

Departament d'Economia Aplicada

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Universitat Autònoma de Barcelona

Facultat de Ciències Econòmiques i Empresariales

Aquest document pertany al Departament d'Economia Aplicada.

Data de publicació : **Març 2008**

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Working Paper 08.05. 01/03/2008
Departament d'Economia Aplicada, UAB

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 of 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 the territory as well as its determinants. Creative local production systems are identified in Italy and Spain departing from local labour markets as territorial units, and focusing 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 suggest the existence of different patterns of concentration of creative industries in both countries and the concentration of creative industries in the largest urban centres, where they account for an important share of the local employment.

Keywords: creative industries, creative local systems, agglomeration economies.

JEL: L22, R12, L82

1. CREATIVITY, LOCALISATION/URBANISATION AND VARIETY: SOME INTRODUCTORY CONSIDERATIONS

Nowadays, creativity definitely represents an emerging paradigm, being at the centre of a lively scientific debate in which scholars from different fields are engaged: not only economists of culture, of economic development, of innovation, but also sociologists, geographical economists, and urban planners (Power and Scott 2004, Hartley 2005, Cooke and Lazzarretti 2008). From its onset, creative economy was usually associated to the knowledge and new economy (OECD 2001) and its leading issues were traced back to three main fields of study: the creative industries (Caves 2000), the creative cities (Landry 2000), and the creative class (Florida 2002a).

Creative industries are a typical phenomenon of modern economies, and 'they are moving from fringes to the mainstream economics' (DCMS 2001, p. 3). Cultural and creative enterprises have been recently considered as synonymous terms, although they were originally differentiated: cultural enterprises are associated to more traditional sectors, such as publishing, music, performing and visual arts (Towes 2002), while creative enterprises also comprise the new sectors linked to digital economy, such as the Software and computer services (DCMS 2001). The economic enhancement of culture and art encouraged the development of new cultural sectors, including non profit ones, such as the museum sector (Lazzarretti 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, before intended in a strict sense, widened to embrace those other sectors that culture and creativity are liable to rejuvenate, for example design, an economic segment which criss-crosses a variety of sectors (OECD 2005).

A second major branch of studies applies to creative cities. Creativity is usually considered an urban phenomenon, and 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, Costa 2008), and the cities of knowledge (Trullen et al. 2002). While originally creative cities were basically associated to creative industries (Hall 2000), now they are also seen as the poles of attraction for the creative class (Florida 2002a), and conversely the driving force behind the development of a city turns out to be its ability to attract and retain creative individuals.

The creative class constitutes the third key area of analysis. This issue was introduced by Florida with his theory of the three Ts (tolerance, talent and technology), which shifted the focus from the creative industries to the human factor and its creative habitat. The advantages deriving from diversity are emphasized together with the socio-demographic characteristics of the population (bourgeois-bohemian or "bobo" index) (Florida 2002b).

Creativity is a multifarious factor, a resource for innovation but also a competitive advantage associated with culture and territory. There is not only an urban creativity but also a rural one (Mc Granhan and Wojan 2007), and a 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 (Sacco and Pedrini 2003, OECD 2005, Lazzeretti 2008), 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).

Creativity is a modern phenomenon, frequently characterized by agglomerations of firms, where localization or, to say it better, 'urbanization' is often interrelated with knowledge economy and the new technologies (Trullen and Boix 2008). Normally, creative industries are clustered (Maskell and Lorenzen 2004, Scott 2005) and address to 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 Fredriksen 2008).

As a last consideration, however, we can say that creativity is still a fuzzy concept, which is difficult to measure and confine. Because of this, the scientific debate on this issue is undoubtedly rich from a theoretical point of view, while the same cannot be said of the related empirical evidences it provides. Therefore, in order to give an useful contribution to the debate, we think it is necessary to restrict the concept of creativity by referring to a few commonly-shared analytical concepts, and to validate it by means of comparative analyses.

So, the proper questions to answer are: is creativity a relevant fact? is it associated with the local/urban factor, to variety, to diversity? how can it be measured?

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 economy produced a lot of studies on cultural and creative industries, according either to a sectorial or a localization viewpoint, and following multiple perspectives that meet with the evolution of conceptualization raised from different contexts and in different countries (Pratt 1997, Jeffcutt and Pratt 2002, AA.VV. 2004). This is why it is difficult to make general considerations on this issue, although this is the direction followed by the *Mapping Document* (DCMS 2001), with its tentative homogenization of the factors involved. However, the most extensive comparative analyses carried out till now are probably those concerning the creative class, developed according to Florida's model and on the three indexes – tolerance, talent and technology – which measure the degree of creativity in North American and European city regions (Gertler et al. 2002,

Florida and Tinagli 2004, 2005), and even went so far as to make a global-scaled comparison (Florida 2005).¹ Although limited to some degree (Glaeser 2005), these studies are valuable, if not else because of the lively debate they promoted (Hansen et al. 2005, Wojan 2007) – which saw opposite positions as for the judgements over their approach – and also because of the considerable amount of comparative analyses they produced, which equally surveyed the social, the spatial and the economic dimensions of creativity. In addition, more recently, with the analysis of new enterprises and entrepreneurs –as constituents of a creative class – an attempt was made to go deeper into the issue by examining it at an enterprise level (Lee et al. 2004).

On our part, we tried and offered a contribution to the debate with a comparative analysis of Italy and Spain, two contexts bearing strong similarities in terms of the endowment of human, cultural and artistic resources, which are regarded as creative from a traditional point of view, but did not turn out to be such according to the creative class approach². These are two countries with rather consistent districtual configurations (Sforzi 1997, Boix and Galletto 2006), in which we discovered substantial processes of cultural districtualization (Lazzeretti 2003, 2008). As already said, creativity is a fuzzy concept, so the question we asked ourselves was whether by using a different assessment proxy to take into account both the spatial, social and economic dimensions of creativity, as well as other features (diversity and variety), the result might be different.

Creative industries are also cultural industries, 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 systems³.

¹ At first, Florida and his group analysed the North American big metropolises, and later they replicated their analyses on the city regions of Ontario and Canada, where they found a strong set of linkages between creativity, diversity, talent and technology-intensive activity (Gertler et al. 2002). They also led some comparative examinations in Europe, using a 'Euro Creativity index' which showed how only Northern countries, like Sweden, Finland, Denmark, the Netherlands, are particularly creative; while Italy, and Spain as well, turned out to have only a low degree of creativity. However, an *ad hoc* study conducted on the 103 Italian provinces, based on data from the 2001 census, identified, next to the big metropolitan areas, a few particularly interesting medium-sized cities (Florida and Tinagli 2004, 2005). With his last work Florida (2005) also tried to broaden the comparative analysis to a global context, just like Porter did with his studies on clusters.

² On the ranking worked out for fifteen European countries, Italy and Spain are respectively placed at the 11th and 12th position, with values of 0.37 and 0.34 in terms of Euro Creativity index (Florida and Tinagli, 2004, p. 32).

³ As it is well known from Marshall's and Becattini's lessons (Becattini 2004), the model of the Marshallian industrial district corresponds to a kind of socioeconomic organization. As far as our analysis is concerned, we use creative industries as proxies to measure creativity, just like cultural industries were used as proxies to measure the

Human capital is one of the resources existing in HC Places, and certainly an important creative resource, because it can generate knowledge and innovation; but no less important is the social capital denoting districtual patterns. It was in the attempt at seizing this latter aspect that the unit of analysis we chose to employ are the Creative local production systems (Creative LPS), that is, local labour systems specialized in the creative industry and separated according to their diversification, and to the specialization in traditional and non-traditional creative industries⁴ (Lazzeretti 2007). Then, we adapted to the case under exam the well-established methodology used by districtual analyses, which had already been tested for other contexts, such as the tourism industry (Lazzeretti and Capone 2008). Therefore, the questions our study wants to answer are the following: do creative industries in Italy and Spain cluster? Which are the typologies of the patterns of localization we surveyed, and how does creativity varies over space?

The main results of our analysis show that employment in creative industries in these two countries is in line with the values detected for the whole of Europe, that is around 5% of total employment, with Italy having one point percentage higher. The urbanization trend of creativity is confirmed for both countries, and it is particularly sharp-cutting for the Spanish case, while we detected a more dispersed existence of creative clusters over the territory for the case of Italy. As to variety, the big metropolitan areas have generally undergone a process of diversification, but the dominant pattern is still that of specialization in the traditional creative industries.

economic enhancement of culture and art in cultural districts (Lazzeretti 2008). In our view, the human factor is a strategic resource, an idiosyncratic asset, which – together with the artistic, cultural and environmental resources – can help identify and separate High Culture from Low Culture Places. However, it should be noted that when we talk about the processes of cultural districtualization, what we have in mind is not just the endowment of resources of a certain HC place, but also the cluster of actors who are in charge of their enhancement and of the improvement of their capital. Florida's approach stresses the human dimension and the socio-demographic characteristics of the creative class. These two perspectives are not opposed in themselves but rather they can complete each other when looking at creativity in its multifarious forms.

⁴ Using 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 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.

The paper is divided into four parts. After this introduction, section two deals with the methodology and in particular explains the definition of creative industries used and the methodology to map Creative LPSs. Section three presents the results of the analysis. First of all the impact and weight of employment in creative industries in Italy and Spain is analysed, then the geographical concentrations of creative industries are identified and finally a comparisons among the main urban centres is presented. The work ends with some conclusive remarks.

2. METHODOLOGY

2.1. 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* (1998 and 2001) as an extension of the culture sector which included multi-media activities, and following the structural changes due to the growth and development of the 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, p. 5). Creative industries are signs of the natural evolution of the cultural industry following 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), it 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 in order to define creative industries, where each approach focuses on a single distinctive factor: (1) the product/service supplied, (2) the producing organization, (3) the central production process, (4) and the occupational/workforce groups. Wyszomirsky (2004, p. 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 its characteristics allows to define 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 & Computer Services, Research and Development (Architecture, Graphic design, Fashion), and Telecommunications. All these

activities directly or indirectly produce cultural products and include commercial and artistic enterprises and public and non profit 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, the 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. To take into account the possibility of differentiated geographical patterns, it is proposed to differentiate creative activities in 'Traditional cultural industries' and 'Non traditional creative industries'.

The aim is to answer the question of whether these industries are strictly associated with culture or rather to a wider notion of creativity. To this purpose, a comparison (Lazzeretti 2007) was made between the definition of 'cultural industries' assumed in a report on cultural economy in Italy by Bodo and Spada (2004),⁵ and the definition of 'creative industries' given in the *Mapping Document* (DCMS 2001). In this way, the creative industries present in the DCMS were separated into two more detailed and practical groups: one designates the 'traditional cultural sectors' (that are basically those present in the Italian report) and the other includes the non-traditional creative activities. In particular, the traditional creative activities include: Publishing, Architecture and engineering studios, and Music, film and performing arts. non-traditional creative industries include Research and development, Software and computer services, and Advertising (Table 1)⁶.

⁵ See for instance Towse (2003).

⁶ 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. This is due to the fact that 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, antique, etc. Moreover it is not possible to distinguish 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	
22.2 Printing and service activities related to printing	73.1 Research and experimental development on natural sciences and engineering
Architecture and engineering studios	73.2 Research and experimental development on social sciences and humanities
74.2 Architectural and engineering activities and related technical consultancy	
Music, Film, Video and performing arts	Software & Computer Services
22.3 Reproduction of recorded media	72.2 Software consultancy and supply
92.1 Motion picture and video activities	72.6 Other computer related activities
92.2 Radio and television activities	Advertising
92.3 Other entertainment activities	74.4 Advertising

Source: Elaborated from DCMS (2002) and NACE Rev.1.

2.2. The identification of the Creative local production systems

The urban nature of creative activities suggests that creative industries are not homogeneously distributed across the territory and that urban local production systems (LPS) as large cities and metropolitan areas should be more specialized than others, showing characteristics of Creative LPS.

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

Territorial approaches to the geographical distribution of creative activities in Spain and Italy centred on the use of large administrative units, like regions or provinces, or concentrated in particular regions or cities, with the main limitation being that they are too large or too small to capture socioeconomic processes of creativity over space. Sforzi and Lorenzini (2002) propose the use of the local labour market (LLM) as an appropriate unit of analysis, which is capable of capturing socioeconomic processes over space as well as capturing and analyzing local specialization patterns, as they approach the territorial boundaries of the LPS. Menghinello (2002) provides several reasons for using LLM as a basis for the identification of LPS: they go beyond the administrative definitions and refer more to the effective organisation of the territory; they 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, the Italian Institute of Statistics (ISTAT 2005) identifies 687 LLMs in Italy for 2001 whereas Boix and Galletto (2006) identify 806 LLMs in Spain.

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 to compare local production systems in two countries and the possibility of several typologies leading different input-output structures, we will rely on the most elemental characteristic of a Creative LPS, the territorial concentration. The Creative LPS is empirically defined as a concentration of employment belonging to the creative industry within the geographical boundaries of a local production system.

Concentration of creative industries in LPSs can be identified by means of standard or stochastic methods and using absolute or relative indexes. Location quotients are the most employed method to identify territorial specialization because they have the basic propriety of capturing 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, Basset et al. 2002), Spain (García et al. 2003) and Italy (Capone 2008). The location quotient (LQ_{ij}) 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 an industry i , E_j is the number of employees in a LPS j , and E is the total employment in the country. A 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 because 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 the use of a minimum threshold value, 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:

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

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 so precise information about the relative specialization although it has the propriety 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 literature, in the attempt at solving or improving the quality of the standard LQ. O'Donohue and Gleave (2004) propose an improved approach to the LQ which solves the cut-off problem by parametrizing the quotient to a normal function, which allows for the application of statistical levels of significance. The method to obtain the Standardized Location Quotient (SLQ) takes place in three steps (O'Donohue and Gleave 2004): (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 to each observation the mean 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% confidence 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% confidence interval can be used:⁷

⁷ Following O'Donohue and Gleave (2004) we use 5% and 10% confidence intervals usual in econometric statistical inference although the suggested values can vary depending on the particularities of each research.

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

Another version of the LQ is the Symmetric LQ:

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

where values above 1 indicates 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 in the O'Donohue and Gleave method.⁸

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 supposed to be 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 identify a LLM as a Creative LPS, if it is specialized in the creative industry as a whole, or in one of their components: traditional or non-traditional. 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 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) complementing 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.

3. RESULTS

3.1. Employment in creative industries

⁸ 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 later multiplies the Cross-industry LQ by a term λ^* to weight the size of the place.

Creative industries have 879,000 jobs in Italy (5.60% of total employment) and 673,000 in Spain (4.12%) (Table 2), in the usual range between 4-6% found in other studies (Pratt 1997, Hall 2000, DCMS 2001) ⁹. Creative industries are more important in Italy than in Spain although the relative difference between both countries is not extreme (1.5% in absolute terms or 36% in relative).

Traditional creative industries add up to 580,000 jobs in Italy (3.7% of total employment) and 458,000 in Spain (2.8% of total employment) (Table 2). The share of jobs in traditional creative industries on total creative industries is very similar in both countries: 66% in Italy and 68% in Spain. Thus, regarding the distribution of employment, traditional creative industries are larger than the non-traditional ones.¹⁰ Inside the traditional creative industries, the most important activities are Architecture and engineering. These activities are also characterised as being much more important in Italy (295,000 jobs, 1.9% of total jobs and 33.6% of creative jobs) than in Spain (142,500 jobs, 0.9% of total jobs and 21.2% of creative jobs).

The other two groups of traditional creative industries are more similar across countries. Printing and publishing account for 173,000 jobs in Italy (1.1% of total employment) and 197,000 in Spain (1.2% of total employment). Its share on total creative jobs is 19.7% in Italy and 29.2% in Spain.¹¹ Film, video and performing arts add to 111,175 jobs in Italy (0.7% of total employment) and 118,000 in Spain (0.7% of total employment). Its share on total creative employment is 12.6% in Italy and 17.6% in Spain.

Non traditional creative industries have 299,000 jobs in Italy (1.9% of total employment) and 215,500 in Spain (1.3% of total employment) (Table 2). Their share on total creative jobs is 34% in Italy and 32% in Spain. The greater relative importance of non-traditional creative industries in Italy is explained by Software and computer services. They have 224,000 jobs in Italy (1.4% of total employment and 25.5% of creative jobs) and 145,000 in Spain (0.9% of total employment and 21.5% of creative jobs). The share of Research and development considered within the creative industries is also slightly larger in Italy (23,000 jobs and 2.6% of creative jobs) than in Spain (8,800 jobs and 1.3% of creative jobs) although in both countries is very small (0.2% of total employment in Italy and 0.1% in Spain). Finally,

⁹ Other sectors are much more relevant, for example: Manufacturing (25% in Italy and 17% in Spain), Trade (around 16% in both countries), Real estate and business activities (11% in Italy and 8% in Spain), Construction (8% and 12% 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.

¹⁰ These results could change using other indicators, as the turnover or the added value.

¹¹ 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.

advertising is slightly more important in Spain (62,000 jobs, 0.4% of total employment and 9.2% of jobs in creative industries) than in Italy (52,000 jobs, 0.3% of total employment and 5.9% of jobs in creative industries).

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 and INE Census (2001)

3.2. 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% of LLMs) and 25 in Spain (3.1% of LLMs). Creative employment in Creative LPSs adds up for 561,500 employees in Italy (63.8% of creative employment) and 438,000 in Spain (65% of creative employment) (Table 3).

There are 42 traditional Creative LPSs in Italy (67.7% of Creative LPSs). They have 108,000 employees in creative industries where 74.8% are in traditional creative industries. In Spain there are 17 traditional Creative LPSs (68% of Creative LPSs) and there are 79,000 employees in creative industries, of whom 72% are in traditional creative industries. In Italy, traditional Creative LPSs are basically associated with medium-sized cities 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% of Creative LPSs) that have 64,500 employees in creative industries (55.5% in non-traditional creative industries). Again, these LPSs are associated to big-medium cities with a medium specialization on high-tech services (medium cities specialised 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.¹² There are 9 diversified Creative LPSs in Italy (14.5% of Creative LPSs) and 8 in Spain (32% of Creative LPSs). Diversified Creative LPSs add up to 389,000 creative employees in Italy (44,3% of the employment in creative industries) and 359,000 employees in Spain (53% 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 pure traditional and non-traditional Creative LPSs are distributed across all the country, forming small clusters. However, in Spain Creative industries show to be strongly concentrated in few places. These concentrations form clusters around Madrid, Barcelona, Basque Country-Navarre-Rioja, and Galicia as well as Valencia and Seville. Madrid's LPS accounts for 30% of the Spanish employment in creative industries and Barcelona other 15%. Both have 45% of the Spanish employment in creative industries and 69.5% of the employment in Creative LPSs. Thus, 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) produces the same results than 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 are centring the distribution and shortening the upper tail where extreme values are concentrated, a fact that can be seen as an undesirable effect if our "values-objective" are concentrated in this upper tail. This causes that in non-traditional creative industries, we can accept a value equivalent to 0.8 in the traditional LQ by including some LPSs which, as best as we know, are not specialized in this typology of activities. Thus, the traditional LQ combined with a threshold produces better results than other methodologies.

¹² It is possible being diversified without being separately specialized in traditional or non-traditional (or any of both) industries although no system with these characteristics was detected in our research.

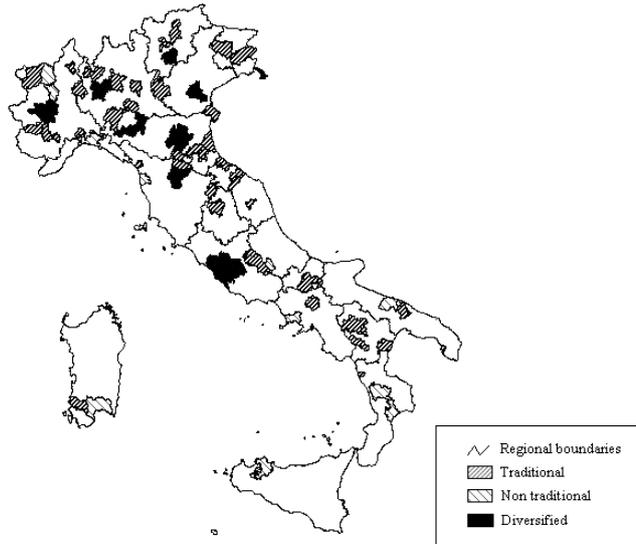
Table 3. Traditional, non-traditional and diversified Creative LPS in 2001. LQ above 1 and minimum 250 employees by LQ

	N° of Local systems		Employment in creative industries		Examples		
	Italy	Spain	Italy	Spain	Italy		Spain
Traditional Creative LPS	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; Pamplona; Compostela; Penedès; Igualada; d'Anoia; Estella; Capellades	Sevilla; A Coruña; Logroño; Santiago de Girona; Vilafranca del Tarragona; Manresa; Sant Sadurní d'Ontinyent; Ibi;
Non traditional Creative LPS	11	0	64,458	0	Ivrea, Saint-Vincent, Genova, Pisa, Naples, Bari, Catanzaro, Palermo, Cosenza, Piscina, Cagliari		-
Diversified Creative LPS	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			

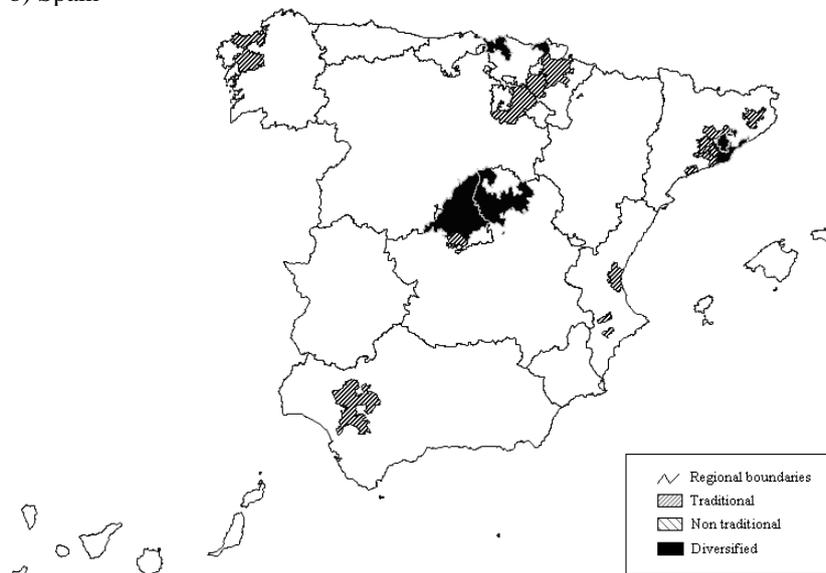
Source: Elaborated from ISTAT and INE Census (2001).

Figure 1. Creative Local Production Systems in Italy and Spain, 2001. LQ above 1 and minimum 250 employees by LQ

a) Italy



b) Spain



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

3.3. A comparison among the main urban centres

Due to the concentration of creative industries in the largest Creative LPSs, we centre on the main urban LPSs in both countries. The comparison includes the capital cities (Rome and Madrid), the main industrial centres (Milan and Barcelona) as well as cities of art like Florence and Valencia.

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

1. Madrid, Milan, Barcelona and Rome are the main creative centres in their countries. Madrid's LPS (205,000 creative jobs) has the largest amount of creative employment whereas on a second 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 (27.8%) and Barcelona (14.7%), which together account for 42.5% of national employment in creative industries (Table 5). In Italy, Milan's LPS has 13.3% of national creative industries and Rome 11.4%. When combined, they account for 24.7% of national creative employment. The share of Valencia (3.8%) and Florence (2%) is less significant.

2. Regarding the share of creative industries over local employment, the most specialized cities are Milan (9.5%) and Rome (9%), followed by Madrid (8.5%) and Barcelona (7.4%), whereas creative industries seems to be less important in Florence (5.2%) and Valencia (4.2%) (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 activities (Table 6). In Rome, Milan, Madrid and Barcelona, traditional creative industries contribute to around 5% of local employment, whereas in Florence and Valencia the same share is between 3% and 4% (Table 6). non-traditional creative industries are also very important for Milan (4.5% of local employment) and Rome (3.9%) whereas their importance reduces for Madrid (3.2%) and Barcelona (2.4%), and they are not very important in Florence (1.5%) and Valencia (1.3%).

6. Overall, all 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% respectively) whereas in Madrid traditional creative industries share a larger amount on total local creative employment (62%) (Table 7). The share of traditional creative industries on total creative employment is more important in Barcelona (68%), Valencia (70.3%) and Florence (70.5%).

Going into details, Rome's LPS is the most specialized in Film, video and performing arts (26% of local employment in creative industries) due to the location of Cinecittà cinema studios (Table 9). Milan shows the most balanced profile although Software and computer services shares 34% of local creative employment. Madrid is characterized because of the concentration of a large amount of the national employment in creative industries and the relevance of Printing and publishing (26% of local creative employment) as well as Software and computing services. Barcelona stands out because of the importance of Printing and publishing on local creative employment (38%). Finally, Florence and Valencia are characterized by their specialization in traditional creative activities where the relative specialization of Florence in Architecture and engineering, and of Valencia in Printing and publishing and Architecture and engineering is quite remarkable.

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 & 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 and INE Census (2001).

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 & 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 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 & 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 and INE Census (2001).

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 & 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 and INE Census (2001).

4. CONCLUSIVE REMARKS

The aim of the present work was twofold: first, to measure the relevance of the ‘creativity’ phenomenon in Italy and Spain and its spatial dimension using as units of analysis the specialized local production systems of creative industries; second, it was to point out the difference in the existing localization patterns and in the creative vocations of territories. Creativity industries are defined and measured in Italy and Spain focusing on two different kinds of creative industries: traditional cultural industries (Publishing, Music, Architecture and engineering, Performing arts) and non-traditional (technology-related) creative industries (R&D, ICT, Advertising). Departing from the definition of creative industries and using LLMs as territorial units, Creative LPSs are identified in Italy and Spain.

The relevance of creativity in the countries under exams results to be around 5% of total employment: creative industries account for 5.6% of total employment in Italy (879,000 jobs) and 4.1% in Spain (673,000). Creative industries are more important in Italy than in Spain. These data, although not much remarkable in term of absolute values, are in line with the average values made known by other researches over creative industries at a European level (Pratt 1997, Hall 2000, DCMS 2002), and find a place for creative industries which is equal to other sectors, such as Transport and communication (around 6% in both countries) and Hotels and restaurants (5,4%).

In general, both countries can be well described for a more traditional form of creativity. Traditional creative industries are more than the

non-traditional ones: 66% in Italy and 68% in Spain. The higher relative importance of non-traditional creative industries in Italy is explained by Software and computer services.

The variety and diversity of Creative LPSs is greater in Italy than in Spain. We identified 62 Creative LPSs in Italy (8.9% of LLMs) and 25 in Spain (3.1% of LLMs). Creative employment in Creative LPSs adds up for 561,500 employees in Italy (63.8% of creative employment) and 438,000 in Spain (65% of creative employment). There are 42 traditional Creative LPSs in Italy, 11 non-traditional and 9 diversified. In Spain 17 traditional Creative LPSs are identified; none of them is exclusively non-traditional and 9 are diversified.

Creative industries show an 'urban' nature as they tend to cluster in the largest urban agglomerations, where they play an important role for the local economic base. This event is common to both countries, but it is particularly obvious for Spain, where there are 5-6 metropolitan areas which take in the quasi entirety of enterprises. The case of Italy, instead, although witnessing a trend of urbanization within the big cities, also register a clear situation of diffusion of Creative LPSs all over its national territory. Creative LPSs as a whole don't show a clear pattern of concentration in Italy and are distributed across the country. Pure traditional and non-traditional Creative LPSs are distributed across the whole country giving shape to small clusters, whereas diversified Creative LPSs are concentrated in the Centre and the North. On the contrary, Spanish Creative LPSs are extremely concentrated and the LPSs of Madrid and Barcelona alone have 45% of Spanish employment in creative industries and 69.5% of the employment in Creative LPSs.

The comparison between the largest LPSs includes capital cities like Rome and Madrid, industrial centres like Milan and Barcelona, and cities of art or culture like Florence and Valencia. Milan (9.5%) and Rome have a larger percentage of creative jobs on total local employment (9%), followed by Madrid (8.5%) and Barcelona (7.4%), whereas creative industries seem to be less important in Florence (5.2%) and Valencia (4.2%). All these Creative LPSs are diversified, with the exception of Valencia (specialized in traditional activities), and the cities show particular combinations of creative industries which produce different profiles.

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