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HOW SOCIAL CAPITAL CAN IMPROVE THE TERRITORIAL INNOVATION? THE CASE OF THE FRENCH AGRICULTURE. SOME CONCEPTUAL ISSUES

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Biographical notes

Ion Lucian Ceapraz is associate professor of agricultural economics within UniLaSalle, France and member of INTERACT research team. His research interests are related to regional economics and take into account the relation between different rural territories and innovation process in place: territorial governance, learning processes, territorial innovation models.

Catherine Delhoume is associate professor of rural sociology within UniLaSalle, France and member of INTERACT research team. Her research is focus on professional identities and evolution of rural countryside in relationship with the new social and economic challenges.

Abstract

The paper focus on the importance of social capital as a significant cause of territorial innovation in French agriculture. Social capital as a relational resource is embedded in a social network of innovation which is created by different agricultural professions known also as rural professional identities. A social network of innovation is related in our case to the agricultural professions and differentiated according to their capacity of changing more the interaction capital rather than the technological assets of everyone. More than the social relationship itself between individuals and the resources carried on by everyone, we emphasize the importance of their integration in a social network. Thus two types of agricultural professions profiles are highlighted (Ceapraz and Delhoume, 2014) and related to the territorial innovation.

Keywords: Social Capital, Territorial Innovation, Rural Professional Identities, French Agriculture.

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JEL Classification: Q12, Q19.

1. Introduction: social capital and innovation, what definition?

The precise definition of social capital is by far one of the most difficult tasks when related to the literature that associates innovation and social networks. Innovation is created along the social networks from “collective and creative learning processes and the mutual exchange of knowledge” (EU SCAR 2012). There is a mutual process of sharing information and a permanent social value-added that make possible new outputs (Oreszczyn et al. 2010, Stuiver et al. 2004). The participation of different types of actors through a network gives everybody an active role and not anymore a passive status (Wenger, 2000, Leeuwis and Aarts, 2011). In this case the network model allowed for a chance to every economic actor to become a member into the agricultural knowledge system analysis (Moschitz et al., 2015).

According to Hall (2007), a study made by the World Bank in 2006 revealed some important issues which brings together these two concepts: a) “social and environmental sustainability are integral to economic success and need to be reflected in patterns of participation and interaction that are considered when strengthening innovation capacity”; b) “lack of interaction weakens innovation capacity”; c) “innovation is rarely triggered by agricultural research and, instead is most often a response of entrepreneurs to new and changing market opportunities” (World Bank, 2006). More precisely, these social networks of innovation are focusing on the links between actors rather than the technical assets of everyone. Innovation is transforming into a collaborative process and thus the social capital can be essential for the economic outcome (Morgan and Cooke, (1998). Moreover, the difference in the competitive advantage should be mentioned: while the technical factors are already available to everyone in the network, the relational tools are individual and the only ones creating competitive advantages. This sharing of specific knowledge, business and mutual cooperation between actors become local competitive advantages and majors assets of differentiation concerning the innovation in general (Subaramian and Youndt, 2005). Another research paper made available Dakhli and De Clercq (2004) emphasize the relation between social capital and innovation. As the authors indicated, the effect of social capital on economic outcome have focus on processes localized more at regional level than at national level. Much of the literature explaining how the social capital works is related to the regional or geographical scale beginning with works of Bourdieu, Coleman and Putnam.

Nowadays the relationship between the social capital and territorial innovation is evident since “the ability to propose and promote innovation is strictly linked to the tacit local knowledge and structure of interactions among the actors involved” (Torquati et al., 2016, Cecchi et al., 2008). Katonane Kovacs et al. (2016) described the fact that the social capital is composed of three main elements: “trust, keeping norms and social relations built on transparency”. The author added that the innovation plays a very important role for the rural development as it has been recognized within the plans and reports of the European Union. Much more attention has been paid recently to other forms of knowledge and information as the tacit knowledge and social capital (Dargan and Schucksmith, 2008). According to Dufhues (2006) the access to resources in rural areas is easily made by engaging in mutual relationships with other actors. The author mention that the social capital is of major importance for rural households since the access to productive resources is made within a network or directly by creating a collective action. This new farmer’s role within a social network is synthesized through a comprehensive table of different paradigms of agricultural innovation (Hall, 2007) (see Table 1).

Table 1. Characteristics of different paradigms of agricultural innovation (according to Hall, 2007)

Paradigm	Transfer of Technology	Farming Systems Research	Farmer First/ Farmer Participatory Research	Interactive Learning for Change/ Innovation Systems
Era	Widespread since the 1960s, but building on a very long history	Starting in the 1970s and '80s	Starting in the 1990s	Work in progress
Organisation focus	Agricultural research organisation arranged as NARS	Agricultural research organisation arranged as NARS	NARS [†] as part of AKIS [‡]	NARS as part of agricultural innovation systems
Mental model of activities	Supply through pipeline	Learn through survey	Collaborate in research	Interact and learn for innovation
Farmers seen by scientists as	Progressive adopters, laggards	Objects of study and sources of info	Colleagues	Key actors among many others
Farmers' roles	Learn, adopt, conform	Provide information for scientists	Diagnose, experiment, test, adapt	Co-generate knowledge, processes and innovation
Scope	Productivity	Input-output relationships	Farm-based	Beyond the farm gate
Core element	Technology packages	Modified packages to overcome constraints	Joint production of knowledge	Facilitated interactive innovation, learning

[†] National Agricultural Research System

[‡] Agricultural Knowledge and Information System

				and change
Driver	Supply push from research	Scientists' need to learn about farmers' conditions and needs	Demand pull from farmers	Responsiveness to changing contexts
Key changes Sought	Farmer behaviour	Scientists' knowledge	Scientist-farmer relationships	Institutional, professional and personal, affecting interactions and relationships between all actors

Source: Hall, 2007.

As observed in the Table 1 there is an evolution concerning the farmers' role within the agricultural innovation with an important part nowadays in co-generating knowledge and co-interactive learning. The difference is sensitive if compared with the previous generations of farmers who were less implied in the development of innovation.

2. Social capital and territorial innovation

As Landry et al. (2000) pointed out, the innovation in general and the territorial innovation in particular implies not only the development of technical solutions but also a process involving social interactions. In the same way, Torquati et al. (2016) mention that the innovation is no longer regarded as a "linear process" but a "systemic or mixed approach" considered to be supported by a collaborative network between different actors. These interactions are dependent on the development of local sources of collective and social action, mostly located in rural areas. In our case, local professional identities and rural professional memberships are considered a reservoir of social capital resources in French agriculture and a key role for the development of these areas. Thus, these local agricultural networks can generate 'territorial innovation' and implicitly 'systemic innovation' through their capacity of generating social capital.

According to Tamaschke (2003) there is a disparate nature of the social capital definition. We are not intending to emphasize the wide literature on the definition of the social capital but only to identify those themes which entails the way to the innovation in a certain geographical space (region or territory). As stated by Coleman (1988) we identify the social capital "not located in the individual actor or within the social structure but in the space between (as outlined by Tamaschke, 2003). As concluded by this author the social capital is having "a multiplicative role" as an input, that is as a solely entity the creation of innovative output is by far surpassed when the creation implies 'the cooperative mood'. According to Munasib and Jordan (2011) the diffusion or circulation of information and knowledge can be better

accomplish when using social interactions (Casey and Lynne, 1999; Lynne, 1995; Lynne and Casey, 1998). Thus several behaviors internal to a social network like attitudes and norms can be more effective than external forces or controls (Lynne et al., 1995).

Concerning the rural development the role of social capital has been frequently associated with the innovation such as technology options, as depicted by Parthasarthy and Chopde (2000). In this case people are characterized by the inclination or readiness of sharing and working together. Recent studies consider that innovation is not solely a process generated by only the scientific knowledge but also by a variety of different actors or networks of actors and thus taking into consideration the concept of social capital (Dargan and Schucksmith, 2008, Katonane Kovacs et al., 2016). Moreover the research and the technological change are not anymore the only determinant of innovation and are extensively accompanied by “wider competencies, linkages, enabling attitudes, practices, governance structures and policies that allow knowledge to be put into productive uses” (Rajalahti, Woelcke and Pehu, 2005).

In our case the territorial scale is considered of major importance since the social networks of innovation are analyzed in rural areas. Concepts like the territorial innovation materialize through the diverse types of social networks which promotes the innovation as “co-evolutionary learning” (Dargan and Schucksmith, 2008).

3. Methodology and results

Our article is based on the methodology already used previously by Ceapraz and Delhoume (2014) when several farmers in rural France (dairy stockbreeders) are analyzed and a typology of their professional identities is defined according to their propensity to integrate a social network. This integration is characterized by both the degree of restrictive and supportive attitudes and practices as emphasized by the World Bank in Table 2 (World Bank, 2006).

Table 2. Attitudes and practices affecting key innovation processes and relationships (World Bank, 2006)

Innovation processes	Restrictive attitudes and practices	Supportive attitudes and practices
Interacting, knowledge flows, learning	Mistrust of other organizations - Closed to others ideas - Secretiveness - Lack of confidence - Professional hierarchies between organizations and disciples - Internal hierarchies	Trust - Openness - Transparency - Confidence - Mutual respect - Flat management structure - Reflection and learning from successes and failures

	<ul style="list-style-type: none"> - Top-down cultures and approaches - Covering up of failures - Limited scope and intensity of interaction in sector networks 	- Proactive networking
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Source: World Bank, 2006.

A database of dairy stockbreeders were interviewed through a precise survey guide for different aspects of their professional, social and individual life. Thus a typology of professions' behavior established previously by Ceapraz and Delhoume (2014) and related to this database can be better understood if organized according to the methodology used by Gomez-Limon et al. (2012). These authors described three types of dimensions of social capital concerning the farmers and described as structural, cognitive and relational.

Another possible configuration made available by Pretty (2002), Pretty and Ward (2001) sum up four characteristic of social capital as follows: a) relations of trust; b) reciprocity and exchanges; c) common rules , norms and, sanctions; d) connectedness in networks and groups. Two major territorial scales described by Ceapraz and Delhoume (2014) allow to describe generally the connectedness of agricultural famers to the neighboring environment: a local level (context) considered for several of them as a place of local action but less connected to the environment and, a global level (context) much more puzzling but more connected to the external environment.

First of all, the local context which is considered by Anselm Strauss (Basznager, 1992) “the closest context” or the immediate context of action might lead to a redefinition of the farming profession. This local context or local network is much more restrictive than the second one and characterized by less intensity of the relationship with other networks. In this case the generation of knowledge or innovation is farm-based.

Secondly, the global context is considered the “distant context” or the secondary context of action. The global context or global network is much more opened to outside and thus the knowledge is created beyond the farm gate.

The association of these two types of contexts can redefine the professional identities through a geographical scale since the local context or the closest context constitutes the first step for the farmer in order “to adjust its business”. In this case the level of territorial innovation from the part of the community is relatively weak since we don't have major innovative actions produced by the working routine of the farmers. The second step reveal “the distant context” which described a more opened professional identity to meet a variety of actors.

Several methodologies or normative measures were proposed by Pretty (2003) in order to better operationalize the social capital in rural areas: a) “improve social capital with social learning and participatory methods (the software)”; b) “develop information technologies to support networks”; c) “develop ways to measure and monitor social capital improvement”. These methodologies should be applied to the first level observed or transferred from the second level to the first one since the global context is already englobing a variety of tools.

According to Torquati et al. (2016) recent social changes were a major cause of technological change in the agricultural sector. Different public or private companies, firms or entities contribute to the infusion of innovation into the agricultural sector (Esposti, 2012, EU SCAR, 2012, Moschitz et al., 2015). Several forms of challenges were identified concerning the agricultural sector: “a) international price dynamics; b) the speediness in product transformation; c) the farm endowment of new knowledge and technologies; d) the effective use of ICT within the farm; e) the changing of the educational framework in agriculture” (World Bank, 2007).

This environment can be maintained only by the “neoclassic interpretation of innovation” (Torquati et al., 2016) and requires to be preserved by a new systemic approach of the concept of innovation. Thus networks of individuals/or actors collaborating/interacting can contribute to the creation of knowledge, know-how and innovation. The social capital as a resource can be available in a network through multiple linkages between different individuals/economic actors who are not only farmers but with different professional backgrounds (Moschitz et al., 2015) Together they contribute to improve knowledge within the network and implicitly improve the diversity of innovation as an output in rural sector. According to EU SCAR (2012) the rural areas and communities gain attraction when considering the “economic diversification and sustainable development”. The so-called rural population is not anymore represented only by famers but also by communities belonging to non-agricultural sectors. Innovation is not anymore a static process but rather a dynamic one which resulted from “interactions and exchanges of knowledge involving a large diversity of actors...” (Landry et al., 2002). Moreover, farmers are considered not anymore as only learners, providers or experimental actors but also co-generators of knowledge, processes and innovation (Hall, 2007).

Different transformations/challenges like the multifunctionality, the importance of sustainable technologies, an agricultural production for the non-food markets, contract farming, biotechnology and biofuels and some other exogenous factors like socio-demographic

changes, counter-urbanization and the flow of some knowledge-based industries from cities to rural areas, (Knickel et al., 2008) are considered important changes that give a new “redefinition of the jobs of farmers”.

4. Conclusion

This article concerns the relationship between social capital in rural areas and the territorial innovation (or innovation at territorial level). We draw some notes on the literature by pointing out the importance of the social capital and its recent versions in place as we observe a diversity of definitions and different outputs on the connection between social capital and innovation.

Some remarks are to be made here: a) firstly, the social capital is captured differently depending on its embeddedness within the social network we already identified. In our case the paper made by Ceapraz and Delhoume (2014) on the dairy stockbreeders should serve as a conceptual and methodological basis for further developments; b) secondly, the importance of social capital to the creation of innovation is no further neglected and its quantification should be better integrated to its development; c) thirdly, local (mostly rural in our case) social networks should further contribute to innovation in general if connected to other social networks from other rural areas; d) fourth, future empirical research should be launched in order to define more characteristics of social capital created by agricultural farmers (dairy stockbreeders in our case) and selected those that have accounted as a priority concerning the innovation; e) fifth, once these new facets or characteristics of social capital evaluated as important for the innovation, new arguments should be postulated close to the farmers and their social networks. As mentioned by Landry et al. (2000), what it's very important is to know what variable of social capital should be taken into account or which variable is better to be taken into account when measuring its implication to the development of innovation.

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