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Research Paper

Do Creative Industries Cluster? Mapping Creative Local Production Systems in Italy and Spain

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ABSTRACT An important debate on the role of creativity and culture as factors in local economic development is distinctly emerging. Despite the emphasis put on the theoretical definition of these concepts, it is necessary to strengthen comparative research for the identification and analysis of the kind of creativity embedded in a given territory. Creative local production systems are identified, in Italy and Spain, that depart from local labour markets as territorial units and focus on two different kinds of creative industries: traditional cultural industries (publishing, music, architecture and engineering, performing arts) and technology-related creative industries (R&D, ICT, advertising). The results show a concentration of creative industries in the largest urban systems, although different patterns of concentration of creative industries are revealed between the two countries.

KEY WORDS: Creative industries, creative local systems, agglomeration economies

1. Introduction

An important debate is emerging regarding the role of creativity and culture as factors of local economic development. Despite the emphasis put on theoretical definitions, creativity is still a fuzzy concept, difficult to measure and confine. The multiplicity of approaches and the lack of comparative analysis make it difficult to generalize these notions. In order to add a useful contribution to this debate, it is necessary to restrict the concept of creativity and its relationship with territory to a few commonly shared analytical concepts, and then to validate them by means of comparative analyses.

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This investigation is organized around a simple research question: do creative industries cluster? The initial hypothesis is that creative industries tend to cluster in specific places we have named Creative Local Production Systems (Creative LPSs). The main aim of this paper is to measure the spatial dimension of creative industries by analysing their localization patterns in two countries that are characterized by very similar socio-economic and territorial characteristics, namely, Italy and Spain.

This research introduces three main contributions. First is the definition of the Creative LPS as a socio-territorial entity, characterized by specific features that facilitate the concentration of creative industries. Second is the procedure to individualize and classify Creative LPSs on the basis of their specialization in either traditional creative industries, non-traditional creative industries or both. Third, given the lack of between-country comparative analysis about the patterns of spatial concentration of creative industries, the results we present directly address this.

The paper is divided into four parts. After this introduction, Section 2 strengthens the relationship between creative industries, creative class and territory. Section 3 deals with the methodology of defining creative industries and mapping Creative LPSs. Section 4 presents the results of the analysis. The work ends with some concluding remarks.

2. Creative Industries, Creative Class and Creative Territories

At the present time, creativity definitely represents an emerging paradigm at the centre of a lively scientific debate, engaging scholars from different fields that include not only economists of culture, economic development and innovation, but also sociologists, economic geographers and urban planners (Power and Scott, 2004; Hartley, 2005). From its onset, creative economy has been associated with the knowledge economy and new technologies (OECD, 2001) and its leading issues can be traced back to three main fields of study, namely, the creative industries (Caves, 2000), the creative class (Florida, 2002) and the creative cities (Landry, 2000; Florida, 2008).

Creative industries are a typical phenomenon of modern economies, and “they are moving from fringes to the mainstream economics” (DCMS, 2001: 3). Cultural and creative enterprises have been considered as synonymous terms, although they are in fact different. Cultural enterprises are associated with more traditional sectors, such as publishing, music, performing and visual arts (Towse, 2002), while creative enterprises also comprise the new sectors linked to the digital economy, such as software and computer services (DCMS, 2001; OECD, 2007).

The economic enhancement of culture and art encouraged the development of new cultural sectors, including non-profit ones, such as the museum sector (Lazzeretti, 2004) and related activities; for instance, the organization of expositions and events (Belussi and Sedita, 2008). The economic space of culture and creativity was enlarged, and the creative sectors, previously limited in a strict sense, widened to embrace those other sectors that culture and creativity are liable to rejuvenate; for example, design—an economic activity which criss-crosses a variety of sectors (OECD, 2005).

The creative class constitutes the second key area of analysis. This issue was introduced by Florida (2002) with his theory of the three Ts (tolerance, talent and technology) and this shifted the focus from the creative industries to the human factor and its creative habitat. The advantages deriving from diversity have been emphasized, together

with the socio-demographic characteristics of the population, which links with Jane Jacobs' urban analysis (1961).

A third major branch of studies applies to clusters and cities. Creativity is frequently characterized by agglomerations of firms, where localization, or more specifically "urbanization", is often interrelated with the knowledge economy and the new technologies (Trullén and Boix, 2008). Normally, creative industries are clustered (Maskell and Lorenzen, 2004; Scott, 2005) and address a great variety of professions and economic sectors. Variety and diversity are, in fact, the engines of creativity: "Variety necessitates clustering, novelty necessitates urban clustering and radical innovation demands clustering in global and world cities" (Lorenzen and Frederiksen, 2008: 165).

Thus, creativity is usually considered an urban phenomenon, one of the determinants in the development and growth of cities (Jacobs, 1961, 1984; Scott, 2006). A creative city is a multifaceted place, characterized by many of the peculiarities of both the cultural cities of the new millennium (Hubbard, 2006) and the cities of knowledge (Trullén *et al.*, 2002). Creative cities were originally associated with creative industries (Hall, 2000), but now they are also seen as the poles of attraction for the creative class (Florida, 2002), such that the driving force behind the development of a city turns out to be its ability to attract and retain creative individuals.

There is not only an urban creativity but also a rural one (McGranahan and Wojan, 2007), as well as creativity concerning either whole regions (Cooke and Schwartz, 2007) or districts (Santagata, 2004; Cinti, 2008). According to some authors, creative districts represent an evolution of cultural districts (OECD, 2005), while others consider them only for their typical specialization in creative industry in a strict sense; for example, Hollywood as a classical district of the film industry (Scott, 2005).

Going back to the above-mentioned three branches of studies on creativity, and focusing on the results attained by the comparative analyses they carried out, it is possible to make some preliminary considerations.

Cultural and creative economies have produced a lot of studies that afford either on a sectorial or a localization viewpoint and follow multiple perspectives, with the result that the evolution of conceptualization arose from different contexts and in different countries (Pratt, 1997; Jeffcutt and Pratt, 2002). This is why it is difficult to make generalized considerations on this issue, although this is the direction followed by the English Department for Culture, Media and Sport (DCMS, 2001) and the OECD (2007), with their tentative of homogenization of the factors involved in the definition of "creative industries".

A second line, with a certain degree of approval, has been defined by Florida (2005, 2008) and measures the degree of creativity in North American metropolitan areas and European countries, even going so far as to make a global-scaled comparison. Although limited in some degree (Glaeser, 2005), these studies are valuable, if nothing else because of the lively debate they promoted over the opposite positions for judgments over their approach (Hansen *et al.*, 2005; Wojan *et al.*, 2007). However, they are also of value because of the considerable number of comparative analyses they generated, which equally surveyed the social, the spatial and the economic dimensions of creativity.

Creative industries are also cultural industries (at least in part), and there is not only a high-tech, but also a high-culture creativity, as we have already tried to argue in our previous studies on cities of art as High-Culture local systems (Lazzeretti, 2008). Human capital is one of the resources that exists in High-Culture places and is certainly an

important creative resource as it can generate both knowledge and innovation. However, social capital is no less important and denotes patterns similar to those of industrial districts (Becattini, 2004). It was in an attempt to capture this latter aspect that Creative LPS was proposed in the present research as a unit of analysis; that is, local production systems specialized in creative industries and separated according to their specialization in traditional and non-traditional creative industries (Lazzeretti, 2007). Then, we adapted the well-established methodology used by districtual analyses,¹ to the case under examination here.

3. Methodology

3.1. *The Definition of Creative Industries: Traditional and Non-traditional*

The term “creative industry” was coined by the English Department for Culture, Media and Sport in the report, *The Creative Industries Mapping Document* (2001), to extend the definition of the culture sector to include multi-media activities and to follow the structural changes occurring due to the growth and development of new technologies. The definition of “creative industries” refers to “industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property” (DCMS, 2001: 5). Creative industries are signs of the natural evolution of the cultural industry that follow the structural changes caused by the affirmation of new technologies and new products in the sphere of the entertainment industry. According to the definition of the European Commission Report (2001), this has to do with a “digital culture”; a sectorial area in which it is difficult to trace precise borders and where there exists a whole series of synergies and interactions between the traditional cultural sector and the information technology sector.

Wyszomirsky (2004) defines four sets of criteria for the definition of creative industries, with each approach focusing on a single distinctive factor: (1) the product/service supplied, (2) the producing organization, (3) the central production process and (4) the occupational/workforce groups. The author (2004: 27) asserts that most initiatives for developing creative industry focus on “a list of which organizations in what fields and industries are to be included and then gather information that maps key dimensions such as size, distribution, revenues, export activities, employment, and production figures”. The extrapolation of these characteristics allows the definition of creative industries on the basis of a classification of activities. A similar approach was followed by DCMS (2001) to classify, as creative industries, Advertising, Film and Video, Music, Performing Arts, Publishing, Software and Computer Services, Research and Development (Architecture, Graphic Design, Fashion), and Telecommunications. All of these activities directly or indirectly produce cultural products and include commercial and artistic enterprises as well as public and non-profit

¹ The empirical analysis differs from Florida’s creative class comparative researches in two ways: the first regards the territorial unit of analysis, that is usually the metropolitan area (Florida, 2002) or the province (Florida and Tinagli, 2005), and the second regards the occupational categories used to define the creative class (artists, engineers, designers, entrepreneurs, etc.). In this paper we will instead use local labour markets as territorial unit of analysis and the creative industries as a proxy for analysing the creativity of a locality.

organizations. In any case, the underlying theme is creativity, even if it is not an element that identifies just one sector.

It is also considered that, inside the group of creative activities, a rapid development of non-traditional creative industries could take place in locations different from those where more traditional cultural activities had developed in the past.² To take into account the possibility of differentiated geographical patterns of specialization, a comparison was made (Lazzeretti, 2007) between the definition of “cultural industries” assumed in a report on cultural economy in Italy by Bodo and Spada (2004), and the definition of “creative industries” given in the *Mapping Document* (DCMS, 2001). In this way, it is possible to determine if these industries are strictly related to culture or to a wider notion of creativity.

By this type of analysis, the creative industries presented in the DCMS were separated into two more detailed and practical groups. The first one is comprised of the “traditional cultural industries” (basically those present in the Italian report) and includes Publishing, Architecture and engineering studios, and Music, film and performing arts. The second is comprised of non-traditional creative industries, which includes Research and development, Software and computer services, and Advertising (Table 1).³

3.2. The Identification of the Creative Local Production Systems

The urban nature of creative activities suggests that creative industries are not homogeneously distributed across a territory; but rather, they concentrate in specific places that show characteristics of Creative LPSs. Territorial approaches to the geographical distribution of creative industries in Spain and Italy are based on the use of large administrative units, like regions or provinces (García *et al.*, 2003; Bodo and Spada, 2004), with the main limitation being that they are too large or too small to capture socio-economic processes of creativity over space.

Sforzi and Lorenzini (2002) propose the use of the local labour market (LLM) as an appropriate unit of analysis, as this is capable of capturing socio-economic processes over space as well as capturing and analysing local specialization patterns. Local labour markets contain the area where the population lives and works and form a community of firms and people that can be identified as a LPS.

² Departing from the classification adopted in the *Mapping Document* (DCMS, 2001), which can be seen as a sharable European standard, we separated the traditional from the non-traditional creative industries, with the aim of calling attention to their national specificities, and to the same evolution of the concept of cultural/creative industry within the country under exam. While cultural industries in a strict sense are usually the prerogative of South European countries, in which cultural and artistic heritages are particularly rich, creative industries are more widespread in the North of Europe, whose countries have a stronger orientation to the knowledge economy and ICT. In this paper, as we tried to seize an additional dimension of creativity—which in other cases may be hardly clasped—that is, the dimension of High Culture, we used a methodology that could substantiate both.

³ It is necessary to consider a series of aspects regarding the categories utilized. The first is the exclusion of Telecommunications in this study. This is due to the fact that in the NACE definition of economic activities (rev. 1.1) the Telecommunications category includes the maintenance of the network and it is impossible to distinguish it from the macro-category. Regarding the other activities, Advertising and Movies also include intermediation agencies, which are impossible to distinguish from the macro-category, even if the importance of these activities on a national level is very small, compared to the whole. Finally we excluded the voice “Trade of Craft and Antique market” from this study, as in the NACE definition, trade is non-registered with the object of the traded product and it is not possible to identify the sellers of crafts, antiques, etc. Moreover, it is not possible to distinguish that from the macro-category.

Table 1. The traditional cultural industries and the non-traditional creative industries NACE Rev. 1

Traditional cultural industries	Non-traditional creative industries
Publishing	Research and development (Architecture, Graphic design, Fashion)
22.1 Publishing	73.1 Research and experimental development on natural sciences and engineering
22.2 Printing and service activities related to printing	73.2 Research and experimental development on social sciences and humanities
Architecture and engineering studios	Software and computer services
74.2 Architectural and engineering activities and related technical consultancy	72.2 Software consultancy and supply
Music, Film, video and performing arts	72.6 Other computer-related activities
22.3 Reproduction of recorded media	Advertising
92.1 Motion picture and video activities	74.4 Advertising
92.2 Radio and television activities	
92.3 Other entertainment activities	

Source: Elaborated from DCMS (2001) and NACE Rev. 1.

Menghinello (2002) provides additional reasons for using LLMs as a basis for the identification of LPS. Because these go beyond the administrative definitions and refer more to the effective organization of the territory; LLMs focus on the intensity of relations between residents and the workforce of a certain area; and they allow for the consideration of creative “commuters” that work in the city, but reside outside the city limits. The existence of a homogeneous definition of LLM based on daily commuting flows in Italy and Spain allows the use of these units. By using the same methodology on 2001 Census data, the Italian Institute of Statistics (ISTAT, 2005) identifies 686 LLMs in Italy, whereas Boix and Galletto (2006) identify 806 LLMs in Spain.

In order to use an operational definition of the creative production systems, we define a Creative LPS as a LLM where there is a high concentration of creative industries, as defined.

The concentration of creative industries in the country can be addressed with simple industry-specialization statistics (concentration index, Gini index) and more sophisticated measures, taking into account the existence of natural advantages and agglomeration economies (Ellison–Glaeser and Maurel–Sédillot indexes). However, these statistics are non-spatial and only rely on the industrial dimension, so that they do not provide information about the place where an industry is concentrated. The territorial dimension is taken into account by territorial indexes of specialization, or clustering, where a wide range of methodologies are available (Von Hofe and Chen, 2006; Koschatzky and Lo, 2007). Given the additional difficulty of comparing local production systems in two countries and the possibility of several typologies leading to different input–output structures, we will rely on the most elemental characteristic of a Creative LPS, the territorial concentration.

Concentration of creative industries in LPSs can be identified by means of standard or stochastic methods, using absolute or relative indexes. Location quotients are the most commonly employed method to identify territorial specialization because they capture the

spatial agglomeration independently of the size of the place (Von Hofe and Chen, 2006). This index was applied to the cultural industries in the UK (Pratt, 1997; Bassett *et al.*, 2002), Spain (García *et al.* 2003) and Italy (Capone, 2008). The location quotient (LQ) compares the relative specialization of a place in an industry regarding the national average and is defined as

$$LQ_{ij} = \frac{E_{ij}}{E_i} \bigg/ \frac{E_j}{E} > 1 \quad (1)$$

where E_{ij} is the number of employees in the industry i in a LPS j , E_i is the total number of employees in an industry i , E_j is the number of employees in a LPS j , and E is the total employment in the country.⁴ An LQ above 1 indicates that the concentration of an industry i in a place j is larger than the national average.

The main advantages of the LQ are simplicity, transparency and data requirements. On the other hand, it has some disadvantages. For example, it does not take into account the absolute size of the local industry (high LQ coefficients can be associated with a small number of employees and vice versa) so that it could be necessary to use a minimum threshold value. Other limitations are the distribution of industries by size and the usual definition of a cut-off value different from 1 (usually 1.1 or 1.2), and the limited information incorporated in the LQ.

The LQ can also be computed by taking absolute deviations from the mean:

$$ALQ_{ij} = \left(\frac{E_{ij}}{E_i} - \frac{E_j}{E} \right) E_j > 0 \quad (2)$$

where values above zero indicate the local excess of employees in the industry compared to the national average. Regarding the standard LQ, this index does not provide very precise information about the relative specialization, although it has the property that the application of a filter on the positive values usually takes into account the dimension of the place, favouring large places with high levels of specialization.

Other variations of the LQ were proposed in the literature, in the attempt to solve or improve the quality of the standard LQ. O'Donoghue and Gleave (2004) propose an improved approach to the LQ, solving the cut-off problem, by parametrizing the quotient to a normal function, which allows for the application of statistical levels of significance. Their method to obtain the Standardized Location Quotient (SLQ) takes place in three steps: (1) The LQ is computed for the industries under study; in our case, the creative industries. (2) The procedure is valid only under the assumption of a normal distribution, so that the normality of the distribution should be tested, for example, using a simple Kolmogorov–Smirnov test. If the distribution is asymmetric, the LQ can be transformed taking logarithms to centre the distribution. (3) The LQ (or the log LQ) is standardized (normalized) by subtracting the mean from each observation and dividing by the standard deviation, to produce the z-value of the Standardized LQ (SLQ). This z-value can be directly compared to a prefixed level of statistical significance using the normal values. The standard value for a 5 per cent confidence

⁴ The analysis relies on employment due to the fact that it is the only homogeneous data available to compare Italy and Spain at this level of territorial detail.

level corresponds to 1.96, although if the distribution continues to be slightly asymmetric, a one-tail z-value of 1.65 corresponding to a 10 per cent confidence interval could be used:⁵

$$zLQ_{ij} = \frac{\log(LQ_{ij}) - \overline{(\log(LQ_{ij}))}}{\text{std.dev.}(LQ_{ij})} > \frac{1.96}{1.65} \quad (3)$$

Another version of the LQ is the Symmetric LQ:

$$\text{SymLQ}_{ij} = (LQ - 1)/(LQ + 1) > 1 \quad (4)$$

where values above 1 indicate specialization in the industry. This simple transformation is useful in econometric estimates because it centres the distribution of the LQs, which are usually skewed, and provides an alternative to the log transformation of the O'Donoghue and Gleave method.⁶

Thus, the empirical approach to the geographically concentrated Creative LPS in Italy and Spain departs from the previous definition of creative industries and uses LLMs as territorial units. As the internal input–output linkages between creative industries are unknown, and it is supposedly different among clusters, it is proposed to apply the LQ, first on the creative industry as a whole and subsequently on the traditional and non-traditional divisions of the creative industry. This produces three sets of LQs from which we can identify a LLM as a Creative LPS, if it is specialized in the creative industry as a whole, or in one of the traditional or non-traditional components. When a LPS is simultaneously specialized in traditional and non-traditional creative industries, or only the sum of both subsets produces a significant LQ, we can refer to it as a Diversified Creative LPS. The existence of many values close to 1 and the lack of clear cut-off values suggest the use of the Standardized LQ (SLQ) as a complement to the traditional LQ. As an additional control correcting for explosive, relative effects in small LPSs, a minimum of 250 employees in the industry (equivalent to a large firm) is required to consider the LQ or the SLQ as economically significant.

4. Results

4.1. Employment in Creative Industries

Creative industries have about 879,000 jobs in Italy (5.60 per cent of total employment) and about 673,000 in Spain (4.12 per cent) (Table 2), in the usual range of between 4 and 6 per

⁵ Following O'Donoghue and Gleave (2004) we use 5 and 10 per cent confidence intervals usual in econometric statistical inference although the suggested values can vary depending on the particularities of each research.

⁶ Other applicable versions of the LQ are the Cross-industry LQ and the Flegg LQ (Flegg and Webber, 2000), both inspired by the input–output framework. The former compares the specialization in an industry with that of any other industry (e.g. creative industries with non-creative industries) while the latter multiplies the Cross-industry LQ by a term λ^* to weight the size of the place.

Table 2. Employment in creative industries in 2001. Italy and Spain

	Jobs		% on total employment		% on creative industries	
	Italy	Spain	Italy	Spain	Italy	Spain
Traditional	579,855	457,864	3.7	2.8	66.0	68.0
Printing and publishing	173,391	196,951	1.1	1.2	19.7	29.2
Architecture and engineering	295,289	142,459	1.9	0.9	33.6	21.2
Film, video and performing arts	111,175	118,454	0.7	0.7	12.6	17.6
Non-traditional	299,107	215,499	1.9	1.3	34.0	32.0
Advertising	52,240	61,949	0.3	0.4	5.9	9.2
Software and computer services	223,771	144,785	1.4	0.9	25.5	21.5
Research and development	23,096	8,765	0.2	0.1	2.6	1.3
Total creative industries	878,962	673,363	5.6	4.1	100.0	100.0

Source: Elaborated from ISTAT (2001) and INE Census (2001).

cent found in other studies (Pratt, 1997; Hall, 2000; DCMS, 2001).⁷ Creative industries are more important in Italy than in Spain, although the relative difference between both countries is not extreme (1.5 percentage points; that is to say, a relative difference of 36 per cent).

Traditional creative industries add up to about 580,000 jobs in Italy (3.7 per cent of total employment) and about 458,000 in Spain (2.8 per cent of total employment) (Table 2). The share of jobs in traditional creative industries out of the total creative industries is very similar in both countries: 66 per cent in Italy and 68 per cent in Spain. Thus, regarding the distribution of employment, traditional creative industries are larger than the non-traditional ones.⁸ Inside the traditional creative industries, the most important activities are Architecture and engineering. These activities are also characterized as being much more important in Italy (about 295,000 jobs, 1.9 per cent of total jobs and 33.6 per cent of creative jobs) than in Spain (about 142,500 jobs, 0.9 per cent of total jobs and 21.2 per cent of creative jobs).

The other two groups of traditional creative industries are more similar across countries. Printing and publishing account for about 173,000 jobs in Italy (1.1 per cent of total employment) and about 197,000 in Spain (1.2 per cent of total employment). Its share of the total creative jobs is 19.7 per cent in Italy and 29.2 per cent in Spain.⁹ Film, video and performing arts add about 111,000 jobs in Italy (0.7 per cent of total employment) and about

⁷ Other sectors are much more relevant, for example: Manufacturing (25 per cent in Italy and 17 per cent in Spain), Trade (around 16 per cent in both countries), Real estate and business activities (11 per cent in Italy and 8 per cent in Spain), Construction (8 and 12 per cent, respectively). However, if we considered the contribution of creativity to the rejuvenation of the mature sectors in the Made in Italy, this percentage would probably be a lot higher.

⁸ These results could change using other indicators, as the turnover or the added value.

⁹ The greater importance of this sector in Spain is due to the fact that Spanish books published in the country (especially in Madrid and Barcelona) are not only for the internal market but also for the Latin-American market.

118,000 in Spain (0.7 per cent of total employment). Its share of the total creative employment is 12.6 per cent in Italy and 17.6 per cent in Spain.

Non-traditional creative industries have about 299,000 jobs in Italy (1.9 per cent of total employment) and about 215,500 in Spain (1.3 per cent of total employment) (Table 2). Their share of the total creative jobs is 34 per cent in Italy and 32 per cent in Spain. The greater relative importance of non-traditional creative industries in Italy is explained by Software and computer services, which constitute about 224,000 jobs in Italy (1.4 per cent of total employment and 25.5 per cent of creative jobs) and about 145,000 in Spain (0.9 per cent of total employment and 21.5 per cent of creative jobs). The share of Research and development considered within the creative industries is also slightly larger in Italy (about 23,000 jobs and 2.6 per cent of creative jobs) than in Spain (about 8,800 jobs and 1.3 per cent of creative jobs), even though, in both countries, it is very small (0.2 per cent of total employment in Italy and 0.1 per cent in Spain). Finally, Advertising is slightly more important in Spain (about 62,000 jobs, 0.4 per cent of total employment and 9.2 per cent of jobs in creative industries) than in Italy (about 52,000 jobs, 0.3 per cent of total employment and 5.9 per cent of jobs in creative industries).

4.2. *Geographical Concentration of Creative Local Production Systems*

Using the LQ with the usual cut-off value of 1, with a minimum value of 250 employees in creative industries, and calculating the coefficient for each country separately, we identify 62 Creative LPSs in Italy (8.9 per cent of LLMs) and 25 in Spain (3.1 per cent of LLMs). Creative employment in Creative LPSs adds up to about 561,500 employees in Italy (63.8 per cent of creative employment) and about 438,000 in Spain (65 per cent of creative employment) (Table 3).

There are 42 traditional Creative LPSs in Italy (67.7 per cent of the total Creative LPSs). They have about 108,000 employees in creative industries, where 74.8 per cent are in traditional creative industries. In Spain there are 17 traditional Creative LPSs (68 per cent of the total Creative LPSs), which have about 79,000 employees in creative industries, of whom 72 per cent are in traditional creative industries. In Italy, traditional Creative LPSs are basically associated with medium-sized cities such as Verona, Piacenza or Aosta, while in Spain they also include Valencia and Seville, two of the largest cities in the country.

There are 11 non-traditional Creative LPSs in Italy (17.7 per cent of the total Creative LPSs) that have about 64,500 employees in creative industries (55.5 per cent in non-traditional creative industries). These LPSs are associated with medium and big cities with a certain specialization in high-tech services (medium cities specialized in the north of Italy and big cities in the south). In Spain, there is no Creative LPS exclusively specialized in non-traditional creative industries.

Diversified Creative LPSs are simultaneously specialized in traditional and non-traditional creative industries.¹⁰ There are nine Diversified Creative LPSs in Italy (14.5 per cent of the total Creative LPSs) and eight in Spain (32 per cent of the total Creative LPSs). Diversified Creative LPSs add up to about 389,000 creative employees in Italy (44.3 per

¹⁰ It is possible to be diversified without being separately specialized in traditional or non-traditional industries (or any of both) although no system with these characteristics was detected in our research.

Table 3. Traditional, non-traditional and Diversified Creative LPS in 2001. LQ above 1 and minimum 250 employees by LQ

	No. of local systems		Employment in creative industries		Examples	
	Italy	Spain	Italy	Spain	Italy	Spain
Traditional Creative LPS ^a	42	17	107,855	79,000	Novara, Dogliani, Fossano, Saluzzo, Ovada, Omegna, Aosta, Varese, Como, Bergamo, Brescia, Cremona, Bolzano, Cles, Verona, Porto Viro, Udine, Maniago, Piacenza, Faenza, Ravenna, Forlì, Cattolica, Rimini, Pietrasanta, Borgo San Lorenzo, Firenzuola, Città di Castello, Perugia, Fano, Pergola, Tolentino, Avezzano, Campobasso, Benevento, Cava de'Tirreni, Putignano, Gallipoli, Marsicovetere, Potenza, Policoro, Iglesias	Valencia, Sevilla, A Coruña, Pamplona, Logroño, Santiago de Compostela, Girona, Vilafranca del Penedès, Tarragona, Manresa, Igualada, Seseña, Sant Sadurní d'Anoia, Estella, Ontinyent, Ibi, Capellades
Non-traditional Creative LPS ^b	11	0	64,458	0	Ivrea, Saint-Vincent, Genova, Pisa, Naples, Bari, Catanzaro, Palermo, Cosenza, Piscina, Cagliari	–
Diversified Creative LPS ^c	9	8	389,105	359,000	Trieste, Parma, Bologna, Florence, Rome, Turin, Milan, Trento, Padua	Madrid, Barcelona, Bilbao, Sabadell, San Sebastián, Mataró, Guadalajara, La Garriga
Total	62	25	561,418	438,000		

^aSpecialized (LQ > 1) in only traditional cultural industries: Publishing, Architecture and engineering studios, and Music, film, video and performing arts.

^bSpecialized (LQ > 1) in only non-traditional creative industries: Research and development (Architecture, Graphic design, Fashion), Software and computer services, and Advertising.

^cSimultaneously specialized in traditional and non-traditional creative industries (both LQ are above 1).

Source: Elaborated from ISTAT (2001) and INE Census (2001).

cent of the employment in creative industries) and about 359,000 employees in Spain (53 per cent of the employment in creative industries). This category contains the LPSs associated with most of the largest cities in Italy (Rome, Milan, Turin, Florence, etc., but with the exception of Naples) and Spain (Madrid, Barcelona, Bilbao, etc., but with the exception of Valencia and Seville).

The mapping of the Creative LPSs shows patterns of spatial clustering in both countries, although they are less clear in Italy (Figure 1). In fact, in Italy, the Diversified Creative LPSs are concentrated in the centre and north of the country, while purely traditional and non-traditional Creative LPSs are distributed across the whole country, forming small clusters. However, in Spain, creative industries are strongly concentrated in a few places, forming clusters around Madrid, Barcelona, Basque Country–Navarre–Rioja and Galicia, as well as Valencia and Seville. Madrid's LPS alone accounts for 30 per cent of the Spanish employment in creative industries and Barcelona's another 15 per cent. Both have 45 per cent of the Spanish employment in creative industries and 69.5 per cent of the employment in Creative LPSs. Thus, the creative industry is more important and less concentrated in Italy; whereas, in Spain, it accounts for a smaller share of employment and is very concentrated in some LPSs, particularly those of Madrid and Barcelona.

Regarding the other methods based on the LQ to identify Creative LPSs, the Prevalence index (LQ in absolute deviations) produced the same results as the traditional LQ when controlling the size of the difference, whereas the Standardized LQ enhanced the number of LPSs classified as creative. However, in Spain, the normality of the distribution for traditional and non-traditional LQs was rejected, even using a previous logarithmic or symmetrized transformation of LQ (Smirnov–Kolmogorov and Shapiro–France tests), while it could be accepted for the creative industries as a whole. In practice, the standardized and symmetric LQs centre the distribution and shorten the upper tail where extreme values are concentrated; a fact that can be seen as an undesirable effect if our “values-objective” is concentrated in this upper tail. Because of this, in non-traditional creative industries, we can accept a value equivalent to 0.8 in the traditional LQ by including some LPSs, which, to the best of our knowledge, are not specialized in this typology of activities. Thus, the traditional LQ combined with a threshold produces better results than do other methodologies.

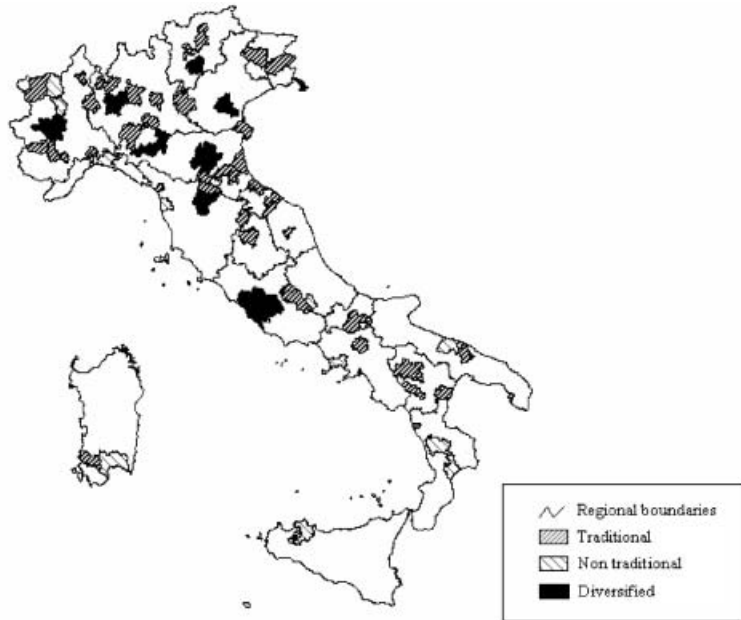
4.3. *A Comparison among the Main Urban Centres*

Due to the concentration of creative industries in the largest Creative LPSs, we performed an additional comparison of the main urban Creative LPSs in both countries. In order to deepen the investigation, we decided to compare three main cities for each country. First of all, we included in the analysis the main creative centres that registered a higher percentage in employment in the creative industries: that is, the capital cities (Rome and Madrid) and the two main industrial centres in Italy (Milan) and Spain (Barcelona). In order to also focus on cultural traditional industries, we included in the analysis two cities of arts and culture of comparable dimensions, Florence and Valencia.

No clear patterns between pairs of cities or countries emerged, although the comparison remarks some interesting facts (Tables 4–7):

- (1) Madrid, Milan, Barcelona and Rome are the main creative centres in their countries. Madrid's LPS (about 205,000 creative jobs) has the largest amount of creative

(a) Italy



(b) Spain

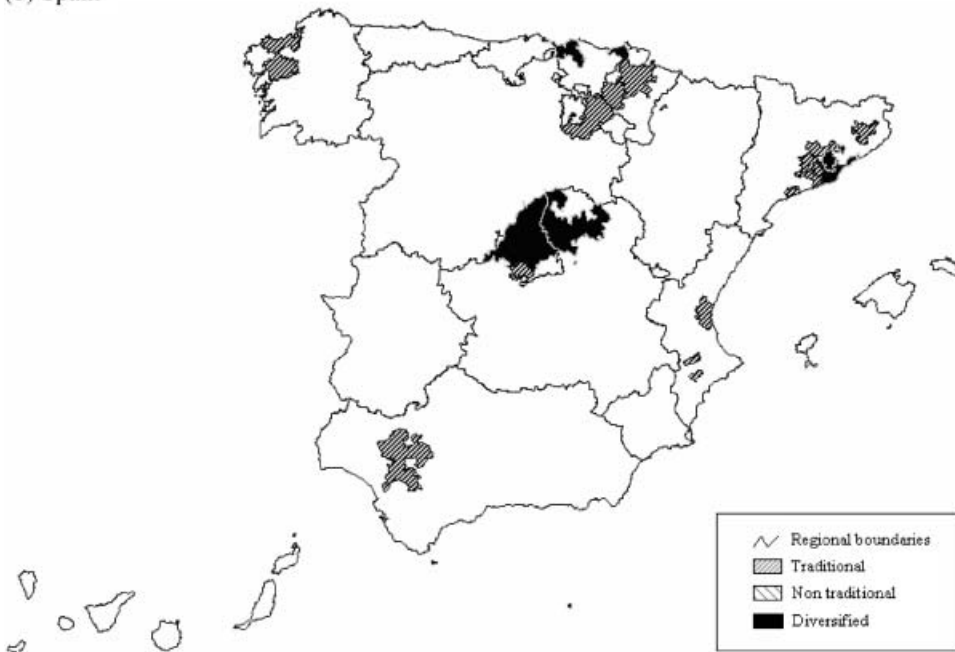


Figure 1. Creative local production systems in Italy and Spain, 2001. LQ above 1 and minimum 250 employees by LQ.
Source: Elaborated from ISTAT (2001) and INE Census (2001).

Table 4. Employment in creative industries: Rome, Madrid, Milan, Barcelona, Florence and Valencia

	Rome	Milan	Florence	Madrid	Barcelona	Valencia
Creative industries	117,507	146,268	16,778	204,950	99,177	24,909
Traditional creative industries	66,159	76,979	11,838	127,220	67,509	17,516
Printing and publishing	16,798	34,819	3,979	54,178	38,003	7,607
Architecture and engineering	18,793	27,187	6,159	34,980	15,872	5,662
Film, video and performing arts	30,568	14,973	1,700	38,062	13,634	4,247
Non-traditional creative industries	51,348	69,289	4,940	77,730	31,668	7,393
Software and computer services	44,525	49,929	3,673	53,901	20,873	4,564
Advertising	4,239	15,879	914	21,990	10,016	2,348
R&D	2,584	3,481	353	1,839	779	481
Non-creative industries	1,182,975	1,394,903	306,663	2,196,308	1,238,319	563,165
Total	1,300,482	1,541,171	323,441	2,401,258	1,337,496	588,074

Source: Elaborated from ISTAT (2001) and INE Census (2001).

employment, whereas next in position are Milan (146,000), Rome (117,500) and Barcelona (99,000). The LPSs of Valencia (25,000) and Florence (17,000) have a more reduced number of creative jobs (Table 4). The distribution of creative industries in Spain is extremely polarized in the LPSs of Madrid (30.4 per cent) and Barcelona (14.7 per cent), which together account for 45.1 per cent of national employment in creative industries (Table 5). In Italy, Milan's LPS has 16.6 per cent of national employment in creative industries and Rome 13.4 per cent. When combined, they account for 30 per cent of national creative employment. The share of Valencia (3.7 per cent) and Florence (1.9 per cent) is less significant.

- (2) Regarding the share of creative industries over local employment, the most specialized cities are Milan (9.5 per cent) and Rome (9 per cent), followed by

Table 5. Percentage of local creative industries on national creative industries: Rome, Madrid, Milan, Barcelona, Florence and Valencia

	Rome (%)	Milan (%)	Florence (%)	Madrid (%)	Barcelona (%)	Valencia (%)
Traditional creative industries	11.4	13.3	2.0	27.8	14.7	3.8
Printing and publishing	9.6	20.1	2.3	27.5	19.3	3.9
Architecture and engineering	6.3	9.2	2.3	24.6	11.1	4.0
Film, video and performing arts	27.5	13.5	1.5	32.1	11.5	3.6
Non-traditional creative industries	17.2	23.2	1.6	36.1	14.7	3.4
Software and computer services	19.9	22.3	1.6	37.2	14.4	3.2
Advertising	8.1	30.4	1.7	35.5	16.2	3.8
R&D	11.2	15.1	1.5	21.0	8.9	5.5
Creative industries	13.4	16.6	1.9	30.4	14.7	3.7

Source: Elaborated from ISTAT (2001) and INE Census (2001).

Table 6. Share of creative industries on local employment: Rome, Madrid, Milan, Barcelona, Florence and Valencia

	Rome (%)	Milan (%)	Florence (%)	Madrid (%)	Barcelona (%)	Valencia (%)
Creative industries	9.0	9.5	5.2	8.5	7.4	4.2
Traditional creative industries	5.1	5.0	3.7	5.3	5.0	3.0
Printing and publishing	1.3	2.3	1.2	2.3	2.8	1.3
Architecture and engineering	1.4	1.8	1.9	1.5	1.2	1.0
Film, video and performing arts	2.4	1.0	0.5	1.6	1.0	0.7
Non-traditional creative industries	3.9	4.5	1.5	3.2	2.4	1.3
Software and computer services	3.4	3.2	1.1	2.2	1.6	0.8
Advertising	0.3	1.0	0.3	0.9	0.7	0.4
R&D	0.2	0.2	0.1	0.1	0.1	0.1
Non-creative industries	91.0	90.5	94.8	91.5	92.6	95.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Elaborated from ISTAT (2001) and INE Census (2001).

Madrid (8.5 per cent) and Barcelona (7.4 per cent), whereas creative industries seem to be less important in Florence (5.2 per cent) and Valencia (4.2 per cent) (Table 6). The LQ suggests that the LPSs more specialized in creative industries are Rome (2.20), Milan (2.07), Madrid (2.06) and Barcelona (1.79). Florence tends to be relatively less specialized (1.23) whereas Valencia shows a modest LQ of 1.03.

- (3) All these Creative LPSs are diversified, with the exception of Valencia, which is specialized in traditional cultural industries (Table 3). In Rome, Milan, Madrid and Barcelona, traditional creative industries contribute to around 5 per cent of the total local employment, whereas in Florence and Valencia the same share is between 3 and 4 per cent (Table 6). Non-traditional creative industries are also very important for Milan (4.5 per cent of local employment) and Rome (3.9 per cent) whereas their

Table 7. Distribution of creative industries by group: Rome, Madrid, Milan, Barcelona, Florence and Valencia

	Rome (%)	Milan (%)	Florence (%)	Madrid (%)	Barcelona (%)	Valencia (%)
Traditional creative industries	56.3	52.6	70.5	62.1	68.1	70.3
Printing and publishing	14.3	23.8	23.7	26.4	38.3	30.5
Architecture and engineering	16.0	18.6	36.7	17.1	16.0	22.7
Film, video and performing arts	26.0	10.2	10.1	18.6	13.7	17.1
Non-traditional creative industries	43.7	47.4	29.4	37.9	31.9	29.7
Software and computer services	37.9	34.1	21.9	26.3	21.0	18.3
Advertising	3.6	10.9	5.4	10.7	10.1	9.4
R&D	2.2	2.4	2.1	0.9	0.8	1.9
Creative industries	100.0	100.0	100.0	100.0	100.0	100.0

Source: Elaborated from ISTAT (2001) and INE Census (2001).

importance is reduced for Madrid (3.2 per cent) and Barcelona (2.4 per cent), and they are not very important in Florence (1.5 per cent) and Valencia (1.3 per cent).

- (4) Overall, all of the cities show particular combinations of creative industries which produce different profiles: Rome and Milan show a balanced proportion between traditional and non-traditional creative industries (56–44 and 53–47 per cent, respectively) whereas, in Madrid, traditional creative industries share a larger amount of total local creative employment (62 per cent) (Table 7). The share of total creative employment represented by traditional creative industries is more important in Barcelona (68 per cent), Valencia (70.3 per cent) and Florence (70.5 per cent) (Table 7).

Going into further detail, Rome's LPS is the most specialized in Film, video and performing arts (26 per cent of local employment in creative industries) due to the location of the Cinecittà cinema studios (Table 7). Milan shows the most balanced profile, although Software and computer services shares 34 per cent of local creative employment. Madrid is characterized by its concentration of a large amount of the national employment in creative industries and the relevance of Printing and publishing (26 per cent of local creative employment) as well as Software and computer services. Barcelona stands out because of the importance of Printing and publishing on local creative employment (38 per cent). Finally, Florence and Valencia are characterized by their specialization in traditional creative industries where the relative specialization of Florence in Architecture and engineering, and of Valencia in Printing and publishing and Architecture and engineering, is quite remarkable.

5. Concluding Remarks

This research provides a comparison between creative industries and their spatial patterns of localization in Italy and Spain. Creative industries are defined and measured, focusing on two different kinds of creative industries: traditional cultural industries and non-traditional (technology-related) creative industries. The main aim of the research is to measure the patterns of spatial concentration of creative industries in the two countries, providing comparative evidence about these patterns.

The size of the creative sector in Italy and Spain is in line with the average values for European countries, although it is more important in Italy (5.6 per cent of total employment) than in Spain (4.1 per cent of total employment). In both countries, traditional cultural industries are more important than non-traditional creative industries: 66 per cent of the total creative employment in Italy and 68 per cent in Spain.

Departing from the definition of creative industries and using LLMs as territorial units, we identified 62 Creative LPSs in Italy (8.9 per cent of LLMs) and 25 (3.1 per cent of LLMs) in Spain. Creative industries tend to concentrate in Creative LPSs, as they have 63.8 per cent of creative employment in Italy and 65 per cent in Spain.

Despite the fact that socio-economic and territorial characteristics of both countries are very similar, the results point out the difference in the patterns of localization of Creative LPSs in both countries. The number and variety of Creative LPSs is greater in Italy (42 specialized in traditional creative industries, 11 specialized in non-traditional and 9 diversified) than in Spain (17 specialized in traditional creative industries, 9 diversified and none of them is exclusively non-traditional).

Creative industries show an “urban nature”, as they tend to cluster in the largest urban LPSs, where they play an important role for the local economic base. This event is common to both countries, but the patterns of concentration are again different. In Spain, Creative LPSs are extremely concentrated in the largest metropolitan areas. The LPSs of Madrid and Barcelona alone have 45 per cent of the Spanish employment in creative industries and 69.5 per cent of the employment in Creative LPSs. In Italy, although witnessing a trend of urbanization within the big cities, urban Creative LPSs are more diffused across the country.

Finally, the comparison between the largest centres (capital cities of Rome and Madrid, industrial centres of Milan and Barcelona, and cities of art or culture such as Florence and Valencia) points out two interesting results. First, creative industries are an important share of the economic base of the largest cities (ranging from 9.5 per cent of the employment in Milan to 7.4 per cent in Barcelona) whereas they account for a smaller share in Florence (5.2 per cent) and Valencia (4.2 per cent). Second, these large and urban Creative LPSs are diversified (with the exception of Valencia), where particular combinations of creative industries produce different and unique profiles.

From the point of view of the policy implications, strategies can be focused from multiple approaches, depending on the actor. Thus, in view of the spatial concentration of the creative industry in a few places, national and regional authorities could decide to support this concentration or to provide policies to foster creative industries in other places. Although both strategies are not incompatible, for local governments from the places where creative industries cluster (specially the largest cities), concentration should be considered as a strong potentiality and policies could support the most important local specialization or foster those less developed. Finally, enterprises should recognize the existence of strong external economies that affect most of the creative industries and decide their concrete patterns of localization.

In conclusion, the results suggest centring the next steps to find out the determinants of these concentrations of creative industries in Creative LPSs and to explain the reasons for the different patterns of localization in two countries with such similar characteristics.

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