

# Resilient Territories



# Resilient Territories

*Innovation and Creativity  
for New Modes of Regional  
Development*

Edited by

Hugo Pinto

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Resilient Territories:  
Innovation and Creativity for New Modes of Regional Development

Edited by Hugo Pinto

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Hugo Pinto

# INTRODUCTION

## RESILIENT TERRITORIES

RON BOSCHMA AND HUGO PINTO

Today, Europe is in a delicate situation. Contrasts of growing competition and the lack of capacity to overcome challenges from the recent economic turbulence in specific regions and countries have created a sense of urgency to reflect on member-states' cohesion. Questions arise regarding the diverse regional economies that compose the European Union (EU) and what this diversity means for adaptation to external shocks, resistance to negative impacts and evolution to new socio-technical regimes. Essentially, academics, planners and decision makers are looking for a way to increase the resilience of the EU territory. Resilience can be understood as a non-equilibrium characteristic that facilitates a socioeconomic system to recover from a negative impact by reshaping a former trajectory or by adapting a new trajectory that successfully deals with the external pressures. These processes and characteristics have been studied in the recent past by regional scientists seeking to identify the set of dynamic conditions that create a more or less resilient territory.

In the regional context, resilience is a concept adapted from the study of ecological systems and other fields of science that is applied to the understanding of geographically embedded socioeconomic systems. It is often a characteristic connected to a threshold of socioeconomic variety and specialisation that facilitates a smooth adaptation to the challenges faced in territories. With the recent crisis, some regions have dealt with this concept, by planning the adequate conditions for resilience. Regional resilience has also been connected, but not fully integrated in the literature, with more stabilised concepts, such as innovation and creativity (Pinto & Pereira, 2014).

Innovation is often assumed as crucial for resilience. It was a central notion for the EU's policies in the last decade and it was also very influential in science and technology (S&T) studies. In particular, innovation

systems have been used as a framework to develop and implement policies in transnational, national, regional, local, and even sectoral contexts (OECD, 2005). An innovation system focuses on a specific area or sector, where a group of actors is interconnected, with the goal to innovate. The core of the system has the main function of innovation but also has a broader ambition for growth and development. Hence, when analysing the innovation system it is important to understand actors and linkages that are directly connected to S&T infrastructure but also the institutional architecture and a vast group of building blocks that are in the centre of the socio-economic profile of the territory, providing the range of possibilities for adaptation and evolution.

In parallel, contributions for the role of creativity in regional resilience have increased since Richard Florida's best-selling book 'The Rise of the Creative Class' gained media and city planners' attention (Florida, 2002). The 'creative class thesis' argues that the basis for territorial advantage is talent, and that to enhance economic growth, places should develop, attract and retain creative people who can stimulate knowledge, technology and innovation, and thus, resilience. Creative people can be defined as a new, emerging collective, the creative class. Fundamental to talent attraction and retention is the quality of place, combining factors such as openness, diversity, street culture and environmental quality. Creative class members prefer places that are tolerant, diverse and open to new ideas. The place should provide an eco-system in which diverse forms of creativity can root and flourish. The existence of culture and leisure that support particular lifestyles provides incentives for the location of people who like this quotidian. These factors, more or less intangible, structure institutions and an environment of 'cosmopolitanism' that influences the locational decisions of talent.

In this introduction, we will first provide a tentative framework for the notion of regional resilience by underlining that history, industrial variety, knowledge networks and institutions matter in this capacity. Second, we will provide a brief presentation of this book and its organisation.

## **Regional Resilience: an Evolutionary Framework**

Regional resilience is a notion that has obtained a great deal of attention in the context of the economic crisis. In evolutionary economic geography, it is common to refute the equilibrium engineering-based concept of resilience, in which resilience is simply the response to external shocks and a movement towards a previous steady state. Instead, the focus is on the long-term capacity of territories to reconfigure their socio-

economic structures and to develop new growth paths (e.g. Christopherson, Michie, & Tyler, 2010; Cooke, Parrilli, & Curbelo, 2012; Simmie & Martin, 2010). However, there is still little understanding of the long-term adaptive capacity of territories (Martin, 2012), and as such, an evolutionary notion of regional resilience is still under construction (Boschma, 2014).

An evolutionary regional resilience concept abandons an equilibrium framework. Resilience is not only about short-term buffers, which prevent a territory to collapse. Territorial resilience should explicitly be about structural change and long-term economic renewal, as this is the way for territories to offset economic decline. It is therefore misleading to analyse territorial resilience merely as a mechanical response to shocks, without discussing it, let alone without analysing the main determinants of what makes a territory competitive. What sense does it make to talk about the resilience of the Greek economy without a fundamental analysis of how the Greek economy can improve its competitiveness? If we had understood that well, discussions about the future of the Greek economy would not have been narrowed down to austerity measures, and to how long it would take for the Greeks to pay back their debt. Instead, we would have had more fruitful discussions on how to improve the innovativeness of the Greek economy (to stimulate tourism, for instance, or to diversify into new activities), and what structural measures had to be taken to make that happen.

We have to understand how history matters for regional resilience. History should be an integral part of an evolutionary notion of territorial resilience (see Boschma, 2014). Resilience in terms of the capacity of a region to develop new growth paths does not imply a movement away from former territorial trajectories, as if new growth pathways are disconnected from their past, and as if territories require a divergence from their history to achieve success. Our understanding is that history is central to comprehend the development of new growth pathways, as the past not only defines constraints (not any new path is feasible) but also provides opportunities to move into new economic and technological domains. Boschma (2014) proposed an evolutionary notion of territorial resilience in terms of how a shock affects the long-term determinants of regional competitiveness. In particular, Boschma (2014) focuses on how the shock affects the capacity of a territory to develop new growth paths. He distinguishes between three determinants of territorial resilience: industrial, knowledge networks and institutional structures in territories. These capture different dimensions of resilience in an integrative manner, which had been treated independently in the literature so far. Below, we briefly

discuss the three dimensions of territorial resilience proposed by Boschma (2014).

The industrial composition of territories matters for resilience. Specialised regions are less vulnerable to sector-specific shocks, but once hit, they have more damaging effects on the regional economy as a whole. Moreover, these regions are more likely to be dominated by powerful interests that may frustrate the development of new growth pathways. These territories also have a limited number of local options available to recombine different knowledge areas and to diversify related activities. To be resilient, specialised regions need to link to and activate casual redundancies (such as skills) in the territory, use their specialised knowledge base to diversify related activities, and connect to other territories from which new resources can be integrated in the local knowledge base. Diversified regions have a higher chance to be susceptible to sector-specific shocks, as they house many industries that might be potentially hit. And once hit, whether such territories are resilient or not, will depend on the extent to which local industries are economically integrated and skill-related. When their industries are more disconnected in terms of input-output relationships, and more skill-related, it improves their ability to absorb that part of the labour force that has become redundant because of the shock (Diodato & Weterings, 2012). Diversified regions also have more capacity to recombine a range of local industries (unrelated variety) and generate new growth pathways as a result. On top of that, these territories have a higher likelihood to benefit from overlapping areas between related industries: higher related variety implies a larger number of learning and recombinatory opportunities for local industries (Neffke et al., 2011). As a consequence, diversified regions are more resilient when they have a combination of unrelated variety and related variety, which guarantees that there is both focus within one knowledge domain, and variety between knowledge domains.

Knowledge networks also affect regional resilience. Regional networks can be excessively inward-looking and actors in such a network too proximate, in particular in over-specialised regions. These networks will suffer from limited recombination possibilities and a high proportion of closely tied core actors. This also makes the network more vulnerable to shocks by preventing lock-outs. Resilient territories have knowledge networks that connect with more peripheral actors, preferably in related activities, or by rearranging their local knowledge networks to achieve the adequate levels of proximity between organisations, such as loosely coupled networks (Boschma & Frenken, 2010; Balland et al., 2013). In other situations, local knowledge networks may be very fragmented with

an excessive number of actors with few linkages between them. These local networks provide opportunities to accommodate shocks and to get access to new and non-redundant information, but there is no regional cohesiveness. In addition, there is a low rate of efficiency and control of collective behaviour within the network. Resilient territories are expected to have a core/periphery network structure with an adequate balance between embedded relationships and strategic ‘structural holes’ linkages, as proposed by Fleming, King & Juda (2007).

Institutional structures may also be directly linked to territorial resilience. Territories may be hostages of institutional lock-in, when the institutional architecture is mainly focused on the specific needs of very dominant local industries. This problem is reinforced when the local political elite is part of this tight and rigid institutional constellation (Hassink, 2010). Such territories are expected to suffer from institutional inertia in which institutions are non-responsive to new growth pathways and cannot adapt to accommodate the growth of new trajectories. This may be overcome by institutional plasticity (Strambach, 2008), in which new institutions emerge without directly challenging the overall institutional framework. In diversified regions, it is unlikely that powerful actors can completely dominate and take over the design of regional institutions. Diversified regions have a more developed capacity for institutional change but they also lack cohesiveness with too many interests that may harm local commitment and control. Instead, resilient territories are expected to be open, with a decentralised institutional framework that responds to and accepts newcomers, but in parallel is also supportive and responsive to the needs of particular industries. Territories with a certain degree of institutional overlap between local industries are more capable of developing new growth paths, as new institution-building is less likely to be opposed by local institutional players, and existing institutions may even be put to effective use in this respect (Boschma, 2014).

## **Organisation of the Book**

The book ‘Resilient Territories: Innovation and Creativity for New Modes of Regional Development’ intends to contribute to the definition and advance the scientific agenda of topics such as: regional resilience, innovation and creativity. The stabilisation of this research agenda and the informed discussion about different conceptualisations of regional resilience is crucial for the alignment and engagement of the scientific community in the study of these crucial topics. The book is also focused

on informing policy and decision-makers, in different levels of action, about the advancements of conceptualisation in these domains. This may have a significant impact on the process of planning and designing new policy measures and instruments, specifically for the implementation of Research and Innovation Strategies for Smart Specialisation (RIS3) that can help the construction of more resilient territories in Europe.

The book is organised in three main parts:

‘Part I – Innovation’ collects six chapters that discuss the connections of innovation with regional resilience. These chapters are based on traditional approaches to innovation in Regional Science. The first chapter “The role of social capital in resilient territories: mechanisms for growth” by Sisti, Parrilli and Zubiaurre, underlines the importance of social capital in the evolution of localised patterns of economic activities and in the growth dynamics, using the cluster concept as a framework, and providing empirical evidence with the study of several regions. The second chapter “Which factors foster resilience? Does innovation matter? Evidence from European Figures” by Fernandes provides a summary of recent research on the linkages of innovation and resilience, giving emphasis to firms and to the national innovation systems’ response to the recent economic crisis. In the third chapter “Knowledge transfer in Regional Innovation Systems: The effects of socio-economic structure”, Fernández-Esquinas and Pérez-Yruela structure a framework to understand the influences of regional socioeconomics in the knowledge transfer process, understood as the systemic connections between knowledge producers, in particular universities and public research organisations, and the knowledge users, specifically the firms. Chapter 4 “The effects of variety in regional resilience: Evidence from French metropolitan regions” by Elli explores the effects of different types of variety in regional resilience showing that simplistic visions of the positive impacts of related variety in economic dynamics requires additional discussion. In Chapter 5 “Human capital and regional economy: a preliminary approach of the Portuguese case” Almeida and Nogueira present the fundamental concepts of intellectual capital as constituted by human capital, structural capital and relational capital, and an empirical example using the Portuguese case. Chapter 6 “Financing and business innovation processes” presents empirical evidence of firms’ innovative behaviour, relevant barriers and their relation to policy instruments, using information from the Spanish region of Extremadura.

‘Part II – Creativity’ collects five chapters focusing on the relevance of culture in creative dynamics, providing insights about the impacts of this domain in regional resilience. Chapter 7 “Creative dynamics, local identities and innovative milieus: re-focusing regional development

policies?” by Costa debates the recent attention given to cultural and creative industries presenting the tensions that emerge with this policy-agenda, illustrating critical factors for the sustainability and resilience of the creative territorial systems. Comunian and Jacobi present in Chapter 7 “Resilience, creative careers and creative spaces: Bridging vulnerable artist’s livelihood and adaptive urban change” an exercise to adapt the resilience framework to cultural and creative industries, through the interaction of the micro-level individual resilience of creative careers and macro-level creative urban struggles. Chapter 9 “Tracing limits – Public and private in the cartography of contemporary cities: the dialogue boxes on Street Windows Project” by Tavares debates the public art and space organisation in urban contexts using case studies from several interesting initiatives. In Chapter 10 “Creativity and culture for territorial innovation” Sedini, Vignati and Zurlo present the CCAIps project, intended to promote creative companies in the Alpine Space in Italy. Chapter 11 “MuT: Connecting people, ideas and worlds to build a useful museology” by Querol and Sancho highlights the relevance of social museology and its impact in local dynamics using the case study of the Costume Museum of São Brás do Alportel (Portugal).

‘Part III – New Modes for Regional Development’ presents four chapters that incorporate explicit policy visions that take into account innovation, creativity, smart specialisation and regional resilience. Chapter 12 “Governance and sustainable development: building capacity for resilience in cities” by Bravo and Manso discussed the notion of resilience, systematising several theoretical contributions and policy documents, linking that debate with the governance of urban areas. Romão and Ikegani present in Chapter 13 “Knowledge, place and economic performance: Smart specialisation and the Triple Helix framework in Amsterdam and Sapporo” a comparative study between a region in Netherlands and another in Japan identifying key factors for the implementation of smart specialisation in regional innovation strategies. Chapter 14 “The Regional Innovation Strategy in the Czech Republic and SMEs: Evidence from Moravia” by Jurčik presents the case study of the development of a smart specialisation strategy in a region of the Czech Republic. The book concludes with the Chapter 15 “Implementing Doing-Using-Interacting regional innovation policies: Smart specialisation in a tourism based region”. In this chapter, Pinto, Cruz and Cooke argue that Science-Technology-Innovation (STI) policy approaches might be complemented in less technology-intensive regions by a Doing-Using-Interacting (DUI) approach. Emphasis is given to the Algarve (Portugal), a region where the

implementation of a smart specialisation policy model based on DUI can contribute to unlock its over-specialisation in ‘sun and sand’ tourism.

This book combines a variety of chapters, theoretical essays and empirical studies. Hopefully it will contribute to the ongoing debate about the integration of regional resilience, innovation, and creativity, the conditions for the consolidation of resilient territories, the impacts of talent and human capital in regional development, the articulation of related variety and regional resilience, and the implementation of smart specialisation policies.

**PART I**

**INNOVATION**

**Chapter One**  
**The Role of Social Capital in Resilient Territories:  
Mechanisms for Growth**

**Chapter Two**  
**Which Factors foster Resilience? Does Innovation Matter?  
Evidence from European Figures**

**Chapter Three**  
**The Social Structure of Innovation: Implications for  
Knowledge Transfer in Peripheral Regions**

**Chapter Four**  
**The Effects of Variety on Regional Economic Resilience:  
Evidence from French Metropolitan Regions**

**Chapter Five**  
**Human Capital and Regional Economy: A Preliminary  
Approach of the Portuguese Case**

**Chapter Six**  
**Financing and Business Innovation Processes**



# CHAPTER ONE

## THE ROLE OF SOCIAL CAPITAL IN RESILIENT TERRITORIES: MECHANISMS FOR GROWTH

EDUARDO SISTI, MARIO DAVIDE PARRILLI  
AND ARANTZA ZUBIAURRE

### **Introduction**

The social structural conditions have long been considered a major driver of economic development (Bourdieu, 1986; Becattini, 1990; Coleman, 1990; Putnam, 1993; Granovetter & Swedberg, 1992; Parrilli, 2009, 2012). Additionally, the increasing attention to ‘local productions systems’ (LPS) as creditable models for regional development (Moulaert & Sekia, 2003) has stressed the positive implications of social embeddedness of economic action (Nadvi & Schmitz, 1994). Complementarily, within the LPS literature, dissimilar stories of success and decline have renovated the attention about basic patterns of cluster evolution (Nadvi & Schmitz, 1994; Boschma & Fornahl, 2011; Lorenzen, 2005). Following Becattini (1990), this wide research literature should discuss the role that social capital plays in the different stages of the life cycle of clusters and LPS in general. In particular, he emphasises the criticality of some social capital facets such as the ethic of work, the attitude to change and reciprocity as means to reinforce the effective working of some critical development mechanisms.

Clusters, the most popular and one of the LPS ideal-types, are defined as “geographic concentration(s) of interconnected companies and institutions in a particular field...that compete and cooperate with one another” (Porter, 1998). The two most relevant reasons for cluster popularity are the loss of reputation of ‘traditional’ policy approaches to industrial and regional development based on national champions and public subsidies, and the opportunity clusters represent for different layers

of the public administration as a means to promote economic development (Duranton et al., 2010). However, the global changing context, (Li & Bathelt, 2011; Parrilli, 2012), together with some theoretical and policy flaws in the literature (Li et al., 2012; Martin & Sunley, 2003; Fernández Satto & Vigil Greco, 2007) have confronted the role of clusters to thrive in the new industrial and/or regional development. An approach to these issues is to explore the evolutionary features of clusters. Among different analytical frameworks, the cluster life cycle analysis (CLC) is the most widely used (Bergman, 2008; Capó-Vicedo, 2011).

Early CLC studies provided useful theoretical frameworks and crucial insights regarding the key mechanisms of cluster growth (Pouder & St. John, 1996; Swann, 1998), yet they were criticised by their determinist outcome (i.e. decline & lock-in) and the subordination of cluster evolution to changes in the industry-technology cycle (Martin & Sunley, 2011). Recently, the so-called ‘new clusters life cycle’ (NCLC) strand has been focusing on knowledge diversity as the critical adaptive driver (Menzel & Fornahl, 2010), together with the co-evolutionary nature of clusters with firms, networks, and industries (Ter Wal & Boschma, 2011).

Within the NCLC framework, the dynamic influence of social capital has not yet been deeply analysed, even though, in the LPS literature, social capital has been considered a primary driver of critical cognitive and normative resources (Becattini, 1990; Putnam, 1993; Humphrey & Schmitz, 1998; Cooke, 2001; Parrilli, 2004). Moreover, a homogenous’ local community system of values, strongly emphasised by the Italian (neo-marshallian) school on Industrial Districts (e.g. Becattini, 1990), is considered to have a direct influence on cluster competitiveness through the encouragement of self-realisation through entrepreneurship (Parrilli, 2004; 2009) and by easing “coordinated action and collective learning” (Staber, 2007).

The goal of this chapter is to propose a conceptual framework to illustrate the proactive role of social capital for regional development by means of activating various critical mechanisms of growth through the different stages of the cluster life cycle. With this objective in mind, we identified a set of relevant mechanisms that are likely to promote cluster evolution, exploring our argument with some preliminary qualitative empirical evidence based on a comparative analysis of a few international well-known cluster cases.

This chapter is organised in five sections. The second section reviews how clusters evolve with an emphasis on the NCLC propositions. Subsequently, the importance and dimensions of social capital are framed within the literature on LPS and clusters. The fourth section refers to the

connection between the selected social capital facets and some critical mechanisms for clusters' evolutionary processes. The fifth section pursues some exploratory empirical evidence based on a few selected cases. An ongoing discussion of these results is proposed in the final section.

## **The Importance of Clusters and their Evolutionary Process**

### *Cluster Theory*

The renewed attention on a cluster as a unit of economic analysis comes from the combination of policy and historical trends (Duranton, et al., 2010). First, policymakers' interest is driven by the loss of reputation of 'traditional' policy approaches to industrial and regional development based on national champions and public subsidies (Bianchi, 1997), and the possibility of implementing industrial development policy at different layers of the government administration (including local). Second, the success of Silicon Valley to date, and the Italian industrial districts in the 1970s and 1980s raised the significance of 'local development conditions' to favour 'collective efficiency' outcomes defined as "the competitive advantage derived from local external economies and joint actions" (Schmitz, 1995). Additionally, the popularity of the Porter conceptualisation of clusters (1998) contributed to the increased awareness of three elements associated with the performance of LPS: geographical concentration, value chains, and the co-existence of cooperation and competition. These basic conditions help to explain pecuniary gains on the basis of the reduction of information, coordination and transaction costs, and non-pecuniary or untraded gains such as knowledge access and reputation effects. Therefore, the characteristics of the social structure are considered to have a distinctive mediating capacity to promote and/or manage effective knowledge processes (Camagni, 1991; De Propris, 2001), thus enhancing the collaborative efforts of small and medium firms and increasing their competitive abilities.

Recently, the former positive perception about clusters as a key industrial and territorial development focus has been challenged by a context of greater uncertainty that demands faster adaptations (Li & Bathelt, 2011; Parrilli, 2012). Four types of external forces exert increasing pressure: 1) technological changes, 2) competition from other clusters, 3) demand effects derived from consumers' habits and changes in income, and 4) macroeconomic volatility and regulatory variations (Karlsson et al., 2005). The difficulties faced by the Italian districts (a

specific variant of clusters, see Markusen, 1996) are an example of this: “since the beginning of the new millennium ... are experiencing a crisis and are undergoing a phase of profound restructuring” (Dei Ottati, 2009). This fact is combined with perceived flaws in theory (i.e. conceptual vagueness) and policy implementation (e.g. top-down policy approaches and failures) (Li, et al., 2012; Martin & Sunley, 2003; Fernández Satto & Vigil Greco, 2007). Consequently, those concerns have reignited the academic interest and debate on clusters’ evolutionary aspects (Boschma & Fornahl, 2011; Lorenzen, 2005).

### *Clusters Evolutionary Framework*

The ‘cluster life cycle’ approach has been widely used as a ‘discussion template’ (Bergman, 2008) to identify common evolutionary patterns. Earlier CLC studies provided useful insights about key mechanisms for growth dynamics such as the effects of imitation and specialisation (Pouder & St. John, 1996) and firms’ entry decisions based on the strength of the cluster in its industry and among competing clusters (Swann, 1998). Meanwhile, negative endogenous forces such as myopic behaviour (Pouder & St. John, 1996) and congestion costs (Swann, 1998) are regarded as factors of decline.

In the past decade, critical appraisals revived the interest on the study of cluster trajectories (Hassink et al., 2012). First, a set of critiques arose against the CLC deterministic view and subordination of cluster performance to industry-technology changes (Hassink et al., 2012; Martin & Sunley, 2011). Such concerns are critical to acquire an adequate understanding of specific trajectories (Humphrey, 1995). Secondly, the new impulse of an ‘evolutionary turn’ in economic geography (Boschma & Martin, 2007; Boschma & Martin, 2010) stressed the need to explain the spatial evolution of economic units as an interaction between individual historical behaviour (business micro-routines) and institutional structures (Boschma & Frenken, 2006).

In the last five years, the so-called ‘new clusters life cycle’ (NCLC) has responded to some of these critiques. These recent studies highlight the heterogeneous behaviour of economic agents, and focus on their absorptive capacity as a decisive factor for individual performance, and for the cluster evolution. Menzel & Fornahl (2010) point out the possibility of cluster growth autonomy vis-a-vis the related industry growth. They value knowledge diversity as a change and adaptive driver. In addition, they include a range of systemic quantitative (i.e. cluster size) and qualitative (i.e. knowledge diversity) dimensions to integrate the interactive effects on

cluster internal dynamics. Meanwhile, Ter Wal & Boschma (2011) highlighted the co-evolutionary nature of the cluster in relation to the firms, networks, and industries that are connected. In particular, they stress the underrated role of networks that influence the behaviour of heterogeneous economic agents.

In this framework, the dynamic influence of social capital is a fundamental issue that has not yet been integrated in depth. Therefore, following a gradual approach based on social embeddedness (Parrilli, 2004), the multidimensional and complex character of social capital is introduced in the debate on cluster evolution.

## **Social Capital and Cluster Evolution**

Social capital, defined by Putnam (1993), is “the features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit”. Its popularity is grounded in the consensus that investments in collaboration and social exchanges generate economic value (Bourdieu, 1986; Becattini, 1990; Coleman, 1990; Putnam, 1993; Granovetter & Swedberg, 1992; Malmberg & Maskell, 2002; Parrilli, 2009, 2012; Staber, 2007). Specifically, in the LPS literature it is argued that social capital may represent the “missing ingredient” that stimulates social/collective learning based on norms and trust that help to understand differences in competitiveness between regions (Cooke, 2001).

Path-dependence and its relation with place-specific conditions (e.g. institutions) needs to be taken into account in order to understand how the historic formation and accumulation of values and norms affect the behaviour of economic agents (Martin & Sunley, 2006; Boschma & Frenken, 2006). This functional line of argument about the effect of a homogeneous local community’ system of values and norms is strongly emphasised by the Italian (neo-marshallian) school on Industrial Districts (Becattini, 1990; Brusco, 1982). Such influence is made effective by means of two interdependent forces that in these cases traditionally produced a ‘positive sum game’, i.e. social cohesion/trust (including ‘the subordination of individual interest to the larger interests of the community’, see Wolfe, 2002), and self-realisation via intense entrepreneurship (Parrilli, 2004, 2009).

However, the effects of social capital on the competitiveness of clusters are not always positive. For example, cultural constraints and rigid settings in decision-making processes derived from too homogenous social ties may lead to a reduction in the exploration of new demand

opportunities, business processes and technology options (Trigilia, 2003). Accordingly, cognitive lock-in effects (Parrilli, 2012; Anderson & Jack, 2002), “exclusion of outsiders, limited mobility, poor socioeconomic advancement and lack of adaptability to change” (OECD, 2002), and lack of innovations may prevail over the aforementioned constructive effects. On this wide basis, there is an open debate about what, how and when the social norms and values have positive evolutionary implications for cluster development (Parrilli, 2012; Staber, 2007).

### **Social Capital’s Influence on Growth-Inducing Mechanisms**

In this work and context, social capital is defined by Becattini (1990)

“homogenous system of values and views, which is an expression of an ethic of work, the family, reciprocity, and change... (that) constitutes one of the preliminary requirements for the development of a district, and one of the essential conditions of its reproduction”.

These four underlying collective aspects offer a basis to discuss how the longstanding social structure conditions affect the cluster life cycle. We argue that they encompass a mediating role to differentiate the local basis of competitive advantages *vis-a-vis* other regions and LPS, and to influence individual business decisions and collective interactions. Based on this functional specification, three salient facets are selected:

- Work ethic: Sense of responsibility and discipline that is committed towards a business and socioeconomic aim.
- Attitude to change: Willingness to change (and to take risks), individually and collectively, in order to improve both business and territorial competitiveness.
- Reciprocity: Attitude towards sharing benefits and sacrifices within the local community as a means to produce an all-encompassing development.

Becattini also mentions family values, removed from our analysis. It is considered important in the specific case of the Italian industrial districts, but less relevant in other cluster typologies (Markusen, 1996).

The work ethic is associated with the importance ascribed to the hard and constant effort devoted to the generation of economic value. Accordingly, this fact is grounded in religious beliefs and/or cultural characteristics (Nadvi & Schmitz, 1994). The attitude to change entails a