

BARRIERS TO THE RELOCATION OF ACTIVITIES IN THE CASTELLÓN CERAMIC INDUSTRIAL DISTRICT

F. Xavier Molina Morales ⁽¹⁾, Ángeles Ares Vázquez ⁽²⁾

⁽¹⁾ Universitat Jaume I, Business Administration and Marketing Department, Spain

⁽²⁾ Universitat Jaume I, Economics Department, Spain

ABSTRACT

The relocation phenomenon has been monopolised almost solely by the multinational corporations, associated with specific characteristics like disassociation with the country of origin. However, recently this phenomenon has extended as far as SMEs, or to be more precise, territorial agglomerations such as the so-called industrial districts or clusters.

The phenomenon has rarely been analysed in any specific way or from a dynamic and relational perspective. The existence of an environment with high interdependencies between the companies and institutions, as is the case with the industrial districts, could suggest a greater resistance to this phenomenon.

This study seeks to analyse the extent to which companies belonging to these districts relocate their activities and, particularly, what are the inhibiting factors that condition the decisions taken by these companies. In order to reach our objective, we have carried out a specific study on the ceramic industrial district in Castellón from a social capital perspective. Likewise, we have analysed the evolution of relocation activities in companies from the industrial district over a time period of 10 years.

1. INTRODUCTION

The business decision to relocate productive activities has recently taken on unusual significance. Reduction of transport costs and the economic importance of so-called emerging countries, the globalisation of the value chain, the digitization of the economy (Biggiero, 2006) are often used to justify the choice of this strategic option for businesses.

Relocation has been identified with big multi-national companies. Its global character and relative disassociation with the place of origin can make these types of business decisions easier. However, recently this phenomenon has extended to SME contexts, in particular to territorial agglomerations such as the so-called industrial districts or clusters.

The response from the Administration has been diverse; however, in general it has consisted of an attempt to stop the process at all cost, or at least, lessen the impact on the local region. For example, policies that favour import obstacles or various local assistance plans of a generic nature. The phenomenon has rarely been analysed in any specific way or from a dynamic and relational perspective.

In our opinion, the existence of high interdependencies between companies, characteristic of these districts and clusters, could indicate a greater resistance

In this study we seek to analyse the degree to which companies in the district relocate their activities and, in particular, what are the inhibiting factors that limit or condition these business decisions. With the aim of finding a response to these questions we have carried out a study on the ceramic industrial district of Castellón. Some of its characteristics make it a useful and interesting case to study. For example, its high level of concentration, the dominance of SMEs, the high level of innovation and its leadership in the international market place. For this reason, we have attempted to find a significant association between companies' social capital and minor relocation of activities. We have analysed the evolution of corporate relocation activities in the district over a period of 10 years.

Our study has been structured in the following way: firstly, we have established our theoretical framework, taking into consideration the description of the industrial district concept as a social network and our proposal regarding the relocation of activities within these districts. The presentation of the empirical study and its results follows. In the second place, we have analysed the relocation process of the Castellón ceramic industry in two time frames. Thirdly, we have pointed out the implications of the industrial policy in relocation. Finally, the main conclusions suggested by the results indicate are outlined.

2. THEORETICAL FRAMEWORK

2.1. THE IDENTIFICATION OF THE INDUSTRIAL DISTRICT AS A SOCIAL NETWORK

The concept of social capital is associated with the structure and content of relations and the possible consequences have been analysed from the different strata of relations, including individual, commercial, regional and even national, Triglia

(2001), when referring to the aggregate level, states that within a territorial context, there is more or less social capital according to the extent to which the people or population in this region relate to each other or are committed to their social networks.

Analysing the situation from a network perspective allows us to discuss the opportunities and restrictions that geographical proximity can bring for the companies that belong to these geographically concentrated regions.

The use of anchoring concepts has spread quickly through literature on the local region. (Oinas, 1998). For example, Martín (1994) indicates that anchoring is inherently special. Despite the presence of long-distance interaction, most contacts, especially of an informal nature, are made within a small radius of the company (Malecki, 1995).

Regions are not only intertwined by *input-output* interaction, they are also integrated by a much wider, less tangible, series of connections that Storper (1995) calls non-commercial interdependencies. These interdependencies include knowledge on conventions, rules, practices and institutions that combine to make the possible and real “production worlds” (Storper and Salais, 1997).

Even though it is a difficult task to find studies coming from a local territory perspective that systematically apply concepts based on network, and even less more recent concepts like those deriving from non-redundant connections, (Burt, 1992), a great number of investigators have concentrated on demonstrating social control mechanisms that operate within local region agglomerations. To a lesser extent, and not without its own controversies, the possibilities that industrial districts offer for extended innovation as a response to the changes in the external network has also been studied.

Factors related with space and proximity makes regional interactivity a key factor. Proximity contributes to the generation of tacit knowledge and the learning capacity that encourages innovation (Maskell and Malmberg, 1999). Alliances and agreements should be extended as a mechanism for developing cooperative relations, in this case within a wide social network of participants. This includes workers and management and also includes a wide number of social assistance resources for the innovation process (Asheim, 1996). Furthermore, physical proximity facilitates face-to-face relations as well as frequent and close interaction. Companies in the same district often share the same culture, which could facilitate the social learning process (Wolfe, 2002). A communication code and common language are elaborated in their interaction over time. Finally, these interactions are supported by the regional institutions, which help generate and reinforce the rules and conventions that regulate the behaviour of local businesses. To put it another way, the reason why companies may distrust big companies’ superiority lies in trust and collaboration relationships, tacit and coded knowledge and the assistance of local institutions.

On close examination of these characteristics, the authors agree in considering that industrial districts can be identified as dense networks of strong connections. The traditional perspective on social capital (Coleman, 1990) underlines the positive effects that a dense structure, by generating social standards and sanctions, can have to promote trust in cooperative exchange. Looking at the situation from the perspective of

strong ties suggests the existence of two main advantages. On the one hand, strong ties are associated with the exchange of high quality information and tacit communication. Furthermore, they serve as a control mechanism in order to govern relationships between companies (Uzzi, 1996). The characteristics of these networks are ideal for *exploitation* of already existing opportunities, sharing information and knowledge through cooperative exchange (see example: Rowley *et al.* 2000).

2.2. HYPOTHESIS

As a consequence of the previous theoretical development we can consider industrial districts as a social network characterised by the density in its relations structure as well as a high level of strength in the relations maintained. This gives rise to the existence of a series of common standards and values. Finally, companies in the district benefit from a group of local institutes that offer a number of advanced services to the businesses. These relationship elements are what we consider inhibiting factors for relocating activities.

Piore and Sabel's (1984) reference study proposes having two premises functioning in the district, as is also recognised by Nassimbeni (2003). The first one should be dedicated to specialisation or the division of work and the focus of certain phases in the production process. This will benefit from the economy of experience and scale, and secondly, internal supply in the district. The district may provide a series of benefits such as; the existence of agencies that offer specific services, a specialised labour market, an assistance infrastructure, low transport costs, better interaction facilities given the physical proximity, and similarities in cultural identities.

According to the industrial district model therefore, out of all the alternative options available, companies generally opt to locate activities outside the company and within the district, with the exception of those who carry out their own specialisation.

In order to delve more deeply into the issue we seek to investigate, we have applied social capital to the district as a generator of inhibiting factors that restrict relocation of activities outside the district, positing the following hypothesis:

"The corporate level of social capital development will be inversely associated with the corporate tendency to relocate."

The factors that shape social capital are: (a) Sense of belonging, (b) density of relations, (c) Shared standards and values and (d) Local institutions.

Sense of belonging in the district even though it is difficult to define, as Becattini (1979), pointed out, does not mean that it is of less importance when identifying and defining the district. We should consider that the opinions and perception of the consulted companies can reflect the sense of belonging a company has for the district in a complementary way as well as defining the limits of the district. Belonging to a district means sharing cultural elements like a common language as well as geographical proximity. A company that is involved in the district will consider options external to the company but internal to the district to be a priority, before those that involve going outside the district.

The density of the relations network in a company will demonstrate the extent of relations maintained by the companies and which of the people belonging to the network are redundant. In other words, players who relate with players and as a result relate with each other. This density will mean a reduction in the options to locate activities outside the district. Therefore, it could be argued that the dimensions of the organisations relations network density will lead to a lower propensity to relocate their activity outside the district.

A characteristic of the districts is that within them, a series of *shared standards and values* are produced such as trust, reputation, reciprocity etc. These *shared standards and values* benefit other companies in various different ways, for instance, the transmission of high quality information or tacit communication. These would be difficult to transmit in another context where these values do not exist. For this reason, they don't use relations within the market for the relocation of activities outside the district rather, out of the available options they opt for the familiar, using previous relations.

In the districts, the companies have *local institutes* at their disposal. These connect them with external networks and facilitate access to all types of information and knowledge (McEvily and Zaheer, 1999). There is a set group of local institutes that develop related activities and support within the district (Brusco, 1990). We define local institutes as organisations based locally (both private and public) that offer collective support for companies in the district. Examples of local institutes are: universities, professional training centres, research institutes and institutions, commercial and professional associations. These interact with many companies and institutions both internally and externally. They provide organisations with the specific capacity to compare and evaluate different solutions and problems. Institutions play the role of *third party* in coordinating activities between the different companies in the district. The companies in the district that have strong ties with the local institutions will not tend to relocate.

3. EMPIRICAL STUDY

Our empirical work has centred on the companies in the ceramic industrial district of Castellón who are involved in various activities related with the manufacturing of ceramic floor and wall tiles.

The identification of the companies that belong to the Castellón industrial district was carried out following a company census in 2004 of the companies belonging to the Spanish Ceramic Tile Manufacturers' Association (ASCER). It was necessary to refine the list, as manufacturers of related products were also included on the list (glass products, spray-dried clay, etc.) bringing the total to 149.

The field study was carried out by a company specialising in this type of activity throughout the months of July to October 2005. The basic source of information used in the empirical study was the survey. The surveys were obtained from personal interviews with company management. The personnel in charge of the field study rated various items in each question on a scale of 1-7 (1 = disagreement, 7 = agreement).

The field study was carried out based on the distributed and returned questionnaires provided by 118 companies in the ceramic industrial district of Castellón with a total population of 149 companies. This allowed us to obtain a response rate of 79%. This figure can be considered acceptable in terms of group representation, more or less reducing the existence of any type of bias from the non-included cases to a minimum. Similarly, this business group presents a balanced distribution with the presence of organisations of different size, age and legal form, etc.

We developed the contrast to the outlined hypothesis based on a model of binary logistical regression, or more succinctly, *Logit*, given the dichotomous nature of the event that we studied: the presence or non-presence of a relocation process in the ceramic industrial district of Castellón.

With respect to the model variables, the dependent variable, Y , is a binary variable that takes on two values; the value of 0 if the event we studied does not occur, i.e. relocation, and the value of 1 if the event occurs, relocation. We are interested in investigating the presence of the outsourcing or relocation in the businesses with this variable, of activities or products that involve the exploitation of already existing knowledge and technology.

As explanatory variables we have chosen the ones most relevant to the analysis of the industrial district and social capital. The explanatory variables that reflect social capital are: a) the degree of belonging to the region (NivPert), b) the density of relations (DensiRed), c) the standards and values (NoryVal) and d) the local institutions (InstLocales). Furthermore, we have introduced the level of activity of the companies as a control variable (LnFactur). Its intervention can be seen in Annex I.

4. ANALYSIS TECHNOLOGIES

Correlation matrix. This indicates the degree of linear association between the two variables. Positive values close to 1 indicate a strong positive linear association and values close to -1 a strong negative linear correlation. The values close to zero demonstrate the absence of a linear correlation between both variables.

The *Cronbach Alpha test* has been used to analyse the internal consistency of the measurement scales through the calculation of the correlation between the items in it. Therefore, it can be considered as a coefficient of the correlation. The value of Cronbach's Alpha can oscillate between 0 and 1. If it is 0 this will signify the absence of correlation and if there is greater agreement, this value will signify a greater correlation.

Logistical Binary Regression. Given a dependent, dichotomous variable with values 1, 0 and a group of explanatory variables, the analysis of *multiple logistical regression* allows the presentation or not of an event to be known in terms of probability according to the set values that the independent variables take on. Specifically, the objective of the regression consists of demonstrating the way in which independent variables in the analysis relate with the dependent variables and make prognostications on the values of the latter based on the values of the former. Therefore, the *Logit* analysis is a powerful and flexible process to analyse relations that may be used in the following forms (Malhotra, 1997: 582).

The functional form that the specification model takes is as follows:

$$\Pr(Y = 1) = \frac{1}{1 + e^{-z_i}}$$

Where Y is the dependent dichotomous variable that reflects the relocation or outsourcing process. As for Z, this is defined as follows:

$$Z_i = \beta_0 + \sum_{j=1}^k \beta_j X_j$$

The proposed model would be:

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Specifically,

$$Z = \beta_0 + \beta_1 NivPert + \beta_2 DensiRed + \beta_3 NoryVal + \beta_4 InstLocales + \beta_5 LnFactor$$

5. RESULTS

Table 1 presents the average, the standard deviation, Cronbach's Alfa and the matrix of the correlations of the variables considered in our analysis.

Cronbach's Alfa allows us to analyse the *viability of the scale*. This means ensuring that the average scale yields consistent and stable results. There is no consensus between the authors on which of the values should be considered having an acceptable viability. Following Malhotra, (1997: 305) we consider that the viability of the scale is satisfactory when Cronbach's Alfa is greater than 0.60. Precisely, in our research, Cronbach's Alfa coefficient was calculated for all measured variables through the multi-item scale. Neither the degree of belonging nor the control variables show Cronbach's Alfa due to being measured by one single item.

With respect to the correlation of the explanatory variables, in Table 1, we observe that all show values less than 0.45; this is a value that does not have any disturbing effect on the variables that are used in the logistical regression model.

Variables	averages	Std.D	α	1	2	3	4	5
Degree of Belonging	6.26	1.01	-	1.000				
Density	5.48	0.77	0.63	.324***	1.000			
Standards and values	4.29	0.92	0.61	.081	-.043	1.000		
Local Institution	4.21	1.2d6	0.82	.106	.172	.182**	1.000	
Control variable	16.34	1.26	-	-.098	-.070	.141	.322***	1.000

N=118;

α = Cronbach's Alpha

The Pearson correlation is significant for levels ** $p < 0.05$ and *** $p < 0.001$

Table 1. Descriptive statistics: averages, standard deviation; Cronbach's Alfa and the variables correlation

We used the SPSS statistics programme when working on this model. The model's results are shown in Table 2.

Results of the model		
model χ^2	22.788 (gl 5)	Sig: 0.000
Hosmer-Lemeshow test	$\chi^2 = 5.003$	Sig: 0.757
R ² of Nagelkerke	0.612	
Classification of cases	95.1%	No event 100% event 57.1%

$N = 118$
Significance of 5%

Table 2. Model Fit

The overall significance of the model has been observed by using the Chi-Squared Test which is used to contrast the null hypothesis that the coefficients of the model are altogether equal to zero. The value for the proposed model takes χ^2 with 5 degrees of liberty is 22.788 ($p < 0.05$), therefore we reject the null hypothesis.

The model's goodness-of-fit comes with a Nagelkerke R² that is over the value of 0.60. The Hosmer-Lemeshow Test indicates a degree of acceptance or rejection of the null hypothesis of non-existence of differences between the values observed and estimated. In our case, this hypothesis is accepted with a level of probability of 0.75 ($p > 0.05$).

As regards the discriminatory capacity of the model, it deduces the practically optimum classification of the cases by itself. It obtains a total percentage of correct answers of 95.1%. In the case of non-presentation of events (non-existence of relocation or outsourcing), the model correctly classifies 100% of the cases; and in cases of presentation of the event (existence of relocation or outsourcing), the model correctly classifies 57.1% of the cases.

In Table 3 we observe the results of the model as regards the proposed equation. The coefficient of three of the five explanatory variables of our model: the degree of belonging to the region (1), the network density (2) and the common standards and values (3) present a significance less than 0.10.

Variable	Coefficient	Standard Deviation	Wald Statistic	Sig.	Exp β
(1) NivPert	-.909	.538	2.854	.091*	.403
(2) DensiRed	-1.703	.882	3.730	.053**	.182
(3) NoryVal	-2.172	1.037	4.385	.036**	.772
(4) InstLocales	-.566	.486	1.360	.244	.568
(5) LnFactor	.140	.454	.095	.758	1.150
Constant	1.441	8.095	.032	.859	4.223

$N = 118$
The correlations are significant for levels: ** $p < 0.05$, * $p < 0.10$.

Table 3. Results of the Logit Binomial Model

The results generally indicate a coinciding tendency with the meaning of the formulated hypothesis. Social capital inhibits relocation. Likewise, the feeling of belonging to the district discriminates companies that carry out outsourcing in any

significant way. Furthermore, perhaps with greater significance, the density variable and the existence of shared standards and values in the district. The fourth variable considered in the model, relations with the institutions, even though it is orientated in the same direction as the greater values of this variable, i.e. they are associated with less relocation, does not turn out to be significant. This result does not match what is anticipated. It can be explained through the existence of some moderating elements of an inhibiting effect. For instance, contacts with the outside world that are maintained by the local institutes, excessive local or local institution orientation or the non-existence of some specialised service activities that are carried out in the district such as relations with communication technologies or advanced marketing services.

The indicator β specifies how probability is increased or decreased in the event where the variable associated with beta increases in one unit given the fixed value of all the explanatory variables used in the model. We observe that an increase in one unit, considering any of the representative variables, reduces the probability of relocation, emphasising the density of relations that diminishes the probability of relocation by 82%.

6. EVOLUTION OF RELOCATION ACTIVITIES IN THE CERAMIC DISTRICT OF CASTELLÓN DURING THE DECADE 1995-2005

With the aim of finding out what activities were relocated in the ceramic district of Castellón during the years 1995 and 2005 we started by identifying the activities that were carried out here.

Due to the difficulty in finding a list of the main activities carried out in the district, we consulted specialised personnel and organisations. We obtained a list of 25 representative activities of the main activities in the industrial district (Table 4).

Reference	Type of Activity
1.	Manufacturers of floor and wall tiles.
2.	Manufacturers of trims (third fire).
3.	Manufacturers of special pieces.
4.	Manufacturers of frits and glazes.
5.	Manufacturers of spray-dried clay
6.	Manufacturers of machines and equipment.
7.	Manufacturers of presses.
8.	Manufacturers of dryers.
9.	Manufacturers of spray-dryers.
10.	Manufacturers of handling, internal transport facilities.
11.	Manufacturers of glazing lines.
12.	Manufacturers of kilns
13.	Manufacturers of sorting and palletising machines
14.	Manufacturers of warehouse authorisation installations
15.	Marketing companies for the finished product.
16.	Transport companies.
17.	Technical services (consultation, documentation, etc.).
18.	Financial and accounting services.
19.	Publicity and marketing services.
20.	Industrial Supplies (spare parts, primary material, etc.).
21.	Technical services (equipment, software, etc.).
22.	Industrial design services.
23.	Certification and standardisation services.
24.	Supply of clay and other primary material.
25.	Non-specified others.

Source: Own research.

Table 4. Classification of the activities carried out by companies in the ceramic district

6.1. DISTRIBUTION OF ACTIVITIES WITHIN THE DISTRICT IN 1995 AND 2005 (TEMPORARY COMPARISON)

Taking the sample of 118 companies as a starting point, the first question we analysed was finding out what activities on the previous list are carried out or acquired within the company, relocated to the companies within the district, or relocated outside the district. We have situated this occurrence in two temporary periods between 1995 and 2005. We begin by observing how many companies carry out every one of the 25 activities on the list in the three districts outlined in 2005 (Table 5)

No. of Activities	Within the company	Within the district	Outside the district
Between 1 and 2	75	5	60
Between 3 and 5	39	1	20
Between 6 and 15	4	43	34
More than 15	0	69	4
Total	118	118	118

Table 5. Activities carried out by companies in the ceramic district in 2005

The construction of the scale that classifies the companies in various categories (1-2; 3-5; 6-15 or more than 15 activities) does not follow any explanatory criteria. It simply deals with distinguishing four groups with a certain degree of similarity that allows a clear view of the distribution of activities between the companies.

One conclusion is that within the companies there is a certain degree of productive specialisation. The majority of the companies carried out a reduced number of activities. In fact, 114 of the 118 companies carry out less than 5 productive activities of the 25 carried out among the companies. Out of those, 75 companies (64%) carry out one or two activities. Nevertheless, the companies obtain a much higher number of activities within the district. This fact demonstrates how the district is a big supplier of productive activities to the companies. With respect to the activities that the companies carry out or acquire outside the district, in the majority of cases this is a much lower number than the activities within the district. In fact, 114 of the 118 companies carry out fewer than 15 activities outside the district. Table 6 indicates the number of companies that carried out the 25 activities on the list in 1995.

No. of Activities	Within the Company	Within the District	Outside the District
Between 1 and 2	77	8	63
Between 3 and 5	35	0	20
Between 6 and 15	6	48	33
More than 15	0	62	2
Total	118	118	118

Table 6. Activities carried out by companies in the ceramic district in 1995

The comparison between both tables shows firstly a great similarity in the distribution structure of the activities. Namely, the standard or criteria of the companies when deciding where to locate their activities has varied very little between 2005 and 1995. To go into more detail, this could signal a slight tendency to rely on the district to obtain a number of determined activities as opposed to the possibility of obtaining them outside the district (Table 7).

No. of relocated activities Company	From the company to the district	From the company outside the district	From the district to outside the district
1	7	0	0
2	0	0	1
3	0	0	1
4	0	0	1
5	0	0	1
6	2	0	0
7	6	0	0
8	2	0	0
9	1	0	0
10	10	0	0
11	1	0	0
12	1	0	0
Total no. of relocated activities	30	0	4

N = 118

Table 7. Companies in the ceramic district of Castellón that have relocated their activities between 2005 and 1995

The main conclusions that stand-out are: 1) Eight of the companies surveyed, relocated 30 activities in 2005 within the district that in 1995 they carried out in the company; 2) During this decade no company outsourced activities that were carried out by the company directly outside the district; 3) In 2005 only 4 of the surveyed companies relocated activities outside the district that were performed outside the company but relocated in the district in 1995.

It can be concluded that the district, as a binder of activities presents a strong resistance to relocation. In any case, when companies decide to outsource their activities they have a clear preference for relocating in the district and only opt for outside the district when the activities have already been outsourced.

In the detailed analysis of the relocation that took place, based on the information provided by the 118 companies belonging to the ceramic district of Castellón, we have drawn up the following table:

Activity	Relocation of direct production activities within the district
1	Manufacturing of trims (3rd fire)
2	Manufacturing of special pieces
3	Manufacturing of frits and glazes
4	Manufacturing of presses, dryers, spray dryers, kilns
5	Manufacturing of spray-dried clay
	Relocation of services
1	Technical Services (consultation, documentation, etc.)
2	Finanancial and Accounting Services
3	Advertising and Marketing Services
4	Industrial Design Services
5	Standardisation and Certification Services
	Relocation of Services Outside the District
1	Computer Services (equipment, software, etc.)

Table 8. Relocation of activities of companies belonging to the ceramic industrial district.

Table 8 demonstrates two types of relocation within the district. One corresponds to activities within the production process that could be considered auxiliary or supply activities, the other corresponds to specialised services in the company. This distinction is important. It could be interpreted that in the first group, the decision to relocate activities within the district could be associated with strategic decisions. As per the second group, relocation took place due to the development of a new service or that they were under-developed in the district in 1995.

With respect to relocation outside or inside the district, it appears that it is usually due to the fact that a service (computer services, equipment, software etc.) are under-developed in the district.

7. CONCLUSIONS

The current study has analysed the decision-making process for the relocation of activities in companies belonging to industrial districts. The industrial district has been characterised as a social network where a number of inter-organisational activities constitute the social capital. This identification can theoretically explain a certain inertia or constraint in decisions to outsource or relocate. Based on this theoretical development we have endeavoured to hypothesise the social capital using four factors: sense of belonging, density of relations, existence of shared standards and values, and relations with local institutes. The empirical results of the study have shown that these factors act as barriers against the decision to relocate activities. Most significant are a sense of belonging and the existence of shared standards and values.

Companies with a strong sense of belonging to a dense network in the district dedicate considerable time and resources to internal relations (Hansen, 1999) therefore limiting their capacity for external relations given that they imply a

greater opportunity cost. Local players limit themselves to a circumscribed range of decisions due to the inherent cost of social capital construction (Adler and Kwon, 2002). We can conclude that social capital can inhibit the flexibility of organisations in finding new relations and ties.

With respect to shared standards and values, a high level of trust can have a boomerang effect that manifests itself in several ways. A high level of trust reduces the flow of new ideas within the group, which causes a certain amount of insularity and inertia. (Adler and Kwon, 2002). Organisations with high levels of trust are less likely to experiment with new associates which can also affect individual organisations (Berman et al., 2002). Regarding the density of relations, Portes and Sensenbrenner (1993) argue that occasionally the benefits that cohesive, dense networks provide also generate obligations in terms of trust, reciprocity, solidarity, etc. that are difficult to avoid and reduce their capacity to avail of new opportunities. Network density is associated with the concept of reciprocity in so far as the assistance must run both ways (Marsden and Campbell, 1984). Companies that provide information and resources expect to receive a similar value in return.

Definitively, from a social capital perspective, certain limitations to relocation of activities can be explained by the companies that belong to these networks.

Some authors working in the field of industrial districts have suggested that companies should reposition themselves according to their productive needs. Grandinetti and Passon (2004) support the internationalisation of the companies' production outside the district therefore displacing activities of lesser added value (to districts where production costs are lower). This also includes highly specialised services that are not available in the district so that relations are only maintained with suppliers of advanced sub-products. Sammarra (2005) refers to the ability of companies to select the activities or phases in the cycle that allow them to achieve a lasting advantage and so decide what activities to move outside the district. Therefore, they would be performing selective relocation.

In our opinion, the results of our work lead us to suggest two lines of action though authoritative policies. The first one relates to the creation and implication of social capital within the district. The second implies that the making of external ties allows access to new ideas and opportunities from local institutions and company leaders. Using terminology from the social capital perspective, policies should reinforce the two types of social capital: *Bonding social capital* and *bridging social capital* (Putnam, 2000). The first one refers to the advantages of a homogenous group and the second the advantages of connections with diverse groups. In short, *Bonding social capital* generates common values and standards such as trust, reciprocity and others. These values and standards allow the circulation and exchange of knowledge resources of all kinds and facilitate the increase and continuous improvement of products and processes that will also constitute barriers to the decision to relocate certain activities. On the contrary, in order to create *bridging social capital* local institutes and company leaders must play the role of intermediaries between the local districts and external networks which will allow the companies to access a global supply chain as well as better positioning nearer the target markets through the greater control of product distribution.

One limitation should also be pointed out that may determine the possible generalisation of the conclusions of our study; the fact that the analysis is centred in

one industrial district only, that being the ceramic district of Castellón. The analysis of the companies belonging to this district may mean that results are biased towards the specific characteristics of the district. This case characterises the production process of the ceramic industry. Unlike other production processes, the ceramic production process could be defined as continuous, from the treatment of clay to the selection of products. We believe that this discourages a disintegration of the phases of the process and is a determinant in the relocation decision, as it discourages partial relocation of the process. We suggest that the technological characteristics of a production process could influence the business decisions analysed in our study. It is for this reason that we need to consider it to be a limitation and proposal for future study.

Finally, just as with the social capital we also point out the importance that social capital has on the companies trying to avail themselves of relations that primarily stimulate exploitation activities. We believe that the knowledge of the existence of relocation inhibiting factors in industrial districts could suggest various forms of action by the Administration to stimulate exploration activities and maximise the development of those with the highest added value.

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ANNEX 1: Items conforming to explanatory variables.**Variable 1: Degree of belonging to the district.**

- 1.1. Do you think, in general, that your closest competitors, main suppliers and various institutes that support your activity are those in a nearby geographic district?

Variable 2: Network density. (Structural dimension).

- 2.1. Does the exchange of resources, information, etc. between people or institutions external to your organisation tend to have a similar content (redundant)?
- 2.2. Do the external companies, people or institutions that you maintain relations with maintain relations among themselves? Considering four or five of the most relevant organisations for your company (suppliers, institutions), what percentage of them know each other? (We ask you to evaluate your agreement on a scale of 1-7. For example, giving the value 7 indicates they all know each other.)
- 2.3. Do the external companies, people or institutes from whom you receive advice, information or any type of input that helps when making important decisions know each other? In other words, do they maintain relations among themselves? Can we conclude that it is a more or less closed circle?
- 2.4. In general does your company obtain more and more relevant information from people, companies or institute nearby with whom you maintain frequent contact and less from people, companies and institutes in other economic circles, industries or districts?
- 2.5. If there is an obligation to opt for resources and information from one place or another and *a priori* the expectations are the same in terms of use, would you systematically choose the options within your own district as opposed to those outside?

Variable 3: Common standards and values. (Evaluation of the existence of standards and values in your district).

- 3.1. In general, would you consider that relations with customers, competitors and suppliers have a high level of trust? In other words, no one tries to take advantage of the relations, even if the opportunity arises, i.e. there is no opportunistic behaviour?
- 3.2. Do you think that your reputation affects the companies you have relations with (customers, competitors, suppliers)? Does theirs affect you? For example, if a company you conduct relations with doesn't deliver the desired results to their customers, does this have repercussions for your company? And the other way around?
- 3.3. Do you think that the cooperative relations your company maintains at the moment (with suppliers, customers or institutions) will be maintained in the future (reciprocity)? To put it another way, do you expect to be compensated in the future?

- 3.4. Do the companies in the district behave in an opportunistic manner (copying models, disloyal commercial practices, etc.)? Are they “punished” by the other companies (excluded in any way) even if it is a social or image punishment.
- 3.5. In general do companies not sign contracts to regulate exchanges (*non-contractual*). If there are conflicts do the organisations in your district resolve the matter in a friendly manner without pursuing legal suits that could seriously damage the other’s interests (*non-judicial*).

Variable 4: *Commitment to local institutions.*

- 4.1. Indicate the number of business or professional associations or institutions in general that the company belongs to or some company individual is a member of.
- 4.2. Indicate the number of responsibilities or executive posts (chairman, board member, area leader etc.) that members of the company have in one of the institutions.
- 4.3. Do you consider your relations with external institutes important (associations, professionals, business people), in relation to the number of these, in order to obtain knowledge regarding new products, processes and services etc.? (1= not important at all, 7= very important).
- 4.4. Does your company or its employees obtain significant information for its company from business or professional associations?
- 4.5. Are your relations with institutes or research centres intense and considered significant for the innovation process?
- 4.6. Relative to your competitors, do you think that their relations with local institutions are more frequent or closer?

Local Institutions: *Business Associations (ASCER, ANNFFECC, ASEBEC); Professional Associations (ATC professional schools,), Training and research centres (UJI, ITC, FUE, ALICER, IES Caminas); Public Administration Institutions (IMPIVA, Local Councils, Generalitat, MCYT).*

Variable 5: *Control Variable.*

- 5.1. Approximate annual turnover.