



Personal relationships and innovation diffusion in SME networks: A content analysis approach

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ABSTRACT

Networks have been hailed as a third organizational form, between markets and hierarchies. One of the main characteristics of networks is the coexistence of different kinds of relationships, personal and professional among these. The presence of multiple types of relationships modifies inter-firm dynamics, creating a space where traditional innovation activities take place in an unusual way. The present paper investigates the role played by personal relationships within networks, addressing the following research questions: how do different types of relationships existing in a network of SMEs favour the development of economic activities? And do personal relationships play a role in supporting innovative activities? To answer our research questions, we analyzed qualitative data using content analysis methodology. Content analysis allows researchers to obtain an objective, systematic, and quantitative description of the manifest content of a communication. Based on this analysis, we conclude that the coexistence of personal and professional relationships shapes a unique context that alters the usual dynamics of innovation diffusion.

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1. Introduction

A network has been defined as a hybrid coordination mechanism of economic activity that combines the advantages of both the traditional governance mechanisms of vertical integration and market exchanges (Brass et al., 2004; Faems et al., 2008; Grandori, 1997; Kogut, 2000; Powell, 1990). Due to its unique positioning between markets and hierarchies, an “a priori” definition of its characteristics is not possible. However, the past few years have witnessed a flourish of empirical studies, aiming to understand how economic activities occur in a networked structure (Brass et al., 2004; Faems et al., 2008; Grandori, 1997; Kogut, 2000; Powell, 1990; Tortoriello and Krackhardt, 2010). More specifically, innovation scholars have devoted their attention to the network dynamics that lead to the generation and diffusion of innovation within networks (Giuliani and Bell, 2007; Granovetter, 1985; Gulati, 1998; Iubatti et al., 2010; Kogut, 2000; Lorenzoni and Lipparini, 1999). Network and innovation literature has shown that firms belonging to networks are more innovative than isolated firms (Ahuja, 2000; Baptista, 2000; Baptista and Swann, 1998; Brass et al., 2004; Podolny and Stuart, 1995; Powell et al., 1996), identifying a series of factors that result in these positive associations: higher flexibility, greater ability to

change, more fluid knowledge flows and the presence of a large variety of relationships among members (Cooke, 2001; Dahl and Pedersen, 2004; Giuliani and Bell, 2005; Inkpen and Tsang, 2005; Padgett and Powell, 2011).

In the present work, we build upon the latter stream of research: different types of relationships coexist within networks and modify inter-firm dynamics, creating a space where traditional innovation activities take place in an unusual way. Multiple relationships lead to the existence of multidimensional links. Seminal contributions have highlighted that the dynamics of economic activities are largely influenced by the multidimensional characteristics of networks (Brass et al., 2004; Faems et al., 2008). Recently, Padgett and Powell (2011) focused their attention on how multidimensional links, in particular personal and professional links, contribute in different ways to the social and economic development of networks. Focusing on the personal aspects of relationships, we already know that economic decisions are largely influenced by the presence of trust between players (Granovetter, 1985; Gulati, 1995; Lawson et al., 2009; Uzzi, 1997). However, we still know very little about the impact that multiple domains have on innovation dynamics.

The present article investigates the role played by personal inter-firm relationships within networks, addressing the following research questions: how do different types of relationships existing in a network of SMEs favour the development of economic activities? Do personal relationships play a role in supporting innovative activities?

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We address these research questions through an empirical analysis of a consortium of SMEs located in Abruzzo (Italy) and composed of 15 SMEs operating in the automotive industry. The consortium is characterized by a large variety of relationships, horizontal as well as vertical, formal and informal, personal and professional. Within this consortium, personal and professional relationships are closely linked. This context represents a unique scenario within which we analyze the role that personal and professional relationships play in promoting the diffusion of innovation. We use content analysis methodology to examine the data in order to ensure the objective, systematic and quantitative description of the communication contents (Berelson, 1952; Krippendorff, 2003). Content analysis is a research method, initially diffused in social studies, that allows measuring the content of communication on the basis of textual analysis (interviews, political speeches, laws, books and newspapers). To reach high levels of objectivity and external validity, the analysis is implemented by following a coding procedure (Duriau et al., 2007; Insch et al., 1997; Morris, 1994; Zaheer and Soda, 2009). Although the use of content analysis in managerial studies is increasing, to our knowledge this is the first study that uses content analysis as a primary method. We use content analysis to analyze interviews and obtain quantitative information from qualitative data. In doing so, we strictly followed the guidelines provided by Krippendorff (2003).

Our results describe how the diffusion of innovation takes place and what the dynamics between activities and personal/professional inter-firm relationships are. The contributions of the present work are threefold: (i) the diffusion of innovation is enabled by personal relationships: the presence of trust, shared values and mutual objectives facilitates the commencement of a difficult and risky path, such as that characterizing the adoption of innovation; (ii) strategic and innovative activities take place in different networks of relationships: the *locus* of innovation is not the *locus* of strategy; (iii) innovative activities are widely diffused within networks, exploiting a large variety of relationships and involving multiple network dimensions. On a final note, we believe that this paper also makes a significant contribution in the field of managerial research, adopting a novel methodological approach in the analysis of text interviews. The remainder of the article is organized as follows. In Section 2, we review contributions investigating the role of network features and personal/professional relationships in the diffusion of innovation, Section 2.1 explores the characteristics of networks and Section 2.2 highlights the distinctive features of personal relationships in networks. Section 3 develops the analytical model that guides the analysis of the empirical evidences, Section 4 describes the empirical context in which the research is grounded, and Section 5 explains the methodology used in this study. The last two sections discuss our results, draw conclusions and describe the implications of the present research for practitioners and scholars.

2. Literature review and model development

2.1. Networks and the diffusion of innovation

Since the beginning of the 1990s, organizational scholars have enriched the traditional dichotomy between vertical integration and market exchanges by identifying the existence of networks as a third organizational form. Networks, defined by Powell and Smith-Doerr (1994) as “a set of nodes linked by a set of relations, such as friendship, kinship, political, etc.” (Powell and Smith-Doerr, 1994: p. 3), are seen as enabling the combining of the advantages of the two long-established traditional governance mechanisms (Brass et al., 2004; Coase, 1937; Powell, 1990; Williamson, 1975, 1979).

One of the first conceptualization of networks is ascribed to Marshall (1890) who identified industrial districts as an example of networks of firms that collaborate to produce the same output and operate in a restricted area (Becattini, 1986, 1990; Marshall, 1890). Asheim (2000) emphasized that the distinctiveness of industrial district is the combination of functional and territorial integration. Industrial districts reflect the socio-cultural and economic influence of the contexts in which they develop (Lundvall, 1992). Furthermore, such dimensions follow territorial dynamics that lead to the generation of a complex and geographically bounded systems of complementary specialized organizations (Amin and Thrift, 1994; Asheim, 2000; Storper, 1997). In such systems, innovation cannot be seen as a linear process but it must be analyzed as a social, non-linear and interactive process (Lundvall, 1992), in which territorial and socio-cultural variables play significant roles in shaping innovative outputs over time (Asheim, 2000; Whittington et al., 2009). Contributions in the field of industrial districts are crucial to understand the specificities of innovation dynamics taking place in a context of small and medium firms (SMEs) (Becattini, 1986, 1990; Marshall, 1890; Storper, 1997). Firms organized as an industrial district benefit from what Marshall (1890) called “industrial atmosphere”, which is constituted by a set of distinctive resources and relationships (personal as well as professional) between members of industrial districts, facilitating the acquisition of tacit knowledge and other types of informal skills (Asheim, 2000; Bellandi, 1989). The “industrial atmosphere” is thus a particular environment that enables the generation of innovation. In such contexts, innovation is facilitated by non-market and non-economic factors, such as trust, social capital (Putnam, 1993) and by the existence of effective information networks (Asheim, 2000; Garofoli, 1991). This allows a broader and faster circulation of information about markets, alternative production techniques, new raw materials, and components. Moreover, territorial closeness facilitates the inter-organizational transfer of tacit knowledge about labour process and production techniques. The interaction of those elements facilitates the diffusion of innovations in the whole district (Asheim, 2000; Becattini, 1990, 1991).

Other studies pointed out that SMEs collaborate in order to have some control over the external environment, leveraging on frequent and facilitated knowledge exchanges (Storper and Walker, 1989). In particular contexts, the creation of a network of SMEs is promoted by a large firm that identifies in a potential network, such as a network of sub-contractors or suppliers, a way to compete in changing global markets (Smith-Ring and Van De Ven, 1992). Scholars have largely devoted their attention to increasing their understanding of network dynamics, studying factors that enable the creation of networks, their inner characteristics, and the distinctive features that determine their unique ways of knowledge sharing and transfer (Deroian, 2002; Granovetter, 1985; Gulati, 1998; Knoke, 1990; Kogut, 2000; Smith-Doerr and Powell, 2004).

Numerous contributions, also from the sociology field, attest that firms belonging to networks are more innovative than isolated firms (Ahuja, 2000; Baptista, 2000; Baptista and Swann, 1998; Brass et al., 2004; Podolny and Stuart, 1995; Powell et al., 1996). Scholars have identified a series of factors that result in such a positive association. More specifically, given the flexibility provided by the smaller organizational units within the network itself, networks are able to rapidly evolve and adapt to changing environments, adopting the most appropriate structure (Cooke, 2001; Cooke and Wills, 1999; Dosi, 1988). Moreover, smaller units constituting a network relate to one another and enable the spread of knowledge. Within networks, flows of knowledge are facilitated and, therefore, the likelihood of adoption and diffusion of innovation increases (Dahl and Pedersen, 2004; Sorenson et al., 2006). This is due to the presence of a set of relationships established by professionals, called “business networks”, that enable localized learning and

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