

# **SPIN-OFFS AND CLUSTERS: THE CASE OF THE SWIMWEAR MANUFACTURERS IN THE OLEGGIO INDUSTRIAL DISTRICT\***

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## **Abstract**

The process of geographic agglomeration of firms is explained in the economic literature with regard to at least two different views: the traditional frameworks relate to the existence of “external economies” or “agglomeration economies” in explaining the clustering of firms in a geographically defined area. While, more recent studies have highlighted social ties, knowledge inheritance and spin-offs formation in shaping the emergence of firms in a cluster without referring to the existence of agglomeration economies. This paper analyzes the case of the swimwear industrial district in Oleggio with the intent of discussing some hypotheses about the links between the evolution of the cluster and the role of spin-offs and prior knowledge. We provide evidence that knowledge inheritance and spin-offs formation contributed in the emergence of the district.

## **1. Introduction**

The purpose of this paper is to discuss the different strands of literature which give explanation to the process of geographic agglomeration of firms in a given localized and geographically defined area. On the one hand, the traditional frameworks relate to the existence of “external economies” or “agglomeration economies”. These approaches emphasise how the external benefits might be the engine of the emergence of the so-called industrial districts or clusters. On the other hand, more recent acknowledged studies have emphasised other factors at play in clusters’ development, highlighting social ties and the importance spin-offs formation in sustaining the development of firms in a cluster without referring to the existence of agglomeration economies (Sorenson, 2003; Klepper, 2004; Buenstorf and Klepper, 2009; Buenstorf and Fornahl, 2009; Buenstorf and Guenther, 2011). These studies set up themselves against the traditional explanations. More precisely, these researches present models that show

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\* Keywords: cluster, industrial district, spin-off, social ties, external economies; JEL classification: R11, L26, L67, R50

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how, under certain conditions, spin-offs are able to explain cluster development without referring to the existence of agglomeration economies.

In this paper, we carry out an original field study through survey questionnaires to gather microeconomic evidence on the links between the evolution of the cluster and the role of spin-offs. Our focus rests on the case study of the Italian swimwear industrial district in Oleggio. In Italy the economic development have strongly rested on industrial districts in the last decades: understanding industrial district formation and evolution is, then, of crucial interest for scholars interested in local economic development. Our results show that: spin-offs played a significant role in cluster formation; knowledge inheritance determines the activities of new ventures in the cluster; social ties influence the location decision of the entrepreneurs. Our analysis, also, strongly relates to the debate about policies, that aim at sustaining clusters' formation and development. Local policies that aim at supporting actions that stimulate the entrepreneurial attitude of individuals may reveal important for the development of a territory. As a consequence, regional authorities often tailor local policies aiming at reproducing the conditions for clusters' emergence and growth. If we follow the idea that cluster formation is spurred by local spin-offs, the consequences in term of regional policies would significantly differ with respect to the idea of considering external economies as the driving force of clusters' formation.

The paper is structured as follows: we firstly review the main contributions in the literature about the role of external economies in Section 2, then we analyse the recent researches on spin-offs, clusters and social ties and we construct our research questions (Section 3), and we finally discuss the case study of the swimwear industrial district in Oleggio in Section 4. Section 5 concludes.

## **2. The role of external economies in firms' geographic agglomeration**

The development of industrial clusters has been traditionally widely analysed and discussed in a Marshallian spirit (Marshall, 1890, 1919). The existence of positive external economies have always been the main explanations of clusters' emergence and growth. The development of a cluster is comparable to a social organization whose evolution brings, on the one hand, increasing specialization, production flexibility and differentiated functions and, on the other, a stronger and more intimate interrelation among its parts and functions. This creates positive economies that are external to the firms but internal to the local industrial system. With regard to this, the Marshallian tradition emphasized the effects of the availability of skilled and specialized workforce, the localization of specialized suppliers and the ease of transmission of knowledge and information flows in a given area. A geographically concentrated industry is

able to offer highly skilled human capital such that firms, that want to locate in a local area where it is likely to find the special skilled workforce they need, find it advantageous to locate close to other existing firms. Similarly, trained and skilled employees move to areas where employers look for such specific skills, and customer firms and suppliers gain in locating close to each other because of transportation cost savings. Moreover, mysteries of trade are no mystery and knowledge is in the air, according to the well known Marshallian metaphor, such that firms take advantage from some knowledge diffusion by locating close to other firms. This processes, once at work, are self-reinforcing.

This basic argumentation has been used and further developed by different researchers to stress the importance of different aspects.

### **The Italian theories of industrial districts.**

The Italian theories of industrial districts strictly developed along the Marshallian tradition. The merit of these studies is to further develop a more critical and “productive” role for the socioeconomic and cultural aspects in influencing the emergence and growth of the cluster (Becattini, 1987, 1989, 1990, 2002; Brusco, 1989; Sforzi, 1990). The individuals, the local knowledge and system of values become in this view a factor of production as the classical economic factors are. Industrial districts are, thus, defined as a socio-territorial entity characterised by the coexistence of a community of people with a sufficient “cultural complexity” and a set of firms in a well specified area (Becattini, 1989): a shared system of values, thoughts, views, language, expectations, behaviours combined to a local entrepreneurial culture and knowledge, shapes the industrial atmosphere and facilitates the relationships among firms, people and institutions. In this way, economic factors and sociocultural aspects fuse into a unique conceptual framework; the block of economic and production relationships and the block of sociocultural processes are both spatially defined, overlapped and interrelated with each other: a “cultural district” (Sacco and Pedrini, 2003). In this context, public institutions and private organisations contribute in enforcing these mechanisms (Molina-Morales and Martínez-Fernández, 2008).

A crucial condition for the rise of this division of activities and integration of relationships is given by the emergence of a demand for new differentiated and personalized goods and services. These conditions follow the emergence of a new set of needs with social and qualitative content, developed in large segments of the middle class, who having achieved the normal standard of comfort, aim at new differentiated and sophisticated goods to show social status and prestige (Becattini, 2002). This shift from manufacturing standard products to more differentiated and refined goods gives a more important role to the external economies and the coordinating relationships among the individuals and firms. It comes out a figure of a local area

where the local structures of the social community and institutions increase the willingness and the opportunities to become self-employed (Bagnasco and Trigilia, 1984, 1985; Becattini, 1997; Tappi, 2000; Lin *et al.*, 2006). The local system that emerges from this picture is a community in which the spirit of “entreprendre” is vivid, the cultural beliefs are supportive to new business formation and self-employment, behaviours and mobility inside the area favour the development and diffusion of technical know-how, creativity, skills, organizational capacity, entrepreneurial attitude, such that the outcome of these socio-economic processes is given by an “enlarged family” of small entrepreneurs and self-employed people that share the same experience and set of values.

### **Knowledge spillovers.**

Small firms in particular lack the resources of large firms and are thus more dependent on resources in their local environment (Feldman and Francis, 2004a; 2004b). In industrial clusters, small firms are able to overcome their size disadvantages (Pyke and Sengenberger, 1990): this reason may find its explanation in the existence of local knowledge spillovers from which small firms in a cluster may benefit. The role of knowledge spillovers has received much attention in the last years (Breschi and Lissoni, 2001). Networks of economic agents that interact with each other represent the source of agglomeration and knowledge spillovers, that, in turns, positively foster the urban development and the rate of innovative activities (Audretsch, 2003). Knowledge relevant for innovative and entrepreneurial activities is mostly tacit and needs personal face-to-face contact and labour mobility in order to transmit, and these factors are more likely to occur locally.

In this context entrepreneurship and spin-offs may be considered as the vehicle that drives the spillover of knowledge in the process of economic evolution (Audretsch and Feldman, 2003; Audretsch and Keilbach, 2004). Anyway the empirical evidence on knowledge spillovers is ambiguous. Some recent contributions (Breschi and Lissoni, 2001; Gordon and McCann, 2000) point out the overestimation of knowledge spillovers in explaining cluster formation. The most important point to note is that most of the econometric literature that has attempted to estimate the existence and magnitude of localised knowledge spillovers has not been able so far to shed light on the actual mechanisms through which knowledge is transmitted among agents. As a consequence, most of the results obtained regarding the spatial concentration of innovative and entrepreneurial activities might be observationally equivalent to other explanations, particularly to those that neglect any importance to knowledge spillovers and point out the role of more traditional market-based pecuniary externalities arising in the labour market and in the market for intermediate inputs. In facts, proximity may not imply any significative advantage in benefiting from knowledge spillovers. The inverse causation may give an explanation to this

claim. Innovative activity (knowledge) is geographically concentrated in some industries simply because the location of production is concentrated and not the vice versa (Audretsch and Feldman, 1996).

### **The “new economic geography”.**

Differently from the knowledge spillovers sustainers, the contributions of the so called “new economic geography” explain the processes of geographic concentration of firms on the basis of pure pecuniary externalities related to the labour market and to the demand side (Krugman, 1991a; 1991b; Puga and Venables, 1996; Ottaviano and Thisse, 2001). The level of transport costs, the increasing returns to scale at the plant level and factor mobility, involving a circular causation mechanism, play a critical role in triggering the process of agglomeration of firms. The emergence of clusters is explained as a cumulative and self-reinforcing process in which the location of new firms in a region attracts workers from other areas to benefit from relatively higher wages; this in turn stimulates the further entry of new firms in the same region to benefit from a larger local market and save on transport costs. According to this view, the formation of clusters is given with regard to pure economic explanations. The existence of external pecuniary economies is able to endogenously explain firms’ agglomeration independently on the exogenous natural and physical characteristics of the location (Krugman and Venables, 1990; Ottaviano and Puga, 1998; Rosenthal and Strange, 2004; Ottaviano and Thisse, 2001, 2004).

The elegance of the logic and models of the “New Economic Geography” sustainers had to deal with the criticism of lacking a corresponding empirical relevance of this strain of research; moreover, institutions do not play any critical role in these explanations, while various cases proved the institutions to be relevant for clusters’ emergence. Moreover, the empirical support of the “New Economic Geography” is questioned if it is not considered that spatial scale economies materialize only after firms make their location decisions accordingly.

### **2.1. Discussion: the external economies.**

The approaches presented in this section share a common feature in explaining the development of clusters: some sort of external benefits that network firms are able to appropriate when locate in the cluster triggers and feeds the process of agglomeration of firms.

These approaches have been criticized under many respects. Hadjimichalis (2006) believes that the image of small-medium firms networks in industrial districts as places where firms collaborate, mutually support actions, and equally share benefits is hardly true. He emphasises the lack of a deep theoretical investigation on relevant social factors, neglected by the traditional researches, and claims to consider the role of semi-illegal practices, low-paid work of women, the asymmetric-power relations and the consequent democratic deficit in cluster areas. Staber

(2007) criticizes regional studies because of a lack in considering the situational context of the social capital thus leading to weak, inconclusive and universalistic recipes for cluster success. He argues for a clear contextualization of researches on social capital to strengthen conclusions on clusters. Other scholars (Sorenson, 2003; Klepper, 2004; Buenstorf and Klepper, 2009; Buenstorf and Fornahl, 2009; Buenstorf and Guenther, 2011) criticize the traditional theories on clusters, the role of external economies and knowledge spillovers, arguing that agglomeration economies and spillovers hardly explain the location's decisions of new entrepreneurs. In what follows, we are interested in investigating this last criticism: if true, this criticism would be disruptive also for the other two critics.

### **3. Spin-offs, social ties and the emergence of clusters**

Some recent researches particularly emphasize criticize two features of the entrepreneurial activity in order to explain clusters' emergence and development: the inheritance of organizational competences and spin-offs, on the one hand; the role of social ties, on the other. According to this approach, no agglomeration economies and knowledge spillovers are needed to explain the location's decisions of new entrepreneurs in a given bounded area.

To start, in this paper we use a definition of cluster as a geographical area where many actors locate and operate in related-industries. This definition requires at least two ingredients to exist: a) actors engaged in "related activities"; b) actors located in the "same geographical area". So, the argument on clusters' formation is the following: spin-off processes spur the number of firms, transferring knowledge, routines and learning, and operating in related activities, and these new firms locate near to parent firms because social ties "naturally" constraint the location decisions of the new entrepreneurs. This process is self-reinforcing, thus explaining geographical clustering of firms. In this section we develop these arguments.

#### **Spin-offs.**

In the U.S., the automobile producers were geographically dispersed initially and over time the industry evolved to be an oligopoly and highly concentrated around only one city, Detroit. On the contrary, in the television industry, from the start in the 40's and 50's most of the firms have been clustered around New York, Chicago and Los Angeles. After some years the industry turned out to be more concentrated in terms of market structure but more geographically dispersed. These two patterns of evolution hardly agree with the existence of positive external economies that induce firms to agglomerate around a local area. Neither of the two industries provides support for the existence of external agglomeration forces that enhance the performance of firms located there. If there were positive agglomeration effects in the television

industry, then, the deagglomeration processes in New York and Los Angeles would have stopped, and Chicago would have become the leading city. With regard to automobiles, there was no evidence of advantage for locating in Detroit, which in the end became the centre of the industry. An alternative explanation is, then, proposed.

In addressing the question of why industries agglomerate geographically, Klepper (2004) rejects the theories that feature increasing returns to scale, both internal and external to firms and proposes an interpretative framework, which is based on the inheritance of organizational competences. Pre-entry experience is crucial for the entrepreneurs' subsequent decisions (Helfat and Lieberman, 2002). The explanation starts from the assumption that knowledge of particular routines and specific technologies accounts for a large proportion of the heterogeneity across firms in profitability and performance. Replicating this scarce and valuable knowledge may be extremely difficult, if not impossible, for potential entrepreneurs, whose background is in a different business line or who plan to found a start-up company. On the other hand, entrepreneurs coming from related industries or from the incumbents in the industry are likely to inherit from their pre-entry experience some of the organizational competences of the originating companies. Entrants having access to this knowledge and capabilities, then, potentially enjoy a large advantage over other firms. If one accepts the idea that the most competent entrants in an industry are those founded by entrepreneurs who were former employees of firms in the same or in related industry, then it is possible to explain the birth of new waves of firms engaged in the same activity of the "parent" firm.

Klepper and Sleeper (2005) develop a model in which firms give birth to spin-offs and spin-offs inherit individual traits, like knowledge, from their parent firms. Spin-offs enter market niches that overlap with their parent markets. These niches are smaller than the market shares of other entering firms because spin-offs require smaller market share to be profitable thanks to the learning of the spin-offs' founders. Spin-offs implement efficient routines from their parents thus improving their survival chances (Boschma and Wenting, 2007). Moreover, the model predicts that the more experienced firms generate more spin-offs. More experienced firms generally spawn more knowledge: employees drawn on this knowledge. Thus more experienced firms give birth more likely to more spin-offs. The empirical results of these researches in the laser industry in the U.S. and in the automobile industry in UK support the prediction of the model according to which spin-offs inherit technical and market-related knowledge from parent firms.

These findings are in line with other empirical works. Buenstorf and Klepper (2009) analyse the U.S. tire industry, investigating the factors that induced the industry to be regionally clustered around Akron. Akron is a small city in Ohio with no particular advantages for tire

production. The results show that geographic concentration of firms around Akron was not driven by the existence of agglomeration economies that attracted entrants in this area, but by a process of reproduction and heredity that induced the the creation of new entrants, spurred by the supply of entrepreneurs. Buenstorf and Fornahl (2009) analyse the emergence of a software cluster in Germany, ascribing its birth to a process of spinoffing of many small new firms, generated by the downsizing of the large parent firm Intershop. These new ventures established locally thus giving rise to a concentration of firms around Jena. Spinoffing of firms from a public institution (ITRI – Industrial Technology Research Institute) in Taiwan generated a successful cluster in the computer and microchip industry in Hsinchu (Parker, 2010). Other empirical evidence is found in the disk drive industry in U.S. (Franco and Filson, 2006), the semiconductor industry in Silicon Valley (Saxenian, 1983), the musical instrument cluster in Italy (Tappi, 2005), the plastic district in Italy (Patrucco, 2005), the laser industry in Germany (Buenstorf, 2007), the call centre cluster in Sweden (Nuur and Laestadius, 2010).

So far we analyzed the birth of new firms engaged in the same activities as incumbents firms and their knowledge transmission. We now turn our attention to what we called ingredient b): spin-offs usually tend to locate in the “same geographical area” of their parent firms.

### **Social ties.**

The second ingredient for having a cluster is given by geographical agglomeration. The crucial force here relates to the role of social ties and local network in influencing the decision of where to locate a new firm (i.e. in our case spin-off), even in the absence of locational effects (Sorenson, 2003; Stuart and Sorenson, 2003; Sorenson and Audia, 2000).

Spin-offs, as well as other entrepreneurial activities, require the mobilisation and the organisation of the resources necessary to start a new firm. In this respect, geography and location matter because they help establishing and maintaining those network ties that are vital in order to mobilise the resources needed to found a new venture. In fact, individuals do not interact at random with other agents, but tend to enter into social relations and maintain such relations over long periods of time preferably with others living in the same region and with whom they share a common culture, interests and background. These localised social networks in turn play a crucial role in affecting both who engages in entrepreneurship and what regions are most likely to attract new firms.

In the first place, social ties affect the awareness of entrepreneurial opportunities. As argued above, evaluating market opportunities is often a first step in the entrepreneurial process and it requires access to private information and data (Garavaglia and Breschi, 2009). Social linkages represent a powerful means to have access to this valuable data, by connecting potential entrepreneurs with other individuals working in the same industry, e.g. employees of incumbent

firms, and living in the same local community. People better identify opportunities when social linkages are dense, connecting potential entrepreneurs with other individuals working in the same industry.

Once an opportunity has been identified, social networks also constrain where individuals can successfully build new firms. The success of a new company depends in fact on having access to some key factors, notably human capital, financial capital, knowledge capital and trust. Once again, social relations are likely to increase the likelihood to mobilise and bring to the nascent firm the financial capital and the human capital needed for its operations. Given the high risks involved and the fundamental information asymmetry problem afflicting new ventures, entrepreneurs may find it difficult to collect sufficient financial and human capital (Granovetter, 1973; 2005). Strong and dense social ties help overcoming this constraint by reducing the amount of uncertainty and by raising the trust necessary to convince investors and potential employees about the real prospects of the nascent firm.

Typically, these aspects could not be easily replicated outside the local community, outside the geographically bounded area of the cluster (Figueiredo *et al.*, 2002). An important consequence of this perspective on entrepreneurship and clustering is that *locational inertia* is likely to emerge. The need to draw on social networks to identify entrepreneurial opportunities and to mobilise financial and labour resources, together with the fact the individuals prefer to remain close to family and friends, tend to bind potential entrepreneurs to the regions in which they have contacts, i.e. the regions in which they have worked and live, even though other locations seem to be more attractive. This implies that once clustered in a given location, industry tend to remain persistently located in the same area, even when co-location implies disadvantages. Empirical evidence by Figueiredo *et al.* (2002) shows that entrepreneurs display a strong attitude to locate in the familiar home environment, being willing to pay wages to employees more than three times higher before becoming indifferent between moving from the home base or staying.

Thus, social ties that an individual develops during his work experience constraint the decision of the new entrepreneurs to start their own businesses in the same area where they worked: changing the region would break the existing ties and connections; the development of new ties and connections from scratch would mean to bear costs both from a pecuniary and emotional point of view. It emerges a geographical inertia of the entrepreneurs to move elsewhere, even in presence of better production conditions. Katona and Morgan (1952) show that the efforts to move away from the location where an individual had been employed and lived seems to be stronger than the desire to start the activity in the ideal region from an economic point of view with less risk of failure.

### 3.1. Discussion: spin-offs and social ties.

The picture that emerges in this section may be summed up as follows. Given the primitive existence of some firms in an area (because of availability of natural resources, historical accident or other reasons), these firms will give birth to spin-offs (because of different reasons, like disagreement, the existence of asymmetric information, the problem of cannibalization for the parent firms, the effects of learning of employees). The spin-offs inherit knowledge and behavioural routines from their parent firms. More experienced firms generally spawn more knowledge thus giving birth more likely to more spin-offs. By knowledge inheritance, more efficient incumbents spawn more efficient spin-offs which, by virtue of their superior heritage, will outperform start-ups founded by inexperienced entrepreneurs, possibly located in other areas, thereby causing in the long run the industry to become heavily agglomerated around the regions of the early incumbents.

This force combines with the fact the individuals prefer to remain close to family and friends and usually draw on social networks to identify entrepreneurial opportunities and to mobilise financial and labour resources. Therefore, spin-offs tend to display “sticky” behaviours by inducing the “spinoffing” entrepreneurs to locate in the cities and regions in which they already have contacts and where their families live.

The consequence of these forces is that spin-offs and social ties represent the means through which clusters emerge and industries tend to remain persistently located in the same areas. In the following section we provide support to this story by examining the case of the swimwear district in the town of Oleggio, in Italy.

### 3.2. Hypotheses of research.

In order to assess our research question related to cluster formation, we are interested to investigate the following propositions.

*Proposition 1.* Firms in the district proliferate through a spinoff process.

Thus we analyse the following *hypothesis*: 1) Most of the founders had previously been employed in another firm.

*Proposition 2.* Founders inherited the competencies from the previous work experience and implemented these competencies in their new entrepreneurial activity.

Thus we investigate the following *hypotheses*: 2a) Production: the production field in which the firm stands at the foundation was the same as that of the firms in which the founder has been employed. 2b) Skills: at the time of foundation, firms specialized in the same activity that the founder practiced when he was employed.

*Proposition 3.* The “spinoffing” entrepreneurs are bounded by social ties and locate in the same city where they already have contacts and they live.

Thus we investigate the following *hypothesis*: 3) Most of the founders firstly established the firm in the same town where they were living.

#### **4. The case of the Oleggio swimwear industrial district**

Many researches analyse industrial districts by aggregating large datasets about different districts together (Paniccia, 2002). An alternative methodology consists in collecting more precise micro data about a single case: in this way, the research permits to cover various aspects related to the specialization in production, the cultural background of the entrepreneurs and other micro data, thus giving a more complete analysis of the features that characterize the district. In this section we discuss the case of the Oleggio industrial district. In this section, we show that, according to our data, spin-offs and inheritance played a key role in shaping the cluster’s formation.

Oleggio is a small town, located in north-eastern territory of Novara, along the boundary between Piedmont and Lombardy in the North of Italy. The existing legislation recognized Oleggio and the territory that combine 13 municipalities<sup>1</sup> as an industrial district where a multiplicity of small and medium-size firms produce swimwear and underwear and interact each other (Baici and Mainini, 2003)<sup>2</sup>. The regional government also recognized Oleggio as one of the local districts in Piedmont (delibera n°227-6665, 26th of February, 2002), characterized by the specialization in textiles, accompanied by the presence of a parallel mechanical sector. Oleggio is characterized by a specialization in swimwear manufacturing. Close to Oleggio, and related to Oleggio’s activities, another district emerged, centered around the town Varallo Pombia. Varallo Pombia specialized in textiles as well, and in mechanics.

The origin of the Oleggio district dates back in 1885, when the entrepreneur Giovanni Gagliardi established a firm, named Gagliardi, for the manufacture of corsets, corsetry and related tissues in Oleggio. In few decades, this firm became the main manufacturing establishment of the area with several hundreds of employees. The swimsuits firstly appeared into local production only after the second World War in the late forties-early fifties, when this product became part of the goods of mass consumption. The other leading firm dedicated to the production of swimsuits, the Manufacturing Gagliardi Oleggio (MGO), dates back to those years. These two firms embody the birth of the swimwear industrial district in the province of Novara. In the sixties-seventies, Gagliardi and MGO grow and prosper and a lot of micro and small firms, often with fewer than 20 employees, were founded, operating as contractors. Many small firms originated by these larger incumbents either by the deliberate strategy of incumbents

to create subcontractors and by the process of spin-offs of former employees. Also, some new firms were created after the cases of factories' closures.

Over the years, many of these micro firms expanded and became producers on their own. Many firms in the district also attempted to diversify their production by offering corsetry, lingerie, sportswear, trying to overcome the seasonal nature of the production of swimwear. The good image, the strong relationships with clients in Europe, particularly in Germany, the presence of highly qualified and skilled labour, and entrepreneurs which were able to capture the market and stimulate demand and create innovations, were the principal factors that ensured the competitiveness of the sector and the success of many firms in the district on the international markets (Baici and Mainini, 2003).

This process of development induced the regional legislation to recognize and consider in all respects the area around Oleggio as an industrial district with the Law 317 of 5 October 1991. With the Ministerial Decree of 21 April 1993 the required conditions to define an industrial district were made more explicit and parameterized by identifying some operational rules and indicators for the delimitation of an industrial district organization: index of manufacturing industrialization (Im)<sup>3</sup>, index of entrepreneurial density (Id), index of specialization (Is), weight of the sector (PS), absolute incidence of PI (PI). Table 1 clearly shows that the area of Oleggio responds to all the required values of the indexes and therefore it was eligible to be considered an industrial district.

Table 1: Industrial district indexes in Oleggio according to the Italian law DM 21/4/93: 1981-1991.

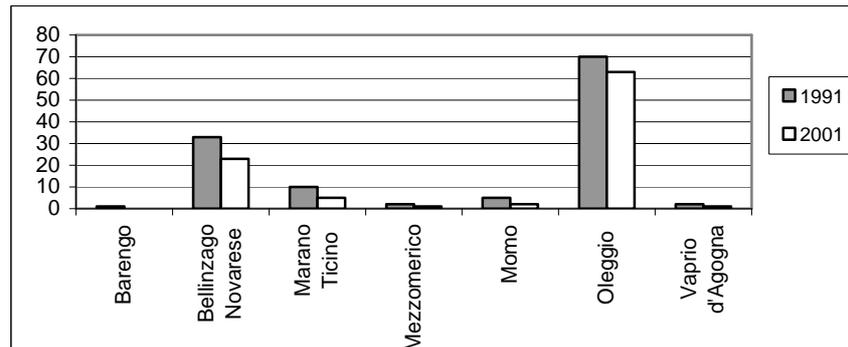
Index	Required Value	Oleggio	
		1981	1991
Im	>1,3	1,82	1,93
Id	>1	1,43	1,51
Is	>1,3	1,96	2,07
Ps	>0,3	0,42	0,42
Pi	>0,5	0,64	0,80

Source: Baici and Mainini (2003) on Istat data.

The district is characterised, as many other Italian cases, by a high degree of heterogeneity in terms of product differentiation, firms' size and form of production. It is possible to recognize the presence of a large group of small firms and a handful of medium-large producers, focussed on the production of swimwear and sports clothing. Firms are mainly localized in two towns:

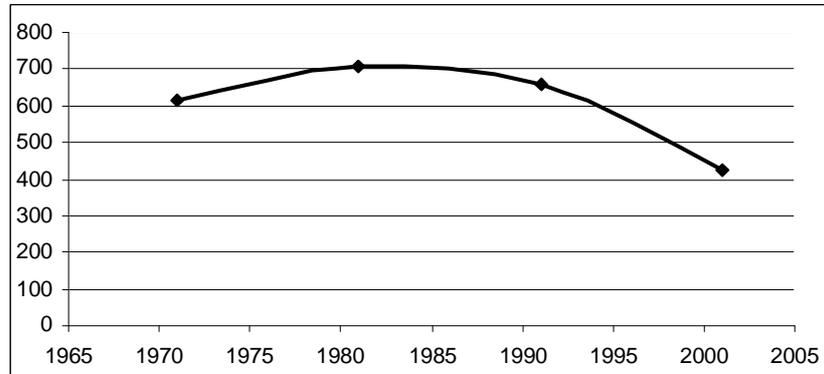
Oleggio and Bellinzago Novarese. The number of firms, as well as the number of employees, have been decreasing since the nineties due to the process of international competition that intensified during the eighties and nineties (Figure 1): this trend has generally characterized the entire province of Novara (Figure 2).

Figure 1: Evolution of the number of firms in the municipalities of the Oleggio district between 1991 and 2001.



Source: Istat 1991, 2001

Figure 2: Number of firms in the province of Novara from 1971 and 2001 (Ateco code 182).



Source: Istat 1971, 1981, 1991, 2001

Baici and Mainini (2003) claim that this situation of crisis should be also ascribed to the fact that Oleggio is not really an effective industrial district but only a sort of "District of fact" defined by indexes, business characteristics and economic variables, but that in practice lacks effective cooperation between firms, knowledge transfer and mutual support that usually characterize the industrial districts (Carbonara, 2004). The majority of the interactions between firms appears to be limited to a simple direct relationship of subordination, without providing specific forms of mutual cooperation or contributions among firms, while the spirit of

competition tends to remain very high generating a general attitude of uncertainty and distrust. In support to this criticism, Baici and Mainini mention the failure of the only example of cooperation among firms in the area: the creation of the Società Consortile Promozione e Sviluppo Distretto Ticino in 1998 (Ticino District Promotion and Development Consortium), by the initiative of the Chamber of Commerce of Novara, the Novara Industrial Association, and the Association of Small and Medium Enterprises with the intent to benefit from the contributions provided by regional law n. 24/97 to support the growth of the district. Thus, the authors conclude that Oleggio might not be considered as a real district structure but as a simple localized concentration of firms operating in the same productive field.

For our purposes, we do not discuss if Oleggio can be considered a real district or not. We are interested in the formation of the agglomeration of firms in the Oleggio area, with the intent to investigate if spinoffs drove the clustering process. We develop this analysis in the following section. The consequences of this analysis will also be fruitful for discussing the crisis of the district. In fact, if we find that the firms of the districts generated through spinoff processes, if most of the spinoffs came from failing or downsizing firms, and if we believe that firms inherit competencies from their parent firm, then we interpret the crisis of the Oleggio district as a process of inheritance of unsuccessful routines through spinoffing. When leader firms (and “hub firms”) prosper, then, the whole industrial district expand through subcontracting, cooperating and learning (Albino *et al.*, 1999; Takeda *et al.*, 2008), while in case of recession of leading firms, also a number of satellite small firms suffer as well.

#### **4.1. Data and methodology**

The methodology of our analysis is organized in three steps. First, we interviewed some experts of the swimwear manufacturing in order to understand the main characteristics of production and work organization. These meetings allowed us to compose a questionnaire to submit to existing firms in the district. The questions are mainly closed questions which results in a minimal loss of time by the interviewee and in a immediate quantitative analysis of individual responses.

Secondly, we identified 55 active firms in 2007 in the district area through the on-line “Registro delle Imprese” (i.e. firms register), internet, phone calls and personal visit, as reported in Table 2. Then, we submitted the questionnaire to a subsample of these firms, randomly selected according to a stratified sampling method. Out of 55 firms in the territory, 43 of these were proposed to participate to the research project.

The questionnaire submission has been organized through a preliminary phone call to explain the research project to the interviewee and a subsequent data collection through a

meeting or emailing or fax, according to the interviewees' preferences. 34 of these firms declared to be willing to participate but in the end only 19 have responded (34.5% of the entire population).

Third, we organized the data of our case study in order to assess our research questions, developing a qualitative analysis (the limitation of the data does not allow us to implement an econometric investigation).

The questionnaire consists of two main sections:

- Section I has the objective to obtain information about the founder and the firm at the year of foundation;
- Section II focuses on the activity of the firm in the present years.

Table 2: Number of firms in the Oleggio district in 2007.

<b>Municipality</b>	<b>N° firms 2007</b>
Barengo	0
Bellinzago Novarese	13
Marano Ticino	4
Mezzomerico	0
Momo	3
Oleggio	35
Vaprio d'Agogna	0
<b>Total</b>	<b>55</b>

Source: Author's elaborations.

## **4.2. Analysis and discussion.**

The data we collected enabled us to understand the process of development of firms in the Oleggio district, in order to assess our research question related to cluster formation. In particular we assessed in a qualitative way the hypotheses presented in section 3.4.

The questionnaire asks to the interviewees to trace back their work career such that we are able to reconstruct if the founder had previously been employed in another firm, working in the same area, in the same manufacturing field.

### **Hypothesis 1.**

Our data show that firms mainly started as spinoffs: 73,6% of our sample were created as a spinoff.

### **Hypothesis 2.**

2a) The production field in which the firm stands at the foundation is the same as that of the companies for which the founder worked prior to foundation: 85,7% of respondents to the foundation started an activity in the same production field.

2b) The activity on which the firm focussed at the time of foundation is the same as the activity the founder practiced before going on his own: 75% of firms performed the same function (most of which in the function of sewing, drawing and cutting) that the founder exercised when was still an employee.

### **Hypothesis 3.**

The current location of the firms is in one of the neighbour town where the founder previously worked: 78,5% of these spinoffs located exactly in the same town of the parent firm and 91,6% of them located in the same town where the founder (founders) lived.

This evidence supports the idea that the agglomeration of firms mainly occurred through a series of spinoff firms whose founders decided to locate near to where they were previously employed. This results support Klepper's and Sorenson's view: the spin-offs formation and the "sticky" behaviours that induce "spinoffing" entrepreneurs to locate in the cities in which they already have contacts and where their families live generate the emergence of the industrial district.

These results show unequivocally that the experience and knowledge gained during working life has been decisive when deciding to found a new firm. In a cluster, employees are trained and focused on specific activities and functions, which become a potential professional growth for the individuals. This technical specialization and expertise represent an investment for the future of the employee: the employee will be able to start up a new business by exploiting the same "activities" in which he has developed his experience.

The Italian examples are full of situations in which both large vertical integrated firms as well as small artisanal firms represented the incubator of the specialised knowledge, technical and manufacturing skills for many employees. Italy is not the only case. In the Mexican garment industry we register a similar story (Hanson, 1996). Firstly, the prior knowledge of some immigrants that were textile and garment merchants in their countries of origin determined the pre-conditions in terms of knowledge in the setting up of the first garment firms in the country. Secondly, after a process of industry dispersion, the relocation of the production in other areas was initiated by pioneer firms whose founders were former employees and had prior experience in the capital's garment industry.

Also, prior knowledge and experience may stem from large existing firms, as mentioned above, as well as from public institutions, Universities and research centres (Bresnahan *et al.*, 2001; Feldman *et al.*, 2005).

Putting together the results of *Hypothesis 1-3*, we are able to reconstruct the picture that represents the emergence of the Oleggio industrial district. Some firms settled in the Oleggio area at the end of the 1800. After World War 2, some of these firms grew and became large in size. Some of these specialized in the swimwear activities to face the increased demand of these products. From these firms, employees learnt the technical expertise in production, and developed economic and social ties bounded in the Oleggio area, like the contacts with other firms, the relationship with local banks, the relations with other specialized employees, and so on. A series of these employees decided to become self-employed, founding a new small firm, implementing the experience they developed during the previous years of employment. Thus, a multiplicity of small and medium-size firms, engaged in the production of swimwear and underwear products, emerged, giving birth to the emergence of an agglomeration of firms, named Oleggio industrial district.

Moreover, our data are able to show that the activities of these new firms typically took the forms of subcontracting and specialized in the same technical activity-field where the founders have been employed. Firms mainly established as subcontractors (94,7% of the surveyed firms), and there has been a very low tendency to move toward an autonomous condition over the years (only 22% of firms became autonomous producers in 2010).

Given the subcontracting relations among the few medium-large firms and the many small-micro firms, we are also able to interpret the reasons of such a rapid decline of the Oleggio industrial district. What emerges from this picture is a situation of dependence of many small subcontracting firms on few medium-large firms, in line with the “hub-and-spoke district” structure (Markusen, 1996; Guerrieri and Pietrobelli, 2004). In these clusters, interesting development processes may be envisaged: the presence of a large hub-firm with several activities and multiple linkages may foster the firms in the district to venture into new sectors and to diversify the activity of the cluster, thus stimulating the growth of the area (Guerrieri and Pietrobelli, 2004). In the same way, in these cases, when the hub-firm faces difficulties and recession, the other satellite firms suffer. In the end, the fate of the cluster is linked to the fate of the hub-firms. The Oleggio district shows that most of the firms remained subcontractors, unable to move to an autonomous production, with own brands and autonomy. Most of the firms remained small (micro) in size. Many firms were laboratories with no employees, specialized in one activity that was typically outsourced by larger firms, with few low tech machineries in the own house where the founder lives. There has been a total dependence of

most of the firms in the cluster from the few medium-large firms, since the beginning. The few medium-large hub-firms created the cluster, through spinoffs, determined the development of the cluster and, in the end, determined the decline of the cluster.

## **5. Concluding considerations**

In this paper we discuss and provide evidence about the idea that clusters emerge through a process of spinoffing of firms, knowledge inheritance and locational decision's inertia. Opportunity recognition and resources mobilization are typically locally bounded by the social ties of the individuals: these factors are difficult to replicate outside the local community, outside the geographically bounded area of the cluster (Figueiredo *et al.*, 2002). Individuals prefer to locate near where they live, to remain close to family and friends, because changing the region would break the existing ties and connections and the development of new ties and connections would mean to bear costs both from a pecuniary and emotional point of view. What emerges is a geographical inertia of the entrepreneurs to move elsewhere, even in presence of better production conditions. Following these lines of research, the role of spin-off formation and its linkages to the social capital of the founder combined to a hereditary theory of organizational competence may well explain cluster formation even without referring to any kind of external economies.

Our analysis carries out an original field study, that provides microeconomic evidence on how the case of the swimwear district in Oleggio conform to these patterns. The typical entrepreneurs in this district began his experience as a seamstress (most of the entrepreneurs are women) in a medium-large size firm (such as Gagliardi, MGO or Gavinelli), where they acquired self-confidence and knowledge that (because of the desire to become self-employed or because of the risk of failure) induced them to start a new business in the area adjacent to where they were employee and where they lived. Our data have confirmed the existence of a close link between business focus of the new business and the professional backgrounds of entrepreneurs.

We sustain the idea, then, that the combination of spin-offs, knowledge inheritance and locational decision's inertia explain why clusters arise. These processes contribute to generate the critical mass of firms in the initial phase of cluster evolution, that subsequently may start the external pecuniary and non-pecuniary effects in an agglomerated area. Spin-offs, also, contribute to cluster growth because of the trial-and-error experiences (typical in the primordial stages when uncertainty is high) they explore, offering in this way a local learning mechanism that contribute to ease subsequent entrepreneurship, adaptation to external shocks, innovation and change, as occurred in Hsinchu (Parker, 2010). When a critical mass of firms is reached, then, it emerges a self-sustaining process of agglomeration, where the so-called "external

economies” play a reinforcing role (i.e. in the Oleggio case through the creation of Consortium, the extension of infrastructures, the birth of related industries, the development of bank services, and so on) .

This paper may be useful to drawn policy indications. If we acknowledge that clusters represent a vehicle of regional growth, and if we believe that clusters’ formation is spurred by spin-offs, then policies that aim at regional development should focus on sustaining spin-off creation. This represents a change of direction with respect to the regional policies that concentrate on the development of external factors that encourage positive external economies<sup>4</sup>. The question, then, is: how to sustain spin-off creation?

First of all, it is important to create the conditions to foster self-employment. For examples, courses devoted to the resident population in business administration and about how to create a business plan would be needed to develop an “entrepreneurial” attitude of people. Investing in education in a fundamental element in order to prepare a culture prone to start new business and to generate the competences which are the endogenous force of the local system as it happened in the case of the Large San Jose cluster in Costa Rica (Parrilli and Sacchetti, 2008) and in Hsinchu in Taiwan (Parker, 2010). Also, cooperations with local banks in order to provide financing to local firms would represent a key element for stimulating self-employment.

Secondly, it is crucial to focus on one or more successful businesses that can fertilize the local area through a process of offspring, that might be sustained. Policies that finance new ventures might give some priority criteria to those projects that are related to coherent professional background of the potential entrepreneur. Systems of protection of the idea of the spin-offs are required. Policies should also enhance collaboration between spin-offs and established firms. This is an important means for sustaining the initial stage of the new firms and for creating a close network structure in the district.

Third, industrial development processes seem to be economic as well as social and cultural processes (Nuur and Laestadius, 2010): this is important to keep in mind if we believe that spin-off creation entails economic, social and cultural motivations. Local policies should focus on the co-development and co-evolution of these aspects.

This work presents some limitations. Two further improvements may be interesting for future research. The first consists in the development of a more detailed dataset in order to run some econometric analyses to empirically sustain the idea of the paper. The second consists in the comparison of several micro-founded case studies, as the one presented in this paper, in order to draw some taxonomies on clusters’ emergence, by identifying geographical-technological-sociological imperatives.

## Acknowledgements

The author acknowledges Marzia Artusi, Giuseppe Donghi, Piero Gallazzi for their useful suggestions and Luca Annibale Vignati, Jacopo Berra, Giulia Bignoli, Antonietta D'Amore, Andrea Di Fiore, Angela Morelli, Valentina Casiraghi, Lia Misani for collaboration in data collection. The usual disclaimers apply.

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## Notes

<sup>1</sup> Agrate Conturbia, Barengo, Bellinzago Novarese, Borgo Ticino, Castelletto Sopra Ticino, Divignano, Marano Ticino, Mezzomerico, Momo, Oleggio, Pombia, Vaprio d'Agogna and Varallo Pombia.

<sup>2</sup> See also [www.regione.piemonte.it/industry/districts](http://www.regione.piemonte.it/industry/districts).

<sup>3</sup> (Im): the ratio between the weight of the local manufacturing industry workers in the national total. (Id): compares the weight of the units' local manufacturing compared to the population living with the weight of units' manufacturing than the national population residing in Italy. (Is), and 'the relationship between the local staff in a given sector and those employed in the same industry at national level. (PS): the relationship between the local staff in the relevant specialization and total employment in activities' within the manufacturing system. (PI): shows the weight of those employed in local manufacturing for the industry in highly specialized units' with fewer than 200 employees in total local employment in that sector.

<sup>4</sup> Note that Oleggio is close to the Malpensa airport and the recent logistic and service centers in the Malpensa area, and close to the "new" train Intermodal Station in Novara.