide with the district and leave out a part of it in another local system. The filter allows discarding 33 local micro-systems.

3. THE MAP OF THE MARSHALLIAN INDUSTRIAL DISTRICTS IN SPAIN

3.1 General results

The application to Spain of the adapted methodology produced 806 local labour systems in the year 2001. 237 of them would show characteristics of Marshallian industrial district (Fig. 1). The industrial districts add up to 4,574,612 employees (30% of the Spanish employment) where 1,288,082 employees are in manufacturing (46.8% of the Spanish manufacturing). The “district-industry” (main specialization) located in these ID accounts for 410,700 employees (14.9% of the total manufacturing), 2.7% of the total employment in Spain and 31.9% of the manufacturing located in the industrial districts. Above 87.2% of the employment in the establishments of the “district-industry” is in small and medium enterprises.

3.2 Results by industry

The sectors with a greater number of industrial districts are: Textile and textile products (53 ID); Food products; beverages and tobacco (52 ID); Wood products; jewellery; toys (40 ID); Products for the house (37 ID); and Leather and footwear (30 ID). The sectors with a smaller number of industrial districts are: Transport equipment (7 ID); Chemicals; rubber and plastics (6 ID); Basic metals; fabricated metal products (5 ID); Pulp and paper, publishing and printing (4 ID); and Machinery and equipment (3 ID) (Table 3).

The sectors with a greater number of employees in the “industry-district” located in industrial districts are: Textile and textile products (85,151 employees); Leather and footwear (75,510 employees); Food products; beverages and tobacco (59,315 employees); Wood products; jewellery; toys (56,739 employees); Products for the house (53,530 employees); and Pulp and paper, publishing and printing (45,773 employees). The sectors with a smaller number of employees in the “industry-district” in industrial districts are: Chemicals; rubber and plastics (17,053 employees); Basic metals; fabricated metal products (8,731 employees); Transport equipment (6,217 employees); and Machinery and equipment (2,681 employees). Some industrial districts reach important proportions in comparison to the total employment of its sector in Spain. The most remarkable case is Leather and footwear, where 76.7% of the Spanish employment is concentrated in 30 ID (Table 3).

3.3 Results by regions

The industrial districts are distributed in fourteen autonomous regions (Comunidades Autónomas) drawing a figure in form of “#” with corridors that cross the centre and the east of Spain, and in many cases forming conglomerates of districts with the same specialization. The autonomous regions with a greater number of districts are Valencia (54 ID), Castilla-La Mancha (44 ID), Catalonia (35 ID) and Andalusia (30 ID). They account for 68.6% of the ID in Spain. With a much smaller number of districts we find Castilla y León (14 ID), Aragon (12 ID), Galicia (9 ID), La Rioja (9 ID), Murcia (7 ID), Navarre (7 ID), the Basque Country (5 ID), the Balearic Islands (4 ID), Extremadura (3 ID), Cantabria (2 ID) and Madrid (2 ID).

Regarding the number of employees of the “district-industry” in the ID, two regions stand out: Valencia (150,003 employees) and Catalonia (131,881 employees). Both account for 68.4% of the employment in ID in Spain. The average of employees of the “industry-district” on the total manufacturing employment in Spain is 14.9%. Above 46.8% of the employment in the Spanish manufacturing is located in the industrial districts.

3.4 The most important industrial districts

Ranking industrial districts according to the number of employees in the “industry-district” (main specialization), the 25 largest ID accounts for 85.8% of the employment in that specialization. The most important are Barcelona (Catalonia) in Pulp, paper, publishing and printing (43,494 employees), Elx (Valencia) in Leather and footwear (27,141 employees), Valencia (Valencia) in Wood products; etc. (21,468 employees), Sabadell (Catalonia) in Textile and textile products (17,632 employees), Castelló de

la Plana (Valencia) in Products for the house (16,391 employees), Elda (Valencia) in Leather and footwear (14,568 employees), Granollers (Catalonia) in Chemicals, rubber and plastics (12,525 employees), and Mataró (Catalonia) in Textile (11,670 employees).

The coefficients of specialization of the main specialization suggest several typologies of industrial districts. There are “hyperspecialized” districts whose coefficients of location point out a relative concentration between 5 and 17 points larger than the national average: Elx (16.84), Villena (Valencia) (14.68), Yecla (Murcia) (10.75), Onda (Valencia) (10.21), Lucena (Andalusia) (8.55), Castelló de la Plana (Valencia) (7.25), Vila-real (Valencia) (6.95), Ontinyent (Valencia) (6.48), Alcoi (Valencia) (5.33), and Igualada (Catalonia) (5.07). On the other hand, we find districts with eminent urban dynamics, where a greater productive differentiation predominates, and the more outstanding examples are Girona (Catalonia) (2.49), Valencia (2.45), Sabadell (2.21) and Barcelona (2.07). Strictly speaking, the last ones are not industrial districts but urban systems that contain some industrial district.

3.5 Comparing the Spanish Marshallian industrial districts with Italy and United Kingdom

Spain has a surface of 504,782 km² and 43,975,375 inhabitants in 17 autonomous communities. The density of population is 85 inhabitants/km². The 18% of the employed population work in the manufacturing sectors (2,750,080 employees out of the 15,267,762 total employees). Italy has a surface of 301,270 km² and 57,998,353 inhabitants in 20 regions. The density of population is 196 inhabitants/km². The 24.2% of the employed population works in the manufacturing sectors (5,086,733 employees out of 20,993,732 total employees). The United Kingdom has a surface of 244,820 km² and 59,657,000 inhabitants with a different territorial organization based on counties and regions. The density of population is 244 inhabitants/km².

The methodology adapted from the ISTAT (1996 and 1997) identifies in Spain 806 LLSs and 237 ID in the year 2001. The original ISTAT methodology identifies 199 ID in Italy for 1991, and its revision identifies 156 ID for 2001. The adaptation of De Propris identifies 47 ID in UK for 1997.

Spanish ID contain 1,288,082 employees in manufacturing (46.84% of the manufacturing of Spain) and 4,574,612 in all sectors (30% of the employment). Italian 199 ID in 1996 add up to 2,173,801 employees in manufacturing (44.7% of the Italian employment in manufacturing) and 4,437,000 in all sectors (32.2% of the employment); in 2001 they accounts for 156 ID, 1,928,602 employees in manufacturing (39.3%) and 4,929,721 in all sectors (25.4%)⁸. For the United Kingdom, IDs would amount to 2,102,000 employees in manufacturing (50% of total employment in manufacturing and 9% of total employment).

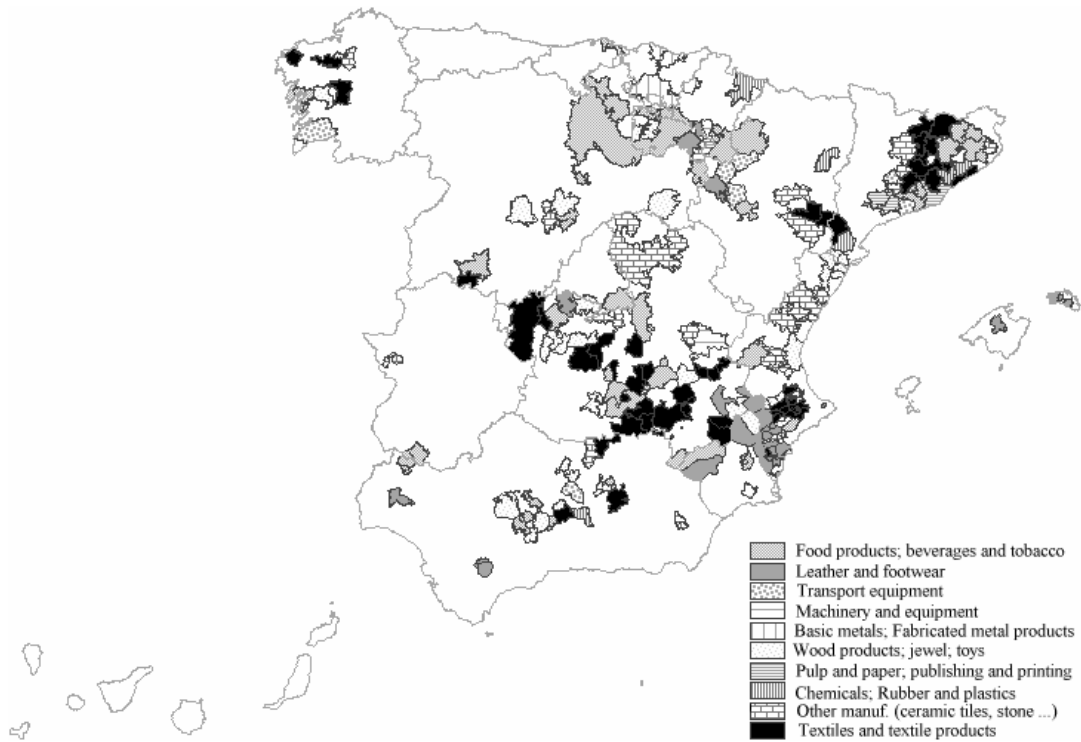
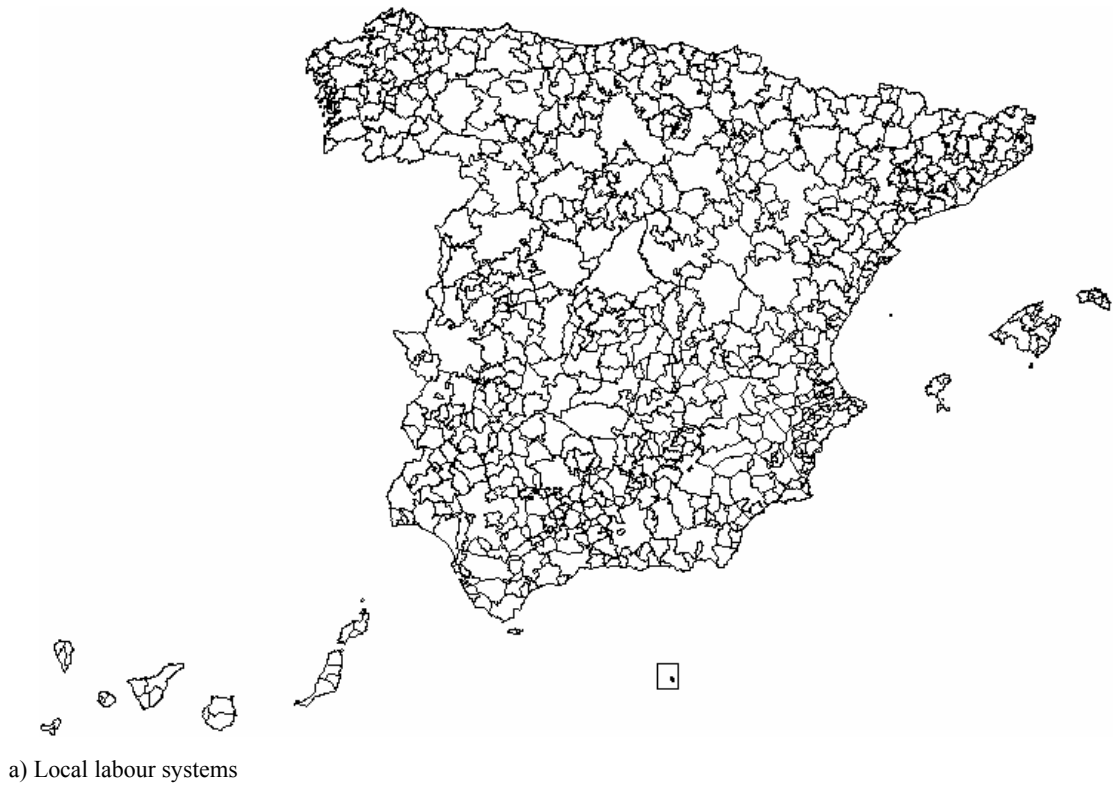
In Spain, the “industry-district” (main specialization) in the ID adds up to 410,700 employees that it is equal to 14.9% of the total manufacturing and 31.9% of the manufacturing employment in the ID in Spain. In Italy (using 1996s data) it accounts for 871,694 employees, the 20.1% of the total employment in manufacturing and the 40.1% of the manufacturing employment in the ID. In the United Kingdom, the main specialization adds up to 882,840 employees, 21% of the total manufacturing employment and 42% of the manufacturing employment in the IDs.

Regarding the role of the ID over total employment by sector, several typologies are observed in the comparison between Spain and Italy⁹: a) sectors where the share of the employment in ID and the number of ID are very similar in Spain and Italy: Textile and textile products; Products for the house; and Chemistry; rubber and plastics; b) sectors where the share of the employment of the ID is very similar in Spain and Italy but the number of ID is very different: Wood products; jewellery, etc.; c) sectors with a greater role of ID in Spain than in Italy: Leather and footwear; Food products; Pulp and paper; publishing and printing; Basic metals; fabricated metal products; d) sectors with a greater role of ID in Italy than in Spain: Machinery and equipment.

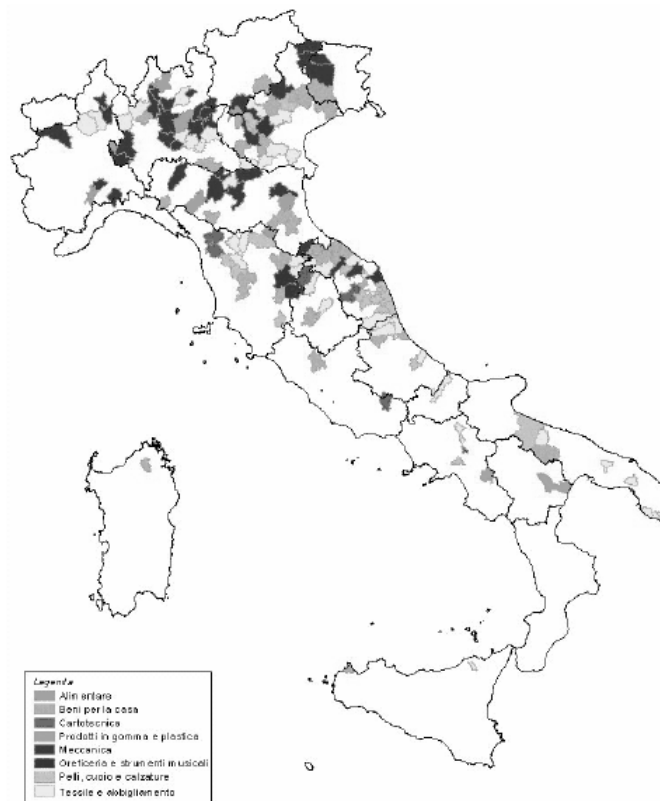
Regarding the territorial distribution in the three countries, IDs show strong territorial patterns in Spain and Italy (Figures 2 and 3). The main difference is that in Spain doesn't exist a duality North-South despite the largest concentration of districts in the East, Centre and North. In the UK, ID are scattered across the entire country with a significant presence in the Mid-lands and the North of England (De Propris, 2005).

⁸ Although we provide the results for Italy in 2001, results for Spain are more comparable with the results for Italy in 1996 due that they use a closer application of the ISTAT (1996 and 1997) methodology. In fact, Italian results for 1996 and 2001 are not directly comparable. Direct comparability between 2001 Spanish and Italian results will be provided in future papers.

⁹ Detailed data by sector for the UK where not provided in the article of De Propris (2005).



Source: Elaboration from Census and DIRCE (INE).
 Figure 2. Local labour systems and industrial districts in Spain. 2001.



Source: Elaboration from ISTAT (2005) and De Propris (2005).

Figure 3. Industrial districts in Italy (2001) and United Kingdom (1997)

Table 3. Industrial districts and employment by sector. Ordered from higher to lower number of employees in the main specialization. 2001

	N°. of Employment in the industrial districts “industry-district” in ID	Total Sector Employment in Spain	Total Manufacturing Employment in ID	% of “industry-district” In IDs out of sector’s national total	% of “industry-district” out of ID’s manufacturing	% of employment in SME in the “industry-district” in IDs	
Textile and textile products	53	85.151	270.519	221.984	31,5%	38,4%	91,9%
Leather and footwear	30	75.510	98.390	118.362	76,7%	63,8%	98,1%
Food products; Beverages and tobacco	52	59.315	378.990	181.599	15,7%	32,7%	78,1%
Wood products; Jewellery; Musical inst. & toys*	40	56.739	203.160	196.769	27,9%	28,8%	96,1%
Products for the house **	37	53.530	244.549	106.117	21,9%	50,4%	79,2%
Pulp and paper; Publishing and printing	4	45.773	231.849	305.314	19,7%	15,0%	89,2%
Chemicals; Rubber and plastics	6	17.053	274.963	62.169	6,2%	27,4%	69,3%
Basic metals; Fabricated metal products	5	8.731	77.930	69.344	11,2%	12,6%	62,1%
Transport equipment	7	6.217	280.835	21.773	2,21%	28,5%	100,0%
Machinery and equipment	3	2.681	684.836	4.651	0,4%	57,6%	67,7%
Other (recycling)	0	0	4.059	0	0,0%	0,0%	-
Total	237	410.700	2.750.080	1.288.082	14,93%	31,9%	87,2%

* For Italy, it does not include Furniture, which is included in Products for the house.

** For Italy, it includes Furniture.

Source: Elaboration from Census and DIRCE (INE).

Table 4. Comparison Spain (2001), Italy (1996) and United Kingdom (1997): number of industrial districts, manufacturing employment in the industrial districts and share of employment in the main specialization on total manufacturing employment in industrial districts

	No. of Industrial districts			Employment in the "industry-district" of the ID			Total Manufacturing Employment of the ID			% of "industry-district" out of ID's manufacturing employment			% of ID out of sector's national total		
	Spain	Italy	UK	Spain	Italy	UK	Spain	Italy	UK	Spain	Italy	UK	Spain	Italy	UK
Textile and textile products	53	69	-	85.151	280.936	-	221.984	733.514	-	38,4%	38,3%	-	31,5%	39,4%	-
Leather and footwear	30	27	-	75.510	98.740	-	118.362	198.274	-	63,8%	49,8%	-	76,7%	42,8%	-
Food products; Beverages and tobacco	52	17	-	59.315	27.492	-	181.599	109.528	-	32,7%	25,1%	-	15,7%	6,3%	-
Wood products; Jewellery; Musical inst. & toys*	40	4	-	56.739	18.871	-	196.769	81.341	-	28,8%	23,2%	-	27,9%	29,6%	-
Products for the house **	37	39	-	53.530	125.669	-	106.117	377.384	-	50,4%	33,3%	-	21,9%	27,8%	-
Pulp and paper; Publishing and printing	4	6	-	45.773	4.208	-	305.314	17.534	-	15,0%	24,0%	-	19,7%	1,6%	-
Chemicals; Rubber and plastics	6	4	-	17.053	15.198	-	62.169	65.508	-	27,4%	23,2%	-	6,2%	3,5%	-
Basic metals; Fabricated metal products	5	1	-	8.731	692	-	69.344	2.354	-	12,6%	29,4%	-	11,2%	0,7%	-
Transport equipment	7	0	-	6.217		-	21.773		-	28,55%		-	2,21%		-
Machinery and equipment	3	32	-	2.681	299.477	-	4.651	588.364	-	57,6%	50,9%	-	0,4%	17,9%	-
Other (Recycling)	0	0	-	0	0	-	0	0	-	0,0%	0,0%	-	0,0%	0,0%	-
Total	237	199	47	410.700	871.694	-	1.288.082	2.173.801	-	31,88%	40,1%	-	14,9%	20,1%	21 %

* For Italy, it does not include Furniture, which is included in Products for the house.

** For Italy, it does include Furniture.

Source: Elaboration from Census and DIRCE (INE), Iuzzolino (2000) and De Propris (2005).

4. CONCLUSIONS

The aim of this research is the identification of the Local Labour Systems and potential Industrial Districts in Spain using the ISTAT's methodology (1996 and 1997). The finality is twofold: first, to get a map of industrial districts of Spain destined to its use for the design of the industrial strategies; second, contributing to enhance the evidence on the quantitative dimension of the Marshallian industrial districts by comparing the results with other countries like Italy and United Kingdom.

The most remarkable results are:

1. We identify for Spain 806 LLSs and 237 show characteristics of Marshallian industrial district. These 237 industrial districts add up to 1,288,082 employees in manufacturing (46.8% of the Spanish manufacturing) and 4,574,612 in all sectors (30% of the total employment). The "industry-district" (main specialization) located in these ID accounts for 410,700 employees, this is, 14.9% of manufacturing, 2.7% of the total employment in Spain and 31.9% of the manufacturing located in the industrial districts. Around 87.2% of the employment in the establishments of the "industry-district" is in SMEs.

2. The sectors where the industrial districts are more important are Textile and textile products (53 ID; 85,151 employees; 31.5% of the sector); Leather and footwear (30 ID; 75,510 employees; 76.7% of the sector); Wood products; jewellery, toys (40 ID; 56,739 employees; 27.9% of the sector); Products for the house (37 ID; 53,530 employees; 21.9% of the sector); and Food products (52 ID; 59,315 employees; 15.7% of the sector).

3. Industrial districts are located in fourteen regions, forming conglomerates and corridors. They are especially important in Valencia (54 ID; 150,003 employees in the main specialization) and Catalonia (35 ID; 131,881 employees in the main specialization). They account for 38% of the districts and 68.41% of the employment of the main specialization in ID.

4. The results of the process of delimitation of LLSs and industrial districts allow reasonable comparisons between Spain, Italy and United Kingdom. The methodology adapted from ISTAT identifies 806 LLSs and 237 ID in the year 2001 in Spain. They contain 1,288,082 employees in manufacturing (46.84% of the Spain's manufacturing) and 4,574,612 in all sectors (30% of the Spain's employment). In Italy (1996), there are 784 LLSs and 199 ID; they contain 2,173,801 employees in manufacturing (44.7% of the Italian manufacturing employment) and 4,437,000 in all sectors (32.2% of the total employment). In Spain, the "main specialization" of the ID accounts for 410,700 employees, 14.9% of the total manufacturing and 31.9% of the manufacturing employment in the ID. In Italy, the main specialization add up to 871,694 employees (20.1% of the total employment in manufacturing and 40.1% of the manufacturing employment in ID). In both countries, deep patterns of territorial concentration of ID by sector emerge. Nevertheless, there is not a duality north-south in Spain as in Italy. In the United Kingdom there are 46 ID and they account for 50% of total UK manufacturing employment, where the main specialization amounts to 21% of the total manufacturing.

5. The results allow the beginning of new lines of investigation about the industrial districts in Spain. In the present context of the Spanish industrial policy, priority lines should focus on: (1) the verification of the existence of increasing returns in the industrial districts (measurement of the "district effect"); (2) the research on the external competitiveness; (3) and the analysis of the processes of innovation and knowledge in the ID. Results should be updated to allow the comparison with the new Italian methodology (ISTAT 2005). The similarity of the processes of identification of industrial districts in Spain, Italy and the United Kingdom suggests the possibility to coordinate some inter-country lines of research involving Government departments and agencies as well as universities, and the possibility to coordinate specific lines of industrial policy based on industrial districts.

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