

**The Role of Knowledge and Inter-Firm Relations in the Renewal Process of
Industrial Districts in Crisis: An Exploratory Study**

Mauro Capestro¹

PhD Candidate in Intelligent Systems and Technologies

ISUFI School of Advanced Studies

University of Salento, Lecce (Italy)

mauro.capestro@unisalento.it

Giovanni Pino

PhD Candidate in Intelligent Systems and Technologies

ISUFI School of Advanced Studies

University of Salento, Lecce (Italy)

giovanni.pino@unisalento.it

Gianluigi Guido

Full Professor of Business Management,

Marketing and Place Marketing

University of Salento, Lecce (Italy)

gianluigi.guido@unisalento.it

¹ Corresponding Author

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Abstract

In the last decades there has been a flourishing debate on the possibility that industrial district might be yet considered successful productive organization models. It has been, however, underlined that an analysis limited to the purely economic dimension of this organizational model system is insufficient to understand how it may renew itself and regain competitiveness. This research aims to contribute to this debate by investigating: i) the role of inter-firm relations as a variable capable of fostering district renewal; ii) the role of knowledge in renewing interactions among district firms. To this end, an exploratory research was conducted in a Southern Italian footwear district by means of in-depth interviews. Results show that cooperative relations and the need for new knowledge are the factors that have the potentiality to shape the future of this district. Based on these findings, the paper suggests some possible strategic policies for the re-innovation of the examined district.

Keywords: Industrial districts, footwear district, inter-firm relationships, Knowledge Intensive Business Services, in-depth interviews.

1. Introduction

Globalization and the diffusion of new technologies have increased the level of competition in international as well as in domestic markets and decreased the time to market response. With the rise of emerging countries capable of implementing low cost manufacturing strategies, industrial districts – communities of firms specialized in the different phases of the same production process located in a given territory (Becattini, 1989) – have started to lose their competitiveness, especially the traditional manufacturing districts of developed countries, such as the textile and footwear ones, which have often centred their competitive advantage on cost strategies. In this scenario, districts do not represent any more the same system of values they represented in the last century. Nevertheless, the issue of their competitiveness continues to assume relevant importance for territorial development policies. Competitive pressure from emerging countries is indeed deeply transforming industrial districts as most of them are currently threatened by: i) inadequate attention to innovation strategies; ii) excessive fragmentation and delocalization of production processes; iii) limited

openness to the external global environment, which prevents the absorption of new knowledge. As for the latter issue, existing research has stressed that *knowledge* may be a key factor for the competitiveness of traditional manufacturing districts (Boari and Lipparini, 1999). Districts can be thought as “cognitive systems” able to assimilate, develop, and accumulate new knowledge, which is at the basis of their capacity to innovate (i.e., introduce new products, production processes, and forms of organization) and hence achieve a competitive advantage (Becattini and Rullani, 1993). It is important to note, however, that knowledge may represent an enabler of innovation only if an efficient *relational system* exists inside a district (Torre, 2013). The relational system allows indeed the diffusion of knowledge within the districts as well as the absorption of new knowledge from the external environment. Consequently, it is vital for the processes of learning and innovation (Boari, Fratocchi and Presutti, 2005). In industrial districts experiencing economic crisis, however, the relational system is often particularly weak because a sense of reciprocal mistrust leads firms to work alone (Dei Ottati, 2009; Molina-Morales and Martinez-Fernandez, 2006). This is a relevant drawback as interaction among firms (and institutions) plays a crucial role in a district (Molina-Morales *et al.*, 2012). It is acknowledged indeed that the overall economic performance of the districts results from the interaction among its firms. In addition, the process of economic renewal of the district mostly depends on its firms’ ability to produce and diffuse new knowledge among district members, which is possible only through effective inter-firm relationships (Breschi and Lissoni, 2001a).

On such premises, two main visions are here embraced to address the issue of district revitalization. The first takes into consideration the decline of the district *relational system* in consequence of decreased factor productivity; the second focuses on a knowledge-based view of the district, according to which *knowledge* shapes its organizational innovation and allows a more effective governance of the district as a production system (Giuliani, 2005). This research aims, in particular, to identify a conceptual link between these two visions, which may turn to be useful to foster the renewal of an industrial district. Hence, the objectives of the present study are: i) examining in depth the factors that have had an active role in determining the decline of the district model; ii) analysing the role that knowledge has in the development of inter-firm relationships and identify the new skills and competences essential for the renewal of the district model; iii) defining a theoretical model that links together knowledge and inter-firm relations.

2. Industrial districts in the globalization era

Territorial agglomerations of firms, such as industrial districts, have received growing attention in economic literature because of their positive effects on firms' performance (Molina-Morales, 2001). The phenomenon of industrial districts is certainly neither recent nor exclusively Italian, although it played a crucial role in the development of such a country. In Italy, the districts were set up in the first decades of last century with a major development in the '50s and '60s, characterized by a high average growth of GDP, of the demand for goods and of international trade. However, starting from the past two decades, the entire Italian production system has been profoundly affected the transformation processes generated by globalization and its related increase of international competition (Rullani, 2009). The new competitive context has put into doubt the strategic importance of the factors that, in the past, have been at the basis of industrial districts' success, i.e., the geographical proximity of district actors and their socio-cultural homogeneity. These two factors represented a crucial resource that, for several decades, allowed districts to flexibly adapt to market trends and continuously innovate their products and production processes (Asheim, 2000).

Technological changes have been one of the principal determinant of the current difficulties experienced by district firms. Information and Communication Technologies (ICTs) have indeed become a crucial resources for the achievement of production efficiency, but, many district firms, especially those operating in the most traditional manufacturing districts have been barely able to rapidly adapt to technological changes (Guerrieri and Pietrobelli, 2004). The problem of the limited adoption of new technologies by Italian district firms has also been attributed to their small size: the Italian production system mostly consists indeed of small and micro-sized firms. Such a phenomenon of "dwarfism" of Italian firms (compared to the European average) has been reported to be a structural weakness of Italy's industrial system (Rabellotti, Carabelli and Hirsch, 2009). The criticality of this phenomenon lies in the fact that while medium and large sized firms present the proper characteristics to rapidly adapt to market and technological changes, small (and micro) firms have a limited capacity to access end-markets and financial resources and are more vulnerable to the risks associated with changes in market demand (Iannuzzi and Berardi, 2012).

The small dimension of Italian district firms together with the excessive fragmentation and delocalization of production processes and an inadequate attention to product, process and organizational innovation strategies, has deprived districts of their most important resource, i.e., the social capital. Such an effect has limited the dimensional growth of firms, and hindered their interaction with the external global environment, which, in turn, prevented

the absorption of new knowledge. Such a knowledge is vital for the processes of learning and innovation (Giuliani, 2005; Lundvall, 1992) and necessary for an adequate supervision and control of supply and markets.

All these changes have deeply affected the socio-cultural and relational dimensions characterizing the district model (cf. Alberti, 2006). Despite the obvious competition, among district firms there is also a sense of collaboration as they are all parts of the same system. This promotes the diffusion of knowledge and innovation and favour processes of mutual learning among district firms (Belussi and Sedita, 2012). However, in those districts experiencing periods of crisis, inter-firm relationships are weakened by a general sense of mistrust, which mostly loosens the relations with peripheral firms, i.e., those engaged in marginal production processes. Such a phenomenon has relevant consequences for the whole district as it undermines firms' sense of belonging to a broad production system and their proclivity to cooperation (Boschma and Ter Wal 2007; Molina-Morales *et al.*, 2012). If this relational system falls then the whole district suffers from this reduced interactions, because its economic performance strictly depends on the interactions among its firms. This happens because the process of economic renewal of a district is related to its firm's ability to produce and diffuse new knowledge among district members, which is possible only when effective inter-firm relationships do exist (Ramazzotti, 2009).

Technological changes, dimensional limits, and impoverishment of cooperative relations are, however, only some of the factors that are currently threatening the survival of district in Italy as well as in other developed countries. To increase the current understating of these mechanisms – and hence add to the literature on industrial districts – this research concentrated on an economic sector that has mostly contributed to the consolidation of the district model in the Italian economy – i.e., the footwear sector – and addressed, in particular, a Southern Italian footwear districts whose firms are seeking to recovery from the international economic crisis and defend their current market positioning from external competition.

3. Footwear production in Italy: the recent trends of a Southern Italian district

Italian footwear production represents a point of excellence of the *Made in Italy* manufacture. Compared to other developed countries, wherein, in recent years the number of imports has exceeded the number of exports of shoes (in terms of value and volume), Italy is an exception. At the same time, Italy is the country that has suffered most of all the international competitive pressure arising from low-labour cost countries, such as China,

India, Romania, and other East European and Southeast Asian countries. Starting from the mid '90 this position has been challenged by the growing competitive pressure determined by globalization processes and the rise of low-labour cost countries. This was due mainly to the traditional structure of footwear districts composed in large part by small firms engaged only in the production process without a marketing and innovation strategy (Cutrini, 2011).

As a response to this crisis and the changes it has brought about, many districts have coped with international competition by upgrading their production to high-quality segments leveraging the fact that *Made in Italy* fashion goods are sold at a significant premium price in international markets. But many other districts adopted a strategy of reducing production costs by outsourcing relatively less value-added stages of the production process to Eastern Europe or Asia (Rabellotti, 2003). This was the case of the district of the Barletta district, a footwear district situated in Southern Italy, in the Apulia region. This district consists of firms (mainly Small and Medium Enterprises) located in Barletta and its neighbouring municipalities and operating in two productive segments: the segment of *sport-shoes* and that of *safety-shoes* (Guido, 2003). Firms operating in the first segment are currently experiencing a period of crisis, while firms operating in the second segment are in a situation of economic recovery. One of the main causes of the decline of the firms in the first segment is the fact that they are continuing to pursue a low cost strategy to face globalization. Conversely, the firms in the segment of safety-shoes have made notable efforts to innovate their products and production processes in order to shift from a low-cost to a high-quality strategy (Boschma and Ter Wal, 2007). The decision of firms of the segment of sport-shoes to produce low-quality products even after the entrance of new low-cost competitors in their market has led to the commercial crisis of the district and the consequent deterioration of its inter-firm relationships. To react to this crisis, the firms in the segment of sport-shoes began a massive process of delocalization of production processes to low-cost countries, but this had severe negative economic and social consequences for the local economy (Guido and Marraffa, 2004). Also the firms of the segment of safety-shoes delocalized some phases of the production process in low-cost countries, but they chose to mainly base their economic renewal on the high-quality strategy. This involved significant investments to innovate manufacturing processes and cooperative efforts to boost the internationalization of production processes.

The district of Barletta is here considered as a prototypical example of manufacturing district that have to develop suitable strategies to cope with the current international marketing dynamics. The identification of these strategies grounds, however, on a clear

comprehension of the problems faced by the firms operating in the districts and the ways through which the same firms could leverage their potentialities to react to current market trends. Such issues have represent the focus of the present research, whose objectives are illustrated in the following paragraph.

4. Research objectives

The main objective of the present study is to examine the causes underlying the crisis that, in the last decade, has profoundly changed the structure of the Barletta district and define a theoretical model capable of identifying a strategic pathway leading to a renewal process. We aim to focus, in particular, on the relationships that have existed and currently exist among the actors of each district, in order to understand the weight that this internal variable has had, in the course of recent years, on the transformation of the studied district. In this way we will seek to establish if today the district of Barletta may still be considered as an industrial district, based on relations of solidarity and mutual trust between the members of the system (Dei Ottati, 2006), or whether it is just a set of firms co-located in the same territory. The main objective of the research is, therefore, twofold: firstly, it aims to analyze the role that inter-firm relationships have had in the crisis; secondly, it aims to evaluate how knowledge could improve the relations between district firms. The research questions, to which this research intends to answer, are:

- What are the main causes regarding the internal environment which have determined the decline of the district of Barletta?
- What aspects of the district of Barletta must be considered in order to outline the possible ways out of the current crisis?
- What is the role of external linkages for enhancing the competitiveness of industrial districts in the global arena?
- How could knowledge improve the development of inter-firm relationships?
- What are the actors that could foster the renewal of the districts?
- What should be the role of institutions in supporting the district renewal process?

The methodological approach embraced to provide an answer to such questions is illustrated in the following paragraph.

5. Methodology

To achieve the above illustrated objectives a qualitative field study was conducted in the district object of attention. This study involved interviewing relevant actors of the district, namely entrepreneurs, public actors, and associations. In addition, a journalist, who was reputed to be a relevant informant, was also interviewed. Interviewees were selected through a *snowball sampling* procedure. This procedure started from the journalist, who was requested to indicate a list of possible key stakeholders to interview. The same request was addressed to the selected stakeholders and through this technique a sample of 20 subjects was drawn up (Table 1). All interviews started from a general consideration about the causes of dissolution of the district of Barletta, then moved onto the internal and external relationships of district firms, the role of the public actors, and the process of knowledge sharing within the district. Interviewees were also requested to express their opinions about the phenomena of market globalization and internationalization and propose possible ways to escape from the current crisis.

Table 1: *District's Actors Interviewed through the field study*

<i>Actor</i>	<i>Qualification</i>
1 – Other	Local journalist
2 – Associations	Manager Confindustria
3 – Associations	CGIL union leader
4 – Private Actor	Entrepreneur – Medium firm (safety)
5 – Private Actor	Entrepreneur – Small firm (sports)
6 – Public Actor	Town councillor of Barletta
7 – Private Actor	Entrepreneur – Small firm (safety)
8 – Public Actor	Town councillor of Trani
9 – Private Actor	Entrepreneur – Medium firm (sports)
10 – Public Actor	Mayor of Barletta
11 – Associations	Member of Footwear Industries Association
12 – Private Actor	Entrepreneur – Large firm (safety)
13 – Private Actor	Entrepreneur – Small firm (sports)
14 – Public Actor	Mayor of Trani
15 – Associations	Member of Apulian Fashion Promotion
16 – Private Actor	Entrepreneur – Small firm (sports)
17 – Private Actor	Entrepreneur – Small firm (safety)
18 – Associations	Regional councillor
19 – Private Actor	Entrepreneur – Medium firm (safety)
20 – Private Actor	Entrepreneur – Small firm (sports)

6. Results

The gathered data were analysed through a content analysis (Krippendorff, 2004) to extract the most relevant meanings of respondents' answers. Such an analysis allowed to distinguish four main areas of investigation concerning: i) the *relationships* among district firms and those among firms and local public actors; ii) the *product*, understood as the output of production processes delivered to the final customer; iii) the *education* (and *training*) and *know-how* needed to innovate the district; iv) the *internationalization process*. Each area is illustrated in detail in the following subsection.

6.1 Relationships

The first important aspect that emerged from the interviews was the state of the internal relational system of each district, with particular attention to the two most important types of relation: business to business and private (firms) to public (institutions). The first type of relationship is the most important because, for the respondents, it is the main factor affecting, in addition to the globalization, the crisis of the district. Respondents highlighted that there has never been a good explicit collaboration among district firms.

"Among us (entrepreneurs of the district) there has never been a strong collaboration. Many firms have always worked for other firms, mostly of them located in the north of Italy, and had no decision-making autonomy. Today the mutual trust is even scarcer but mainly because of the current situation. The only firms that would reverse the trend are the larger firms which work in international markets and thus have a more efficient management capacity" (Respondent no. 5).

"At the beginning there was a little collaboration. It was limited to the firms linked commercially to each other. Now, collaboration is still lacking among the firms that produce sports shoes, however, the situation has improved for firms that produce work shoes, also thanks to the creation of several consortia for technological innovation and for internationalization" (Respondent no. 8).

"The relationships with organizations outside the district especially the foreign ones are relevant because they allow us to improve the knowledge of markets abroad" (Respondent no. 4).

The importance of the relational component in a district must be viewed in the light of the need to place manufacturing output outside the district as one of the main linking factors among internal actors (see Becattini, 1989). In particular, this kind of relationship facilitates the consolidation of a "stable network of relations" that intersects in a spontaneous system of shared values, another essential element for the existence of a district. This highlights what could be the negative contribution to the internal development of a district, determined by non-optimal conditions of relatedness (see Bell, Tracey, and Heide, 2009).

With regard to the second type of relations here considered, that is between private (firms) and public (institution) actors, the views that emerged are quite similar. In particular, interviews with public actors showed a low degree of confidence of entrepreneurs in the institutions and a lack of initiatives in terms of effective participation in public projects:

"Despite our efforts to intervene in the development of our territory, through different public initiatives, local entrepreneurs have always shown distrust towards us ..." (Respondent no. 14).

On the other hand, on the part of private actors, there were complaints about the inefficiency of the various government agencies. Greater prominence was given, in particular, to the inertia of public actors in transforming initiatives already in place into successful outcomes:

"Honestly, the institutions have not been absent. They have promoted different training programs on technology and design innovation, as well as feasibility studies and international conferences...but then we felt abandoned to ourselves. What we need, in addition to these initiatives, is their support in the next phases, such as creating a climate of stable relationships especially with the leading firms in order to go forward together into the global environment" (Respondent no. 7).

The responses significantly show how important the relational system between the different actors of the system is. Currently, this system does not exist, consequently, it must be created with the special support of government and business leaders.

6.2 Product

With regard to the product, the firms of the studied district have focused their production strategies on the manufacturing of sports shoes, mainly for the markets of Western and Central European countries:

"Regarding sports shoes, the strategic decision to direct production to the low-quality segment and the absence of own brands penalized the district when countries that have been able to produce at lower costs appeared on the market "
(Respondent no. 11).

The rise of labour cost and the appearance on the market of developing countries (Eastern Europe and Asia) with a very low cost of production, has challenged the initial strength of the district. It is in this particular historical moment that the respondents identified the emergence of one of the major causes that led to the crisis in the district. At a time when made most sense to produce low-quality products on-site, the strategy chosen by the majority of district firms was to relocate their production, whole or in part, to such countries with lower labour costs, such as initially Albania and Romania, and later to Bangladesh and India, in order to still compete on price. This delocalization has had, however, a significant negative impact on the district territory, in terms of production value and employment:

"The relocation abroad of production processes, rather than having positive effects, has, obviously, impoverished the district in terms of production and employment, making it even more vulnerable to new competitors" (Respondent no. 3).

The interviewees have pointed out that firms should have instead transferred production to the high-quality segments, typical of *Made in Italy*, with higher added value and for which the customers are disposed to pay a premium price (Steenkamp, Van Heerde and Geyskens, 2010):

"The international market is becoming more demanding, requiring high quality products and design. Even emerging markets are attracted by *Made in Italy* brand"(Respondent no. 19).

In addition to a lack of a specific "quality strategy" there has also been a total lack of marketing strategies in general. This type of gap was felt also in the sector of *safety shoes*.

"The work shoes produced by our firms represent a point of excellence of European manufacture, but it will certainly not be the best manufacturing techniques alone that will enable us to sell more and create more jobs, if they are not supported by excellent sales and marketing strategies" (Respondent no. 2).

It is, therefore, necessary to think also about an improvement of the technical and managerial skills of the different people – entrepreneurs and employers – working in the district.

6.3 Education and know-how

All interviewees noted that a sticking point for the revival of the district here considered is the lack of adequate competences, not only on the part of staff - skilled and unskilled - but also of entrepreneurs and/or the managers of the different firms, necessary for the handling of both the processes of business innovation (related to production processes, organization, and final product), and of internationalization:

"Regarding the manufacturing of *safety shoes*, they set up several training courses to provide the technical skills necessary for workers to better perform all the production processes. Now we need the education for the entrepreneurs, with particular attention to marketing and promotional strategies and to the enhancement of the product in order to innovate and open up new markets" (Respondent no. 15).

"The entrepreneurial culture is almost entirely non-existent. Without an adequate training of technical personnel and a network strategy, maybe through the creation of consortiums, the district will be condemned to dissolve" (Respondent no. 9).

It is important to note that most of *safety shoes* firms are actively involved in the Footwear ETP (European Technology Platform), which guarantees them the know-how necessary to produce high quality products. It is a network of different kind of actors – firms, research organizations, different European organizations and different government agencies – working with the aim of transforming the European footwear industry into the world's leading producer of high quality and high added-value shoes.

"The local government has engaged in various projects to support the local production system which has covered different fields of interests. Among these it is

worth noting the organization of the 14th meeting of the European footwear products and processes technology platform (Footwear ETP) an event of great importance with a view to create a system of relations useful to the technological development and quality improvement of the Barletta footwear system" (Respondent no. 6).

6.4 Internationalization and future perspectives

From the point of view of the global market and the future prospects for the management of relations with foreign countries, it is important to note that the development of foreign markets is a critical step for all Italian SMEs. Firstly it must compensate for the stagnation of the average level of consumption in developed countries, due to the world crisis, and the reduction in exports due to the increasing competition from new low-cost countries.

From the interviews, the obvious importance of international markets for the survival of the Barletta footwear district is highlighted. The few medium-sized firms, that have been able to place their products on foreign markets, have had positive economic results. However, it is difficult to sustain similar operations on the part of small firms because of their limited managerial competencies. In this case, an important role should be played by local and national governments, which could "accompany" the smaller district firms during the process of internationalization, mainly, through the organization of promotional events abroad, and offering financial support. Results revealed a certain lacuna in the organization and management of the contacts with foreign interlocutors, in addition to a general aversion of district firms towards the internationalization processes considering that most of them work for third parties, without their own brand. But this essentially concerns the sports shoes segment, while for that of *safety shoes* the general situation is better with more and clearer prospects as regards future strategies.

"Our firms are not yet ready for internationalization ... in smaller firms and especially those from the sports segment, there are still very few people who speak English. Interaction with foreign colleagues is non-existent. Consequently it is difficult to understand of the current situation regarding international markets. In this sense, public actors could play an important role" (Respondent no. 18).

"The district firms have expressed the need for financial and management support for the processes of internationalization. In this sense, it would be appropriate to organize the district as a single system in order to initiate stronger policies, and

introduce innovation technologies to facilitate the development of relationships and new business models" (Respondent no. 20).

"We produce *safety shoes* and, thanks to the quality of our products, were able to develop good internationalization processes by exporting to several foreign countries, but now it is important to improve the relationships with foreign partners. In order to ensure a quality product it is necessary to produce our shoes here in Italy. The production *in loco* ensures us the full control of the entire production process, and greater environmental sustainability" (Respondent no. 12).

"In the 2009-2011 period, the segment of work shoes has had an 18% increase of turnover thanks to increased exports and also to product diversification, adding to the footwear other safety clothing products" (Respondent no.).

The key concepts deriving from the analysis of the interviews are summarized in Table 2. Even if we grouped the results of the analysis in four fundamental action points, we note that the revival of the studied district appears to depend on two main factors: the *relationships* among the different district actors (inside the district) as well as with external organizations (outside the district) and the development of new *competences and know-how* (new knowledge), because by managing these two factors the remaining two (product and internationalization) are affected.

Table 1: Summary of the main concepts extracted from interviews

<i>Areas of analysis</i>	<i>Sport shoes</i>	<i>Safety shoes</i>
Inter-Firm relations	No stable relationships	Collaboration through consortia
Firm-Institution relations	Organization of training courses, but poor support in the next steps (mainly financial)	
Product	Low quality - no brand	High quality - poor marketing activities
Education and Know-how	Training and education is necessary especially for entrepreneurs	
Internationalization	Poor internationalization capacity	Product quality impetus for internationalization
Future Strategies	Own brands, high quality, government support, education and training, adoption of new technologies	Production processes on site, development of marketing activities, diversification, improvement of foreign relations for export activities
	Apulian Fashion System	

7. Discussion

Results derived from the analysis of the performed interviews reveal a deficient system of internal relationships, inadequate training of the entrepreneurial class, poor support on the part of public actors, and a nearly non-existent marketing policy, requirements that today are essential to boost the competitiveness of an industrial district. As mentioned, although four fundamental action points have emerged from the analysis, two are the most relevant factors upon which depend the other two and to which the crisis and the near-future revival of the district are connected: the *inter-firm relationships* and the education and *know-how* of district firms, the latter intended above all in terms of marketing competences. The strategic decision to produce low-quality products even after the entrance of new low-cost competitors has led to the commercial crisis of the district and the consequent deterioration of internal inter-firm relationships.

With the advent of the international economic crisis, the firms operating in this district began a massive and inexorable process of delocalization of production processes to low-cost countries with serious negative consequences on the district territories in economic and social terms. In particular, with delocalization, the firms (micro and small) engaged in the intermediate stages of production process and depending almost exclusively on the larger firms, found themselves in the position of having to close because they were being crushed by the weight of labour costs. They have not demonstrated the ability to invest in innovation in order to be part of that necessary process of repositioning required by international competition. This situation is due also and above all to the organizational inertia of the leading firms due to their past economic successes, based on costs economies. They have not had the foresight to start a repositioning process that considered the issues of quality, the building of a company image and the power of the *Made in Italy* manufacture as competitive factors essential for Italian fashion products, not easily imitated abroad. The crisis and the delocalization have further weakened the distinctive aspects of the district, such as competitive collaboration and the solidarity among district members (Guido and Marraffa, 2004). Without collaboration even the automatic process of self-revival characteristic of the industrial districts has disappeared (Cutrini, Micucci and Montanaro, 2013).

It is important here to note that in the district of Barletta there are firms that constitute exceptions with respect to the other district firms. There is a whole segment, the work shoes segment, which differs from the rest of the district firms, especially in terms of the strategy put in place to counteract the phenomenon of globalization, and which is experiencing a period of slow recovery that bodes well for the future. This segment is to be taken as an

exemplar because its firms have long focused on the improvement of product quality and the innovation of their production processes. Beside such strategies, quality services in the field of marketing and communication are also needed as they may allow these firms to develop a wider range of products and a denser network of relationships (especially at international level).

In this respect, all the interviewed entrepreneurs emphasized the importance of increasing tertiary activities, especially those related to design, communication and use of new technologies as catalysts for the district's process of innovation. The interviewees have also highlighted the value of external knowledge which is necessary to satisfy international demand and to activate efficient processes of internationalization. Scholars of the knowledge-based view of local agglomeration underline that the survival of districts in the current global competitive scenario requires indeed a greater degree of cognitive openness toward distant knowledge and the development of local-global interfaces (Bathelt, Malmberg and Maskell 2004; Malmberg and Maskell 2006).

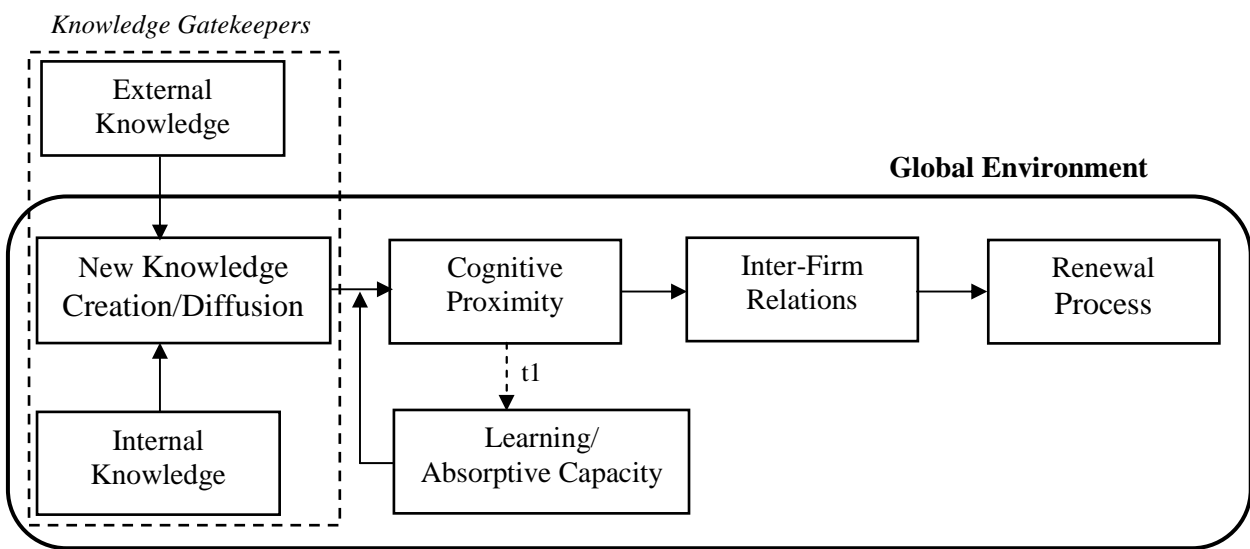
A key role in their revival of the examined district could be played by the so-called *knowledge gatekeepers*, i.e., those (private and/or public) organizations capable of absorbing knowledge from the global environment and distributing it within the district, thus assuming the role of cognitive interface between local and global (Becattini and Rullani, 1996; Morrison, 2008). They provide complementary sources of knowledge linked to the external environment (Giuliani, 2011; Morrison, Rabellotti and Zirulia, 2013) and generate *knowledge spillovers*, i.e., informal information exchanges taking place between people working in the same or in unrelated industries and representing one of the most important externalities of industrial districts (Breschi and Lissoni, 2001ab; Lambooy, 2010). The process of knowledge exchange and acquisition by district firms is then favoured by their geographical proximity (Davenport, 2005; Felzensztein, Gimmon and Carter, 2010). The interviewees highlighted the importance of public actors in the renewal process of the district from two viewpoints: firstly as facilitators of the institution of organizations which perform the function of local-global interface typically of *knowledge gatekeepers*, and secondly in supporting financially the district firms in accessing these services.

In order to draw some managerial implications, in the next sections a theoretical model derived by our results will be proposed to explain the renewal process of districts and, in addition, the characteristics of the subjects that act as *knowledge gatekeepers* will be discussed.

7.1 An interpretative model of the processes of industrial district renewal

On the basis of the obtained results, we propose a theoretical model that considers the new external knowledge that is absorbed and diffused by *knowledge gatekeepers* as the principal factor that could improve the internal relational system of the district. This model (Figure 1) refers to the decline phase of industrial districts, during which the relational system among district firms is practically non-existent (Guido and Marraffa, 2004). According to the model, the new knowledge created from the interaction between internal and external

Figure 1: Theoretical model at the basis of the renewal process of industrial districts



knowledge by *knowledge gatekeepers* is diffused in the district through interaction with other district firms (Morrison, 2008). The diffusion of knowledge activates a process of learning that enhances the absorptive capacity of firms, i.e., the stock of knowledge accumulated over time through working and learning experiences and regarding the assessment of external knowledge and its assimilation (Cohen and Levinthal, 1990; Noteboom, 2000).

The concept of *cognitive proximity* is closely related to that of absorptive capacity. Cognitive proximity is required for inter-firm learning and innovation to occur (Boschma, 2005; Capello and Faggian, 2005). So through new knowledge diffusion, both learning and absorptive capacity enhance the cognitive system of firms. When firms share a very close cognitive structure, it is easier for them to interact and improve their relationships (Boschma and Frenken, 2010; Noteboom, 2000). Hence, cognitive proximity facilitates a process of relational development that leads the district to assume the shape of a system that operates as a single subject (Molina-Morales, Garcia-Villaverde and Parra-Requena, 2011). Knowledge

transfer and reception between district firms, which is necessary for the process of innovation and renewal of the district, depends primarily on the concept of cognitive proximity (Camuffo and Grandinetti, 2011). The greater the cognitive proximity between firms is, the more effective will be the process of learning resulting from inter-firm relationships. Finally, the development of strong relations between district members favours the processes of district innovation and revival, because proximity (intended as both geographical and cognitive proximity) assists the building of strategic cooperation that contributes to enhance economic performance (Carbonara, 2004; Felzensztein, Gimmon and Carter, 2010).

Based on the above illustrated model, it can be pointed out that the contributions of this study to the renewal of industrial districts in crisis and characterized by a population of firms working alone without mutual collaboration, are the following:

1. New knowledge diffusion – in terms of services in tertiary activities and education/training for workers and entrepreneurs – among district firms is required to re-activate inter-firm relations, for the reasons discussed in the theoretical model proposed. In this sense *knowledge gatekeepers* play a critical role.
2. New knowledge improves the cognitive system of firms, reducing the cognitive distance between firms creates that “industrial atmosphere” in which the different actors interact and co-operate and seem to feel part of one productive system (Becattini, 1990). Previous studies have shown that the “industrial atmosphere” of industrial districts can support the process of innovations and self-regeneration (Asheim, 1994).

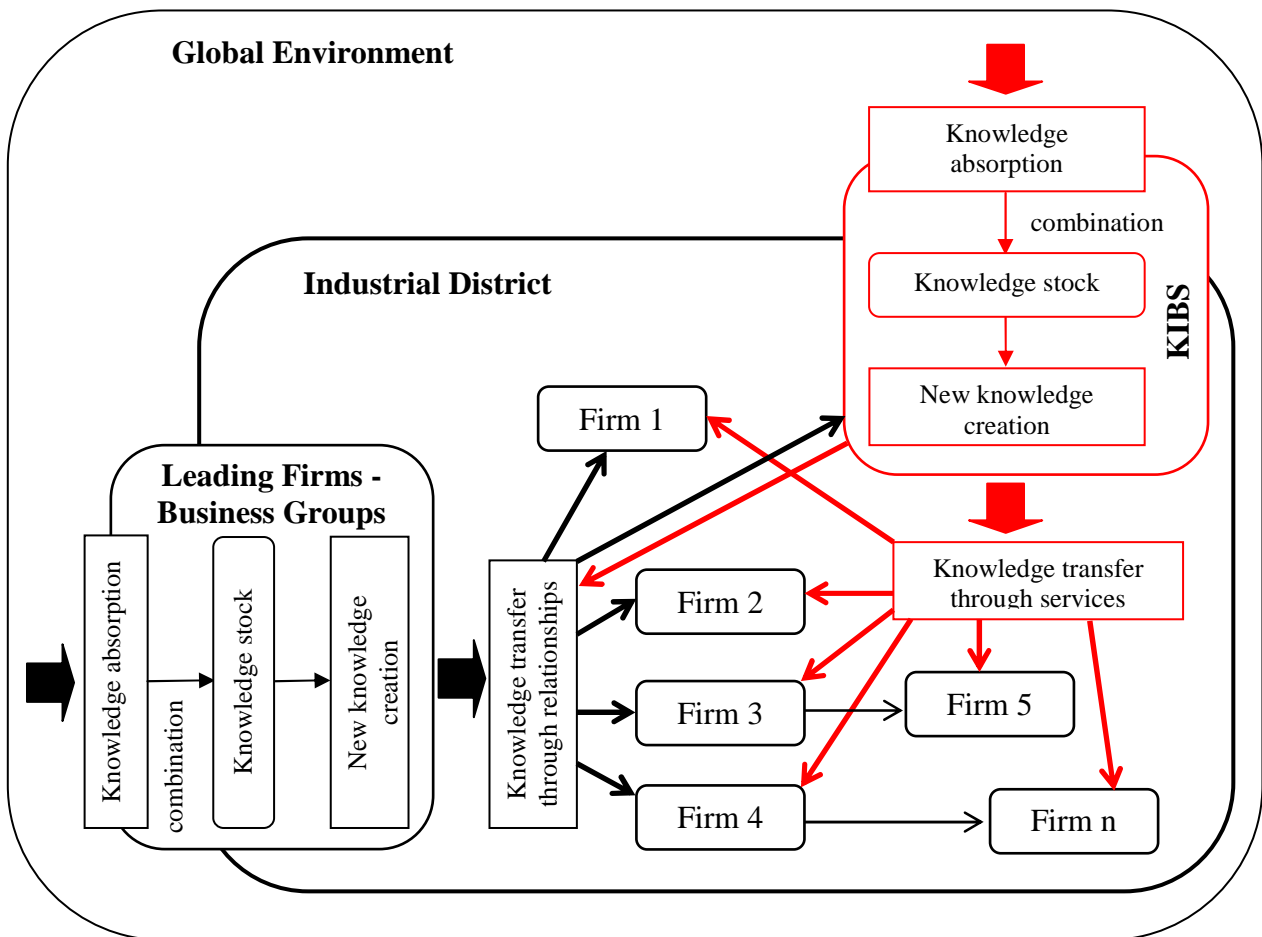
Such considerations take into account the fact that globalization has profoundly changed the current economic scenario and has extended the range of sources from which industrial district can absorb knowledge. In such a new situation, the ability of industrial districts to acquire and absorb external knowledge has become one of the major elements of their competitiveness. Not all the district actors, however, have the necessary skills to succeed in this process of knowledge acquisition and absorption (Aage, 2010). Recent studies have identified three categories of subjects capable of increasing the openness of district firms to the global environment, namely:

1. *Leader firms*, also named as *global district firms* because of their ability to operate in international end-markets (Morrison, 2008; Munari, Sobrero, and Malipiero, 2012; Zeitlin, 2007);
2. *Business groups* as a particular organizational form with a core firm and one or more subsidiaries (Belussi, 2010; Cainelli, 2008; Rabellotti, Carabelli and Hirsch, 2009; Randelli and Boschma, 2012);

3. *Knowledge Intensive Business Services (KIBS)* agencies – private and/or public – which provide high knowledge content services to district firms, such as management, technical marketing and communication consultancy, product, process and technology innovation and other knowledge-intensive services (Muller and Zenker 2001; Strambach 2008).

As shown in Figure 2, all three *knowledge gatekeepers* have the function of linking the global to the district context, thus assuming a role of local-global cognitive interface (Grandinetti, 2011).

Figure 2.3: *The Local-Global Interface Role of Knowledge Gatekeepers*



Source: Adapted from Camuffo and Grandinetti (2011)

At the same time, there are some differences among them. It should be noted, first of all, that KIBS agencies may have only direct interactions with all district firms, while leading firms and business groups have direct relationships only with the firms directly linked to them. The direct relationship between organizations assures a more efficient knowledge

transfer process and a more effective learning process (Steiner and Ploder, 2011). Also the ways through which knowledge is transferred are different: for KIBS agencies this happens through the offering of personalized services; for leading firms and business groups this happens through direct interaction with their business partners. Moreover, KIBS agencies have relationships with customers from different sectors and with similar institutions, generally, operating in other countries. This guarantees, differently to leading firms and business groups, a further multi-sectorial knowledge creation capability (Camuffo and Grandinetti, 2011).

8. Managerial implications

The findings of this research suggest that the firms of the district of Barletta should improve their competitiveness by repositioning on the manufacturing of high-quality products. Such firms also need new knowledge, mainly in the field of services (e.g., communication, design, brand building, etc.) in order to increase their own marketing capabilities (Bettiol and Di Maria, 2010). As for the firms operating in the segment of *safety shoes*, in particular, our results suggest that they should continue implementing strategies centred on quality and production processes innovation in order to achieve a leading market position. At the same time, however, it is essential that these firms adapt their products and processes to the continuous changes determined by international competition, which increasingly requires a thorough consideration of consumer desires. In this respect, we feel that entrepreneurs in this segment should be aware of the value of knowledge produced both within and outside the district and consider it as a necessary tool for the development of innovative processes. In their study of the Barletta footwear district, Boschma and Ter Wal (2007) have shown indeed that the competitiveness of firms greatly depends on external sources of knowledge. Hence, it is important for these firms to continuously create new relationships with external actors. Towards this end, local institutions could support the programs of KIBS agencies, who may act as cognitive interfaces between the local and global environment (Grandinetti, 2011), and allow district firms (especially those which do not have the ability to establish business relationships outside of the district) to access distant knowledge and improve their competencies (Cooke and Piccaluga, 2006). More specifically, such agencies could facilitate the creation of new relationships with actors located outside the district (thus acting as *knowledge gatekeepers*) and, at the same time, reduce the sense of

mutual mistrust that undermines the development of collaborative relationships among district firms.

Based on the above, we believe that only the establishment of KIBS agencies (Muller and Zenker, 2001) may favour the renewal of the district of Barletta. Such agencies could turn to play a more critical than local medium sized-firms as these latter organizations have been taking up the role of new leaders of the district only recently; consequently they do not have all the necessary features to drive the rest of the district yet. They could probably play a relevant role at a later stage of the district evolution, i.e. when all district firms involved in the production process and in complementary activities, will have assimilated an acceptable level of knowledge that will guarantee them better relational skills.

9. Limitations of the study and future research

The limitations of the study are to be framed in its exploratory, and therefore qualitative, nature since the results are derived from an inductive-interpretive procedure. As for future research, efforts should therefore focus on quantitative studies in support of the findings derived from the qualitative analysis, focused on the aspects of intra- and extra-district relationships (maybe through a *network analysis*) and on the strategies regarding the process of production repositioning, in addition to the study of other districts in crisis in order to draw more general and macroeconomic conclusions. It would be helpful to also analyse how and to what extent the cognitive proximity of firm influences inter-firm relationships. In line with this view, we advance the hypothesis that the presence of *knowledge gatekeepers*, in particular KIBS agencies, in the districts that are in a situation of decline, substantially increases also technologically-advanced new knowledge favouring the adoption of innovation technologies within the district. From this point of view, it could be useful to consider another line of research in support of this study, i.e., that relating to technological innovation, and, in particular, the one concerning Internet applications. Such applications are indeed essential tools for the development of a global relational business system (Crestanello and Tattara, 2011). It will be fruitful, in particular, to study whether there is a causal relationship between the introduction of KIBS agencies in the district and the adoption of internet applications by the manufacturing district firms. It is acknowledged indeed that district firms (especially the smaller ones) are reluctant towards the adoption of technological innovations and of e-business solutions (Belussi, 2005). Future research could, therefore, investigate if KIBS

agencies have the potentiality to facilitate the adoption of internet applications by these companies and, in this way, effectively improve their intra- and inter-firm relatedness.

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