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CLUSTER DYNAMICS AND INNOVATION IN SMEs: THE ROLE OF CULTURE

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Cluster dynamics and innovation in SMEs: the role of culture

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Abstract

The territorial agglomeration of interdependent enterprises has a positive influence on the competitiveness, the performance and the development of national economies. This is a widely accepted intuition in economic theory, and it dates back to the works of Alfred Marshall.

In particular, these phenomena have been depicted through the theoretical framework of the "Industrial Districts". Another significant impulse to the debate was provided by the GREMI (*Groupe de Recherche Européen sur les Milieux Innovateurs*), through the concept of *milieu innovateur*. Later, Michael Porter's studies and dissemination works granted great visibility to the dynamics of agglomeration of industries, which since then are better known among policy makers as "clusters".

At any rate, the importance of the cultural element in the concepts of "cluster", *milieu*, and "district" is undeniable. This is evident also when observing the phenomenon from a historical perspective. Evidence shows that the strength of a local economic system, and its capacity to grow and to innovate, are closely related to the pattern of knowledge (thus cultural) stratification, to the territory itself and to learning capacity. Moreover, one can observe that cultural socio-economic elements are embedded in technology, thus they play a key role when considering the dynamics of innovation process and growth opportunities for Small and Medium Enterprises (SMEs).

With this respect, the paper will present some relevant case studies of technical assistance carried out by in the field of industrial cooperation with several non-EU Mediterranean countries. In particular, the paper will present those case studies where initiatives were set up with a view to encourage cluster dynamics in regions (i.e. Aleppo, Syria or Yazd, Iran), where the main sector of activity (textile and clothing industry) is historically and culturally based. In particular, several factors were involved, such as the cohesion of stakeholders for the creation of innovation, the development of new products, and the competitive advantages for the local productive system.

The project approach and its conclusions confirm the fundamental role of culture and culture-based activities in the process of economic development, especially when considering SMEs, where culture represents both an embedded strategic foundation for the creation of cluster dynamics, and a significant potential for their future development affecting innovation trajectories.

1. Clusters: a review of existing literature

1.1 Marshall and the Italian districts

Clusters are today recognised as an important instrument for promoting industrial development, innovation, competitiveness and growth. Nevertheless, their theorisation was not a smooth process, and the evolution of the concept has lasted for over a century.

Appearing in economic literature, agglomerations of related industrial activities were first explained in the late 19th century with reference to so-called Marshalian externalities (Marshall, 1890). This framework established a link between co-location by firms and economic efficiency as firms would cluster in order to benefit from positive externalities associated with their respective activities. In the first half of the 20th century, several contributors recognised a relationship between geographic agglomeration and scale economies.

Marshall's ideas were revisited in the 1970s, when Italian scholars (Bagnasco, 1977) explored the economic, social and cultural dynamics which gave birth to the industrial districts, through observations on the so-called 'third Italy' The works described the prosperous firm structures experienced in the Northeast and Centre of Italy, and these performances were confronted with the stagnating situation in the poor South ('second Italy') and the recession in the traditionally rich and early industrialized Northwest ('first Italy'). The growth of the Northeast and centre of Italy pushed the scholars to analyse the economic and social fabric of the region, and its agglomeration of firms clustered in specific geographic zones, and operating in specific industrial sectors. These clusters were able to establish strong positions in world markets in a number of traditional product categories, including shoes, furniture, tiles, musical instruments, etc. Progress seemed promoted by

the capacity of the clusters to innovate in terms of production processes as well as product qualities [Andersson *et al.*, 2004].

1.2 Porter, the GREMI approach and further contributions

Another important input to the debate has been the one around the concept of "*milieu innovateur*" mainly carried out by GREMI (*Groupe de Recherche Européen sur les Milieux Innovateurs*). The group, established by Philippe Aydalot in 1984, has centred its researches around the notion of *milieu innovateur*. The concept originated from the idea of the endogenous nature of the territorial innovation process. It is important to underline that the approach takes into account several kinds of factors, thus not only the classical, economic ones, but also social, cultural and environmental factors, thus encompassing a partly historical perspective. All these aspects combine to create a unique "system of externalities", developing a *milieu* which stimulates innovation and learning. Successive evolution of GREMI research highlighted other sides of the concept, for instance considering not only the static relation within the *milieu*, but also the dynamic connection between the *milieu* and the global environment. An up-to-date definition of *milieu innovateur* is "a multidimensional reality linking a community of stakeholders for the dynamic creation of productive systems, integrating the territorial dimension with techno-industrial paradigms, and considering structural change in the productive system" (Grandi, 2004; Quévit and Vand Doren, 1997; Aydalot, 1986).

Michael Porter's *Competitive Advantage of Nations* (1990) marked a turning point in international literature on clusters. Contrasting with the prevailing U.S. local development objective of promoting diversified economies, Porter called for specialisation according to historical strength, by highlighting the power of *industrial clusters*. Porter highlighted that those factors related to the territory where firms operate can affect their performance. In his "diamond model", four sets of interrelated forces are enumerated as the determinants of national competitive advantage: (a) Factor conditions (the nation's position in factors of production); (b) Demand condition (the nature of home-market demand); (c) Related and supporting industries (their presence or absence in the territory); (d) Firm strategy, structure and rivalry (the conditions in the nation governing how companies are created, organized and managed). Later, Porter (1998) further underlined that local competition creates incentives to import best practice and boosts pressures to innovate, while also connecting the strengths of competition with the virtues of selective co-operation. The concept of clusters were related to the "competitiveness" of industries and of nations. "*Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass an array of linked industries and other entities important to competition. . . .including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations*" (Porter, 1998). What is also very interesting is the idea that cluster dynamics entail a combination of competition and cooperation among enterprises. In fact, in order to enhance a whole territory's competitiveness, both forces are needed, since competition is a powerful incentive to innovate and increase efficiency, whereas cooperation fosters the spread of knowledge and the system's overall attractiveness.

According to Andersson *et al.* (2004) clusters are inherently idiosyncratic in nature, with different applications of the concept suiting various situations. However, collecting all the contribution of several authors regarding the cluster, seven elements can be adopted as key for the notions: i) *Geographical concentration*: firms locate in geographic proximity due to hard factors, such as external economies of scale, as well as soft factors such as social capital and learning processes; ii) *Specialisation***:** clusters are centred around a core activity to which all actors are related; iii) *Multiple actors*: clusters and cluster initiatives do not only consist of firms, but also involve public authorities, academia, members of the financial sector, and institutions for collaboration; iv) *Competition and co-operation***:** this combination characterises the relations

between these interlinked actors; v) *Critical mass***:** is required to achieve inner dynamics; vi) *The cluster life cycle***:** clusters and cluster initiatives are not temporary short-term phenomena, but are ongoing with long-term perspectives, and finally; vii) *Innovation*: firms in clusters are involved in processes of technological, commercial and/or organisational change.

However, *culture* in this list does not appear whilst, it can be considered is a key asset for the development of cluster dynamics. This intuition has been widely recognized in literature, however not always taken in relevant consideration in cluster development policies. Also the Italian experience showed the importance of cultural heritage for economic and cluster development. Some authors trace back the origin the manufacturing tradition in Italian districts to the middle ages, at the time when Feudalism declined, and a new merchant class, including craftsmen, masons, armorers, shoemakers, ropemakers, and other skilled workers gained control of the "boroughs" or "communes", thus laying the foundations for the establishment of the market economy. This can be confirmed by the fact that, in many of the industrial districts individuated by the Italian public authorities, a consistent craftsmanship tradition is documented dating back to the XIII-XIV century (for instance, the ceramics and pottery districts in Faenza, Caltagirone, etc.). Accordingly, some authors (Sforzi and Lorenzini, 2002) remark that the most significant elements of industrial district are embedded in the social structure. Therefore, the concept of "industrial district" is both a sociological and an economic one, and research focused on industrial districts should take into account social and cultural aspects, as well as (or before) economic ones. Hence, getting back to the seven elements used to describe a cluster it should be added the viii) *cultural homogeneity and historical tradition*.

Clusters and cluster initiatives are not depicted as problem-free, though. Risks and pitfalls include: i) vulnerability of specialisation; ii) lock-in effects; iii) creation of rigidities; iv) decrease in competitive pressures; v) inherent decline, and; vi) self-sufficiency syndrome. Realising the opportunities for innovation is deemed critically important for avoiding the traps [Andersson *et al.*, 2004].

2. A Case Study: the Textile District of Aleppo

2.1 Aleppo: an "embryonic" textile cluster

The present case study presents and discussed a project carried out by the Syrian Ministry of Industry in cooperation with the Italian Institute for Industrial Promotion (IPI) in the field of the textile and clothing sector between year 2001 and 2003.

Following the interest on the Italian experience on clusters and industrial districts, the Syrian counterpart expressed the interest to apply this approach in practical term. Following a screening discussion among policy makers and IPI experts on which region and industrial sector should have be considered, the project started focusing to the textile and clothing sector in the region of Aleppo. The choice was following to the observation that the textile and clothing sector in Syria accounts 25% of value added generated by manufacturing industry, represents over 49% of Syrian exports, and employs nearly 21% of manufacturing industry working force, therefore a strategic sector.

As resulted from the Italian professional experts' diagnosis, Aleppo was described as specialized area in the textile sector and has the potential to become a developed industrial cluster. In particular, several specific characteristics of cluster dynamics have been found, whilst others where not present or just in minimal part.

What was most relevant for this paper was the presence of a strong cultural tradition in the textile and garment field. For generations, weavers, knitters and dyers in the Aleppo region have conducted small enterprises, thus creating an embedded cultural asset in the social and economic structure of their region. These enterprises, and the knowledge embedded in their activities, represent the heritage of the Aleppo textile tradition and could be supported and fostered for their cultural and traditional value. However, the study found that a cultural tradition is bound to decay without an entrepreneurial spirit willing to promote it, i.e. to give value this tradition and to avoid a cultural loss. This, therefore, was a weak point compared to the various initiatives around the world, and in Italy as well, that have been undertaken in the recent decades in several handicraft sectors, and now they are an important niche, as well as tourism attractions.

A significant number of enterprises and labour force working in the same industrial sector was found in the area of Aleppo, i.e. indicating a good degree of specialisation and a critical mass of firms in a given geographical area. The presence of specialized educational structures, the chamber of industry and other institutions indicated the presence of a multiplicity of actors in the territory and some level of cooperation competition relationship was observed. However, in Aleppo, entrepreneurs' awareness of being part of an integrated system, as it is in a cluster, seemed very weak. Aleppo's entrepreneurs were lacking the "cooperative" element of clusters.

Another week aspect was the absence of a significant innovation dynamic within the firms, generally regarded as a fundamental ingredient of economic growth. Through innovation, enterprises can expand their market, keep their competitive edge, and create well being and jobs. A cluster where innovation dynamics are not fully developed cannot be defined as a competitive cluster.

Summarising, two main aspects were lacking in Aleppo that could be described as potential or "embryonic" textile cluster: on one hand, more cooperation among entrepreneurs is needed, and on the other hand, the firms would need higher innovation services to gain competitiveness.

2.2 IPI proposal for an intervention on the Syrian textile and garment sector

Based on the previously discussed findings, the Italian experience of Specialized Service Centres, the French *systèmes productifs locaux* (SPL) model (Pommier, 2002) and the industrial

district approach, the IPI proposal aimed at tackling the two issues described: the need to improve the cooperation and integration among the entrepreneurs and other actors in the territory (both at local and national level), and the need to push toward an higher degree of innovation.

The study led to a proposal for the creation of a "Textile and Garment Service Centre" (SC) to be located in the area of Aleppo, with the aim of enhancing the competitiveness of Syrian textile enterprises, and for the creation of a "Textile and Garment Observatory" to be located in Damascus.

The IPI proposal's contents were jointly discussed and integrated by the Syrian Ministry of Industry, the Aleppo Chamber of Industry, supported from the Italian side by sectoral experts.

On one side, the Textile and Garment Observatory aims at enhancing the capacity of the Syrian public and private system of policymakers in undertaking strategies and programs aimed at the achievements of sectoral goals, including international competitiveness and technological innovation, through policy analysis, formulation, implementation and monitoring of the T&G sector in a market oriented economy. On the other hand, the proposed Textile and Garment Service Centre could support the competitiveness and the innovative capacity of enterprises of these sectors acting in Syria, through technical assistance, technology transfer, and development of industrial cluster dynamics.

The Textile and Garment Observatory was designed as a sort of "laboratory" with 3 main service lines: "study and analysis"; "knowledge sharing and technological innovation", and "policies promotion".

The Observatory was suggested to be established as an independent structure - formally under the supervision of the Ministry of Industry - with an active participation of the textile and garment sector main actors. As for the implementation, two phases were identified in the workplan to ensure a durable development. The first, a start-up phase with the aim of setting up the preliminary structure and training of the staff, with initial diagnosis activities; the second, a development phase including the analysis of textile and clothing sector needs, technological benchmarking and policy advising activities.

In order to support the development of the Aleppo specialised area (or "embryonic cluster") into a fully developed industrial cluster the creation of a "Service Centre" (SC) was suggested. This organization could spread the "cluster approach" among local interested actors (enterprises, local public administrators, university, professional and business associations, financial institutions, etc.) and foster a comprehensive process of "system innovation", through information, training, technical assistance and technology transfer services. The SC would be the institution to fill the gap between "demand of services" emerging from local companies, and "supply of services" available at international level from the different centres of excellence. The SC would have the mission to maintain its expertise constantly modern, updated, available and economic to be accessed by the target clients.

For these reasons, the SC of Aleppo was planned to be active on three service lines:

- Common General Services: activities directed to the Aleppo textile and garment industrial cluster as a whole;
- Services to small and medium enterprises: services tailored on the specific needs of client firms;
- Services for Cluster Development: activities aimed at promoting the "cluster dynamics" within the Aleppo industrial system.

The complete business structure of the SC was planned to be composed of six operative units that could be all fully developed in the long term: "Information and Studies"; "Training and Specialised continuous education"; "Laboratories and Technical Assistance"; "Fashion and Design

Services"; "Management Consulting to Enterprises and Internationalisation"; "Quality and Environmental Services".

This fully developed SC structure was suggested to be achieved through a step approach evolution, in order to consolidate the professional growth of management and technical personnel, and the realization of the needed infrastructures. For this, three project implementation phases were identified during the feasibility study in order to maximise the sustainability of the SC both in term of capacity building of the staff, creation of consensus and trust in the local system and minimising the financial effort. Firstly, it was planned a start-up phase which included the setting up of a core number of staff incubated in the chamber of industry, i.e. a so called "soft" approach. Secondly, the development phase was deployed structuring information services, marketing and fashion trends services, tests laboratory. Thirdly, the expansion phase included the setting up of the more real-estate and capital intensive part of the SC, comprising the provision of quality and environmental services and building a finishing pilot plant.

The creation of the SC was thought with the participation of both public and private counterparts. Public participation to the SC is fundamental in order to guarantee activities' coherence with the Country's general policy objectives and the SC financial sustainability – especially during the first years. Private sector participation is just as important since it guarantees that activities delivered meet real enterprises' needs. The involvement of other actors (i.e. university, professional and business associations, financial institutions, cultural organisations, etc.) it was also suggested in order to get together all the relevant interested parties of the local system.

In the planning of the SC, however, despite not fully overlooked in the diagnosis and proposal, not enough space was given to culture tradition, i.e. highlighting the potential services that could be developed for small and medium size enterprises, handicraft and applied art, that can constitute an interesting economic niche. This can be explained observing that when approaching industry development programme, traditionally not enough weight is given to territorial aspects, compared to purely economic factors. Further, experience shows that the local stakeholders show "fascination" more for exogenous elements, rather than local and endogenous forces.

3. Conclusions and lessons learned

In Mediterranean and Middle East areas, cultural heritage with regards to handicrafts and manufacturing in general is comparable to Europe, or even greater. And traditions in production methods, dating back from centuries ago, represent an element which should be taken into account when designing local development strategies. For all these reasons, the ability to fully seize the opportunities offered by these traditions would certainly enhance the effectiveness cluster development policies.

Nevertheless, clusters are a very broad concept, and culture alone (intended as the presence of a manufacturing or handicraft tradition) cannot be viewed as the only factor able to foster cluster development. To write it in more formal terms, culture is a necessary but not a sufficient condition for the "take off" of cluster dynamics, although it is extremely important to ensure its sustainable development and long lasting life cycle.

Indeed, in many developing countries the presence of a *cultural homogeneity and historical traditions* support the identification of "embryonic clusters" and support the idea that these could develop in economic system leading sustainable economic growth.

In particular, IPI had the chance to carry out some cluster development studies, and the evidence found was consistent with this intuition. Particularly deeply analyzed cases were the textile district of Yazd, Iran and in Aleppo, Syria (presented in this paper) where it was possible to observe a *cultural homogeneity and historical tradition* and to identify the presence of several cluster elements that could lead to affirm that these where potential "embryonic clusters", but still they could not be defined as "fully developed cluster".

The study of the Aleppo case highlighted two of the main obstacles to this process. Aleppo textile cluster, as many potential clusters in developing countries, lacks two key features of clusters: innovation and collaboration among entrepreneurs. To this, a low perception on the importance of the "cultural" homogeneity and *de facto* integration was observed.

Now the question may rise, on whether it is possible to overcome such hindrance through an external intervention. Of course, in the cluster case, it is important to adopt a very cautious attitude with regards to public intervention, as clustering is essentially a spontaneous, self-reinforcing process. Nevertheless, to the extent that it is assumed that a "critical mass" of knowledge and culture is necessary to start cluster development, such intervention could potentially start up a virtuous circle, able to promote economic growth and competitiveness in a given territory. The idea would be to "start the engine" of a clustering process, which should become autonomous in the long run.

Service Centres and other intermediaries can be viewed as a potentially effective means to achieve this goal. According to the current definition provided by INSME[2], "Intermediaries (public, private or mixed bodies, operating at local, national or international level) have the following characteristics: (a) a mission that supports SME creation and development, through institutional or professional service supply, and (b) an organisational structure specifically devoted to providing assistance and services to SMEs in the field of technological innovation promotion and development. Examples of intermediaries are service centres, scientific and technological parks, innovation centres, agencies for regional development, etc.".

If carefully planned and adapted to each specific situation, intermediaries could actually provide those critical services (such as training, networking, coordinating, etc.) which could in turn foster

[2] INSME, International Network for SMEs, is a non profit Association open to international membership. Its mission is to stimulate transnational cooperation and public and private partnership in the field of innovation and technology transfer to SMEs (www.insme.org).

cluster dynamics. This was the basic idea laying behind the planned IPI intervention in Aleppo. And hopefully the textile and garment service centre, to be realized, will prove itself an effective tool for this goal.

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