



# Rural inter-firm networks as basis for multifunctional local system development: Evidence from an Italian alpine area



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## ABSTRACT

This paper analyses the relationships between firms involved in a pilot project to promote the creation of a multifunctional local system, a case of collective action. The project area is a rural alpine space in the Friuli Venezia Giulia region (NE Italy). The analysis, which is part of the pilot project, used Social Network Analysis tools to explore the structure and dynamics of firm relationships in terms of mutual awareness, types and strength of business ties, and extension and location of economic and social interactions. These characteristics are described at both complete and ego network levels. The findings can be used to design policies and rural development agendas. The analysis also revealed the potentials of Social Network Analysis in assessing networking projects and enhancing rural actors' awareness of their relational system.

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## Introduction

In 2011, the Mountain Community of Gemonese, Canal del Ferro and Val Canale, a development agency for a rural alpine area in the Friuli Venezia Giulia region (NE Italy), carried out a pilot project to promote the creation of a multifunctional local system (Belletti et al., 2003, p. 68), i.e., a network of local firms providing as a whole a diverse portfolio of private and public goods – in the field of tourism and healthcare, in this case – to the local community. The activities of the project, inspired by a network approach, also included analysis of the interrelations of participating firms. Specifically, Social Network Analysis tools were used to focus on firms' awareness and business relationships, which were described by both complete and ego networks. The results are discussed here. The authors wished to contribute to further understanding of the usefulness of Social Network Analysis (SNA) in terms of collecting information for planning rural development agendas (SNA as a *cognitive tool*), assessing projects affecting existing relational systems (SNA as an *assessment tool*), and enhancing relational awareness (SNA as an *awareness tool*).

The paper is organised as follows. Next section reviews the literature on the role of multifunctional local systems in rural

development; then we provide the theoretical background to the use of SNA in rural studies; Pilot project section briefly describes the pilot project, specific area and participating firms; Methodology section describes the research design; Network results section discusses evidence of the network structure of firms; finally we draw some general conclusions.

## Multifunctional local systems: a network approach to rural development

Empirical studies of rural areas have demonstrated the importance of collective action for rural development. Collective action outcomes are not viewed as simple aggregations of individual results, but emerge from interactions between actors involved in diverse socio-economic sectors. Collective action thus enables farms and other companies to improve their socio-economic performance and create new opportunities for growth, also at local level. In the agri-food sector, collective action may take on a variety of forms, according to existing economic, social, cultural and natural assets, e.g., localised socio-economic networks in which farms are also embedded (OECD, 1998a; Murdoch, 2000; van der Ploeg and Renting, 2000; van der Ploeg et al., 2000, 2009).

Wine routes are an example of this type of collective action (Brunori and Rossi, 2000). They originate from the development of a network involving human and non-human, tangible and intangible elements, and culminate in an established system of relations in which all these elements are focused around common goals.

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The nodes of the network include several categories of actors directly and indirectly related to wine routes, e.g., wine producers operating alone or in association, hotel-owners, representatives of local institutions, and others. The experience of wine routes reveals the importance of integrating economic sectors and cultural spheres into development strategies for viable, vibrant rural communities. Typical food production represents another case of local networks (Belletti et al., 2003). It results from the joint efforts of a plurality of actors belonging to several socio-economic sectors in a specific geographical area: farms, processing firms, restaurants, cultural associations, etc. Empirical evidence shows how a typical product is often used as a pivotal or at least an essential component in designing collective strategies for local rural development. Environmental cooperatives are associations of farmers operating at local or regional level (Renting and van der Ploeg, 2001). Within the context of environmental cooperatives – and other examples of collective action – farming is not only limited to the production of commodities, like milk or wine, but includes joint production of non-commodity output, such as a healthy environment and countryside accessible for enjoyment.

The integration of several socio-economic sectors makes collective action a case in which the concept of multifunctionality is applied at local and collective levels. Multifunctionality, i.e., the joint production of commodity and non-commodity output, of which some are externalities (OECD, 1998b, 2001) can be analysed at various levels, from individual firm to overall economic and political systems, passing through intermediate levels. In multifunctional local systems – collective and local level – the joint production of commodity and non-commodity output comes from a number of farms and other local actors which operate on the basis of shared, explicit or implicit, principles and values to achieve common goals (Knickel and Renting, 2000; Belletti et al., 2003; van der Ploeg and Roep, 2003; Wilson, 2009). In this way, through functional connections between rural actors and combining both competitive and collaborative firm strategies, multifunctional local systems can provide a diverse portfolio of private and public goods (externalities) and thus satisfy diversified demand for local goods. For instance, a typical product system can generate landscape, biodiversity, cultural heritage and environment (externalities), besides the production of foodstuffs (private goods) (Belletti et al., 2003, pp. 70–71).

Collective action for local development has been analysed in the literature on small firm networks.<sup>1</sup> According to this theory, collective action opens up new opportunities which would otherwise be impossible to access by farms and other small firms individually: resource access (capital, labour, knowledge, etc.); economies of scale; economies of scope (pluri-activity and farm diversification); network economies; and reduced transaction and coordination costs. These opportunities enhance socio-economic results at both firm level, in terms of new jobs and revenues, and territory level, in terms of general growth of the area's attractiveness (Capello, 1995; Renting and van der Ploeg, 2001; Hakansson and Ford, 2002; Lamprinopoulou et al., 2006). A relational system involving various local actors could improve their ability to respond to heterogeneous individual demands for rural multifunctionality and thus to contribute to rural development (Gómez-Limón et al., 2012). In addition, any successful, durable form of socio-economic development is based on innovation and learning, the systemic nature of

which is increasingly emphasised in innovation studies. According to these findings, individuals and organisations can also learn through interaction, and innovation may be the outcome of collective action. Agricultural and rural innovation too is a collective process which involves building relationships in a range of rural actors, and this facilitates better generation, exchange and exploitation of new knowledge (Murdoch, 2000; Spielman, 2006; Sligo and Massey, 2007; Knickel et al., 2009).

Lastly, institutional support and the propensity of economic agents to co-operate are essential conditions for successful collective action (Bianchi, 2001; Belletti et al., 2003). In marginal areas, like many rural areas which do not have a strong, dynamic system of relations, local institutions can play a crucial role in strengthening social capital<sup>2</sup> and bolstering relational assets, such as trustworthy relations, social cohesiveness, reciprocity and co-operative disposition, taking care not to undermine local actors' independence and self-management. Being aware of social structures can aid the design of a more effective rural development agenda (Murdoch, 2000; Clark, 2010).

### Social Network Analysis: a network approach to local development

Social Network Analysis is a theoretical and methodological perspective focusing on relational ties among sets of actors (individuals and/or organisations) and has proved to be a useful tool for describing, analysing and predicting their social structure. The network approach stresses the relational nature of social structure and assumes that the explanation for social phenomena is due to actors' relational behaviour rather than to their attributes (Wasserman and Faust, 1994; Knoke and Yang, 2008).

In recent decades, SNA has had some success in several fields of analysis. Disciplines such as sociology, business management and public health have made extensive use of it in a variety of organisational and network situations. In regional science, for instance, it has proved to be a useful tool for analysing local production systems (e.g., analysis of industrial districts) and planning, implementing and evaluating local socio-economic policies (Maggioni, 1994). It has also proved to be a comprehensive tool for mapping the complexity of contextual networking as the origin and outcome of the embeddedness of local economic activity (Johannisson et al., 2002).

Despite the diffusion of SNA, there have been relatively few applications in agriculture and rural resources studies. However, attention is increasing, mainly focusing on collective action involved in sustainable rural resources management (Springer and de Steiguer, 2011; Isaac, 2012). In Italy, this method has been used to explore how social and economic interactions among local firms producing quality and typical foods can influence the organisation of such local production systems (Rossi and Rovai, 1999; Sisto, 2003; Gambelli and Zanolli, 2007; Acciani et al., 2009). SNA has been applied to the study of participatory rural resource management groups and other forms of collaborative initiatives to facilitate multi-stakeholder decision-making processes (Dougill et al., 2006; Magnani and Struffi, 2009; Springer and de Steiguer, 2011), and to illustrate the structure of rural and agricultural information networks in agro-forestry management (Isaac, 2012). A combination of two research frameworks – SNA and Institutional Economic Analysis (IEA) – has been useful in describing the transformation of extension services in changing agriculture in

<sup>1</sup> The concept of *network* is not new. Local production systems, industrial districts and food chains are widespread in many European regions, e.g. "Third Italy" is an area in which small and medium-sized local enterprises are bound together by reciprocal and trust-based linkages (Bagnasco, 1977; Murdoch, 2000). The economic literature on this topic is very rich: see, among others, Becattini (1987, 1990).

<sup>2</sup> Social capital is a concept which provides a framework to explore ties created by actors' relationships. These are a combination of bonding ties (within a group of actors) and bridging ties (between different groups) which create different dimensions for network structures and influence information flows and innovation dynamics (Woolcock, 1998, 2001).

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