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"Ambidexterity": trump card for farm's innovativeness and competitiveness

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Abstract

Purpose – The paper aims to analyze the relevance of networking and social capital in promoting the adoption of sustainable innovation, then reinforcing trajectories of multifunctional agriculture. It puts forwards a systemic perspective by focusing on agricultural knowledge and innovation systems. More precisely, we share the idea of "micro agricultural knowledge and innovation systems", by addressing ambidexterity as engine for boosting sustainable innovation.

Design/methodology/approach – Empirical analysis is focused on sustainable innovation adopted by young farmers in Italy and on the mediation effect of ambidextrous relations in performing innovation adoption. Ambidextrous relations are analyzed within at the micro-AKIS level, through the lens of social capital. Relationships between social capital and innovation adoption are statistically measured.

Findings – The analysis shows how ambidexterity develops a mediation effect, with a strong impact on the farm's innovative capacity. Actually, our results confirm that ambidextrous relations reveal good performance and stimulate innovation and, consequently, farms' competitiveness, alongside the path of multifunctional agriculture. As a consequence, the relevance of networking activity in adoption of sustainable innovation may address possible policy action with the aim to strengthen ambidexterity and farm's innovativeness.

Originality/value – The paper tries to fill a gap in literature, by focusing on micro-AKIS which are explored through the lens of social capital.

Keywords Ambidexterity, Social capital, Innovativeness, Young farmers, Micro-AKIS

Paper type Research paper

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1. Introduction

This paper deals with innovation as an engine for the farm's competitiveness. More precisely, the paper analyses the relevance of networking and social capital in boosting innovation adoption and, consequently, the farm's competitiveness. The relevance of social capital in economics has been widely recognized, despite there is no convergence about its definition and measurement. In this paper, social capital potential is analyzed within the framework of (micro) agricultural knowledge and innovation systems (micro-AKIS), by investigating three forms of social capital (bonding, bridging and linking). The relevance of networking will be analyzed, in order to evaluate their impact on innovation adoption among Italian young farms. The hypothesis under investigation is that among the various forms of social capital, ambidexterity is at the basis of the innovation adoption among Italian young farms.

The paper is articulated as follows: in the next section, a synthetic theoretical overview on the relevance of social capital is provided, with the purpose not to offer an exhaustive literature review, but to provide insights on recent developments of the importance of social capital in rural and agricultural development processes. The third paragraph is devoted to methodology, while paragraph 4 presents our main results. Some final discussions and conclusions will end the paper.

2. Theoretical background

Recent developments in agri-food markets put into question traditional models of analysis, by calling for new perspectives able to take into account a growing complexity (Bonanno *et al.*, 2018). As a matter of fact, a recent trend in the global agri-food system designs a highly competitive scenario, typified by either a reconfiguration of the agri-food supply chain or a functional farm's repositioning to gain competitiveness. The perspective adopted in this paper falls within the analysis of competitiveness at the microeconomic level, which is defined by Jambor and Babu (2016) as the ability to meet consumers' needs by improving products, services and market requirements. This ability turns out through innovation processes.

Innovation is at the basis of the functional repositioning of agriculture, where innovation has to be considered in a wider sense, which have been labeled in recent literature as retro-innovation (Zagata *et al.*, 2020). The transition toward sustainable and multifunctional agriculture implies reconsidering the various dimensions of agricultural activities not only from an economic point of view but also from an environmental and social one (de Fátima Oliveira *et al.*, 2019). Set against this background, farmer's knowledge takes on new roles and may become either a source of innovation or it can be shared to encourage projects of sustainable rural development (Girard, 2015), as in the case of multifunctional agriculture. The potential of multifunctional agriculture to enhance innovation in rural areas has been underlined in the literature (Madureira and Costa, 2009; Morgan and Murdoch, 2000): However, the process is complex and characterized by institutional bricolage (Chowdhury, 2020) and has brought about systemic perspective on knowledge transfer and innovation adoption (Knickel *et al.*, 2009; Klerkx *et al.*, 2012), synthesized by growing importance of agricultural knowledge and innovation systems (AKIS).

As deeply recognized in literature, there are no one-size-fits-all solutions for understanding AKIS effectiveness (Birner *et al.*, 2009), due to numerous context variables to be taken into account (Lioutas *et al.*, 2019; Lioutas and Charatsari, 2020; Vecchio *et al.*, 2020).

Coherently with the micro-level perspective of competitiveness here adopted, in this paper, we will refer to the recently theorized micro-level agricultural knowledge and innovation system (micro-AKIS), defined by Labarthe *et al.* (2018, p. 5) as "*the knowledge-system that farmers personally assemble, including the range of individuals and organizations from whom they seek services and exchange knowledge, the processes involved in the formation and working of the system, including the way farmers translate these resources into innovative activities (or not)*".

This perspective recognizes the variety of sources of knowledge considered as engine for adopting innovation (Girard, 2015). As pointed out by Cohendet and Llerena (2005), this means to assimilate the farmer to a knowledge processor: more precisely, the micro-AKIS perspective allows us to emphasize the networking activities the farmers carry out, in order to acquire significant information and knowledge to adopt innovation. We explore these knowledge networks through the lens of social capital, a fundamental concept that has been recently recalled to explain mechanisms of innovation adoption in the agricultural sector (Gelderman *et al.*, 2020). Set against this background, the micro-AKIS system built by the farmers is the outcome of networking activities the farmers carry out. In the account of multidimensional networks, the social capital approach offers a valid and sound theoretical support.

According to the theorists of social capital, civics matter (Putnam *et al.*, 1993) and the social development paves the way to the economic one. Therefore, community development is a key factor feeding the economic development. The World Bank has recognized the relevance of the social capital approach in its development policies since the 1990s, as earlier theories failed to explain why countries with a similar endowment of natural, physical and human resources demonstrate different socio-economic performance. Consequently, numerous researches have emphasized the relevance of social capital as a factor of innovation (Kaasa, 2009), also in agricultural and rural development, like in the recent analysis carried out by Rivera *et al.* (2018) in seven European countries. A common trait of this researches is the focus on trust, reciprocity and norms of behavior as key ingredients of social capital (Coleman, 1988; Fukuyama, 2000; Putnam, 1993), which fuel collective action and private and public goods. A commonly shared definition provided by Woolcock and Narayan (2000, p. 226) states that "*social capital refers to the norms and networks that enable people to act collectively*". This happens thanks to interactive learning, which facilitates collective action and social knowledge (Thomas *et al.*, 2020). As a consequence, collective action may provide actors benefits "*by virtue of membership in networks and other social structures*" (Portes, 1998, p. 8). According to the individual perspective on social capital, decisions to invest in social capital are made by individuals, not communities. So, without a definition of social capital that begins at the individual level, we cannot begin to understand its formation (Glaeser *et al.*, 2002). This is in line with Turner's (1999) multilevel perspective of social capital, where at the micro-level social capital is made up of encounters of face-to-face interaction. This paper fits with this perspective of analysis of social capital, by taking into account relations and networking activity carried out by farmers within the process of innovation adoption.

Despite some scholars restrict forms of social capital to either bonding and bridging social capital, since the paper of Woolcock and Narayan (2000), linking social capital has been added. In this paper we share this perspective, therefore, forms of social capital are bonding, bridging and linking (De Rosa *et al.*, 2017): bonding capital refers to horizontal links which connect people belonging to the same community with others who are similar (family, ethnic or religious groups, etc.). Therefore, it refers to stronger ties. Bridging capital refers to links among distant and different agents; these ties are weaker but also cross-cutting (Marsden and van der Ploeg, 2008; Santoro *et al.*, 2017). Authors like Robert Putnam (2000) have underlined that bonding ties typify situations of "*getting by*", while bridging ties refer to "*getting-ahead*" strategies. Moreover, Claridge (2018, p. 1) posits that "*bridging social capital could be conceptualized as generalized trust (earned trust) and bonding social capital as ascribed trust*". Finally, linking social capital is different from bonding and bridging social capital, as it involves relations of hierarchy between "*people who are interacting across explicit, formal or institutionalized power or authority gradients in society*" (Rostila, 2011, p. 6). Many researches have been conducted to explore interactions between various forms of social capital and innovation-seeking alliances (Tiwana, 2008). Other studies have emphasized the mediating role of social capital for co-creating knowledge (Charatsari *et al.*, 2020). If social capital provides support for knowledge acquisition and, through this, innovation adoption, how to plan a different type of social capital for acquiring pertinent knowledge is a fundamental field of analysis. The concept of pertinent knowledge is provided in the EC communication "The future of food and farming" and has to be contextualized, in that some territorial contexts are more inclined to develop sound knowledge than others. Moreover, knowledge acquisition is more complex and is drawn on different sources of knowledge locally and elsewhere produced. Therefore, territorial knowledge dynamics are systematically replaced by multi-local knowledge dynamics, where combinatorial knowledge is the object of analysis (Jannerat and Crevoisier, 2011). As posited by Crevoisier (2014, p. 554), "*Economic dynamics and innovation processes are probably much more multi-local (emerging through interactions within and between several places) and more multi-scale (mobilizing institutions enforced at various scales at the same time)"*.

From a theoretical point of view, how to balance each form of social capital to acquire sound knowledge, adopt innovation and promote the farm's competitiveness is a recently explored topic. In their analysis of innovation adoption in fruit farms of Chile, Cofré-Bravo *et al.* (2019, p. 60) use the term of *ambidexterity* as the "*ability to manage different types of social capital to fulfill different tasks and objectives within the innovation process, i.e. both exploration and exploitation of new technologies and practices*". Therefore, as widely recognized in literature, ambidexterity has a big impact on organization strategies, through boosting interaction between deliberate and emergent strategies (Bodwell and Chermack, 2010). As a matter of fact, ambidexterity develops a mediation effect between farm's intended actions and the new opportunities providing room for new emerging and collective strategies (Mintzberg *et al.*, 1998). This mediation triggers learning processes and, consequently, has a high impact on the farm's innovativeness (Martinez-Pérez *et al.*, 2016; Tiwana, 2008).

Therefore, a critical issue becomes the analysis of how farmers configure their relationships, to empower social capital, and, consequently, the farm's innovativeness. Processes of networking at the farm level are at the basis of recent studies concerning the analysis of agricultural and rural innovation at the farm level under the perspective of knowledge adoption. In their analysis of Chilean fruit farmers' network configuration, Cofré-Bravo *et al.* (2019, p. 60) demonstrate how ambidextrous networks are "*consistent with farmers seeking cutting-edge technologies and practices, aiming to be on top of technological trends with a strong focus on competitiveness*".

Based on the previous literature review, our paper aims to investigate the role of different types of social capital in addressing knowledge acquisition and, as a consequence, innovation adoption. Research questions are the following: (1) Which forms of social capital as sources of knowledge do farmers draw upon? (2) What is the relationship between social capital and the farm's innovativeness? In what follows we would like to present an empirical analysis aiming to answer these research questions.

3. Methodology

The empirical analysis is based on primary statistical sources; the data were collected through the administration of a questionnaire to the farmers enrolled in the 14th edition of the Oscar Green Awards managed by Coldiretti, the largest association of farmers in Italy. The awards are targeted to young entrepreneurs (under 40) who have generated innovation aimed to raise competitiveness in their business. 758 questionnaires were collected for the study. Although the sample is not representative at a national level, we can still assert that the group of interviewees best represents the Italian young entrepreneurs and can provide food for thought about the relationship existing between the new generation of farm entrepreneurs and innovation, since Coldiretti is the largest Italian Trade Union, representing the highest share of Italian farmers.

The questionnaire is organized as follows:

(1) I part – Socio-structural features: level of education, household composition, size of the firm and degree of specialization.

(2) II part – Presence of high-quality production: organic or geographical indications.

(3) III part – relationships activated by the farmers.

(4) IV part – Description of the innovative idea. The idea was described in two phases: In the first phase the entrepreneurs reported the innovative idea; in the second phase they specified the economic, social and environmental impact of their innovation. The open-ended answers were then codified on a scale of 1–3, which allowed me to obtain a degree regarding the impact of the proposed idea. In the next stage, we created an overall variable about the general impact of the innovation, with a minimum value of 3 (whenever the three impacts held a value of 1) and a maximum value of 9. To increase its reliability, the variable was then standardized through the following formula:

$$Z_X = \frac{X - \mu_x}{\sigma_x} \tag{1}$$

The objective of connecting the innovation to the social relations of the enterprise has been analyzed through the reconstruction of the three types of social capital: bonding, bridging and linking. By the following literature, these ties have been classified as follows:

(1) Bonding ties: No ties + family ties + personal ties/other firms

(2) Bridging ties: Producer Organizations (POs) + Farm Advisory Services (FAS)

(3) Linking ties: relations with institutions.

Through a codification, we obtained an indication about each farm's ties, so the new variable can be expressed in the following ways:

(1) One tie: bonding or bridging or linking

(2) Two ties: bonding + bridging or bonding + linking or bridging + linking

(3) Three ties: bonding + bridging + linking

The hypothesis to be verified is that ambidexterity, which is the presence of all three forms of social capital, represents the optimal configuration which enhances innovation processes with a high economic, social and environmental impact. To this end, a one-way ANOVA has been carried out. Therefore, there are two variables included in the ANOVA test:

(1) Grouping factor: number of activated ties

(2) Dependent variable: total impact of the innovation.

The ANOVA is a statistical model used to test the differences in a continuous variable among two or more groups in a sample. In particular, the null hypothesis H0 states that the average value is the same for all the groups; the alternative hypothesis H1 is that the average value is not the same for all the groups. The statistic used in the ANOVA is the *F*-test, computed through the ratio of between-group variance to within-group variance. If the null hypothesis is true, the value of the ratio is 1; otherwise, if the alternative hypothesis of different group means holds true, the *F* value will be greater than 1. The critical values of the *F*-statistic for which we can reject the null hypothesis are established in a table of probability values for the F-distribution, depending on the level of significance and the degrees of freedom. If the computed F-statistic is smaller than the one reported in the table, then we accept the null hypothesis, while if the F-statistic is greater than the critical value, we have statistically significant evidence that there is a difference in group means. To validate the quality of the analysis, robust tests on the mean were performed. Based on the characteristics of the variables, we used the Brown–Forsythe test and the Welch test. Subsequently, a pairwise comparison was conducted using the Scheffe test, in order to examine the significance of each possible pair of means. The significance was set with a p-value of 0.05 for all the tests.

All the analyses were carried out with the SPSS v. 26 software.

4. Results

As mentioned in the previous paragraph, we hypothesize that farm entrepreneurs are most efficient in their innovation processes in terms of economic, social and environmental impact in cases of ambidexterity, that is when they engage in all three types of social capital ties (i.e. bonding, bridging and linking). As shown in Table 1, out of the 754 participants to the contest, the great majority of 493 entrepreneurs activated only one tie, while 187 engaged in two ties and only 74 activated all three types of social ties.

By looking at the mean scores, it seems like the configuration with bonding + bridging + linking yields a slightly higher overall impact (0.35) than the configuration with two ties (0.08) and even higher with respect to the configuration with only one tie (−0.08). In the study, the Analysis of Variance was conducted to test whether there is a statistically significant difference between the means of the three groups. The next Table 2 shows the results of the one-way.

The between sum of squares and the within sum of squares displayed in the table divided by the respective degrees of freedom (2 and 751) reveal that in the sample there is a much higher variance between the groups (6.99) than the variance within the single groups (0.984). The F-value is found through the ratio (Between groups variance)/(Within groups variance). The computed value of this test statistic (7.10) is widely larger than the critical value of F (3.01) and reaches significance with a p-value of 0.001.

Table 1.
Descriptive statistics

		N	Mean	Std. deviation	Std. error	95% Confidence interval for mean	
						Lower bound	Upper bound
One tie		493	−0.0849	0.98322	0.04428	−0.1719	0.0021
Two ties		187	0.0852	1.01706	0.07437	−0.0615	0.2320
Three ties		74	0.3501	0.98617	0.11464	0.1216	0.5786
Total		754	0.0000	1.00000	0.03642	−0.0715	0.0715
Model	Fixed effects			0.99199	0.03613	−0.0709	0.0709
	Random effects				0.13096	−0.5635	0.5635

Table 2.
ANOVA test

ANOVA	Sum of squares	df	Mean square	F	Sig
Between groups	13.981	2	6.990	7.104	0.001
Within groups	739.019	751	0.984		
Total	753.000	753			

The soundness of the test is confirmed by either a value of 7.10, more than twice the threshold value and a significance which is well below 0.05. The test tells us that there is a difference, to be furtherly confirmed through both testing the strength of the significance and digging inside the relationships.

Being the assumption of homogeneity of variances violated in this dataset, we later implemented the Welch test (*W*-test) and the Brown–Forsythe test (F^*-test) as robust tests for the equality of means. In Table 3, the results of both tests are reported.

Again, both the statistics of the test (the *W*-statistic and the F^*-statistic) are higher than the critical value of F at a p-value of 0.001. These results confirm to a greater extent the findings of the previously conducted ANOVA test. With the Welch and Brown–Forsythe tests we tested the robustness of the result we previously estimated. The results of the statistics that are asymptotically distributed are 7.13 and 7.03 respectively, still more than double the threshold value. After having obtained statistical evidence about the difference between the groups through the ANOVA test and the Welch test and Brown–Forsythe test, we carried out the Scheffe test in order to have an idea of which particular pairs of means actually have a statistically significant difference; this test examines the difference in means of all possible combinations (Table 4).

From the table we can see that the only statistically significant result (p-value = 0.002) is the mean difference of −0.43 between the group of entrepreneurs who activated only one tie and the group of entrepreneurs who engaged in all three kinds of social capital relations; this proves the great discrepancy in the overall impact produced existing between the two extreme cases: farms that activate only one tie (either bonding or bridging or linking) and farms that adopt all three kinds of social ties. The other differences (i.e. between "One tie" and "Two ties" and between "Two ties" and "Three ties") hold a p-value that is greater than the established 0.05 level, therefore they are not statistically significant. Therefore, the Scheffe test brings out the incremental link that exists between the effectiveness of the impact of innovation and the increase in the number of network nodes to be activated. The relationship with the intermediate stage (two ties) is not statistically significant, but in absolute terms the increase between the difference between *One tie* and *Two ties* is −0.17011, while it increases to −0.26487 between Two ties and Three ties. This provides evidence that the enlargement of the network increases the effectiveness. We can therefore say that the intermediate phase represents a kind of "border" that allows to pass from one type of entrepreneur to another. To test this hypothesis, the Scheffe test is carried out again using homogeneous groups.

Robust tests of equality of means

	Statistic[a]	df1	df2	Sig
Welch	7.130	2	184.120	0.001
Brown–Forsythe	7.027	2	282.366	0.001

Note(s): [a]Asymptotically F distributed

Table 3. Welch test and Brown-Forsythe test

Multiple comparisons

					95% Confidence interval	
		Mean difference (I-J)	Std. error	Sig	Lower bound	Upper bound
One tie	Two ties	−0.17011	0.08520	0.137	−0.3791	0.0388
	Three ties	−0.43498*	0.12367	0.002	−0.7383	−0.1317
Two ties	Three ties	−0.26487	0.13624	0.152	−0.5990	0.0693

Note(s): *The mean difference is significant at the 0.05 level

Table 4. Scheffe test

The homogeneous subsets table provides an alternative way of computing and displaying the post hoc tests and is considered more appropriate when group sizes are quite different, as in our case. Table 5 shows these two subsets.

In the table, the means listed under the same subset are not significantly different from each other: the group "One tie" and the group "Two ties" do not have a statistically significant difference, since their means are reported in the same subset. Likewise, the group "Two ties" and the group "Three ties" do not have a statistically significant difference in means. The only statistically significant difference is detected between "One tie" and "Three ties". This confirms, once again, the evident difference between the two opposite cases already discovered through the multiple comparisons. This representation of the test allowed us to confirm the hypotheses expressed previously.

Finally, the means plot output of the one-way ANOVA (shown in Figure 1) offers a visual representation of the group means and their linear relationship with the independent variable (i.e. the number of ties activated by the farmer).

The plot greatly confirms our initial hypothesis that ambidexterity is the optimal configuration of social capital that allows farm entrepreneurs to benefit from a high economic, social and environmental impact in their innovation processes; as a matter of fact, the plot clearly shows how as the number of activated ties increases, also the total impact (that had been previously standardized) goes up.

5. Discussion and conclusions

Framed within an inter-organizational perspective of knowledge management (Girard, 2015), this paper aimed to explore the relevance of relationships and social capital on the farm's innovativeness, under a new vision of innovation which takes into account either economic, social and environmental dimensions. This perspective fits with the recently proposed vision of rural prosperity, which is not based exclusively on economic variables but is reconfigured around a balance between economic, social and environmental parameters (Rivera *et al.*, 2018).

Against this background, this paper puts forward the idea of innovation boosted by social capital. The perspective of social capital as an engine for innovation adoption seems effective in explaining innovativeness among young farmers of Italy. More precisely, by splitting the social capital composition in bonding, bridging and linking ties, it emerges that ambidexterity is the "good recipe" for securing the farms with higher levels of innovativeness. The empirical analysis clearly shows a significant difference between farms with few cooperation to the high performance of innovativeness by farms with ambidextrous relationships, that is with either bonding, bridging and linking social capital.

Table 5. Homogeneous subsets for Scheffe test

Total impact of innovation			
		Subset for alpha = 0.05	
	N	1	2
One tie	493	−0.0849	
Two ties	187	0.0852	0.0852
Complete	74		0.3501
Sig		0.348	0.078

Note(s): Means for groups in homogeneous subsets are displayed
Uses Harmonic Mean Sample Size = 143.613
The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed

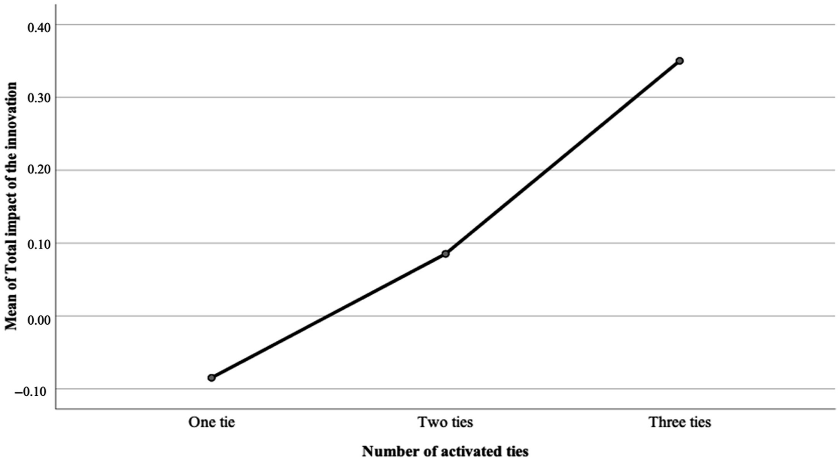

Figure 1.
Mean of total impact of the innovation for each group

Therefore, innovation is drawn on knowledge relationships activated by the farmer within the so-called micro-AKIS. In building up these knowledge relationships, the role of each segment of the AKIS matters, starting from the personal and informal networks (bonding social capital) to relations with more "distant" partners (bridging) and with institutions enabling farms to adopt innovation. However, as demonstrated by the ANOVA test, the aptitude to promote innovation with the highest level of economic, social and environmental impact are the outcome of a synergic action of a "complete" micro-AKIS, where all stakeholders, both private and public, play a fundamental role in addressing sound knowledge and, consequently, innovation adoption.

As a matter of fact, if bonding social capital may bring about strong ties (Granovetter, 1973), on the other side, it may emerge as obstacles to innovation, which require integration of bridging ties, to put into practices innovation projects (Obstfeld, 2005). As Tiwana posits (2008, p. 251): "*A network of collaborators with strong ties has a greater capacity to implement innovative ideas, but has an inherently lower capacity to generate them; a network that is rich in structural holes (i.e. greater bridging ties) has a greater capacity to generate new ideas, but has a lower capacity to implement them*". Our study confirms this conclusion, by assuming the role of ambidexterity in performing innovation adoption, thanks to the effectiveness of bonding, bridging and linking social capital. Moreover, this confirms the role of ambidexterity in mediating deliberate and emergent strategy, thanks to exploration of new opportunities bringing about the uptake of innovation (Bodwell and Chermack, 2010). Furthermore, the analysis is coherent with recent researches carried out in the farming sector, which evidence the relevance of ambidextrous relationships in boosting farm's innovation adoption (Cofré-Bravo *et al.*, 2019). Actually, collective action is at the basis of a new vision of innovation in the European Union, as demonstrated by the experience of the European Innovation Partnership, which was linking and bridging ties to integrate bonding social capital to get higher effectiveness of innovation projects.

Furthermore, our empirical analysis shed a light on a wider perspective of innovation taking into account economic, social and environmental aspects, which are considered of paramount importance for supporting rural development processes, within a new vision of rural prosperity, as recently confirmed in Rivera *et al.*'s (2018) analysis. This new vision engenders new complexities in the micro-AKIS composition, by enlarging the potential actors (both individual and collective) the farm needs to cooperate with to perform sustainable innovation.

According to our conclusions interactive innovation model must be implemented through a better use of complementary types of knowledge (SCAR, 2019). Moreover, our analysis paves the way to some implications at both the farm and policy levels.

As far as farm level is concerned, ambidextrous relations boost farms to pursue strategies grounded on both internal (strong ties) and external (weak ties) relations, so confirming literature on the role of "social proximity" on innovation adoption (Boschma, 2004). This calls for strengthening relationships with multiple actors, at both individual and institutional level. This objective is clearly stated by the policy actors.

As far as policy implications are concerned, our analysis fits with recent trends in the common agricultural policy of the EU, when stressing the relevance of approaches based on supporting collective action and, consequently social capital, as means to accessing funds for farm's competitiveness and promoting rural development. Of course, keeping in mind linking social capital and sharing Putnam's (1994, p. 18) vision, "*social capital is not a substitute for effective public policy but rather a prerequisite for it and, in part, a consequence of it*". Therefore, rural policies are fundamental for addressing these new issues. Actually, knowledge is clearly identified as cross-cutting objective in the new regulation for rural development policy, with the purpose of stepping up the support to knowledge and innovation adoption. This has clear implications on a set of critical issues, impacting on (Laurent, 2018; Nettle *et al.*, 2018; Sutherland *et al.*, 2017):

(1) the definition of governance mechanisms of the processes of knowledge adoption and the role of public/private systems;

(2) the identification of specific tools for better targeting the support for knowledge diffusion and innovation adoption, when the micro-AKIS is the object of the analysis.

(3) new roles for farm advisory services in the micro-AKIS perspectives, through encouraging networking and relational assets.

Set against this background, the micro-AKIS perspective here adopted calls for more contextualized approaches to knowledge diffusion and sharing, which takes into account farm specificity and territorial context, with particular reference to peripheral areas of Europe. This would allow to better target the adoption of best fit solution for boosting sustainable innovation in rural areas.

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