The contribution of Social Enterprises to the resilience of the territories. An empirical investigation of Italian provinces

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Abstract

The great recession of 2008 has led to a growing interest on the phenomenon of resilience. This paper discusses and empirically investigates the relationship between the diffusion of Social Cooperatives - which represent the most important form of Social Enterprise in Italy - and the ability of the territories to face external shocks. The empirical analysis, carried out on a sample of 101 Italian provinces (NUTS-3), has shown how there is a negative relationship between social cooperation and resilience, despite the potential capacity of Social Enterprises to strengthen territorial development through the generation of economic, social, cultural and political value.

Keywords: social cooperatives; social enterprises; resilience; local development.

JEL classification: B52; C25; O52; R11

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1. Introduction

As highlighted in several studies (e.g. Sabatino, 2019; Modica et al., 2018; Boschma, 2015; Lagravinese, 2015; Martin and Sunley, 2015; Modica and Reggiani, 2015; Cellini and Torrisi, 2014; Di Caro, 2014; Martin, 2011), the recent economic recession, fuelled by the 2008 financial crisis, has led to an essential increase in attention, both in the scientific debate and in the political one, towards the phenomenon of resilience, which in this first phase can be defined in generic terms as the ability of a territory to cope with or adapt to a change induced by an adverse event (Ringwood et al., 2019).

The intersection of the economic crisis with other events (natural disasters, terrorist attacks, technological revolutions, war conflicts) has generated a general sense of uncertainty and insecurity that stimulates the search for effective forms of adaptation and survival (Christopherson et al. , 2010; Lagravinese, 2015). For this reason, as evidenced by a recent report (European Union, 2018), resilience has become a key concept in the current narrative of the European Union, inasmuch the continuous exposure to exogenous shocks, also favoured by globalization processes, put a strain the resistance of individuals, regions, countries and institutions.

Focusing on the debate developed at a scientific level on purely economic aspects, the question of regional resilience in the face of economic shocks has emerged as a priority object of analysis especially in the sphere of economic geography and regional economy. The motivation for this attention is because, as well argued by Martin and Sunley (2015), at global and national level crises rarely have neutral spatial results, since it is within regional, local and urban systems that adverse economic events generate their effects and the relative consequences. The recent economic and financial crisis is the demonstration of this since, as claimed by Capello et al. (2015), it has had a high degree of spatial heterogeneity regarding its effects at a regional and local level. Hence, resilience is a crucial concept in the analysis of spatial dynamics of socio-economic systems, starting from the assumption that different abilities to cope with shocks are the reason why regions and communities present different levels of economic growth (Reggiani et al., 2012; Cellini and Torrisi, 2014). This asymmetry of the shocks can be determined by different levels of vulnerability, which can increase due to the intrinsic characteristics of the regions or communities, such as the socio-demographic structure, the endowment of social capital, the solidity of the economic-entrepreneurial system, the peculiarities of the labour market and so on (Modica et al., 2018).

An important role in territorial resilience processes could be played by Social Enterprises (SEs), which - temporarily leaving aside the fact that in literature there is not yet a univocal definition - can be considered as productive organizations that combine social aims and financial autonomy in a competitive business context (Young and Leacy, 2014).

The main peculiarity of SEs, which offers the opportunity to make a differentiation to traditional for-profit enterprises, concerns the aptitude to generate both economic and social added value, allowing the reconciliation of equity and efficiency objectives (Borzaga and Galera, 2014). Consequently, these innovative entrepreneurial realities are characterized, first of all, by a potential ability to activate relationships, attitudes, non-self-interested motivations, generating relational assets and generalized trust (Bruni and Zamagni, 2004); that is fundamental resources to consolidate that social cohesion representing the necessary precondition to trigger virtuous processes of territorial economic development that can enhance the economic and social infrastructures of a territory. It could lead not only to a higher adaptive capacity towards changes induced by external dynamics, but also to stimulate a pro-active attitude towards crises, seizing them as a driving force to question the traditional models of intervention and nurture regeneration processes in the territorial contexts (Colucci and Cottino, 2015). In light of these premises, this work aims to verify whether a greater territorial diffusion of SEs significantly affects resilience processes. Specifically, it is therefore intended to verify the possible presence of a significant correlation between a diffusion index of Social Cooperatives - which can be considered as the most essential expression of social entrepreneurship in Italy - and a resilience index that allows to quantify the capacity of resistance of a territory in dealing with the impact of a recessive shock. The paper is structured as follows. In the second paragraph, there is a general framework on the theoretical evolution of the concepts of resilience and SE. The third paragraph illustrates the modalities with which the construction of the resilience and social cooperation indexes was carried out, subsequently analysing the obtained outputs and their spatial distribution. The fourth paragraph proposes an econometric model aimed to identify the presence of a correlation between resilience and social cooperatives, introducing a set of economic and socio-demographic explanatory variables that represent potential factors affecting resilience processes. The concluding paragraph provides some final considerations aimed to give an overall interpretation of the results obtained of the empirical elaborations carried out.

2. On the concepts of resilience and SE: a theoretical framework

2.1 The concept of resilience

Most economic studies on resilience refer to a conception based on the ability of regional or local socio-economic systems to recover or resist situations of shock and persistent structural changes without deviating from their own economic development path and losing the ability to generate well-being for the community (Manca et al., 2017; Martin, 2011; Hudson, 2010; Simmie and Martin 2010; Hill et al., 2008; Foster, 2007). As emphasized in the introductory phase of the present work,

the notion of resilience necessarily requires an analysis of how territories react and recover from such shocks, also to understand their role in influencing spatial dynamics of economic growth and development, which profoundly affect income, well-being and individual opportunities (Martin and Sunley; Ball, 2014; Turvey, 2007). Through this notion, therefore, it is possible to build a theoretical framework aims to represent the territories in a dynamic, holistic and systemic way, so as to adopt a global vision that takes into account the entire process of production of economic and social well-being and identifies the ways in which to ensure an efficient allocation not only of economic resources, but also of natural, social and environmental ones (EU, 2018; Martini, 2015; Swanstrom, 2008). The variety of definitions and quantitative measurement methodologies could represent the consequence of a difficulty that exists among researchers in reaching a convergence regarding what is meant by resilience (Davies, 2011). However, there are authors, such as Christopherson et al. (2010), who believe that its popularity depends on the inherent malleability, which leads it to mean so many things for different people; the concept of resilience, therefore, is considered sufficiently broad and multidisciplinary to be able to collect and include the different aspects that characterize a region. For Swanstrom (2008), resilience is more than a metaphor and less than theory so that it can be considered more as a conceptual framework. In his opinion, a region should be considered as resilient if local markets and institutional structures continually adapt to changing environmental conditions, and only when these processes fail the system is forced to modify its structures.

Even though this undoubted popularity, no shortage of researchers have challenged the use of the idea of resilience. Starting from the assumption that it, as an object of analysis in the field of scientific studies, was initially been treated by the natural sciences, Brend and Jax (2007) see in its subsequent generalization something that blurs the original use of a descriptive nature adopted in ecological works; this is because fundamentally the economic and social systems differ in many respects from ecological systems. Hassink (2010), criticizes the introduction of the notion of resilience in the regional sciences because, in his opinion, it leads to a misunderstanding of the processes of change because it does not adequately take into consideration the extended duration of the regional adaptation processes. For this reason, he - as well as Pike et al. (2010) - considers resilience as a less useful concept than others already present in the literature, such as "lock-in" and "path-dependence", which are considered more precise (Ringwood et al., 2019). Despite the difficulties in reaching a shared vision of resilience, this concept has been, and continues to be, the subject of numerous researches that analyse how the economic and social systems react to the crisis, making a specification based on the entity to be investigated and the context in which this entity is studied (Martin and Sunley, 2015). Within the extensive economic literature that deals with the question of resilience, it is possible to identify three fundamental approaches that lead to as many

interpretations of this notion: a) engineering resilience; b) ecological resilience; and c) adaptive resilience.

Engineering resilience (Holling, 1973, 1996; Rose, 2004; Walker et al., 2006; Fingleton et al., 2012), which is typically adopted by the physical and engineering sciences, refers to the ability of a subject or a complex system to return to a situation of equilibrium following a shock. Every shock that leads to a situation of non-equilibrium, in fact, give rise to a series of mechanisms aimed to lead back to the original equilibrium situation (De Graaf et al., 2012). In this perspective, the issue focuses on the immediate reaction of the system to a disturbing event and the consequent recovery; the more a system is resistant to an adverse event, returning as quickly as possible to a situation of pre-shock equilibrium, the higher is its capacity of resilience. This approach draws inspiration from the so-called "plucking model" (Friedman, 1993), according to which shocks tend to be transitory and do not influence long-term growth. Generally, economic geographers and regional economists tend not to favour this approach, since focusing exclusively on the concept of equilibrium it does not take into consideration the impact that a shock can have on a regional or local system as a whole; in fact, it can return to a situation of original equilibrium also following changes in its institutional and socio-economic structure (Boschma, 2015; Martini, 2015; Martin, 2011). Ecological resilience (Hotelling, 1973, 1996, 2001; Hotelling and Gunderson, 2002; Gunderson and Pritchard, 2002; Mcglade et al., 2006), which is switched from ecology, indicates the capacity of a system to sustain a certain level of disturbance passing from one equilibrium situation to another without changing structure, identity and function. It, therefore, presupposes that several stability domains characterize the systems, and if a shock pushes the system beyond its threshold of elasticity, the latter can move to a different domain or state (Martin, 2011). As argued by Boschma (2015), some ambiguity characterized this approach. In his view, it does not adequately consider the role of critical elements such as human agency, institutions and structural changes, although they are fundamental to understand the long-term evolution of the regions. Christopherson et al. (2010) believe, instead, that ecological resilience is nothing more than the simple assessment of the sensitivity of a regional economy to shocks and often misleadingly describes the region as an autonomous spatial unit. Finally, adaptive resilience is the ability of a system to react to a disturbance without losing the ability to allocate resources efficiently (Perrings, 2006). It finds its origins in the theory of complex and adaptive systems, and can be placed in the context of evolutionary theory (Martini, 2015), as it considers resilience not so much as a characteristic or a property, but as a dynamic process associated with the Schumpeterian notion of "galaxies of creative destruction" (Martin, 2011, p. 11). Within an evolutionary framework, the ability of a territory or region to sustain long-term development is considered as important as the ability to

respond to short-term shocks. Therefore, this approach focuses more on the long-term evolution of regions or territories and on their ability to adapt and reconfigure industrial, technological and institutional structures in an evolving economic system (Boschma, 2015). All this in the belief that regional and local systems can spontaneously reorganize their economic, social and institutional structures following a shock while maintaining an acceptable growth path in terms of production, employment and wealth (Martin and Sunley, 2007). This definition of resilience is particularly favoured by economic geographers and regional economists, above all by those who adopt the perspective of "Evolutionary Economic Geography - EEG", since it appears to be consistent with that vision which focuses attention on the aspects of non-equilibrium and path-dependence of regional economic development processes (Bristow and Healy, 2014). As extensively explored by Martin (2011), the presence of different interpretations of resilience suggests that to develop a common framework have to be considered four interrelated dimensions: 1) resistance, that is the vulnerability or sensitivity of an economic system to specific disorders, such as economic recessions; 2) recovery, understood as the speed and the degree of recovery from a recessive shock; 3) reorientation, which concerns the extent to which an economic system undergoes a structural modification and what implications this modification of its structures for production, employment and income of the region has; and 4) renewal, i.e. the extent to which an economic system renews its growth path: resuming the pre-recession path or starting a new growth trend (p.11). If, beyond the divergence of views and the adoption of a plurality of theoretical and methodological approaches, we can consider economic resilience as the ability of an economy to effectively deal with the adverse effects of a shock to which it is exposed (Simmie and Martin, 2010), it should be emphasized that this definition, limiting the perspective of analysis to the economic system of a region or a territory only, may not be entirely adequate for a comprehensive analysis of regional development processes (Bec et al., 2018). To this end, it is necessary to adopt a broader reference perspective, which takes into account the fact that the management of change requires the commitment and recognition of all the systems that characterize a given territorial community (Laitner, 2000). In particular, to realize the objectives set in this work, it is necessary to highlight the strategic importance of social infrastructures in fuelling effective resilience processes that can allow a specific territorial community to better face the shock, in some cases seizing them as an opportunity to undertake virtuous processes of structural change. It is, therefore, necessary to introduce the concept of social resilience, which Adger (2000) defines as the capacity of a territory to face an adverse event - such as, for example, an economic recession - through the use of social infrastructures; that is the ability of individuals, organizations and the community to adapt, tolerate, absorb, cope and adjust with respect to change and threats from various adverse situations. Social

resilience cannot, therefore, considered as a mere summation of individual resilience - understood as the ability of individuals to react in adverse situations (Williams and Druy, 2009) - but calls into question the capacity of a given territorial community to activate cooperation networks, which generate reciprocity and mutual support, able to favour a better adaptation to a disturbing event. Consequently, being characterized by factors of an intangible nature, this concept is not directly observable and measurable, and to be able to use it effectively it must be related to other elements, such as economic resilience (Martini, 2015). One of the core interpretation of this research work is the idea that social resilience is an essential element for assessing the impact and determinants of regional economic resilience, as well as of the necessary policy interventions useful to increase the capacity of a given territory to deal with perturbative events that jeopardize the stability of the economic system.

2.2 The emergence of SE

The extent of social and environmental change that is affecting contemporary society has led to a substantial awakening of the consciences of citizens, who are acquiring an ever greater sense of social responsibility (Borzaga and Galera, 2012, Becattini, 2015). This growth in the sense of social responsibility, which has resulted in an essential ascent of the organized civil society, has provided relevant stimuli to the scientific and political debate to address the question inherent in the search for more sustainable business models, which can be engines of the development of a more human economy based on the principles of justice, equity and responsibility (Biggeri et al., 2018; Romani-Dias et al., 2018; Winkler and Schulman, 2012). Following the growing requests of "humanization" of economic systems, has been widely questioned the traditional idea of enterprise as a mere economic organization dedicated to the exclusive maximization of profits. This can explain why in recent decades the concept of SE, used to qualify entrepreneurial initiatives aimed to promote the general interest and able to deal in an innovative way with some of the problems and challenges that contemporary society faces (Borzaga et al., 2012; Galera and Borzaga, 2009; Borzaga and Defourny, 2001; Dees, 1998), attracted the interest of researchers and policy-makers.

Concerning the reasons that have fuelled the emergence of these innovative entrepreneurial realities, it is possible to refer to the traditional economic theory that explains the origin and creation of the non-profit organizations (Diaz-Foncea and Marcuello, 2012). Hansmann (1987), in particular, suggested that when the State does not provide adequate quantities and qualities of public goods to its citizens, and the market fails in the production of certain goods and services, non-profit organizations emerge offering services in fields such as education, social services, environmental protection (Ben Ner, 1986). Therefore, the non-profit sector has developed substantially as a result

of the failures of the State (government failure) and the market (market failure), and many of the organizations related to this sector have evolved into SEs approaching the market to mobilize new resources useful to produce goods and services of general interest (Salinas and Rubio, 2001).

About the European experience, Borzaga and Defourny (2001) argue that there is a precise and generalized coincidence between the birth of the first experiences of SE in the 1970s and the decline in economic growth rates - with the consequent increase of unemployment rates - observed in the same period. This change in the economic performance of many European countries triggered a fiscal crisis that led governments to cut social spending to contain public deficit levels. This reduction in social spending, when the growth of the level of unemployment exposed large portions of the population to new social risks, undermined the traditional European welfare state models. A crisis that, however, was not only due to a reduction in financial resources but also to a growing ineffectiveness of inclusive public policies, inappropriate to face the increasingly high heterogeneity of the social needs expressed by citizens (Bruni and Zamagni, 2016). The legitimization of the crisis of European welfare state regimes led many governments to reform social protection systems, introducing greater subsidiarity in the implementation of social and labour policies, providing an essential stimulus to the growth of the private social sector.

In addition to the traditional welfare state crisis, a further issue that has favoured the rise of SEs calls into question the difficulty, or the non-convenience, of traditional for-profit enterprises to produce welfare goods and services and, more generally, services of general interest. This is fundamentally due to three different reasons: 1) the presence of a demand expressed by people who do not have the necessary monetary means to be able to purchase these goods or services at market prices; 2) the presence of market power situations, due to monopolies or quasi-monopolies, in which competition is limited to one or a few companies that can influence the price level to the detriment of users who are unable to assess the real correspondence between the price of the service and its utility or value; and 3) the difficulty to prevent part of the value produced by enterprises from turning into positive externalities - that is to say benefits for non-paying users - undermining the possibility to obtain interesting margins of profit for profit-oriented entrepreneurs (Borzaga et al., 2012, p.403). Faced, therefore, with the difficulty of the State and traditional enterprises to produce goods and provide services aimed to intercept that demand resulting from emerging social needs, civil society - initially organized through groups of volunteers or mutual aid - began to give life to a series of initiatives that, through a mobilization of a mix of resources, provided a concrete response to ongoing social emergencies (Borzaga and Galera, 2012). These bottom-up initiatives can be considered as the first embryonic forms of SE that used market mechanisms to ensure the supply of goods and services that had a significant impact on the social well-being of the

populations (Borzaga et al., 2012). The high expectations matured towards the rise of the SE have led to the introduction of various definitional approaches (Cieslik, 2018; Nyssens and Defourny, 2008). In the scientific literature, there is, therefore, the absence of a universally accepted definition of SE (Campbell and Sacchetti, 2014; Nicholls, 2006; Hockerts, 2006; Jones and Keogh, 2006). As suggested by some scholars (Kerlin, 2009, 2010; Defourny and Nyssens, 2006), the presence in the literature of different notions of SE is because it assumes specific characteristics based on the geographical context of reference. In other words, SEs tend to differentiate themselves according the peculiarities of the economic, social, cultural and institutional context in which they are rooted (Poledrini, 2018). A further element that contributes to the difficulties in proceeding towards a univocal definition of SE is identified by Borzaga et al. (2012, p.400) in the fact that this concept tends to overlap with those of "social business" and "social entrepreneurship", since they all refer to initiatives that have the explicit objective of generating social value through private use and the management of human and financial resources that are partially generated by market and quasi-market exchanges. Therefore, these are not initiatives designed to maximize profits, but rather to use market mechanisms to provide goods and services that have a social impact. Overall, in the academic field three different schools of thought have emerged that refer to three different approaches: 1) the "Earned income approach"; 2) the "Social innovation approach"; and 3) the "EMES approach" (Defourny and Nyssens, 2012; Dees and Anderson, 2006). The "Earned income approach", adopted by the "School on Social Enterprise" (Austin et al., 2006; Boschee, 2006; Emerson, 2006; Mulgan, 2006; Boschee and Mclurg, 2003; Leadbeater, 1997; Drucker, 1992) conceives the SE as an organization capable of simultaneously pursuing objectives of a financial and social nature, supporting the need to use market solutions to solve social problems since it can guarantee greater effectiveness and financial sustainability to the non-profit organizations, in order to make them less dependent on public subsidies (Cieslik, 2018). The "Social innovation approach" (Nicholls, 2010, 2006; Mulgan, 2006; Bornstein, 2004), focuses on the role of the social entrepreneur as an agent of change and social innovation; here the discourse is focused on issues such as "change agency" and "leadership" (Nicopolou, 2014; Baron, 2007) and reflects the dominant entrepreneurial approach in mainstream literature (Starnawska and Brzozowska, 2018). Finally, we find the "EMES approach" (Defourny and Nyssens, 2008; Borzaga and Defourny, 2008), which refers to a definition of SE generally accepted by academics that has inspired numerous legislative initiatives aimed to regulate this emerging type of enterprise (Borzaga and Galera, 2012). This definition provides an ideal-typical view of SE, based on a series of indicators placed in three different groups: entrepreneurial, social, and governance dimension. The entrepreneurial dimension implies that a SE must carry out a stable and continuous activity of

production of goods and services, assuming a significant level of economic risk and employing a paid workforce in the majority. The social dimension, instead, presupposes that a SE must pursue an explicit social objective aimed to generate benefits for the community or groups of disadvantaged subjects through the production of meritorious goods and services of general interest. Finally, the governance dimension implies the adoption of a participative decision-making structure that ensures the involvement of all stakeholders, as well as the introduction of the ban - total or partial - on the distribution of profits (Defourny and Nyssens, 2012). About this last aspect, an asset-lock characterizes the surplus of SEs; therefore, it could be reinvested in the activity of the enterprise itself or destined to projects in favour of the community. The criteria provided by "EMES Network" make it possible to point out that SEs should not be confused with either the so-called "ethical enterprises", which maintain profit maximization and their distribution to shareholders, or with voluntary organizations, which are generally not market-oriented and tend to depend on public subsidies (Campbell and Sacchetti, 2014). Regardless of the plurality of approaches in the literature, there is, in any case, an almost common tendency to consider the dual mission of generating economic and social value to pursue aims of general interest as the distinctive trait of SE. But beyond to generate economic added value (given by the contribution in terms of material, economic and financial wealth) and social one (relating to the production of relational goods and the generation of social capital), as argued by Bassi (2013, pp. 37-38) it has the potential to be able to generate two additional types of added value: 1) political added value, since it can go to affect the political agenda by bringing into the political debate not covered issues; and 2) cultural added value, which is given by the contribution that it can create in terms of spreading values (equity, tolerance, mutuality, solidarity) in the surrounding community. The ability to generate these four types of added value could make the SE a key player in territorial resilience processes, since it has a potential ability to affect the dynamics of local development through the facilitation of understanding local needs, the generation of social capital, the contribution to the transformation of local welfare systems in a generative perspective, the creation of employment and the use of an optimal mix of resources (human, financial, social) (Borzaga and Defourny, 2001). In particular, it can contribute to a development understood as an expansion of capabilities, since, through the enhancement of relational assets, it can provide a sort of "collective agency" that can strengthen and make express both individual and collective action (Scarlato, 2009).

3. The measurement of the resilience capacity of the territories and the degree of diffusion of social cooperatives

The present study needs, first of all, data to assess the capacity of the Italian provinces (NUTS-3) in facing the 2008 financial crisis which, as written by Capello et al. (2016), has fuelled the worst economic shock suffered from Europe in the post-World War II period. Although scientific production on the subject has exponentially grown in recent years, within the literature it is not possible to identify a univocal methodology to measure the capacity of a territory to deal with negative conjunctural events (Doran and Fingleton, 2016). A large part of the contributions in the literature refers to univariate indicators that analyse how recessionary effects affect employment, unemployment or production levels. In particular, the most widespread methodology is the one introduced in Martin (2012) and Martin and Sunley (2015), which quantifies the degree of resilience through the relationship between the change in the employment level of a territory (e.g. a region or a community) and the same variation recorded at national level; a methodology that was subsequently subjected to modifications by Lagravinese (2015), with the aim to develop an indicator that could better explain the asymmetric behaviours of the territories over a longer time span (Cainelli et al., 2018). However, there is no lack of studies that have used composite indexes (eg Stanickova and Melecký, 2018; Graziano, 2012), suitably constructed using multivariate statistical techniques such as the factor analysis or the identification of simple indicators derived from an analysis of the literature, or field surveys (e.g. Evans and Karecha, 2012).

To concrete the objectives set in this work it was considered that the best approach to adopt was the construction of a composite index which, by aggregating the three main indicators used to analyse the phenomenon of resilience (employment, unemployment and production), allowed to obtain useful information to understand the capacity of the Italian provinces in facing the great crisis from an economic and social point of view. Going into more detail, the three indicators chosen for the aggregation are: 1) Gross Value Added (GVA) at current market prices; 2) employment rate; and 3) unemployment rate.

Unlike the majority of contributions in the literature that refer to a predetermined time interval, identifying in 2008 the year in which the crisis started (Cappelli et al., 2018; Crescenzi et al., 2016; Martin et al., 2015), a flexible method has been adopted to calculate the level of resistance to the shock of the Italian provinces. In fact, taking into account how at the territorial level the crisis may have unfolded its effects over a differentiated time span, the three individual resilience indicators have been computed by making a difference between the data recorded in 2007 and the worst recorded in subsequent years, drawing on the methodology proposed by the EU (2018) and by

Cappelli et al., (2018). In the following table, it is possible to observe the summary information about the calculation methodology of the single elementary indicators subsequently aggregated.

Label	Indicator	Description	Source
EMPres	Employment rate	Difference between the lowest employment rate recorded since 2008 and the employment rate recorded in 2007.	ISTAT
UNEMPres	Unemployment rate	Difference between the highest unemployment rate recorded since 2008 and the unemployment rate recorded in 2007.	ISTAT
GVAres	Gross Value Added at current market prices	The growth rate of Gross Value Added recorded between the worst year in terms of value increase - identified starting from 2008 - and 2007.	ISTAT

Table 1. Description of the elementary indicators that constitute the composite resilience index

To aggregate the three indicators shown above and create a composite resilience index, a composite index construction method, defined as "Adjusted Mazziotta-Pareto Index - AMPI" (Mazziotta-Pareto, 2016), has been adopted. AMPI, a widely used methodology in studies on well-being and quality of life, represents a non-compensatory approach based on the arithmetic mean of the elementary indicators, corrected by a function that takes into account the horizontal variability of the indicators.

Following Mazziotta (2017), the application of the AMPI requires the following algebraic calculation procedure. Given a matrix $X = \{X_{ij}\}$ with *n* rows (units) and *m* columns (indicators), the normalized matrix $R = \{R_{ij}\}$ is calculated as follows:

$$r_{ij} = \frac{\left(x_{ij} - Min_{xj}\right)}{\left(Max_{xj} - Min_{xj}\right)} 60 + 70$$ if the indicator *j* has a positive polarity.

$$r_{ij} = \frac{\left(Max_{xj} - x_{ij}\right)}{\left(Max_{xj} - Min_{xj}\right)} 60 + 70$$ if the indicator *j* has a negative polarity.

Where X_{ij} is the value of the indicator *j* for the unit *i*, while Min_{xj} and Max_{xj} are the limits (goalpost) of the indicator j. Considering with M_{ri} and S_{ri} respectively the mean and the standard deviation of the normalized values of unit *i*, with the following algebraic elaboration is possible to obtain the AMPI:

$$AMPI_i^{+/-} = M_{ri} \pm S_{ri}\, Cv_i$$

Where $CV_i = S_{ri}/M_{ri}$ is the coefficient of variation of unit *i* and the sign ± depends on the type of phenomenon to be measured. This index, which can be defined in a generic way as "Resilience Index" (RESindex), can take a value between 70 and 130 and is characterized by a positive polarity, therefore the higher values represent a greater resilience capacity of the provinces. Figure 1, which shows the choropleth map related to the outputs obtained from the elaboration of the composite index, confirms that the impact of the great recession has been anything but homogeneous within the Italian territory, probably the result of territorial disparities in terms of socio-economic development. The provinces mostly suffered the impact of the crisis are located in the southern area of the country, where the socio-economic conditions are worst than central-northern area - in which the provinces with the highest levels of resilience are concentrated.

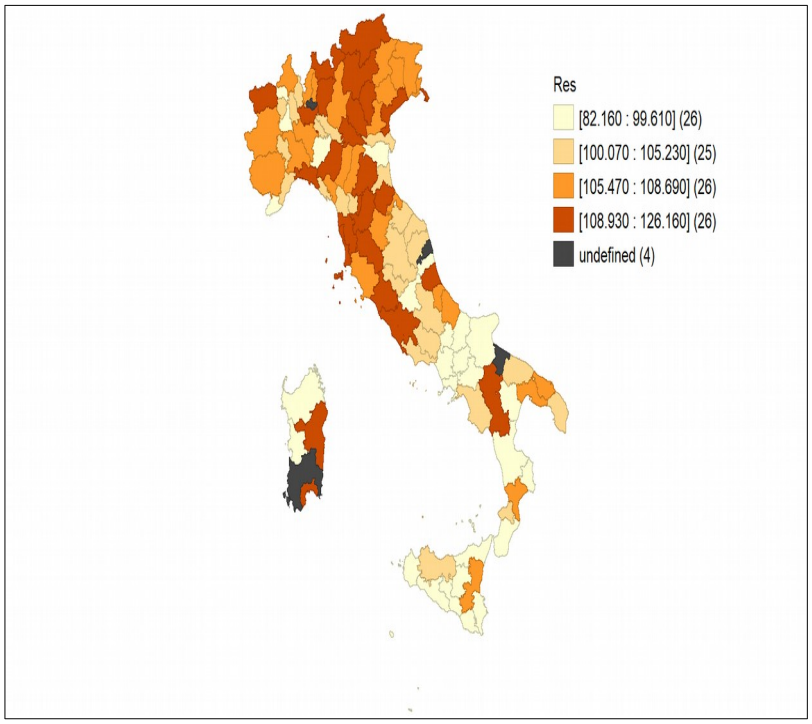

Figure 1. Values of the composite resilience index constructed with the AMPI methodology. Elaboration on ISTAT data.

Regarding SE, the absence of convergence on a common definition entails considerable difficulties in identifying a univocal criterion for the rigid identification of the boundaries of this reality of social entrepreneurship. The various definitions present in the literature highlight the heterogeneity and complexity of the concept, aspects that inevitably determine a difficulty in the field of statistical measurement. Even the normative dimension does not help to clarify the boundaries of SE, since - as the case of the recent reform of the third sector and Social Enterprises shows - it tends to identify a fragmented set of organizations (Della Queva and De Francesco, 2015). To overcome these

problems, the present work intends to refer to the legal form of the Social Cooperative (SC), which represents the only organizational reality that in the Italian panorama can be considered a SE for all purposes. SCs represent organizations that pursue the general interest of the community and the social integration of citizens through the management of socio-health and educational services (type A) or the carrying out of productive activities aimed at socio-occupational integration of disadvantaged individuals (type B)[2]. They are rooted in the important cooperative tradition that characterizes Italy, and their constitution - which occurred in 1991 with law 381 - represented a fundamental innovation not only nationally but also internationally, as they revolutionized the traditional conception of enterprise combining two seemingly incompatible dimensions: business and solidarity (Ianes and Tortia, 2011). SCs tend to differ not only from traditional capitalist enterprises but also from traditional cooperatives. Concerning the latter, the fundamental difference concerns the objective; while the former is generally oriented towards satisfying the interests of the members, SCs - as expressly indicated by the law - pursue the general interest of the community. Furthermore, they are not profit-oriented, since the law imposes a restriction, albeit partial, on the distribution of profits, in addition to prohibiting "demutualization" aimed at the transformation into a for-profit enterprise (Borzaga and Galera, 2012).

To analyse the diffusion of SCs in the Italian territory at a level of provincial detail, a simple indicator was calculated, called "Social Cooperation Index" (SCindex), which shows the number of SCs per 10,000 inhabitants:

$$SCindex = (No.\ of\ social\ cooperatives / resident\ population) * 10{,}000$$

Observing the outputs obtained from the calculation of this index (figure 2), we can see how in the period immediately before the crisis (2006) SCs were more widespread in the southern area of the country. This can be motivated by the fact that in southern Italy the population is exposed to greater risks of marginality and social exclusion, and public welfare policies are ineffective in intercepting and satisfying those needs that emerge from the social risks to which citizens are subjected. In such a situation the role of SCs emerges which, as previously argued, arise fundamentally from bottom-up initiatives aimed to face the growing inefficacy of the traditional welfare state.

2 The legislation also provides the possibility to establish mixed social cooperatives, which can perform typical activities of both type A and type B SCs.

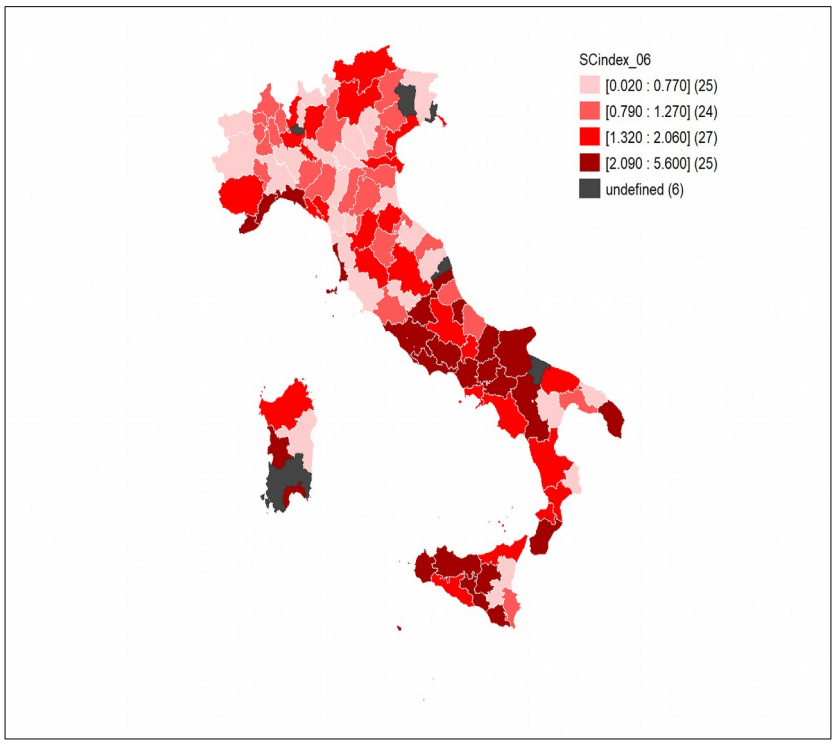

Figure 2. Choroplet map of Social Cooperation Index (2006)
Elaboration on Movimprese data

4. On the link between SCs and territorial resilience: an econometric approach

After structuring and calculating two indexes aimed to assess the capacity of the provinces to resist the shock induced by the recent economic-financial crisis and the territorial diffusion of SCs, it is possible to verify if there is one or less significant correlation between them. To this end, it has been developed an econometric model in which, following a careful analysis of the literature, a series of explanatory variables, that represent socio-demographic and economic factors that can affect the territorial resilience processes, have been included. These variables are:

1. Gross Value Added (GVA) per capita;
2. population density;
3. enterprises birth;
4. social capital;
5. innovation;
6. Gross Value Added of the agricultural sector;
7. Gross Value Added of the manufacturing sector;
8. Gross Value Added of the construction sector.

Table 2 contains the description of the explanatory variables included in the model, as well as their main descriptive statistics.

Indicator	Description	Mean	Standard deviation	Min	Max
Social Cooperation Index (SCindex)	Number of social cooperatives per 10,000 inhabitants	1.587	1.171	0.020	5.600
Gross Value Added per capita (GVA_pc)	Gross Value Added divided by the amount of population	22242.364	5475.065	13169.726	39332.612
Population density (pop_dens)	The ratio between the amount of the resident population and the extent of the reference territory expressed in square kilometres	240.924	314.970	38.020	2597.830
Enterprises birth (entr_birth)	Registered enterprises on the total number of registered enterprises in the previous year (%)	7.751	0.797	5.304	11.088
Social capital (social_cap)	Percentage of employees working in cooperatives on the total number of employees	4.215	1.420	1.741	10.474
Innovation (innovation)	Number of patents registered at the European Patent Office (EPO) per million inhabitants	70.332	67.831	0.805	332.048
Gross Value Added of the agricultural sector (GVA_agr)	Share of the total added value represented by the agricultural sector	3.283	2.211	0.171	10.495
Gross Value Added of the manufacturing sector (GVA_man)	Share of the total added value represented by the manufacturing sector	16.784	7.799	3.307	36.157
Gross Value Added of the construction sector (GVA_constr)	Share of the total added value represented by the construction sector	6.460	1.103	4.001	8.846

Table 2. Description and descriptive statistics of the explanatory variables of the model

The model to be estimated can be expressed algebraically based on the following equation:

$$Y\,RESindex_i = \beta_0 + \beta_1\, Scindex_{i,\,2006} + \beta_2\, GVA\_pc_{i,\,2006} + \beta_3\, pop\_dens_{i,\,2006} + \beta_4\, entr\_birthr_{i,\,2006} + \beta_5\, social\_cap_{i,\,2006} + \beta_6\, innovation_{i,\,2006} + \beta_7\, GVA\_agr_{i,\,2006} + \beta_8\, GVA\_man_{i,\,2006} + \beta_9\, GVA\_constr_{i,\,2006} + u_i$$

The WLS technique (Weighted Least Squares) has been adopted to overcome a possible problem of heteroskedasticity allowing consistent standard errors and more efficient parameter than the OLS estimation. The subsequent step represents the procedure followed to build a WLS regression model: 1) OLS estimation of the model; 2) estimation of an auxiliary regression to generate the estimation of the error variance, regressing the logarithm of the residual squares on the original regressors and their squares; and 3) estimation of the weighted least squares using the reciprocal of the estimated variance as a weight.

Variables (*)	**Coefficients**	**Standard Error**
Constant	2.934 ***	0.314
SCindex	- 0.010 ***	0.002
GVA_pc	0.166 ***	0.030
Pop_dens	0.003	0.005
Entr_birth	- 0.093 **	0.043
Soc_capital	0.073 ***	0.019
Innovation	0.012	0.010
GVA_agr	- 0.017 **	0.007
GVA_man	-0.016	0.012
GVA_constr	0.065 **	0.031
Obs. = 101		
R^2 = 0.92		

** All variables are Log transformed*
*Significance level: ***<1%; **<5%; *<10%*
Table 3: output of WLS regression

The output of the model, shown in Table 3, reveal a negative correlation, statistically significant at 1%, between the Social Cooperation Index (SCindex) and the Resilience Index (RESindex). It suggests how the provinces which, on the eve of the great recession, were characterized by a greater diffusion of SCs are those, except for a few exceptions, have shown a lower capacity to face the crisis. In the descriptive analysis of the two indices this dynamic could already be noted,

highlighting how SCs were more widespread in the provinces of central-southern Italy, i.e. those that generally recorded the lowest levels of resilience.

The ability to deal with shocks is undoubtedly influenced by the levels of economic development, as shown by the value-added per capita, considered as a proxy for the economic and social dimension of the development. The positive relationship between this indicator and the resilience indicator seems to represents an evidence of how the most developed territories are more able to withstand economic stress, consequently limiting its social impact, since a high diversification of productive activities characterizes them and endowed with resources, not only of an economic nature, necessary to face virtuously the periods of crisis and maintain the equilibrium between supply and demand of resources in the short term. The provision of social capital is closely related to the levels of economic development. As noted above, trust relationships based on the principle of reciprocity have significant importance on the resilience capacity of territories. The datum related to social capital, therefore, seems to confirm what emerged in the literature. Obviously social capital is a highly complex phenomenon, and the share of employees working in cooperatives - which can provide indications about the propensity to cooperation of the territories - represents an inevitable approximation which, however, reveals as an essential endowment of bridging social capital could have a positive impact on resilience - as demonstrated by Antonietti e Boschma (2018).

The datum relating to the enterprise birth rate is fascinating. Its negative correlation with the resilience index, albeit weakly significant, can be explained by the fact that if on the one hand, a high rate can be a symptom of dynamism on the other it can indicate a productive instability, which involves a difficulty in linking the productive system to the territory - making it less exposed to crises and closures.

Finally, from the data relating to the composition of the added value, it should be noted that an essential weight of the agricultural sector could have negatively affected the resilience capacity of the provinces, while a positive correlation emerges between the share of the added value of the construction sector.

5. Concluding remarks

From the empirical analysis carried out in the present work, contrary to expectations, it emerged that a greater diffusion of social cooperation, considered as the essential expression of social entrepreneurship in Italy, has not positively affected the ability of the territories to face the recent economic and financial crisis. The reasons for this dynamic can be varied. Although SEs play a key role in promoting social cohesion, establishing themselves as important welfare actors, on the efficiency side, these unconventional entrepreneurial realities still show limitations. As argued in

the report of the European Commission "Social Enterprises and their eco-systems: A European mapping report" (2018), a strong dependence on public policies characterizes Italian SEs limiting their productive and innovative capacity. It is undoubtedly not to underestimate the fact that the constitution of a SE can be determined by opportunistic purposes - for example, to benefit from a more favourable tax treatment - or criminal ones. It is clear that in these cases SEs hardly are able to make a significant contribution to the development processes of the territories, which as we have seen previously assume significant importance in determining the resilience capacities of a territory. The spatial distribution of the Social Cooperation Index shows how SCs are more widespread in the central-southern area of the country. The reason for this distribution could be determined by the fact that these organizations operate above all in those most vulnerable territorial realities, trying to overcome the limits of local welfare institutions which, for organizational and financial reasons, show difficulties in meeting social needs of territorial communities subject to growing social risks. Consequently, the SE tends to play a residual and niche role, justified by the need to remedy the impromptu failures of the State and the market. Assuming a transitory and marginal role, social entrepreneurship can hardly significantly affect the ability of territories to deal with economic shocks, since this capacity depends on the cooperation between local subjects who are able to give rise to systemic interventions on the territory necessary to achieve long-term development goals targeted to improve the quality of life and the well-being of the populations.

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