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SOCIAL CAPITAL IN COOPERATIVES: A TYPOLOGY AND INFLUENCE ON PERFORMANCE

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ABSTRACT. One of the distinctive characteristics of cooperatives is their social capital. This article contributes to the literature by proposing a classification of cooperatives according to their social capital: internal social networks (relationships between their members, and between their members and their managers) and/or external social networks (relationships with customers, other cooperatives, institutions etc.).

The sample comprised managers from 50 agrifood cooperatives located in the Canary Islands (Spain) who answered a questionnaire designed on the basis of the existing literature. Descriptive statistics such as means and non-parametric test (Pearson's Chi-square test) were used to process the information.

The largest group of cooperatives developed strong internal and external social networks (i.e., a broad social network). The second group was the opposite: social networks were weak internally as well as externally (the so-called narrow social network). The results also showed that when cooperatives developed only one type of network, they focused on a strong internal network (asymmetric internal social network).

The only difference in the performance of cooperatives depending on their social network was observed in cooperatives with an asymmetric external social network. Such cooperatives had a better public image than their competitors.

Introduction

This paper focuses on one of the defining characteristics of cooperatives as social enterprises –their social networks (Puusa et al., 2013; Ruben & Heras, 2012). Cooperatives cannot be studied without considering their social context (Deng & Hendrikse, 2018) and the analysis of social networks as their distinctive feature and resource base (Nilsson et al., 2012) provides insights into their strategic behaviour as social enterprises and, ultimately, into how to improve their performance. Our primary objective therefore is to study the social networks of agrifood cooperatives, provide a classification for them and link the derived types to cooperatives' performance.

This paper follows the social capital approach to make an exploratory study of cooperatives' social network. This approach –widely applied in general business administration– has not often been used to explain this important dimension of cooperatives (Nilsson et al., 2012; Ruben & Heras, 2012; Stoop et al., 2021). In this theoretical context, *social capital* has been defined as the benefit that actors (individuals and organisations) obtain from their social relations (Nahapiet & Ghoshal, 1998; Oh et al., 2006). The main benefit is the information provided by these relations (Adler & Kwon, 2002; Coleman, 1990). Authors like Spear (2000) have stated that social capital represents the main comparative advantage of cooperatives vis-à-vis other forms of ownership and organisation. Cooperatives develop social capital in the form of interorganisational and interpersonal social networks –both internal and external– which serve as a way to transmit a great volume and diversity of information.

External social networks are those established by cooperatives with other agents around them, such as their customers, suppliers, institutions, regulators or any other external societal groups. For example, with customers, the objective is to share ideas, future plans or decisions that allow –among other things– cooperatives to adopt a greater approach to the ever-increasing demands and needs of end customers. Some of the information to be exchanged will, for example, involve changes in end consumer habits, new laws, crises or food alerts. Given the need for cooperatives to be market-oriented and taking into account the information that flows through these external networks, such networks prove vital in the present competitive context.

For their part, internal social networks are the ties developed between the members in a cooperative (horizontal links), or between members of the cooperatives and their managers (vertical links). Likewise, these interrelations seek to share experiences about market conditions, new developments in processes and products, as well as any other information that allows cohesive, integrated, and strategically well-oriented organisations to be created.

Nahapiet and Ghoshal (1998) argue that organisational social capital has three related dimensions: the structural dimension (links between actors), the relational dimension (trust between actors) and the cognitive dimension (goals and values shared among actors). These dimensions will shape ideas and information flow and also impact cooperatives' performance.

Cooperatives are encouraged to grow as this seems to generate benefits for them, such as economies of scale and scope, the possibility of hiring professional managers or the chance to try and match the bargaining power of large retail distributors on a more even playing field. However, some studies fail to demonstrate the relationship between cooperative size and their performance (Campos-Climent & Sanchis-Palacio, 2015). Growth and expansions can also increase the diversity of their social base and alter their democratic nature (Nilsson et al., 2012). As a result, the greater the number of members and organisations involved in the cooperatives, the more complex and costly their management will be. Not all cooperatives have the capacity to develop and manage their internal and external social networks correctly, with the impact that this can have in terms of their performance. In sum, the social capital of agrifood

cooperatives not only offers benefits but also pitfalls (Xu et al., 2018); hence the importance of studying said capital.

Within the general aim of analysing the social networks of cooperatives in an exploratory manner, the main contribution of this work is to propose a classification of agrifood cooperatives according to their internal and/or external social networks –an issue which has thus far not been addressed by the strategic literature on cooperatives. This is the added value offered by this paper. Moreover, bearing in mind that social networks are a key feature for cooperatives as well as a potential source of competitive advantage, we also examine the differences in performance that such cooperatives obtain depending on the social network they most develop. This work therefore fills a significant gap in our current knowledge of the management and positioning of cooperatives. Empirical studies that employ managerial theory to explain cooperatives' results are scarce (Arcas-Lario & Hernández-Espallardo, 2003). More specifically, the strategic management perspective has to date not been used to study cooperatives either (Mazzarol, 2009). Inclusion of the social networks approach thus fills a gap in the literature addressing strategic management of agrifood cooperatives (Talamini & Ferreira, 2010).

This article is structured in five parts. Following this introduction, the theoretical framework on internal and external social networks of agrifood cooperatives is provided, together with the main research carried out into how their development has impacted cooperatives' performance. We then explain the methodology used. Finally, the results are presented, with the last section offering some conclusions and implications.

1. Literature review

1.1. Social capital and social networks in cooperatives

Social capital has been studied in diverse areas of knowledge with different streams such as the sociological and the economic (Coleman, 1988). These perspectives have contributed by adding a preliminary theoretical framework to explore social capital in organisations that has received special attention from researchers. In the business field, social capital has acquired certain relevance because it has been recognized as key to improving competitiveness and performance by establishing a network of strategic relationships (Wang & Chen, 2016). Social capital is thus established as the sum of "the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998, p. 243). Social capital is commonly viewed as a valuable asset based on interpersonal relations and whose main benefit is the information it provides (Adler & Kwon, 2002; Coleman, 1990). This social network creates a platform for information sharing and exchange (Sparrowe et al., 2001; Walker et al., 1997).

In this sense, cooperatives are an association of participants with a social network (Deng & Hendrikse, 2018), and are regarded as a reference in social capital (Valentinov, 2004). Compared to other forms of enterprise, they have a greater ability to foster social capital (Sabatini, 2014). Social capital therefore provides the basis for differentiating cooperatives from capitalistic organisations (Valentinov, 2004). However, this difference could disappear if social capital is not managed correctly.

Many approaches have focused on the multidimensional nature of social capital (Deng, 2015). According to Nahapiet and Ghoshal (1998), social capital is composed of three dimensions: structural, cognitive, and relational. In line with that proposal –and applying it to cooperatives– the social ties between the members of a cooperative can be regarded as the structural dimension of social capital (Deng & Hendrikse, 2018). The cognitive dimension

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reflects the view, purpose, codes and goals shared by the cooperative's members, while the relational dimension's main component is trust (Nahapiet & Ghoshal, 1998), which forms the cornerstone of their decision to cooperate. These dimensions are closely interconnected, making it difficult to gauge what effects each one has separately on the cooperatives and on their performance. However, when such analyses have been carried out, it has been confirmed that the impact on the organisations' performance differs (Lee & Tamraker, 2018).

In this article, the three dimensions of the social capital identified by Nahapiet and Ghoshal (1998) are adapted to the cooperative context. The structural and relational dimensions are thus explicitly taken into account in the analysis. The structural dimension is included as the existence and frequency of social relationships (Nilsson et al., 2012) –both horizontal and vertical (Peng et al., 2016). Trust is also incorporated into this work as the main representation of the relational dimension (Lee & Tamraker, 2018; Nahapiet & Ghoshal, 1998). The cognitive dimension is also present in this research, albeit implicitly because of the particular distinctive characteristics of cooperatives. If the members have decided to join a cooperative it is precisely because they share similar visions, goals and, of course, cooperative principles; that is, the cognitive dimension of social capital. Moreover, the geographical and industrial proximity of the agrifood cooperatives analysed (Hendrikse & Feng, 2013) reinforces the existence and importance of the third dimension of social capital.

From a strategic point of view, what also seems interesting is to identify the origin of social capital. In this sense, some existing classifications allow social capital to be categorised as internal and external (Adler & Kwon, 2002; Deng, 2015; Leana & Pil, 2006) [1]. Internal social capital describes the social relationships between the organisations' members and their value (Coleman, 1990; Putnam, 1993). For its part, external social capital reflects the relations between the organisation and other external actors (Burt, 2009; Uzzi, 1996). In the case of cooperatives, Lamers (2012) also regards them as a network of internal and external relationships.

This paper therefore considers and integrates the classification of both internal and external social capital (for example, Adler & Kwon, 2002; Deng, 2015; Leana & Pil, 2006) as well as the structural, relational and cognitive dimensions identified by Nahapiet and Ghoshal (1998). This integration gives rise to external social networks and internal social networks, each with the elements that define them in the cooperative context, as shown in *Table 1*.

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[1]There is another classification of social capital –sometimes applied to cooperatives– which identifies *bonding social capital* and *bridging social capital*. The former establishes ties between individuals who share similar objectives and that result in close internal relations, whereas the second type creates ties with agents external to the organisation (Ruben & Heras, 2012).

Table 1. Social capital types and social capital dimensions

		SOCIAL CAPITAL DIMENSIONS (Nahapiet & Ghoshal, 1998)	
		STRUCTURAL DIMENSION	RELATIONAL DIMENSION
SOCIAL CAPITAL TYPES (Adler & Kwon, 2002; Deng, 2015; Leana & Pil , 2006)	EXTERNAL SOCIAL CAPITAL	External ties (among the cooperative and external agents such as customers, other agrifood cooperatives, other agrifood organisations, public institutions….)	Trust (external) (between the cooperative and its main customers: distributors, large distribution…)
	INTERNAL SOCIAL CAPITAL	Internal ties (between the members of the cooperative and between them and managers)	Trust (internal) (between the members of the cooperative and between them and managers)
		COGNITIVE DIMENSION (shared values and goals between the members of the cooperative)	

Source: *adapted from Adler and Kwon (2002), Deng (2015), Leana and Pil (2006), Nahapiet and Ghoshal (1998), and Ruben and Heras (2012).*

1.2. Classification of cooperatives according to their social networks

Following this approach (Table 1), internal social networks and external social networks have been considered in this work for proposing a classification of cooperatives according to the greater or lesser extent to which these types of social networks are developed. Cooperatives can thus be classified into the following types of social networks (Table 2):

- Cooperatives with a narrow social network: cooperatives with few kinship/friendship ties among their members; whose members interact very little and where there is a low level of mutual trust, both inside and outside the cooperative.
- Cooperatives with an asymmetric external social network: cooperatives whose members interact a lot and where there is a high level of trust with external agents. It is not the same among the cooperative's members.
- Cooperatives with an asymmetric internal social network: cooperatives whose members have kinship/friendship ties, interact a lot with each other and display a high level of trust. It is not the same outside.
- Cooperatives with a broad social network: cooperatives with many kinship/friendship ties among their members, whose members interact a lot and who display a high level of trust, both among themselves and externally.

Table 2. Classification of cooperatives according to their social networks

EXTERNAL SOCIAL NETWORK	Strong	COOPERATIVES WITH AN ASYMMETRIC EXTERNAL SOCIAL NETWORK	COOPERATIVES WITH A BROAD SOCIAL NETWORK
	Weak	COOPERATIVES WITH A NARROW SOCIAL NETWORK	COOPERATIVES WITH AN ASYMMETRIC INTERNAL SOCIAL NETWORK
		Weak	Strong
		INTERNAL SOCIAL NETWORK	

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1.3. Internal social networks, external social networks and performance in cooperatives

The existing general literature supports the relationship between social networks and different organisational outputs, such as business performance (for example, Andrews, 2010; Hsu & Hung, 2013; Wang & Chen, 2016). Rowley et al. (2000) analysed the structural and relational dimensions of social capital in strategic alliances in steel and semiconductor industries, and concluded that both strong and weak ties are positively related to performance. Pirolo and Presutti (2010) also found a positive impact of both strong and weak ties on performance over the entire life-cycle of the company, with the authors examining the structural dimension of social capital in the relationships between high technology firms and their main customers.

There is also substantial consensus in the literature concerning the relevance of social capital for cooperatives (for example, Deng & Hendrikse, 2018; Feng et al., 2016). However, only recently has the study thereof and its link to other cooperative attributes begun to stand out. Social ties thus have a potential impact on cooperatives' performance (Deng, 2015; Deng & Hendrikse, 2018; Liang et al., 2018; Nilsson et al., 2012; Ruben & Heras, 2012), among other aspects owing to how they influence the flow and quality of information (Granovetter, 2005). At the same time, this also determines the innovations to be developed and can shape decision-making.

Among a cooperative's members (internal social network) social ties not only facilitate the exchange of information but could also serve as a source of social motivation for the members' production activities (Deng & Hendrikse, 2018). The latter authors present a game theory model to reflect the social interactions of a cooperative's members and the decisions related to the quality of its products under different pooling policies. The authors find that social ties have a positive effect on members' production activities, on overall usefulness and on economic payments.

The growth of cooperatives is also linked to their social capital. In a study of agrifood cooperatives in Sweden, Feng et al. (2016) find that members in smaller cooperatives are more involved in the governance thereof, display greater trust in the leadership, are more satisfied, and exhibit stronger loyalty. The authors conclude that the smaller the cooperative, the larger its social capital. A similar finding was reported by Valentinov (2004), for whom maintaining social capital as a cooperative's main resource proves difficult due to the rise in the number of members and the subsequent growth in heterogeneity and the increased complexity of objectives and activities. When the members of a cooperative are unknown to each other, it is harder for them to interact (Deng & Hendrikse, 2018). In fact, the paradigm of social capital helps to explain why some of the largest and traditionally more complex agrifood cooperatives have failed (Nilsson et al., 2012). On occasions –as for example when cooperatives grow– the influence of social ties on their performance may ultimately even become negative.

In any case, without active member participation (internal social network), the cooperative would not survive in the long term (Bhuyan, 2007). Encouraging and maintaining relations between members thus proves crucial if cooperatives are to remain focused on their members (Hooks et al., 2017) and so achieve the goals set out by them. Managing such ties or internal networks in the cooperative's strategy is therefore a key issue.

The importance of cooperatives' external social networks also merits highlighting, since the need emerges for cooperatives to adopt market-oriented strategies in response to ever-increasing competitive pressure (Deng & Hendrikse, 2018) –especially today. In this sense, although all external ties are important, vertical coordination with the other agents involved in their supply chain (upstream and downstream) will be crucial in order to ensure that end consumers' needs are satisfied. This vertical coordination entails greater alignment between the

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activities and investments of the different members in the chain (producers, wholesalers or retailers). This coordination involves the exchange of complex information, not only with regard to supply and demand but also in terms of quality requirements from customers and final consumers (Bijman et al., 2011). Market trends thus demand that agrifood cooperatives develop external social networks with their suppliers and customers so that these networks can then facilitate optimal coordination throughout the supply chain and so become a key factor in satisfying their clients' needs.

In a case study of dairy cooperatives in China, Zhong et al. (2018) find that cooperatives' degree of vertical coordination along their supply chain –in other words, how developed their external social network is– affects the cooperative's global performance and the benefits distributed to its members. In the first case, a linear relation is observed: the greater the vertical coordination and the external social network, the greater the benefits the cooperative obtains. However, the influence of vertical coordination on the benefits distributed to members has a different type of relation: members of cooperatives who evidence a medium vertical coordination obtain the highest benefits, followed by members of cooperatives with a high vertical coordination and, lastly, members of cooperatives with a lower development of their external social network. Whatever the case, correctly managing this type of external social network should also be included in the cooperative's strategic plan.

The study by Ruben and Heras (2012) into the coffee sector in Ethiopia is one of the few to link cooperatives' social capital (internal and external) to their performance. The authors conclude that cooperatives' productivity and economic performance improve considerably when developing internal social capital, and that these two indicators are also affected by external social networks. In addition, when comparing the greater or lower presence of both types of capital, they find that when internal social capital is stronger than external social capital, collective actions are more feasible and viable. On the other hand, when external social capital prevails, people place greater trust in individual solutions based on their external networks.

In conclusion, social capital could provide benefits but also costs and/or risks. Therefore, each type of social network (internal and external) could have different implications for the cooperative's performance. We thus propose the following hypothesis:

Hypothesis 1: cooperatives with different internal and external social capital networks perform differently

The greater or lesser development of one or another social network must therefore be guided by an understanding of their different contributions to the organisation's objectives (Adler & Kwon, 2002) and must primarily be framed within the cooperative's strategic plan.

2. Methodological approach

2.1. The information

This exploratory analysis stems from a research line developed within the framework of the research "Size, strategy and results of agrifood cooperatives in the Canary Islands (Spain)". Its aim is to identify factors (such as size, strategy or environmental uncertainty) that have made it possible for certain agrifood cooperatives to perform better than others. In this study, the cooperatives' internal and external social networks are analysed. This project was carried out in the Canary Islands (Spain) which –according to the Spanish Ministry of Employment and Social Services – is one of the regions with the lowest number of agrifood cooperatives in Spain. Of

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the 202 cooperatives in the Canary Islands in 2016, 64 were agrifood cooperatives (31.68%). These cooperatives employ a total of 1,664 employees, and represent 1.96% of all agrifood cooperatives in Spain.

Within the framework of the above project, an *ad hoc* database was designed with the information on cooperatives that was required for the project's aims, given that the information needed was not found in the databases available in the market. A specialised firm conducted the surveys by e-mail and telephone calls in September 2017. The final valid sample comprised 50 agrifood cooperatives of the 64 that existed in the Canary Islands in early 2017. Of the 50 cooperatives surveyed, 17 were fishermen's associations, and the rest were agrifood cooperatives, of which two were second-tier cooperatives and the rest first-tier cooperatives. Accordingly, the sample used in this study comprised 78% of agrifood cooperatives in the Canary Islands (Spain).

2.2. The questionnaire

The theoretical review of the literature and the reflection that made the design of the questionnaire possible were conducted under the strategic management approach and perspective, which has scarcely been applied in the field of cooperatives (Mazzarol et al., 2011).

From the questionnaire that was designed, the following sections are used in this work:

- − Cooperatives' characteristics: their age (years from their creation up to 2017), their size (in terms of the number of employees [2], as a proxy indicator, and the number of members), the products they sell and the markets in which these are offered.

- - Members' characteristics: one of the major challenges facing cooperatives is to cope with the disperse nature of their members (Höler and Kühl, 2018). As cooperatives grow in search of greater efficiency, their managers must cope with a greater diversity of members (Grashuis, 2018). Following this reasoning, this study considers the greater or lesser heterogeneity of cooperative members –adapted from Marcos-Matás et al. (2014) and Österberg and Nilsson (2009)– in terms of their age, education, interest, contributions to the cooperative (e.g. kilos or litres of products) and participation in the cooperative's governing bodies. The scale used ranged from very different/different to similar/very similar.

- - Cooperatives' social networks (Table 3): the question addressing internal social networks is a multi-item question (four items) based on the works of Peng et al. (2016), Ostgaard and Birley (1996), and Österberg and Nilsson (2009). Managers state how often they established the different types of contacts mentioned to them: relations between members (horizontal) (Peng et al., 2016), relations between members and management team (vertical) (Peng et al., 2016), the degree of kinship or friendship, and the degree of trust among members. The first three items allow us to approach Nahapiet and Ghoshal's (1998) structural dimension of social capital. The fourth is linked to the relational dimension through trust. Finally, the cognitive dimension is considered implicitly in all the items because the members of the cooperatives are assumed to share common values, interests and goals, as well as a common language (Deng et al., 2020). The scale used ranged from no link/contact at all or very low trust (value 1) to very frequent links/contacts or very high trust (value 5).

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[2] Following the European Union Recommendation of 6 May 2005 (OJEU 20.05.2003), enterprises are classified according to size into micro-enterprises (0-9 employees), small enterprises (10-49 employees), and medium enterprises (50-250 employees).

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As for external social networks, four items are adapted, mainly from the contributions of Vallet-Bellmunt (2010) and Sporleder and Peterson (2003) (Table 3). Respondents state how often they made contact with their main customers and other external agents linked to the cooperative (such as other cooperatives or any other agrifood organisation, professional and trade associations, local governments, public administrations…) in order to exchange ideas, information (changes in eating habits, new food laws, food alerts, etc.), objectives, plans or decisions. Finally, the fourth item assesses the degree of trust between the cooperative and its main customers. The first three items allow us to approach Nahapiet and Ghoshal's (1998) structural dimension of social capital. The fourth is linked to the relational dimension through trust.

The scale used ranges from never making contact with the main customers, or having low trust in them (value 1) to making contact frequently with the main customers, or having very high trust in them (value 5).

Table 3. Scale of the cooperative's social networks

SOCIAL CAPITAL TYPES (Adler & Kwon, 2002; Deng, 2015; Leana & Pil, 2006)				
		COOPERATIVE'S INTERNAL SOCIAL NETWORK (among members/management teams) (adapted from Peng et al., 2016; Ostgaard & Birley, 1996; Österberg & Nilsson, 2009)		COOPERATIVE'S EXTERNAL SOCIAL NETWORK (with agents external to the co-operative) (adapted from Sporleder & Peterson, 2003; Vallet-Bellmunt, 2010).
SOCIAL CAPITAL DIMENSIONS (Nahapiet & Ghoshal, 1998)	COGNITIVE DIMENSION (shared goals and values)	STRUCTURAL DIMENSION	1. Are there kinship or friendship ties, among the members of your cooperative?	STRUCTURAL DIMENSION	1. Your cooperative shares ideas and information with its main customers (whether distributors, large distribution…)
			2. Frequency of contacts among the members of your cooperative is…. (horizontal)		2. Your cooperative sets objectives, establishes plans and makes decisions together with its main customers (whether distributors, large distribution…)
			3. Frequency of contacts among the members and the management team of your cooperative is…. (vertical)		3. Your cooperative interacts with other surrounding agents such as other cooperatives unconnected to yours or any other agrifood organisation, professional and trade associations, local governments, public administrations…
		RELATIONAL DIMENSION	4. Trust among the members of the cooperative is usually…	RELATIONAL DIMENSION	4. Trust between the cooperative and its main customers (whether distributors, large distribution…) is usually….

- Cooperatives' performance: managerial perceptions – including those concerning performance– are "pivotal" for understanding strategic aspects of organisations (Ishak et al., 2020). In this paper, the cooperative's performance is thus addressed from a subjective perspective (for example, Benos et al., 2016), and in relative terms with

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regard to their competitors (for example, Sengupta et al., 2006; Zhou & Benton, 2007). These arguments allow us to consider cooperative performance as a subjective concept with market and financial indicators, in line with Benos et al. (2016). Moreover, cooperatives pursue a two-fold performance mission of meeting organisational goals and of satisfying members' objectives at the same time. We therefore also included member satisfaction with the cooperative's organisational performance (Benos et al., 2016). Finally, we adopt a subjective measure based on multi-item indicators to consider this dual reality (Soboh et al., 2009). The indicators included in this study are therefore not only economic and financial strength as well as sales growth but also the cooperative's external image/prestige, and the satisfaction of its members. The managers surveyed were asked to rate how they perceived the situation of their cooperative for each of the four indicators –ranging from much worse than their competitors (value 1) to much better than their competitors (value 5).

The information obtained through the questionnaires was analysed using the IBM SPSS Statistics 25 software.

2.3. Description of the sample of cooperatives

The sample of cooperatives used in this study is mainly composed of cooperatives of some considerable age, as 40% of them are between 31 and 45 years old, and 26% have been operating for over 46 years (Table 4). If we characterise the cooperatives according to size – using the number of employees and members– we see that they are mainly small and micro organisations (56% are microenterprises with 0-9 employees), with 32% being small enterprises of 10-49 employees. If we use the number of members to quantify their size, a third of the cooperatives (32%) have at least 31 members, another third have between 32 and 151 members, while 36% have more than 151 members. However, it is also important to highlight that only six cooperatives have over 700 members, with the largest having 2,953 members, while only six cooperatives have fewer than 20 members. The total number of members in the sample comes to 14,453, with the average number of members in the cooperatives in the sample standing at 289.06 [3].

Table 4. Characteristics of the cooperatives analysed

		TOTAL (N=50)	
		No.	%
	0-15 years	6	12%
	16-30 years	11	22%
AGE	31-45 years	20	40%
	Over 45 years	13	26%
	TOTAL	**50**	**100%**
	0-9 employees	28	56%
SIZE	10-49 employees	16	32%
(Number of employees)	Over 49 employees	6	12%
	TOTAL	**50**	**100%**
	1 to 31 members	16	32%
SIZE	32 to 151 members	16	32%
(Number of members)	Over 151 members	18	36%
	TOTAL	**50**	**100%**

Source: *own data*

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[3] As regards the size of cooperatives in terms of the number of members, the Spanish top 10 first-tier agrifood cooperatives –whose number of members ranges from the 257 members of Kiaku to the 10,494 members of Cobadu (OSCAE, 2020)– can be taken as a reference. Furthermore, the average number of members in Spanish agrifood cooperatives in 2016 was 307.1 farmers (OSCAE, 2020).

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We are therefore dealing with a sample of cooperatives that are mostly microenterprises of between 31 and 45 years of age and with a small number of members.

Table 5. Characteristics of the members of the cooperatives analysed*

		TOTAL (N=50)	
		No.	%
AGE	Very different/different	26	52%
	Somewhat different	11	22%
	Similar/very similar	13	26%
	TOTAL	**50**	**100%**
EDUCATION	Very different/different	21	42%
	Somewhat different	10	20%
	Similar/very similar	19	38%
	TOTAL	**50**	**100%**
CONTRIBUTION TO THE COOPERATIVE	Very different/different	33	66%
	Somewhat different	8	16%
	Similar/very similar	7	14%
	Missing data	2	4%
	TOTAL	**50**	**100%**
INTEREST	Very different/different	8	22%
	Somewhat different	4	26%
	Similar/very similar	34	50%
	Missing data	4	2%
	TOTAL	**50**	**100%**
PARTICIPATION IN GOVERNMENT BODIES	Very different/different	11	22%
	Somewhat different	13	26%
	Similar/very similar	25	50%
	Missing data	1	2%
	TOTAL	**50**	**100%**

*These characteristics describe the greater or lesser heterogeneity of the members of the cooperatives.

Source: *own data*

As regards their activity, most of the cooperatives in the sample only sell bananas (24%), with 10% selling fish, and 8% selling tomatoes. However, it is worth mentioning that a significant number of cooperatives sell several products (28%). Some of the existing combinations are, for example, bananas and potatoes, bananas and tomatoes, bananas, tomatoes and wine, or tomatoes and wine. The market to which these products are sent by the cooperatives is local (22%) and national (18%), which is the main market for bananas.

With regard to the members of the cooperatives analysed (Table 5), most have very different ages as well as a very different educational background. However, 50% of them have similar or very similar interests –in line with the cooperative's values and principles– and participate in a quite similar way (actively) in the governing bodies of their cooperatives, although their contributions to the cooperative in terms of kilos or litres of products, for example, differed substantially.

3. Results

3.1. Classification of cooperatives according to their social networks

Information concerning the internal and external social networks of the cooperatives in the sample was considered in order to obtain the classification of cooperatives according to their social networks. The average score of the internal social network items was calculated for

each cooperative and for the external network. Two new measurements for each cooperative were thus obtained: one for the internal social network and another for the external social network.

Common method bias was evaluated with Harman's one factor test. The variance explained by this factor was 26.91%, which is substantially less than the 50% margin established. Additionally, the highest value of two-to-two Pearson correlations of the different items obtained was 0.546, which is lower than the 0.9 indicated as a value for common method bias to exist. For this reason, all survey data were used.

Graphical representation of these two measurements per cooperative allows us to obtain the classification of cooperatives according to their social networks. A social network –both internal or external– is deemed to be strong in a cooperative when it is developed in that cooperative more than in the average for cooperatives in the sample; that is, there is more interaction, more kinship/friendship ties, and more trust among the cooperative's members (internal networks), and between the cooperative's members and external agents (external networks) than in the average of the cooperatives. In contrast, a social network –both internal or external– is considered to be weak in a cooperative when its development is lower than that observed for the average of all the cooperatives; that is, there is less relation, fewer kinship/friendship ties, and less trust among the cooperative's members (internal networks), and between the cooperative's members and external agents (external networks) than in the average of cooperatives.

The results obtained allow us to classify agrifood cooperatives into four types according to their social networks (Figure 1): cooperatives with a broad social network (cooperatives with a strong internal social network and a strong external social network); cooperatives with a narrow social network (cooperatives with a weak internal social network and a weak external social network); cooperatives with an asymmetric internal social network (cooperatives with a strong internal social network and a weak external social network); and cooperatives with an asymmetric external social network (cooperatives with a weak internal social network and a strong external social network).

The largest group of cooperatives is seen to have a broad social network (34%), followed by the group of cooperatives with a narrow social network (22%), and the group of cooperatives with an asymmetric internal network (20%). The smallest group consists of cooperatives with an asymmetric external network (14%).

In a second stage of the research, we analyse the characteristics of the cooperatives according to their social networks. For example, we see that most of the cooperatives with an asymmetric external network are older than the other types of cooperative. Moreover, most cooperatives that do not develop either internal or external networks (narrow social network) are slightly larger in terms of employees than the rest, while the three medium-sized cooperatives in the sample develop at least one kind of network. As regards their members, most cooperatives with a wide social network are larger than the others. A look at the products offered by the cooperatives reveals that in all the types there is a clear predominance of cooperatives dedicated exclusively to bananas, except in those with an asymmetric external social network, where there is greater similarity in the products offered by the cooperatives (Table 6).
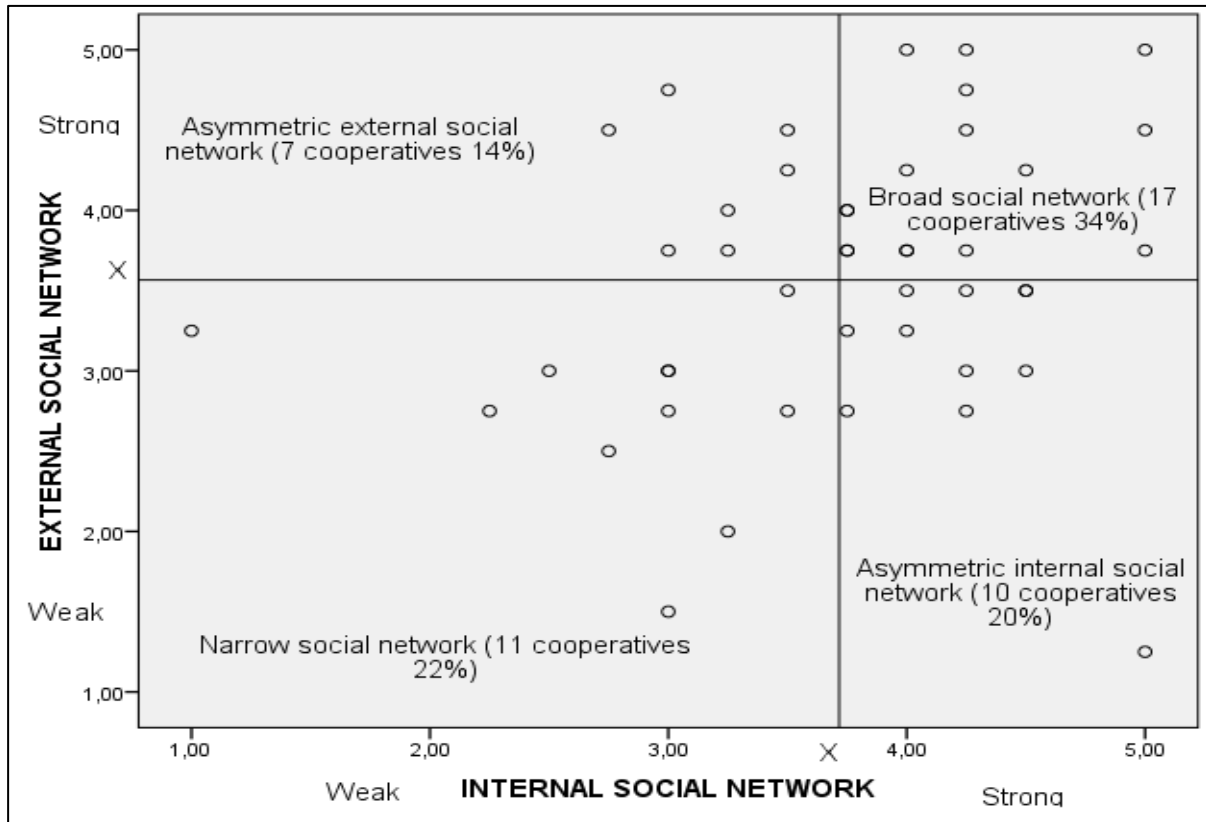
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Figure 1. Classification of agrifood cooperatives according to their social networks
Source: *own data*

Table 6. Characteristics of the cooperatives according to the classification of social networks

	Narrow social network	Asymmetric internal social network	Asymmetric external social network	Broad social network	
	Weak internal and external social network	Strong internal social network and weak external social network	Weak internal social network and strong external social network	Strong internal and external social network	Missing data*
AGE					
From 0 to 15 years	3 (27.3%)	1 (10%)	1 (14.3%)	1 (5.9%)	-
From 16 to 30 years	1 (9.1%)	2 (20%)	2 (28.6%)	5 (29.4%)	1 (20%)
From 31 to 45 years	5 (45.5%)	6 (60%)	--	7 (41.2%)	2 (40%)
Over 45 years	2 (18.2%)	1 (10%)	4 (57.1%)	4 (23.5%)	2 (40%)
TOTAL	**11 (100%)**	**10 (100%)**	**7 (100%)**	**17 (100%)**	**5 (100%)**
SIZE (according to number of employees)					
Micro-enterprises (0-9 employees)	5 (45.5%)	7 (70%)	3 (42.9%)	9 (52.9%)	4 (80%)
Small enterprises (10-49 employees)	6 (54.5%)	2 (20%)	2 (28.6%)	5 (29.4%)	1 (20%)
Medium-sized enterprises (Over 49 employees)	-	1 (10%)	2 (28.6%)	3 (17.6%)	--
TOTAL	**11 (100%)**	**10 (100%)**	**7 (100%)**	**17 (100%)**	**5 (100%)**
SIZE (according to number of members)					
From 1 to 31 members	4 (36.4%)	2 (20%)	2 (28.6%)	5 (29.4%)	3 (60%)
From 32 to 151 members	3 (27.3%)	5 (50%)	3 (42.9%)	5 (29.4%9	2 (40%)

Over 151 members	4 (36.4%)	3 (30%)	2 (28.6%))	7 (41.2%)	
TOTAL	**11 (100%)**	**10 (100%)**	**7 (100%)**	**17 (100%)**	**5 (100%)**
PRODUCTS					
Bananas	4 (36.4%)	2 (20%)	1 (14.3%)	4 (23.5%)	1 (20%)
Potatoes	2 (18.2%)	-	-	1 (5.9%)	-
Tomatoes	-	1 (10%)	1 (14.3%)	2 (11.8%)	-
Other products [1]	5 (45.4%)	7 (70%)	5 (71.43%)	10 (58.8%)	4 (80%)
TOTAL	**11 (100%)**	**10 (100%)**	**7 (100%)**	**17 (100%)**	**5 (100%)**

From the total number of cooperatives in the sample (N=50), five cooperatives could not be classified according to the suggested typology due to lack of information about some of their social networks.
[1]"other products" also includes cooperatives that sell a combination of products; for example, bananas and tomatoes.

Source: *own data*

3.2. Social networks and performance of agrifood cooperatives

Having presented the classification of cooperatives according to their social networks, the cooperatives' performance for each group of cooperatives obtained is analysed (Table 7). From a preliminary and descriptive point of view, the first conclusion to be drawn from these results is that the different types of cooperatives –broadly speaking– consider themselves to be at least the same as their competitors for all the indicators considered; that is, in terms of economic and financial strength, member satisfaction, sales growth, and external image, as their means are higher than the average level of three. However, cooperatives with an asymmetric external social network stand out. Their results are better than the other types of cooperatives for all the indicators used (economic and financial strength, member satisfaction, growth, and external image). Moreover, in this type of cooperative, the minimum level for all the indicators is three. This shows that the managers surveyed from these cooperatives perceive that the situation of their organisation is at least the same as that of their competitors. However, for the other kinds of cooperatives, there is always one cooperative that considers itself to be worse or much worse than the competition with regard to some performance indicator, as shown by the minimum scores (Table 7). Moreover, as regards cooperatives with an asymmetric external social network, it should be highlighted that this is the least numerous group and the most homogeneous –given the standard deviation.

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Table 7. Characteristics of cooperatives' performance according to social networks

Typology of cooperatives	Performance indicator	Min	Max	Mean	Stand. Deviat	Total mean
Narrow social network (N=11)	Economic-financial strength	3	5	3.55	0.820	3.43
	Member satisfaction	2	5	3.27	0.786	
	Growth	1	4	3.36	0.924	
	External image	3	5	3.55	0.688	
Asymmetric internal social network (N= 10)	Economic-financial strength	1	4	3.20	0.919	3.42
	Member satisfaction	2	5	3.60	0.843	
	Growth	1	5	3.40	1.265	
	External image	3	4	3.50	0.527	
Asymmetric external social network (N=6) *	Economic-financial strength	3	5	3.83	0.753	3.79
	Member satisfaction	3	5	3.83	0.753	
	Growth	3	5	3.83	0.753	
	External image	3	5	3.67	0.816	
Broad social network (N=17)	Economic-financial strength	1	5	3.18	1.185	3.47
	Member satisfaction	1	5	3.53	1.179	
	Growth	2	5	3.41	0.870	
	External image	1	5	3.76	1.147	
Missing data (N=5)						
Total cooperatives in the sample (N=49)*	Economic-financial strength	1	5	3.37	1.055	3.51
	Member satisfaction	1	5	3.53	0.938	
	Growth	1	5	3.41	0.977	
	External image	1	5	3.71	0.890	

*From the total number of cooperatives in the sample (N=50), five could not be classified according to the suggested classification due to the missing data about their social networks. Another cooperative –classified as having an asymmetrical external network– did not provide information about its performance.

Given the performance obtained by the cooperatives according to their social networks in a preliminary and descriptive manner, the existence of statistically significant differences (*p-value < 0.05)* was analysed for each of the performance indicators for the four types of cooperative. A *p-value < 0.05* indicated significant differences in the performance of cooperatives according to their social networks. In order to achieve this, prior to applying a non-parametric test (Pearson's Chi-square test) the categories of the results scale were re-encoded (initially from 1 to 5), now considering three categories: much worse/worse than competitors (1), same as competitors (2), and better/much better than competitors (3). The results obtained for each category are as follows:

- Economic and financial strength (Table 8):
In all four types of cooperatives according to their social networks, predominant are organisations that perceive themselves to be at least the same as their competitors. Prominent are cooperatives with an asymmetric external social network, which mostly believe their economic and financial situation to be better or much better than that of their competitors (66.7%). However, this small difference is not statistically significant (p-value= 0.231 > 0.05).

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Table 8. Analysis of significant differences in performance according to social networks: economic and financial strength

	Typology of social networks				Total
	Narrow social network	Asymmetric internal social network	Asymmetric external social network	Broad social network	
Much worse/worse than competitors	0	1 (10%)	0	5 (29.4%)	6 (13.6%)
Same as competitors	7 (63.6%)	5 (50%)	2 (33.3%)	6 (35.3%)	20 (45.4%)
Better/much better than competitors	4 (36.4%)	4 (40%)	4 (66.7%)	6 (35.3%)	18 (40.1%)
TOTAL	11 (100%)	10 (100%)	6 (100%)	17 (100%)	44 (100%)
Pearson's Chi-square 8.105 df 6 p-value= 0.231 > 0.05 Asymptotic significance (two-sided) Not significant					

Source: *own data*

- Member satisfaction (Table 9):

Member satisfaction in half of the cooperatives analysed is better or much better than that of their competitors. This is also reflected in all types of cooperatives, except for cooperatives with a narrow social network, where most members feel as equally satisfied as their competitors. Significant differences are not observed in this indicator either (p-value=0.490 > 0.05).

Table 9. Analysis of significant differences in performance according to social networks: member satisfaction

	Typology of social networks				Total
	Narrow social network	Asymmetric internal social network	Asymmetric external social network	Broad social network	
Much worse/worse than competitors	1 (9.1%)	1 (10%)	0	3 (17.6%)	5 (11.4%)
Same as competitors	7 (63.6%)	3 (30%)	2 (33.3%)	5 (29.4%)	17 (38.6%)
Better/much better than competitors	3 (27.3%)	6 (60%)	4 (66.7%)	9 (52.9%)	22 (50%)
TOTAL	11 (100%)	10 (100%)	6 (100%)	17 (100%)	44 (100%)
Pearson's Chi-square 5.428 df 6 p-value=0.490 > 0.05 Asymptotic significance (two-sided) Not significant					

Source: *own data*

- Sales growth (Table 10):

Cooperatives' growth tendency is reflected in the four types. While those with a broad social network have mostly grown the same as their competitors, the other three types are composed of cooperatives that have mostly experienced better or much better sales growth than their competitors. However, this difference is not considered to be significant from a statistical point of view (p-value=0.857 > 0.05).

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Table 10. Analysis of significant differences in performance according to social networks: sales growth

	Typology of social networks				
	Narrow social network	Asymmetric internal social network	Asymmetric external social network	Broad social network	Total
Much worse/worse than competitors	1 (9.1%)	2 (20%)	0	2 (11.8%)	5 (11.4%)
Same as competitors	4 (36.4%)	3 (30%)	2 (33.3%)	8 (47%)	17 (38.6%)
Better/much better than competitors	6 (54.5%)	5 (50%)	4 (66.7%)	7 (41.1%)	22 (50%)
TOTAL	11 (100%)	10 (100%)	6 (100%)	17 (100%)	44 (100%)
Pearson's Chi-square 2.598 df 6 p-value=0.857 > 0.05 Asymptotic significance (two-sided) Not significant					

Source: *own data*

- The cooperative's external image (Table 11):

External image is the only performance indicator in which the existing differences among the four types of cooperatives according to their social networks are significant and noteworthy (p-value=0.048 < 0.05). Although among the cooperatives with a broad social network there are some that perceive their external image to be worse or much worse than their competitors, over two thirds (76.5%) of the cooperatives with this kind of network perceive their external image to be better or even much better than their competitors'. In addition, cooperatives with an asymmetric external network are split in the same proportion between those who consider their external image to be the same (50%) as their competitors, and those who consider it to be better or much better (50%). For their part, a smaller percentage –48%– of cooperatives that do not evidence a highly developed external social network (cooperatives with a narrow social network plus cooperatives with an asymmetric internal network) considered their image to be better or much better than their competitors.

Table 11. Analysis of significant differences in performance according to social networks: the cooperative's external image

	Typology of social networks				
	Narrow social network	Asymmetric internal social network	Asymmetric external social network	Broad social network	Total
Much worse/worse than competitors	0	0	0	3 (17.6%)	3 (6.8%)
Same as competitors	6 (54.5%)	5 (50%)	3 (50%)	1 (5.9%)	15 (34.1%)
Better/much better than competitors	5 (45.5%)	5 (50%)	3 (50%)	13 (76.5%)	26 (59.1%)
TOTAL	11 (100%)	10 (100%)	6 (100%)	17 (100%)	44 (100%)
Pearson's Chi-square 12.710 df 6 **p-value=0.048 < 0.05** Asymptotic significance (two-sided) Significant					

Source: *own data*

Therefore, the only significant difference found is in the external image of cooperatives with different social networks. Cooperatives with a broad social network are clearly seen to have a better external image than their competitors and –in a smaller percentage– cooperatives with an asymmetric social network abroad, thereby confirming to a certain degree the hypothesis posited.

Conclusions and implications

Conclusions

Given the importance of social capital and social networks in cooperatives, this work contributes to the literature –in a preliminary and exploratory way– by suggesting a classification of agrifood cooperatives according to their internal and external social networks. A polarisation between the two types of cooperatives located at the extremes of the classification can thus be seen, as agrifood cooperatives with a broad social network (34%) and with a narrow social network (22%) predominate. When developing only one type of social network (internal or external), cooperatives place the emphasis on their internal network, encouraging relations and trust between members (horizontal) and between the latter and management teams (vertical). Cooperatives that have a highly developed external social network (regardless of their internal social network) make up 48% of the sample, whereas cooperatives that have a high internal social network (regardless of their external social network) account for 54% of organisations. This highlights the lack of external orientation of these agrifood cooperatives. It is also reflected by the fact that the smaller group is composed of cooperatives with an asymmetric external network. Grashuis and Magnier (2018) also note that most agrifood cooperatives lack a brand image that helps their differentiation. However, Benos et al. (2016) observed that agribusiness cooperatives abandon their traditional "passive market role", creating the conditions to develop a market orientation, despite the difficulties involved. In our study, cooperatives that develop an external asymmetric social network are mostly over 45 years old, which is a distinctive characteristic compared to other types of cooperatives according to their social networks and which are mostly younger. Data analysis shows that the products and markets of cooperatives with an asymmetric external social network also make them different. Specifically, cooperatives with a narrow, broad or asymmetric internal social network clearly show a focus on bananas as their products, while cooperatives with an asymmetric external social network evidence a wider range of products. The same happens with the target markets for their products. Cooperatives with an asymmetric external social network sell their products to local, national or even international markets in similar percentages, whereas the other cooperatives are especially focused on local –and at most– regional markets. Being older, and being involved in a greater variety of products and markets is what characterizes cooperatives that have an asymmetric external social network. These characteristics make them focus particularly on developing an external social network linked to greater market orientation of cooperatives.

These results point to a second step in this research aimed at exploring the influence of social networks on cooperatives' performance. The only statistically significant difference among cooperatives according to their social network is observed in the external image projected by these organisations. Among the cooperatives with a broad social network –or at least with an asymmetric external social network– organisations with a better or much better external image and prestige than their competitors predominate. With the significant impact it has on the external image of the cooperatives, the importance of their market orientation is thus confirmed, given the new competitive environment and, especially, the ever-increasing pressures in the agrifood chain.

The lack of any further differences in the performance of the various types of cooperatives according to their social networks also leads us to conclude that the small size of the vast majority of cooperatives coupled with their geographical and industrial proximity as well as their partners' similar interests (Table 5) may have a greater impact on their performance than the social networks themselves. This exploratory study has therefore only partially

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confirmed the hypothesis put forward by pointing to differences in performance measured as the external image of the cooperatives according to the type of social networks they develop.

Implications

Several implications emerge from the results obtained, both for the sector and for institutions. On the one hand, managers must be able to plan and develop a social climate of interpersonal cooperation between members and between members and managers (horizontal and vertical) in line with the cooperative's values, objectives and strategies. In this sense, cooperative managers should analyse, measure and monitor each social capital dimension and each type of social capital (Apparao et al., 2019). They must also act thereon in a manner that is consistent with their strategy. They should therefore design an appropriate and effective communication policy of cooperatives' shared goals and values and also organise events such as workshops, training seminars and so on (Deng et al., 2020) that show the nature and benefits of cooperatives to members so as to reinforce the cooperative ideology (Byrne & McCarthy, 2005). Managers might thus simultaneously improve the cognitive and structural dimension of capital as members interact with each other and come to know a little more about the activities others are engaged in.

Managers also need to understand that the external social network is especially relevant, since it generates important effects on the external image and prestige of cooperatives. To achieve this, it may prove necessary to hire qualified professionals for management positions. Those professional managers must understand the strategic nature of social networks for cooperatives. They could therefore become market-oriented and innovative organisations that are ready to compete in today's complex markets in the same conditions as non-social economy enterprises.

Finally, managers –and indeed cooperative members as a whole– could benefit more from their social capital as it can simplify and help them with the interpersonal, decisional and informational roles (Mintzberg, 1973); that is, with managerial roles. Social capital has been defined as a supplement of governance in cooperatives (Liang et al., 2015) because social capital and formal governances are complementary (Liang *et al.*, 2018).

Furthermore, institutions and public administrations must favour meeting spaces for dialogue and information exchange between all the members of the agrifood supply chain as well as the other agents involved, in addition to discussion forums or sectorial fairs. Public institutions should also develop policies on human resources and social capital training for sector members and in particular for managers of agrifood cooperatives. All of these activities are aimed at changing the mentality of these managers, and at taking them out of their "comfort zone" so that they can promote larger, innovative and more market-oriented cooperatives.

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