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Social capital as social networks: A new framework for measurement and an empirical analysis of its determinants and consequences☆,☆☆

Fabio Sabatini*

University of Siena, Faculty of Political Science and Department of Economics, Piazza San Francesco 7, 53100 Siena, SI, Italy

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ABSTRACT

The contribution of this paper to the social capital literature is threefold. First, we set up a new framework for measurement, allowing us to build indicators for five different dimensions of the concept. Second, we provide a single, synthetic, measure capturing that particular configuration of social capital which the literature generally associates with positive economic outcomes. Third, we carry out an empirical assessment of the relationships between the different types of social capital identified by our analysis and a range of socio-economic phenomena.

1. Introduction

The social capital literature suffers from two main problems. First, the definition of social capital remains elusive and, also due to the chronic lack of suitable data, there is neither an universal measurement method, nor a single underlying indicator commonly accepted by the literature. Second, given the assumption that social capital is a multidimensional concept, it is still unclear *which dimension* may exert a positive effect on the different aspects of development. Durlauf and Fafchamps (2006, p. 1642) argue that 'social capital is not a concept but a *praxis*, a code word used to federate disparate but interrelated research interests and to facilitate the cross-fertilization of ideas across disciplinary boundaries'. As pointed out by Brown and Ashman (1996), one of the primary benefits of the idea of social capital is that it is allowing scholars, policy makers and practitioners from different disciplines to enjoy an unprecedent level of cooperation and dialogue. However, conceptual vagueness partly invalidates the credibility of empirical and theoretical studies on the possible effects of social capital.

Measurement problems are rooted in the multidimensional and dynamic nature of the concept. Social capital in fact incorporates diverse phenomena such as culture, institutions, social norms, and networks of interpersonal relationships. As argued by Coleman (1988, p. 98), 'Social capital is defined by its function . . . Like physical capital and human capital, it is not completely fungible, but may be specific to certain activities. A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others'.

The first aim of this paper is to draw a new framework for measurement, allowing us to build synthetic indicators of each social capital's dimension. Starting from the acknowledgement of the very

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☆☆ Materials for the study of social capital are available on the Social Capital Gateway, web site edited by the author of this article, at the address www.socialcapitalgateway.org.

* Tel.: +39 0577235048.
E-mail address: f.sabatini@unisi.it.

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multidimensionality of the concept, the analysis focuses exclusively on its "structural" components, which are here identified with social networks, that materialize themselves into measurable phenomena like relational goods' consumption and social participation.

However, as everyday-life experience suggests, social networks may play a double-sided role in development and well-being. According to their nature and scope, networks can in turn nurture or hamper social cohesion and the economic activity. The second aim of our study is to shed light on the socio-economic determinants and consequences of social capital, through an empirical investigation into the relationship between three types of networks, per capita income, the state of health of the environment, and the precariousness of employment. The choice of focusing on such variables in addition to an indicator of the economic performance is rooted in our discontent for the excessive attention devoted to growth by the literature. A growing number of studies states that, to be sustainable in the long run, growth must also preserve or improve the quality of life and of the environment, as well as lifelong learning processes and the stock of human capital possessed by the labour force (Easterly et al., 2006; Antoci et al., 2007; Bartolini and Bonatti, 2008). It is our belief that the precariousness of employment plays a crucial role in determining social cohesion and the agents' well-being. Precarious workers are generally characterized by low employment conditions in terms of pay, employment security, sickness and parental benefits, balance between work and private life. They are usually provided with less work-related training and enjoy scarce prospects of building a career. The high exposure to the risks of job loss, wage variability, and intermittent unemployment raises the uncertainty on future incomes, making difficult any form of long-term planning of life activities such as marriage and procreation.

Labour precariousness can thus be seen as a barrier to social integration that may destroy human and social capital: a high level of flexibility on employment hinders training and qualification and, at the same time, hampers the consolidation of social ties, both inside and outside the workplace. While a stable and satisfactory work provides not only income, but also an identity and a 'sense of belonging', precariousness generates discouragement and distrust towards labour market institutions that, at the macro level, may result in a more distrustful society.

The analysis in this paper is based on a dataset collected by the author including about 200 indicators of five main social capital dimensions: strong family ties (i.e. *bonding social capital*), weak informal ties (*bridging social capital*), voluntary organizations (*linking social capital*), active political participation and civic awareness. Rough data are drawn from a set of multipurpose surveys carried out by the Italian National Institute of Statistics (Istat) on a sample of 20,000 households between 1998 and 2002. The empirical investigation partly follows the strategy traced in Sabatini (2008). First, principal component analyses (PCAs) are performed on each of the five groups, in order to build a synthetic indicator measuring each social capital's dimension. Second, further PCAs are run on such indicators, in order to explore the structure of correlations between different dimensions and to test the popular claim that voluntary organizations foster the diffusion of civicness and cooperative values (Putnam et al., 1993; Brehm and Rahn, 1997). Third, a multiple factor analysis (MFA) is run on the entire dataset to the purposes of building a unique, synthetic, indicator representing that particular combination of social capital's different dimensions which the literature generally associates with positive socio-economic outcomes. The final stage of the analysis carries out an assessment of the determinants and consequences of social capital carried out by means of structural equations models (SEMs), a technique that has grown up in psychometrics and proves to be particularly suitable for the investigation of multidimensional phenomena.

The outline of the paper is as follows: Section 2 introduces the concept of social capital and underlines its relevance to economics through a survey of the literature. Section 3 briefly reviews studies addressing the role of social capital in the labour market. Section 4 carries out a critical discussion of some measurement issues, pointing out the main weaknesses of the empirical studies in the field. Section 5 presents our method for the measurement of social capital and traces a map of its endowments in the Italian regions. The SEM analysis of the relationships between the three types of social capital, human development and labour precariousness is described in Section 6. The survey is closed by some concluding remarks and guidelines for further researches.

2. Social capital and development

Everyday-life experience suggests that social networks may play a double-sided role in economic development and well-being. On the one side, they are a fertile ground for nurturing trust and shared values, that reduce monitoring costs and facilitate transactions. Repeated interactions among group members foster the diffusion of information raising reputations' relevance. The higher opportunity cost of free-riding in prisoners' dilemma kind of situations makes the agents' behaviour more foreseeable causing an overall reduction of uncertainty. Therefore, an increase in trust-based relations may reduce the average cost of transactions, just as an increase in physical capital reduces the average cost of production. At the aggregate level, this mechanism may influence the economic performance and the process of development, providing an explanation for growth differentials among regions with similar endowments in terms of the other forms of capital (Guiso et al., 2004; Fidrmuc and Gërxhani, 2008).

However, networks can work in the opposite direction as well: members of a group may use their ties as a means for the pursuit of narrow sectarian interests, and organizations may lobby against the interest of other groups. The conventional distinction between bonding, bridging and linking social capital reflects the different roles that networks may play in shaping the economic development of a society.

The term 'bonding' holds a negative connotation and refers to relationships between people who know each other well, i.e., family members, close friends, and neighbours (Gittel and Vidal, 1998). These relationships correspond to what Granovetter (1973) termed as 'strong ties' and are often considered the building blocks for relationships with broader social networks.

Bridging social capital is given by horizontal ties shaping heterogeneous groups of people with different backgrounds. The term bridging refers to the ability of such networks to create 'bridges' connecting sectors of society that, otherwise, would have never come into contact. The common claim is that bridging social capital has positive effects on the diffusion of information and trust, thus fostering transactions and economic growth.

The term linking social capital describes ties connecting individuals, or the groups they belong to, to people or groups in position of political or financial power. For example, civil society organizations allow citizens to come into contact with the institutions to carry out advocacy activities through collective action. According to Evans (1996), such linkages allow groups to access resources, ideas, and information from institutions of power, enabling group members to 'scale up' micro-level social capital and social action to a politically and economically effective level.

However, the role of organizations in development is widely debated in the literature. Economic studies suggest that much depends on the context where NGOs' activities take place. Knack