Creative industries and firm creation: disentangling causal effects through historical cultural associations

Eva Coll-Martínez

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Abstract:

In the last decade policy makers and scholars have highlighted the capacity of creative industries to stimulate economic growth. However, there is still some debate about the potential effect of reverse causality on this relationship, as creative industries may also be attracted to successful areas. Therefore, the aim of this paper is to disentangle the role played by the existing spatial concentration of these kinds of activity on new firm creation. The main statistical source is the REIC (Catalan Manufacturing Establishments Register), which has plant-level microdata on the location of plants in Catalan municipalities between 2002 and 2007. By using, for the first time, cultural associations as historical instrumental variables, the results confirm the potential of creative service industries (CSIs) for creating new firms.

Key words: creative industries; cultural associations; industrial location; IV.

Clasificación JEL: R39; Z10.

Industrias creativas y creación de empresas: identificando sus efectos causales a partir de las asociaciones culturales históricas

Resumen:

En la última década diversas instituciones e investigadores han señalado la capacidad de las industrias creativas para fomentar el crecimiento económico. Sin embargo, aún existe cierto debate en torno a la posible causalidad inversa existente en esta relación, ya que las industrias creativas también pueden verse atraídas hacia las áreas más prósperas. Por lo tanto, el objetivo de este trabajo es el de desentrañar el papel desempeñado por la concentración espacial de empleo en industrias creativas en la creación de nuevas empresas. La principal fuente estadística es el REIC (Registro de Establecimientos Industriales de Cataluña), que contiene microdatos a nivel de planta sobre la ubicación de establecimientos en los municipios catalanes entre 2002 y 2007. Utilizando, por primera vez, las asociaciones culturales como variables instrumentales históricas, los resultados confirman el potencial de los servicios en industrias creativas para fomentar la creación de nuevas empresas.

Palabras clave: industrias creativas; asociaciones culturales; localización industrial; variables instrumentales.

Clasificación JEL: R39; Z10.

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1. INTRODUCCIÓN

The creative industries, defined as a set of economic activities that use creativity as the main input and which provide tangible or intangible goods or services with creative content and economic value potentially generating revenues from trade and intellectual property rights (UNCTAD, 2010), have been shown to have considerable potential in terms of local economic growth, development and competitiveness (see, for instance, Florida, 2002; European Commission, 2010; UNCTAD, 2008; 2010). In an increasingly global world, those sectors incorporating high value added from creativity and knowledge – i.e. the creative industries – play a key role in the transformation of economic activity (Sassen, 2009). Because of this, local governments have attempted to attract creative industries to their cities to improve their regional competitiveness.

Creative industries are positively associated with economic growth because creativity is a source of innovation and industrial mix reconfiguration process (Hall, 2000; Florida, 2002; Scott, 2004; Currid, & Connolly, 2008; UNCTAD, 2010; Potts, 2011). Lee (2014) tries to identify this causal relationship by summarising the three mechanisms by which creative industries can lead to economic growth according to the literature. First, creative industries are attractive simply as a growth sector, and their multiplier effect increases local demand. Second, creative industries can increase productivity in other sectors. Third, creative industries can have an amenity value because they attract skilled residents or tourists. So, in line with Coll-Martínez and Arauzo-Carod (2017), municipalities with higher levels of employment in creative industries should be more able to attract new firms because of knowledge spillovers in terms of creativity and innovation, leading to new business development and growth in other industries (Scott, 2000; Lee, Florida, & Acs, 2004; De Jong, Fris, & Stam, 2007; Stam, De Jong, & Marlet, 2008).

Although much of the research done suggests that creative industries enhance economic outcomes, there is still some debate about the potential effect of reverse causality on these models, as creative industries may also be attracted to already successful areas (Hall, 2000; Markusen, 2006; 2010). The Ordinary Least Squares (OLS) estimation of the effect of creative industries on economic dynamism may lead to inconsistent estimation of the coefficients since it assumes that regressors are uncorrelated with the errors. Moreover, omitted variable biases (i.e., quality of public infrastructures and cultural amenities) can also contribute to the inconsistency of the estimation. Thus, the instrumental variables (IV) technique is the leading approach to address both issues as it allows to identify and isolate any source of potential endogeneity. In this regard, Lee (2014) made the first attempt to deal with this causal relationship by using IV. However, his results are still inconclusive and it seems that more theoretical and empirical studies are required.

Besides the traditional location factors that encourage the concentration of creative employment – i.e., agglomeration economies within the organization of industry; the existence of historical and cultural infrastructures; the infrastructure of specialised public and social actors that provide support for these activities; and 'soft factors' [1] or amenities in terms of quality of life, tolerance, and cosmopolitan environments – a particular identity also attracts creative talents (Scott, 2000; Andersson, & Andersson, 2008; Pareja-Eastaway, Turmo, & Garcia, 2008; Murphy, Fox-Rogers, Redmond 2014, & Coll-Martínez, & Arauzo-Carod, 2017). This particular identity, as an intangible characteristic, is difficult to measure and only a few papers have tried to disentangle its effects on economic dynamism. Coll-Martínez, & Arauzo-Carod (2017) and Wojan, Lambert, & McGranahan (2007) try to identify an unobservable *creative milieu* (as a proxy measuring the image of a specific location that helps to attract creative talents and entrepreneurs) and use a two-step procedure to examine if this unobservable *creative milieu* attracts businesses and artists to a particular municipality. However, their approach may be susceptible to omitted variables critiques, which reduce *creative milieu* to a misspecification error. Thus, this paper presents an alternative approach to deal with this issue.

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[1] Soft characteristics are understood as 'specific urban amenities that create an environment that attracts people who are key to the most promising economic activities for the economic development of the urban region' (Musterd, & Murie, 2010). The term 'soft' is used because these factors are difficult to measure or define (Clark, Lloyd, Wong, & Jain, 2002).

In this regard, it should be taken into account that despite the potential of creative industries for enhancing the location of economic activity, the conditions for creating or stimulating creative knowledge regions in a context of a globalised economy are certainly dependent on urban history and the economic tradition of the territory (Pareja-Eastaway and Pradel-i-Miquel, 2014). This urban history can be controlled to some extent and the tolerant, creative, proactive and venturesome personality of a municipality can be captured through cultural organizations or associations as the emergence of city institutions protecting economic and political freedoms facilitates the attraction and production of creative talent (Serafinelli, & Tabellini, 2017). Cultural associations (or *ateneus* in Catalan) are private institutions that aim to educate, cooperate and disseminate modern science and culture among its members and population (Arnabat, & Ferré, 2015). They arose in Catalonia in response to popular demand to bring cultural, social, economic and political changes in the last third of the nineteenth century.

Therefore, this paper presents an alternative approach to that of Coll-Martínez, & Arauzo-Carod (2017), Wojan, Lambert, & McGranahan, (2007) and Lee (2014). It attempts to fill the gaps in these studies by analysing the links between creative industries and new firm location for Catalan municipalities between 2002 and 2007. In particular, it investigates two questions: 1) Do cultural associations capturing the unobservable local identity of a municipality explain the present concentration of creative employment? And 2) Do employment in creative service industries (CSIs)[2] lead to new firm location?

Because of the potential endogeneity of employment in CSIs, this paper relies on cultural associations and urban population in the eighteenth and nineteenth centuries as sources of exogenous variation. Cultural associations democratised culture and knowledge in all its fields. Since these cultural associations were not randomly located and some of the local factors influencing the foundation of cultural associations in the nineteenth and twentieth centuries may still influence the present concentration of creative employment in these municipalities, instrument exogeneity and relevance should be satisfied. The main statistical source is the REIC (Catalan Manufacturing Establishments Register), which has plant-level microdata on the location of new plants in Catalan municipalities between 2002 and 2007. By making use of these historical IVs, results confirm the potential of CSIs for new firm creation. These results are robust across metropolitan and non-metropolitan municipalities, and also across different empirical approaches. They support the view that creative industries lead to economic dynamism (i.e., new firm creation) in the local economy. Furthermore, the IV results suggests that the intrinsic and historical identity defining the municipality – in terms of cultural associations – explains why creative employment is attracted to the municipality and, at the same time, this encourages the location of new firms.

The remainder of the paper is as follows. Section 2 outlines the links between cultural associations and creativity. Section 3 presents the methods used. Section 4 presents the data and Section 5 discusses the main results. Finally, Section 6 summarises main conclusions and the implications for policy makers.

2. CULTURAL ASSOCIATIONS: A SOURCE OF CREATIVITY

2.1. THE HISTORY OF CULTURAL ASSOCIATIONS IN CATALONIA

According to the Gran Enciclopèdia Catalana (1968), a cultural association (or *ateneu* in Catalan) can be defined as a literary and scientific association that aims to increase the intellectual level of its members by holding seminars, conferences, courses and readings. Furthermore, a cultural association is defined as an institution that creates and accepts culture, and which disseminates and contrasts different cultural alternatives resulting from human reason, which may be scientific or literary (Solà, 1978). The general term "cultural

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[2] Creative service industries (CSIs) are those creative industries operating in the service sector. They include industries like arts, advertising, cinema, design, publishing, radio and TV, R&D or software (UNCTAD 2010). The two main reason to focus on CSIs are: First, unlike creative services, creative manufacturing is more engaged in making than in creating (Boix-Domenech and Soler-Marco, 2017). Second, CSIs are more important than manufacturing ones in employment terms (Ajuntament de Barcelona, 2015). See Section 4 for further details.

associations" refers to different types of cultural or leisure entity. To a large extent, the name of the entity indicates the ideology underlying its foundation (Arnabat, & Ferré, 2015).

Cultural associations were at their most effervescent time in the second third of the nineteenth century in the framework of a liberal Catalonia that was being industrialised, but which generated considerable social and cultural inequalities. They arose from the working classes in order to compensate for the lack of public investment in education and culture. Throughout the first third of the twentieth century, they became more established and were soon a key part of Catalan civil society and its associative network (*associacionisme*[3]) (Arnabat, & Ferré, 2015; Navais, 2017). Years later, the Franco dictatorship banned most cultural associations, although they never really stopped working during these troubled political times (Santacana, 2013).

In Europe, cultural associations had their origin in the scientific-literary societies founded in the eighteenth century. Broadly speaking, these institutions were designed for the privileged classes and disseminated culture among its associates. This model was extended to Spain in the nineteenth century (Villacorta, 2003). Unlike the rest of Europe, in Catalonia the fact that the Spanish State did not cover basic needs such as health, culture and education gave cultural associations the double function of socializing and educating the less-favoured classes. They were also characterized by their ability to promote social cohesion and popular culture (Bosch, 1991; Todó-i-Tejero, 2000).

2.2. FROM CULTURAL ASSOCIATIONS TO CREATIVITY

At this point the reader may be wondering how cultural associations are related to creativity and, particularly, to creative employment. In the words of the former Minister of Culture of the Catalan Government F. Mascarell, creativity has an individual origin, but it cannot be forgotten that the most important fact about creativity is its transmission (Arnabat, & Ferré, 2015).

The basic ideas underlying cultural associations were freedom of speech and tolerance since they were the only source of entry and dissemination of new ideas. In most cases, artists and other creative minds found that cultural associations gave them a meeting point to discuss their ideas and the support to develop their projects (Navais, 2017). At the same time, cultural associations were the only way by which the working classes could access cultural activities, especially, in the less populated municipalities (Baltà, 1999; Arnabat, & Ferré, 2015). Indeed, cultural associations released many working-class Catalans from illiteracy, particularly in those municipalities with lower illiteracy rates, usually rural areas (Solà, 1998; Arnabat, & Ferré, 2015). In this regard, the connection between cultural associations and the cultural development and literacy of society is undeniable. Consequently, cultural associations became an essential cultural and social structure for municipalities, giving them a collective identity and their citizens a sense of connection and belonging (Fontana, 2014; Navais, 2017).

As it has been said above, a municipality's ability to attract and retain creative individuals essentially depends on urban history and the "soft factors" in terms of city environment that shape the particular identity of the municipality (Landry, 2000; Florida, 2002; Scott, 2006). In fact, this particular identity of the municipality is path dependent. Thus, cultural associations – through the influence of the local bourgeoisie and working classes[4] – developed the cultural synergies and personality of municipalities and, therefore, determined their subsequent ability to enhance the emergence of creative industries years later (Pareja-Eastaway, & Pradel-i-Miquel, 2014; Serafinelli, & Tabellini, 2017). Indeed, the role of cultural associations and cultural path-dependency on the present development of creative cities has been pointed out in recent studies by García-García, Fernández-Salinas, Caravaca-Barroso, & González-Romero (2012), Andres, & Chapain

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[3] *Associacionisme* (associationism) can be defined as a social, legal and historical phenomenon in modern societies consisting of the will of several individuals to set up associations to achieve predetermined goals or to satisfy specific interests (Mestre-i-Campi, 1998). Also Berme, & Nord (2000) understand associationism as a means of self-organisation within civil society in a Western-style society. Please do not confuse *associacionisme* (the Catalan term) with associationism (i.e. the psychological and philosophical theory).

[4] In most cases the support of the local bourgeoisie assured the survival and expansion of cultural associations. The working class also promoted their own cultural institutions and associations, mainly based on anarchist and republican ideas through culture that brought dynamism to their cities (Keating, 2001; Pareja-Eastaway, & Pradel-i-Miquel, 2014; Navais, 2017).

(2013), Ponzini, Gugu, & Oppio (2014), Bonfanti, Castellani, & Rossato (2015) and Serafinelli, & Tabellini (2017).

All in all, given the reasons that led to the development of cultural associations in the late eighteenth and early twentieth centuries, this article considers that the foundation of a cultural association in a municipality reveals the extent of its cultural sensitiveness, tolerance to new ideas and proactivity. In particular, if the creation of cultural associations in the eighteenth and early twentieth centuries provided some of the most important factors that still today explain the location of creative individuals (i.e., a shared cultural identity, proactive attitude); these municipalities must now have some advantage in attracting to them population employed in CSIs. In short, this article argues that some of the local factors arising from the foundation of cultural associations in the nineteenth and twentieth centuries may still influence the present concentration of creative employment in these municipalities.

2.3. STYLISED FACTS ON CULTURAL ASSOCIATIONS

In the nineteenth and twentieth centuries 2,170 cultural associations were set up in Catalonia (see Table 1). Most of these cultural associations have their origin in the nineteenth century (708) and the first third of the twentieth century (985) because the first Spanish constitution allowed freedom to associate (Olías-de-Lima, 1977). The instability of the Civil War obviously had an effect and only 45 new cultural associations were founded in this period. In the subsequent dictatorship there were very few new cultural associations (287), and most of those that were founded associated with the Franco regime (Augé, 2004). However, contrary to what might be thought, this decreasing trend persisted once democracy had been established. More specifically, only 159 new cultural associations were founded between 1975 and 2014. In this regard, the socio-economic changes of the late twentieth century have contributed to the decline of cultural associations and their subsequent appropriation by the market (Baltà, 1999).

TABLE 1.
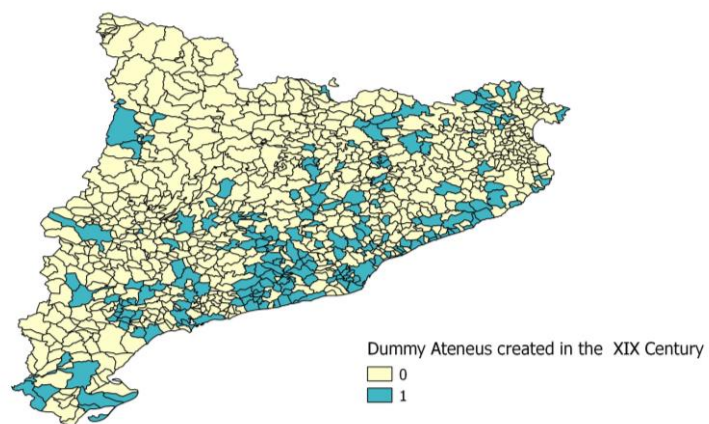Creation of cultural associations by historical periods

	Historical period	Cultural associations
1800 - 1900	Industrialisation	708
1900 - 1935	Restauration	985
1936 - 1939	Civil War	45
1940 - 1975	Dictatorship	287
1975 - 2014	Democracy	159
1800 - 2014		2.170

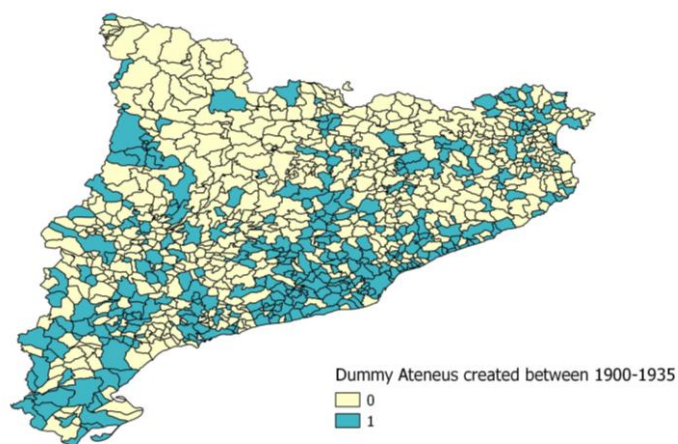Source: Own elaboration on Arnabat, & Ferré (2015)'s data.

This paper mainly focuses on the setting up of cultural associations (*ateneus*) during the most representative period in the history of cultural associations in Catalonia: that is, the nineteenth century (1800-1899) and the first third of the twentieth (from 1900 to 1935). Their relevance and exogeneity as IVs to instrument the effect of the employment in CSIs on firm entries are discussed in-depth in Section 5.2. Here the spatial patterns and stylised facts for these variables are presented as well as the distribution of population in 1900 for all the municipalities of Catalonia.

Figure 1 depicts the spatial patterns of these historical IVs. According to Panel A, even if in most Catalan municipalities no cultural associations were created in the nineteenth century, the spatial distribution of cultural associations was not homogenous throughout Catalonia. This geographical pattern holds for the creation of cultural associations between 1900 and 1935 (Panel B). In this case, however, the number of municipalities with at least one cultural association is even larger and they are spread more widely throughout the region. In this regard, cultural associations were created in both inland and seaside municipalities. A comparison of these geographical patterns with the spatial distribution of the population in 1900 (Panel C)

Spatial distribution of cultural associations (*Ateneus*) and historic population

Panel A. Municipalities with cultural associations created in the nineteenth Century

Dummy Ateneus created in the XIX Century
☐ 0
☐ 1

Panel B. Municipalities with cultural associations created between 1900 - 1935

Dummy Ateneus created between 1900-1935
☐ 0
☐ 1

Panel C. Spatial distribution of population in 1900

Population in 1900
☐ 3 - 2051
☐ 2051 - 5817
☐ 5817 - 12738
☐ 12738 - 28073
☐ 28073 - 539103
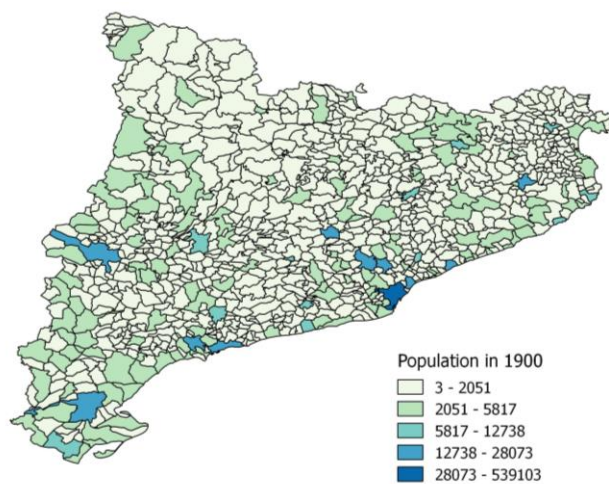
Source: Own elaboration using Arnabat, & Ferré (2015), and Census 1900 (INE).

confirms the idea that even in the least industrialised and populated municipalities an important cultural and social movement was emerging.

3. METHODS

3.1. MODEL SPECIFICATION

In order to test the relationship between creative industries and new firm creation in metro and non-metro municipalities in Catalonia, the number of new and relocated manufacturing establishments over 2002 and 2007 (*Firm entries*) in a municipality is estimated as a function of employment in CSIs (*CSI)* and a set of specific local characteristics:

$$Firm\ entries_{i(2002-2007)} = \beta_0 + \beta_1 CSI_{i(2001)} + \beta_2 puni_{i(2001)} + \beta_3 ptech_{i(2001)} +$$

$$\beta_4 pop\_density_{i(2001)} + \beta_5 job\_pop_{i(2001)} + \beta_6 income_{i(2001)} + \beta_7 job\_ind_{i(2001)} +$$

$$\beta_8 psmall_{i(2001)} + \beta_9 dist\_pro_i + \beta_{10} altitude_i + \beta_{11} seaside_i + u_i \qquad (1)$$

According to the literature on firm location decisions, education in terms of technical and graduate studies (*ptech, puni*) is an important location factor whatever characteristics a firm may have. However, commuting flows may solve spatial mismatch in the labour market if there are appropriate transport infrastructures (Arauzo-Carod, 2005). There is wide consensus on the more productive environment (which is preferred by firms) generated by agglomeration economies (*pop_densisty, job_pop*). Higher income levels should encourage the creation of firms by facilitating access to possible additional financial support at the time of running a new business (*income*). The industrial mix (*job_ind*) helps to capture the local economic structure. Similarly, the existence of a wide range of small firms (*psmall)* typically encourages firms to locate, as suggested by the Incubator Hypothesis (Garofoli, 1994). Obviously, geography and institutional issues matter (Guimarães, Figueiredo, &Woodward, 2000), as firms need good accessibility to services provided in cores, so it is necessary to control for the geographical position of the municipalities (*seaside, altitude*) and their distance from main cities (*dist_pro*) because of their institutional importance. Finally, municipalities with most employment in CSIs (*CSI*) should favour the entry of all kinds of firm. The results for this explanatory variable allow to test the main hypothesis of this paper.

Although some authors argue that adding human capital and creative class to the model could give endogeneity problems (Glaeser, 2004; Markusen, 2006; 2010), this paper avoids this issue as it relies on employment in CSIs (defined by UNCTAD) and not on the concept of creative class (which defines as creative those occupations requiring high levels of education). In fact, *CSIs* attempts to capture the concentration of employment (with different levels of human capital) in those sectors in which creativity is very important to their activity.

3.2. MODEL SELECTION

Under the assumption that the random element of the number of firm entries is uncorrelated with employment in CSIs, Eq. (1) can be estimated by ordinary least squares (OLS). However, as Hall (2000) and Markusen (2006, 2010) point out, creative industries may not be randomly located. On the contrary, their location is expected to be endogenous to economic dynamism: creative industries may also be attracted to the most successful municipalities, thus leading to reverse causality. In an attempt to deal with this issue, this paper implements an IV strategy which uses the historical instruments discussed in Section 2.

Another concern about the above approach is that estimating the number of firm entries by using OLS may lead to a coefficient bias since the number of firm entries could be understood to be a discrete response variable. For econometric estimation, Count Data Models (CDM) have commonly been used to deal with

this location phenomenon from a spatial point of view: i.e., when trying to explain how the local characteristics of different sites (e.g., municipalities, counties or regions) can influence firm decisions (see Arauzo-Carod, Liviano-Solis, & Manjón-Antolín, 2010, for a review of the empirical literature). Poisson models seem to be the starting point, but they have some limitations. They assume that the mean and variance are equal, but this is not usually the case when dealing with location decisions because of the concentration of entries in some areas, which involves an overdispersion problem. This problem can be solved by the generalised form of the Poisson model (the Negative binomial model), which introduces an individual unobserved effect into the conditional mean and allows the variance to exceed the mean.

Nevertheless, the use of CDM raises the issue of reverse causality again. Cameron and Trivedi (2010) propose a structural-model approach to control for endogeneity when estimating CDM. More specifically, this paper applies a bootstrap for Poisson and Negative binomial two-step estimations (see Cameron, & Trivedi, 2010, pp. 592-595 for further details).

4. DATA

The data in this paper are from Catalonia,[5] an autonomous region in north-eastern Spain whose capital is Barcelona. The data includes one dataset about the location of new plants (dependent variable) and another dataset about territorial characteristics (independent variables). The dataset about the location of new plants is the Register of Manufacturing Establishments of Catalonia (REIC), supplied by the Catalan Government (Ministry of Innovation, Universities and Enterprise), which has plant-level microdata on the location of new and relocated manufacturing plants.[6] This dataset includes 10,033 manufacturing plants with codes 011 to 930 that located in Catalonia between 2002 and 2007.

To define creative industries, this paper follows UNCTAD's proposal (2010) as it is the most widely accepted by researchers (see Boix-Domenech, & Lazzeretti (2012), among others). UNCTAD's classification is the broadest available in terms of industries, including both manufacturing and service industries. This paper only considers employment in creative service industries for several reasons. First, as Boix-Domenech and Soler-Marco (2017) suggested further research should focus exclusively on creative service industries because in most of the regions examined activities classified as belonging to creative manufacturing were not in fact engaged in creating but in making. Second, CSIs are more important than manufacturing ones. In particular, more than 90% of all employment in creative industries in Catalonia operates in the service sector (Ajuntament de Barcelona 2015). Finally, the focus on CSIs facilitates the inference of the effects arising from the spatial concentration of creative employment on firm entries, since employment in CSIs is expected to rely more on soft-factors and the creative personality of the municipality (Serafinelli and Tabellini 2017; Coll-Martínez et al. 2018).

Accordingly, this paper works with 13 creative service sectors with codes between 221 and 925 (see NACE-93 industry classifications in Table 2). Applying this criterion, the Census dataset reports 111.380 employed in CSIs.

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[5] Catalonia has about 7.5 million inhabitants (15% of Spain's population) and a surface area of 31.895 km^2. It accounts for 19% of the Spanish GDP.

[6] See Manjón-Antolín, & Arauzo-Carod (2011) for a detailed analysis of the interrelations between locations and relocations using the same dataset. Their results show that the location patterns of both new and relocated firms are quite similar.

TABLE 2.
Creative Service Industries Employment (by NACE-93 classification)

Code	Creative Service Industries (CNAE 93.1)	Employment (2001)
221	Publishing	14.151
223	Reproduction of recorded media	78
721	Hardware consultancy	27.049
722	Software consultancy and supply	4.241
731	Research and experimental development on natural sciences and engineering	1.155
732	Research and experimental development on social sciences and humanities	165
742	Architectural and engineering activities and related technical consultancy	27.623
744	Advertising	13.747
748	Other economic activities (as photography and design)	2.020
921	Motion picture and video activities	11.032
922	Radio and television activities	7.697
924	News agency activities	256
925	Library archives, museums and other cultural activities	2.166
	Total employment in Creative Service Industries (CSIs)	111.380

Source: Own elaboration with data from IDESCAT and following UNCTAD (2008).

The dataset of the local characteristics of all 946 Catalan municipalities is mainly taken from Trullén, & Boix-Domenech (2005), the Catalan Statistical Institute (Census 2001, IDESCAT) and the Catalan Cartographical Institute. IVs are taken from Arnabat, & Ferré (2015) database[7] and the Spanish Statistical Institute (INE). Table 3 shows some descriptive statistics of these variables. More information regarding the correlation between explanatory variables and IV is shown in Table 4.

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[7] The database has been elaborated by the research group *Història, Societat, Política i Cultura des de Catalunya al món* of the Rovira and Virgili University (ISOCAC-URV).

TABLE 3.
Summary Statistics

Variable	Description	Source	N	Mean	Std. Dev.	Min	Max
firm_entries	Sum of the number of firm entries (02–07) (Ln)	REIC 2002-2007	946	1,27	1,33	0,00	6,70
p_graduate_jobs	Educational level: Graduate relative to number of jobs (Ln)	IDESCAT (2001)	946	-1,88	0,38	-3,76	-0,69
p_technical_jobs	Educational level: Technical studies relative to number of jobs (1st and 2nd degree) (Ln)	IDESCAT (2001)	946	0,15	0,04	0,00	0,31
population_density	Population density (Ln)	IDESCAT (2001)	946	3,77	1,86	-0,20	9,85
jobs_per_population	Ratio of number of jobs per population (Ln)	IDESCAT (2001)	946	0,36	0,04	0,00	0,46
income	Average Income Tax for taxpayer (Ln)	IDESCAT (2001)	946	9,073	0,369	7,664	10,402
p_ind_employment	Percentage of industrial employment	IDESCAT (2001)	946	0,20	0,09	0,00	0,48
p_small_firms	Percentage of small firms in the municipality	IDESCAT (2001)	946	0,60	0,15	0,00	0,69
distance_province	Distance to the province capital (Ln)	Trullén and Boix (2005)	946	10,42	1,02	0,00	11,82
altitude	Altitude (Ln)	Trullén and Boix (2005)	946	5,39	1,23	1,10	7,34
seaside	It indicates if the municipality is beside the sea (1) or not (0)	Trullén and Boix (2005)	946	0,07	0,26	0,00	1,00
CSI	Employment in creative service industries (Ln)	IDESCAT (2001)	946	1,76	1,78	0,00	11,03
d_nineteenth	It indicates if the municipality has any cultural association created in the nineteenth century (1) or not (0)	Arnabat and Ferré (2015)	946	0,22	0,41	0,00	1,00
d_00_35	It indicates if the municipality has any cultural association created between 1900 and 1935 (1) or not (0)	Arnabat and Ferré (2015)	946	0,36	0,48	0,00	1,00
pop_1900	Total number of inhabitants in 1900 (Ln)	INE (1900)	946	6,88	0,89	1,10	13,20

Source: Own elaboration.

TABLE 4.
Correlation between independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. p_graduate_jobs	1													
2. p_technical_jobs	0,1122*	1												
3. population_density	-0,0125	-0,0346	1											
4. jobs_per_population	0,1282*	0,041	0,1402*	1										
5. income	0,3787*	-0,034	0,3348*	0,4850*	1									
6. p_ind_employment	-0,1883*	0,1139*	0,2831*	0,2432*	0,2269*	1								
7. p_small_firms	0,0785*	-0,0338	-0,1589*	-0,2447*	-0,2381*	-0,3726*	1							
8. distance_province	-0,0770*	-0,0281	-0,1657*	-0,0799*	-0,2104*	-0,0658*	0,1649*	1						
9. altitude	0,0853*	0,1838*	-0,3143*	0,0273	-0,2611*	0,047	0,0984*	0,3743*	1					
10. seaside	0,0321	-0,1027*	0,2183*	-0,0047	0,2085*	-0,1598*	-0,0435	-0,1148*	-0,5477*	1				
11. CSI	0,0589	-0,003	0,5438*	0,2592*	0,5082*	0,3301*	-0,3975*	-0,3727*	-0,4252*	0,3717*	1			
12. d_nineteenth	-0,0285	-0,0456	0,2961*	0,0565	0,1807*	0,2224*	-0,1643*	-0,0884*	-0,1529*	0,1619*	0,4459*	1		
13. d_00_35	-0,0211	-0,0141	0,2582*	0,0015	0,1632*	0,1976*	-0,1466*	-0,1059*	-0,1822*	0,1502*	0,3966*	0,4268*	1	
14. pop_1900	-0,0525	-0,0602	0,2709*	-0,0356	0,0463	0,1779*	-0,1940*	-0,2179*	-0,2191*	0,2538*	0,6028*	0,4507*	0,3970*	1

Notes: Significance level: *p<0.05
Source: Own elaboration.

5. RESULTS

5.1. DO HISTORICAL CULTURAL ASSOCIATIONS EXPLAIN EMPLOYMENT IN CSIs?

In Section 2, it was claimed that, nowadays, the creation of cultural associations in the nineteenth and the first part of the twentieth centuries still influences the concentration of creative employment. Now this hypothesis is empirically tested for all (946), metro (420) and non-metro (526) Catalan municipalities. The metropolitan and non-metropolitan sub-samples are obtained by using a dummy variable defined by Trullén, & Boix-Domenech (2005) for Catalan municipalities. Although employees in CSIs are assumed to be concentrated in metropolitan areas, there are several exceptions. Therefore, by making this distinction it was determined whether significant differences in location determinants exist between the two areas.

The first goal of this paper is to estimate the effect of these three historical variables on the number of employees in CSIs. OLS regressions grouped in three panels are presented in Table 5. The dependent variables include the number of employees in CSIs in all Catalan municipalities (Panel A), the number of employees in CSIs in metro Catalan municipalities (Panel B) and the number of employees in CSIs in in non-metropolitan Catalan municipalities (Panel C). As in Lee (2014), the number of employees in CSIs reflects the concentration of creative talents. The main explanatory variables are a dummy indicating the creation of cultural associations in the nineteenth century (columns 1, 4 and 7), a dummy indicating the creation of cultural associations between 1900 and 1935 (columns 2, 5 and 8) and the population in 1900 (columns 3, 6 and 9).[8] Finally, some control variables are included.

The results in Table 5 clearly show that cultural associations are associated with present new firm creation. In Panel A, all three historical variables are positively related to the number of employees in CSIs in 2001. The overall R^2 of the preferred specification in column 3 is 73%. At the metropolitan and non-metropolitan levels (Panel B and C) all three historical variables are also significant and have the expected positive sign. The preferred specifications are in columns 6 and 9 and show an overall R^2 of around 79% and 68% for metro and non-metro subsamples, respectively.

It is important to notice that the above results are first-stage results, in which historical cultural associations and population are studied as instruments for present new firm creation. The use of historical instruments is not new in the literature (see, for instance, Duranton, & Turner, 2011 or García-López, Holl, & Viladecans-Marsal, 2015). However, the use historical IVs to explain the economic dynamism potential of creative industries is new in this literature. While Wojan, Lambert, & McGranahan (2007) and Coll-Martínez, & Arauzo-Carod (2017) follow a two-step process to estimate an unobservable *creative milieu*, this paper uses an alternative procedure to deal with possible omitted variables and reverse causality. Moreover, the use of historical IVs makes it possible to capture municipalities that are tolerant, creative, proactive and venturesome.

Instruments need to be relevant, and they seem to fulfill this requirement. Although common sense suggests that present employment in CSIs does not depend on the creation of cultural associations in the nineteenth century / beginnings of the twentieth century, the current concentration of cultural and creative employment largely depends on the historical urban development path and cultural embeddedness of each city (Bonfanti, Castellani, & Rossato, 2015; Pareja-Eastaway, & Pradel-i-Miquel, 2014). Second, the preferred specifications in Table 4 show positive and significant point estimates for the selected instruments, and high over-all R^2.[9] Finally, they also show first-stage statistical values that are above Stock and Yogo's rule of thumb (F > 10) and near Stock and Yogo's critical values (2005) for the size test in the context of TSLS estimation.

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[8] The main source of data for determining the historical urban population in 1900 is the Instituto Nacional de Estadística (INE) and includes the census carried out every ten years from 1900 until 1981 when censuses moved to years ending in 1. Therefore, there is information from 11 censuses between 1900 and 2001. These censuses provide total number of inhabitants at a local (municipality) level in Catalonia. As number of municipalities change during the twentieth century, all of them are included through the census in which they appear for the first time. This empirical strategy implies that departing from 886 municipalities in 1900, it ends up with 946 in 2001 (Goerlich, Mas, Azagra, & Chorén, 2006).

[9] These historical IV contribute to the regression without including control variables by an overall R^2 of 41%, 40% and 50%, for all, metro and non-metro municipalities respectively.

TABLE 5.
CSIs employment as a function of historical cultural associations and population

Dep. Var. : CSI	Panel A: All municipalities			Panel B: Metro			Panel C: Non-Metro		
	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)	OLS (9)
d_nineteenth	0,957***	0,773***	0,292***	0,853***	0,707***	0,266*	1,046***	0,855***	0,371***
	(0,110)	(0,112)	(0,0983)	(0,138)	(0,142)	(0,140)	(0,161)	(0,159)	(0,119)
d_00_35		0,451***	0,161**		0,359***	0,128		0,476***	0,148*
		(0,0852)	(0,0759)		(0,120)	(0,110)		(0,106)	(0,0877)
pop_1900			0,767***			0,620***			0,887***
			(0,0674)			(0,117)			(0,0562)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4,197***	-4,257***	-13,95***	-6,201***	-6,227***	-14,60***	-7,523***	-7,550***	-16,79***
	(1,257)	(1,224)	(1,471)	(2,286)	(2,239)	(2,859)	(1,713)	(1,680)	(1,530)
N	946	946	946	420	420	420	526	526	526
Adjusted R²	0,625	0,636	0,732	0,735	0,740	0,788	0,452	0,474	0,678
First-stage statistic	75,949	52,33	89,995	38,308	22,848	27,617	42,246	30,908	114,399
Overid. *p*-value	-	-	0,7899	-	-	0,6140	-	-	0,322

Notes: Controls include the following variables: p_graduate_jobs, p_technical_jobs, population_density, job_per_population, income, p_ind_employment, p_small_firms, distance_province, altitude, and seaside.
Robust standard errors in parentheses. *** p<0.01; ** p<0.05; * p<0.1.

Source: Own elaboration.

The IVs need to be exogenous. Cultural associations are exogenous because of the time that has passed since they were created and the significant changes undergone by society and economy in the intervening years. Furthermore, they were not created with the purpose of attracting more firm entries 150 years later. As discussed in Section 2, cultural associations arise from the social need to alleviate inequalities, guarantee a dignified life and contribute to the formation and *culturalisation* of the people.

However, it is also true that other factors, in particular demographic issues, could have influenced the development of cultural associations. These factors may also have affected present firm entries. Since there tends to be more cultural associations in the nineteenth century and between 1900 and 1935 in the most populated municipalities, to some extent these IVs may predict the dependent variable both directly and indirectly by employment in CSIs. According to Duranton, & Turner (2011, 2012), the exclusion restriction requires the orthogonality of the dependent variable and the instruments to be conditional on control variables. Therefore, the inclusion of the historic urban population in 1900 should fulfil the exogeneity condition.

In summary, according to the above first-stage results, the three historical variables considered in this study, the creation of cultural associations in the nineteenth century and between 1900 and 1935, and the population in 1900, provide a set of non-weak and relevant instruments. According to the above comments, these instruments are also believed to be exogenous.[10]

5.2. Does employment in CSIs cause new firm creation in Catalonia?

Table 6 Panel A shows the main OLS and IV baseline model results in columns 1-4 for all Catalan municipalities. The estimated coefficient of interest in the OLS regression in column 1 shows that employment in CSIs has a positive and significant effect on new firm creation.[11] In columns 2-5, employment in CSIs is instrumented with a dummy of the creation of cultural associations in the nineteenth century (column 2), a dummy of the creation of cultural associations between 1900 and 1935 (column 3) and the historical population in 1900 (column 4). In general, all TSLS results clearly show that employment in CSIs have a positive and significant effect on new firm creation. It is important to notice that the estimated coefficient is quite stable across the different TSLS specifications, even when the variable historical population is used as an instrument and all the other control variables are used as traditional factors of industrial location. Comparing OLS and TSLS results, the absolute value of *CSI* on firm entries in the TSLS specification is much higher than the OLS coefficient for all subsamples, so the OLS estimates are biased downwards. Larger employment in CSIs, aside from meaning higher levels of creativity on the municipality, reflects better unobserved contemporaneous neighbourhood amenities in the OLS specification, biasing the coefficient towards zero. According to the control variables, the first-stage statistic and the overidentification p-value[12], the preferred specification is in column 4 and its results indicate that by increasing employment in CSIs by 10%, the number of new firms located in the municipality increases by 6.7%. These results remain consistent for metro and non-metro municipalities (Panels B and C in Table 6). However, this effect is larger for metro municipalities (8.7%) than for non-metro municipalities (5.7%).

Nevertheless, the high coefficient values of employment in CSIs should be interpreted cautiously. The estimation of CSIs effects on economic outcomes is usually upward biased due to the use of cross-section datasets and demand-side approaches (Boix-Domenech, & Soler 2017). In this regard, we guess that the use of cross-section data and historical IVs may not be enough to totally rule out the potential endogenous causation. While the results need to be considered with caution, they strongly confirm that creative industries may drive economic dynamism (firm creation) and they are in line with those of Lee (2014), Wojan, Lambert, & McGranahan (2007) and Coll-Martínez, & Arauzo-Carod (2017).

Although the main aim is to analyse the effects of CSIs employment on new firm creation, it may be interesting to analyse the results for of the other location determinants. The coefficients analysed for the OLS results of

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[10] Previous contributions that make use of historical IVs and a similar strategy, but in other contexts, are the following: Duranton, & Turner (2011, 2012), García-López, Holl, & Viladecans-Marsal (2015) or Hellmanzik (2016).
[11] It is worth noting that most firm entries in REICS's database are manufacturing firms. Then, we guess that the effects of CSIs employment on firm entries would differ if they were mostly services, probably being even larger due to closer intersectoral linkages between employment in CSIs and creative service firms.
[12] The overidentification test (or Hansen-Sargan test) assesses the validity of overidentifying instruments (Cameron, & Trivedi, 2010). With a p-value higher than 0.05 it is not possible to reject the null hypothesis that all instruments are valid and conclude that the overidentifying restriction is valid.

all Catalan municipalities are shown in Table 6 Panel A column 1. Agglomeration economies, proxied by population density, act positively; higher income levels, greater distances from provincial capitals are correlated with lower entries; manufacturing workforce shares are correlated with positive entries but SME are correlated with lower entries (see Arauzo-Carod, & Manjón-Antolín, 2012). Educational characteristics have opposite correlations because technical studies are positive for firm location while higher educational levels are negative, as is shown by many other analyses (see Arauzo-Carod, & Manjón-Antolín, 2004; Arauzo-Carod, & Viladecans-Marsal, 2009; among others). Returning to the issue of possible endogeneity, some authors argue that human capital can capture the effects of the concentration of creativity (Glaeser, 2004). However, our results show that the correlation of employment in CSIs on the creation of new firms is still significant when human capital variables are added. These results remain consistent for metro and non-metro municipalities (Panels B and C in Table 6).

5.3. ROBUSTNESS CHECK

One concern with the above approach is that estimating the number of firm entries with OLS could lead to potential coefficient bias. So, this paper makes use of two-step estimation to control for endogeneity following Cameron, & Trivedi (2010). As explained in Section 3, this two-step procedure needs to be estimated by a bootstrap method instead of robust cluster errors since the p-value of the z statistic for the coefficient of the latent factor generated in the first step before being included in the second step (*Res*) is different from zero in this case.

Therefore, Table 7 compares robust OLS results (column 1) without making use of a bootstrap two-step procedure for Poisson (column 2) and Negative binomial models (column 3). Results confirm that even when using this alternative empirical approach the positive and significant effect of having higher levels of employment in CSIs enhances the location of new firms in the municipality. The negative coefficient of *Res* can be interpreted to mean that the latent factor, which increases the probability of having more employees in CSIs in the municipality, lowers the number of firm entries. This result is consistent if we think of all the unobservable characteristics of the municipality that can influence both the concentration of CSIs and firm creation. Controlling for endogeneity has a substantial effect on firm entries explained by an exogenous change in employment in CSIs because its coefficient is now much higher.

<div align="center">

TABLE 6.

Firm entries as a function of CSIs employment (baseline model)

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	Panel A: All municipalities				Panel B: Metro				Panel C: Non-Metro			
Dep. Var.:	OLS	TSLS	TSLS	TSLS	OLS	TSLS	TSLS	TSLS	OLS	TSLS	TSLS	TSLS
Firm entries	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CSI	0,566***	0,667***	0,682***	0,665***	0,644***	0,796***	0,793***	0,869***	0,520***	0,561***	0,609***	0,564***
	(0,0192)	(0,0615)	(0,0558)	(0,0327)	(0,0275)	(0,0964)	(0,0937)	(0,0587)	(0,0283)	(0,0754)	(0,0668)	(0,0390)
p_graduate_jobs	-0,232***	-0,235***	-0,235***	-0,235***	-0,341***	-0,307**	-0,307**	-0,290**	-0,154**	-0,158**	-0,164**	-0,159**
	(0,0638)	(0,0639)	(0,0641)	(0,0638)	(0,119)	(0,120)	(0,120)	(0,124)	(0,0745)	(0,0739)	(0,0742)	(0,0736)
p_technical_jobs	0,942*	0,849	0,835	0,851*	0,782	0,904	0,902	0,963	0,863	0,856	0,848	0,856
	(0,511)	(0,520)	(0,521)	(0,516)	(0,898)	(0,920)	(0,919)	(0,951)	(0,632)	(0,628)	(0,634)	(0,628)
population_density	0,0526***	0,0241	0,0199	0,0248	0,0424*	-0,0236	-0,0222	-0,0553	0,0246	0,0203	0,0152	0,0199
	(0,0144)	(0,0220)	(0,0208)	(0,0165)	(0,0244)	(0,0477)	(0,0464)	(0,0337)	(0,0184)	(0,0194)	(0,0190)	(0,0184)
jobs_per_population	1,196*	1,107	1,094	1,109	1,454	1,428	1,429	1,416	1,107	1,007	0,889	0,998
	(0,713)	(0,711)	(0,714)	(0,706)	(1,025)	(0,986)	(0,986)	(1,001)	(1,019)	(1,035)	(1,049)	(1,014)
income	-0,0468	-0,152	-0,167*	-0,149*	-0,271*	-0,476***	-0,472***	-0,574***	0,0766	0,0430	0,00291	0,0399
	(0,0831)	(0,0999)	(0,0957)	(0,0900)	(0,144)	(0,180)	(0,175)	(0,157)	(0,103)	(0,0831)	(0,111)	(0,108)
p_ind_employment	1,400***	1,121***	1,079***	1,127***	1,686***	1,385**	1,391**	1,240**	0,900**	0,748*	0,567	0,734*
	(0,282)	(0,324)	(0,319)	(0,293)	(0,554)	(0,614)	(0,615)	(0,613)	(0,373)	(0,435)	(0,411)	(0,380)
p_small_firms	-0,236	0,00224	0,0380	-0,00346	0,414	0,874**	0,864**	1,095***	-0,601***	-0,545**	-0,477**	-0,540**
	(0,174)	(0,221)	(0,212)	(0,186)	(0,289)	(0,410)	(0,403)	(0,369)	(0,219)	(0,236)	(0,229)	(0,216)
distance_province	-0,0676***	-0,0364	-0,0317	-0,0371	0,000917	0,0618	0,0605	0,0911***	-0,346***	-0,357***	-0,370***	-0,358***
	(0,0223)	(0,0304)	(0,0297)	(0,0259)	(0,0204)	(0,0444)	(0,0433)	(0,0316)	(0,0788)	(0,0794)	(0,0798)	(0,0782)
altitude	0,0174	0,0299	0,0318	0,0296	0,0552	0,0737	0,0733	0,0825	0,0590**	0,0670**	0,0764**	0,0677**
	(0,0234)	(0,0252)	(0,0254)	(0,0244)	(0,0486)	(0,0506)	(0,0506)	(0,0523)	(0,0290)	(0,0319)	(0,0321)	(0,0295)
seaside	-0,118	-0,263*	-0,284**	-0,259**	0,00734	-0,126	-0,123	-0,190	-0,134	-0,204	-0,287	-0,210
	(0,111)	(0,149)	(0,143)	(0,123)	(0,158)	(0,194)	(0,194)	(0,186)	(0,153)	(0,200)	(0,187)	(0,158)
Constant	-0,0185	0,433	0,501	0,423	0,349	1,329	1,308	1,800	2,288*	2,649**	3,079**	2,682**
	(0,772)	(0,819)	(0,812)	(0,804)	(1,378)	(1,491)	(1,467)	(1,475)	(1,231)	(1,344)	(1,298)	(1,254)
N	946	946	946	946	420	420	420	420	526	526	526	526
Adjusted R^2	0,743	0,735	0,733	0,736	0,805	0,792	0,793	0,777	-	0,600	0,598	0,591
First-stage statistic	-	75,949	52,33	89,995	-	38,308	22,848	27,617	-	42,246	30,908	114,399
Overid. *p*-value	-	-	-	0,7899	-	-	-	0,6140	-	-	-	0,322
Instruments												
d_nineteenth	N	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y
d_00_35	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y
pop_1900	N	N	N	Y	N	N	N	Y	N	N	N	Y

Notes: Robust standard errors in parentheses. *** p<0.01; ** p<0.05; * p<0.1.

Source: Own elaboration.

<center>TABLE 7.</center>
<center>Firm creation as a function of CSIs employment using CDM</center>

Dep. Var. : Firm entries	All municipalities		
	OLS (1)	Poisson[a] (2)	NB[b] (3)
CSI	0,566***	0,778***	0,885***
	(0,0192)	(0,049)	(0,057)
p_graduate_jobs	-0,232***	-0,652***	-0,544***
	(0,0638)	(0,150)	(0,152)
p_technical_jobs	0,942*	2,342*	3,636
	(0,511)	(1,313)	(2,097)
population_density	0,0526***	0,019	-0,044
	(0,0144)	(0,024)	(0,031)
jobs_per_population	1,196*	4,809**	2,575*
	(0,713)	(1,849)	(1,787)
income	-0,0468	-0,151	0,089
	(0,0831)	(0,228)	(0,598)
p_ind_employment	1,400***	2,380***	1,880**
	(0,282)	(0,613)	(0,598)
p_small_firms	-0,236	0,988**	0,481
	(0,174)	(0,333)	(0,371)
distance_province	-0,0676***	0,055*	0,012
	(0,0223)	(0,031)	(0,071)
altitude	0,0174	0,108**	0,003
	(0,0234)	(0,056)	(0,046)
seaside	-0,118	0,052	-0,038
	(0,111)	(0,197)	(0,199)
Res (1st Step)	-	-0,155**	-0,293**
		(0,068)	(0,073)
Constant	-0,0185	-4,454***	-3,386***
	(0,772)	(2,116)	(0,075)
N	946	946	946
Ln_alpha	-	-	-0,319**
			(1,163)
Instruments			
d_nineteenth	N	Y	Y
d_00_35	N	Y	Y
pop_1900	N	Y	Y

Notes: Bootstrap standard errors in parentheses. [a] and [b]: 400 simulations. *** p<0.01; ** p<0.05; * p<0.1.
Source: Own elaboration.

6. CONCLUSIONS

This paper tries to contribute to the literature on creative industries by addressing potential reverse causality between creative industries and economic dynamism. In particular, it investigates two questions: 1) Do cultural associations capturing the unobservable local identity of a municipality explain the present concentration of creative employment? And 2) Do creative services industries (CSIs) lead to new firm location? By using, cultural associations and urban population as historical IVs, the results confirm the potential of creative industries for firm creation. The main results clearly support the view that creative industries lead to economic dynamism (i.e., firm creation) in the local economy. Furthermore, analysis of IVs suggests that the intrinsic and historical personality defining the municipality – in terms of cultural associations – should explain the attraction of creative employment to the municipality and, at the same time, this should encourage the location of new firms.

The contribution of this paper is relevant because it provides new evidence to the literature on creative industries. In terms of previous empirical contributions, these results are in line with the findings by Lee (2014) and support the positive association between entrepreneurship and *creative milieu* claimed by Wojan, Lambert, & McGranahan (2007) and in Coll-Martínez, & Arauzo-Carod (2017). On the other hand, these results also support the association between the concentration of employment in CSIs and new firm creation at a municipality level (Scott, 2000; Lee, Florida, & Acs, 2004; Stam, De Jong, & Marlet, 2008). Furthermore, they do corroborate contributions arguing that employment in CSIs is especially attracted to those intangible characteristics of municipalities (Scott, 2006). In fact, the relevance of cultural associations to employment in CSIs and the resulting higher significance of this employment in CSIs on new firm creation strongly suggest that for the potential in terms of local economic growth of creative industries, the role of cultural dynamism path patterns and a strong identity are important (Pareja-Eastaway, & Pradel-i-Miquel, 2014).

These results have implications for policy. On the one hand, they corroborate the potential of creative industries for economic growth, as they may drive economic dynamism. Thus, policies promoting firm entry should focus on providing and improving the local features and conditions that enhance the concentration of employment in CSIs (i.e., networking possibilities, cultural infrastructures, diversity of people and activities, place-specific image, etc.). On the other hand, creativity-based policies aiming to enhance local competitiveness should take into account cultural path dependence and the historical context of their municipalities. At the same time, however, this means that public efforts to attract creative employment might not be as successful as in those areas with strong cultural path dependence or, at least, they should require more time to be as successful as in those areas.

Despite all this, this study does have some limitations. In this regard, any future research should focus on looking for alternative datasets that will make it possible to produce panel data to control for any remaining source of unobservable heterogeneity that may probably explain the high coefficients of CSIs. Moreover, the econometric analysis should be extended by comparing the effects of CSIs employment on services entries to those of manufacturing as long as data with a good coverage of services are available. Also the use of alternative historical IVs and their application to other regions would also support the results found in this paper. Since this data is not available at present, these issues are left for future research.

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