

SOCIAL NETWORKS, SOCIAL CAPITAL AND PERFORMANCE: A STUDY WITH BRAZILIAN DAIRY COOPERATIVES

Redes Sociais, Capital Social e Desempenho: Estudo com Cooperativas Brasileiras do Segmento Lácteo

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Abstract

The objective of this research is to assess the influence of social networks on the organizational capabilities of the cooperatives operating in the Brazilian dairy segment. The subject of this study arises from the relationship of inter-organizational social networks in managerial capabilities of Brazilian cooperatives operating in the dairy segment. We utilized a structured questionnaire to collect quantitative data. The questionnaire was sent by email and by mail to the leaders of 414 cooperatives. We obtained 348 responses and, after treatment of missing data, 331 of them were analyzed. A theoretical model based on the theoretical framework was proposed and then validated by analysis of Structural Equation Modeling (SEM). Thus, it was established that inter-organizational social networks generate capital and that the cooperatives make use of networks, albeit incipiently. It was noted, too, that inter-organizational social networks can benefit cooperatives' performance.

Keywords: Cooperatives Networks. Social Networks. Social Capital. Performance.

Resumo

O objetivo deste estudo é avaliar a influência das redes sociais sobre as capacidades gerenciais das cooperativas operando no segmento lácteo. O assunto estudado surge da relação das redes sociais interorganizacionais na capacidade de gestão de cooperativas brasileiras que operam no segmento de lácteo. O questionário foi enviado por e-mail e por correio para os líderes de 414 cooperativas. Foram obtidas 348 respostas e, após o tratamento de dados ausentes, foram analisados 331 deles. Um modelo teórico baseado no referencial teórico foi proposto e, em seguida, validado pela análise de Modelagem de Equações Estruturais (SEM). Assim, estabeleceu-se que as redes sociais interorganizacionais geram capital e que as cooperativas fazem uso de redes, ainda que de forma incipiente. Notou-se, também, que as redes sociais interorganizacionais podem beneficiar o desempenho das cooperativas.

Palavras-chave: Redes de Cooperativas. Redes Sociais. Capital Social. Desempenho.



1 INTRODUCTION

The man has by nature the need to live in society. The awareness of the need for mutual aid, cooperation and solidarity are instinctive in people and always manifested in all ages of history. Thus, we can say that cooperate is an act inherent in human beings and is part of the history of human evolution (CARVALHO, 2002). In this context, we see the importance of social networks in human relations as a tool for exchanging information, ideas, values and cultures that may directly influence the man's behavior in the environment that he is inserted in.

Several concepts and terminology can be found in literature to refer to organizational arrangements, such as clusters (PORTER, 1998); competitive cluster, consortia, local productive systems, poles (CASAROTTO FILHO; PIRES, 2001); territorial clusters, industrial districts, supply chain (LASTRES; CASSIOLATO, 2005); organizational networks (NOHRIA, 1992); companies in networks (CASTELLS, 1999); and inter-organizational networks (ARAÚJO, 2000). Even with this multiplicity of concepts and formats, most available studies refer to similar ideas, where cooperation among network participants is the central focus. In this sense, one can say that the possibility of developing cooperative forms of work is presented as a universal and irreversible trend.

Thus, the objective of this research is to assess the influence of social networks on the organizational capabilities of the cooperatives operating in the Brazilian dairy segment.

Grandori and Soda (1995) argue that networks play an important role in the economic environment, regulating the operations of complex transactions and inter-organizational cooperation therein. The authors add that social networks can be found in various formats, among them there are the inter-firm, joint ventures, franchising, consortium, trade agreements and personal.

According Vale (2006), networks can be a source of power and resources. Thus, Barney, Wright and Ketchen (2001) suggest that a sustainable competitive advantage of a company comes from its resources and capabilities not easily imitable, which are difficult to replace and can be tangible or intangible. Among these attributes, the authors listed: the bureaucracy of

the organization, knowledge management, the ability of managers to turn their knowledge into results, control of information and knowledge.

Burt (1992), when addressing this last item on his social networking concepts, points it as a structural hole, requiring constant observation and control. Complementing the importance of generating resources and expertise to manage them, Barney and Hesterly (2004) consider that these are all qualities that give abilities to choose and supply strategies. The authors classified the resources into four types: financial (equity, loans and profits), physical (equipment and fixed assets); human (knowledge retention) and organizational (trust, group work and relationships). Coleman (1988), Burt (1992), Aguiar *et al.* (2008) and Barney, Wright and Ketchen (2001) consider the attributes (listed by Barney, Wright and Ketchen (2001)) and organizational resources as social capital, since they are part of trust, teamwork and relationships.

Even within the characterization of networks, Marteleto (2001) alerts that the studies on this subject show that the contemporary social reality has failed to clarify that actors, armed with resources and capabilities, organize themselves into social networks within their own environments and are mobilized in pursuit of their goals. The author believes that, even with all the work done, there isn't a theory of social networks and the study of this subject can be put into practice in various types of situations. In this context, Aguiar *et al.* (2008) argues that there are difficulties in claiming to have a unified theory, which contains all the attributes related to dynamic development and operation of social networks between companies.

The analysis of the the dynamism and functionality of the networks, their influence in the new format of organizations leads to various discussions about the possibility of joining several concepts to the issues presented in the Cooperativism. Thus, we can see the networks as essential mechanisms to permit cooperation among economic agents.

In the academic context, we can find many studies addressing the topic Cooperative Management. However, few studies relate to management with new structures in networks, and even less with social networks.

Cooperatives have difficulties to follow private companies due to slowness in decision-making, poor marketing, few innovations, isolation from the context

of new organizational forms and lack of professional management (ANTONIALI, 2000). The author adds that these negative factors could be better exploited in cooperatives, since they could offset some of the lack of technical training of their managers when concentrate efforts on ties with sectors and organizations. Thus, it can improve the knowledge transmission, achieve lower costs, and increase capacity on the market, minimizing the risk of losses when the government lacks incentives and benevolence to them.

By analyzing the interrelationships within and outside of cooperatives and the importance of social networks to the dynamism of today's organizations, some issues stand out, such as the performance of cooperatives, which factors lead cooperatives to have greater competitive advantage in the marketplace; what is the role of leaders in this context, what should managers do to improve the performance of cooperatives and their positioning in the market, the social network as a competitive advantage in the cooperatives, and how social capital could be transformed into resources and benefits to institutions.

2 THEORETICAL FRAMEWORK

The evolution of organizational forms walks to the forms of networks. This statement presents strong characteristics, among them are: communication, information exchange and knowledge. Such exchanges are more social than they appear, being formed according to market management structures and hierarchy (POWELL, 1990).

Castells (1999) shows that the traditional organization, working individually, faces difficulties regarding the new challenges, and the only way to minimize risks and share costs is to keep up with the constantly updated information.

The new organizational arrangements were born with discussions on globalization, reinforcing the importance of technological changes that establish network integration as a fundamental form of competition in the new global economy.

Baldi and Lopes (2002), based on theoretical approaches, argue that organizational forms have evolved and are still changing. This happens due to theoretical developments of various concepts, adapted to their

time, customs, economy and many other factors within the organizational context.

New organizational forms are interrelated with new patterns of production organization, different mechanisms of coordination and control as well as information systems and production and dissemination of knowledge in organizations. In this sense, the new would be related to the use of new organizational elements and recombining traditionally used elements (eg, formalization and labor division). (BALDI; LOPES, 2002, p. 3).

However, it is possible to see that, in recent decades, not only organizational forms showed changes, but also new economic, social, political and markets. We also verified that the theoretical approaches presented evolution in their concepts.

Balancieri (2010) highlights that social network analysis allows assimilating relations development, distinguishing the flow of information, resources and actors. The author conceptualizes actor as a social unit of different types, such as: an individual, an organization/ institution/organization, or even a set of social units. We can see that the concept of actor is flexible, allowing different levels of aggregation, thus favoring their suitability for different research problems and also understanding the complexity of the environments and their interactions

To Aguiar *et al.* (2008), the social network between companies is composed of nodes, in which various resources are passed, which are currently discussed and studied by many classical organizations' theorists. The author developed a scientific research in the area of social networks of cooperation, based on the Theory of Relational Exchanges by Ian MacNeil. This study alerts to the complex environment in which organizations live, highlighting the need for new forms of structural processes to deal with the environment. In the survey, Aguiar also highlights the inter-organizational network as a competitive advantage.

According Marteleto (2001), there are many components of networks, such as nodes, single mode (network in which the actors belong to one group only), dual-mode (network in which actors belong to distinct groups), links, specific groups, and urban spaces without physical boundaries. These components lead to a conceptualization of groups of autonomous members, sharing ideas and resources with shared values and goals, thus resembling the cooperative principles.



Considering the power, effectiveness and reach of networks, Buskens and Burger (2009) discuss the different forms of more and less dense networks. They also comment on the positioning of Coleman (1988; 1990) when he speaks of closed networks (those in which all are connected together with strong relationships, in which there is data redundancy).

Granovetter (1973; 1985) and Burt (1992) considered the most comprehensive networks as the search for competitive advantage, since they provide access to new information not yet dominated by peers and/or competitors. From this perspective, it is necessary that the connections bring non-redundant information with ties outside their own cluster itself or network of primary actor, and should be less cohesive, regardless of the context in which they are inserted. By analyzing the studies of Granovetter (1973; 1985), which dealt with the theory of weak links, and Burt (1992), who discussed the theory of structural hole, it can be said that although the approaches are different, the content between them is very similar.

In general, the current trend is to combat what is fragmented and isolated and prioritize integrated. The most important is the integration of knowledge in pursuit of achieving shared goals (FLEURY; FLEURY, 1997). According Senge (1990), the learning gains more relevance as the world becomes more interconnected, and businesses, more complex and dynamic. It is not enough a few learn by organization, it is necessary that all levels of the company to engage in the learning process. Thus, the systemic thought, whereby the whole can be greater than the sum of its parts is necessary.

Following the same parameter analyzed by Burt (1992) on innovation, Tomaél (2007) believes that the information and innovation are part of the research process and knowledge retention, which is influenced by the interactions and socially marked by interdependencies of the organizational environment.

Other content flowing on the network are the relationships, such as trust, reciprocity, cooperation and solidarity (AGUIAR *et al.*, 2008).

Much has been discussed about the social capital, from thinkers who took the capital as purely market relations and hierarchy, to the more recent ones, who consider it as capital immersed in social networks (GRANOVETTER, 1985).

Nahapiet and Ghoshal (1998, p. 243) define social capital “[...] as the sum of the actual and potential resources embedded within, available in and derived from the network of relationships possessed by an individual or organization”. For them, there are 3 dimensions forming social capital: structural, relational and cognitive.

The first comprises the properties of social system and the network as a whole; the second refers to the kind of relationships developed among people and the third refers to “[...] those resources providing shared representations, interpretations, and systems of meanings between the parties” (NAHAPIET; GHOSHAL, 1998, p. 244).

Coleman (1988) argues that social capital can be regarded as the resources available through the social structure which the actor may have in order to achieve their own interests. It is a kind of support, so that the actor could achieve his goals and desired outcomes, making the transition from the micro to the macro environment, without an elaborate and structured process. The author reports that a relevant form of social capital is the potential for information that is within the structure of the relationship. Complements that social capital is not unique, can be found in several ways, depending on the actor, the environment and social structure. Moreover, it is able to generate output and may facilitate certain movements, whether of the actor, the individual or the organization.

We can state that the social network is a social capital. The great obstacle is to describe the benefits of network within the competition, as well as being able to expose how certain structures have highlighted their differentials. The network is built on a mesh of links or nodes, each of which can be connected to one or more contacts. If connected to a single point, carry inside information, first-hand, unique and non-redundant. If connected to multiple interconnected nodes carry secondary information, redundant, without much importance.

Burt (1992) points out that an implicit value in social networking is trust, since it is seen as a critical factor of existence, leading to imperfect competition. According some authors, trust is a crucial issue of social networking and other types of networks (BURT, 1992; EBERS, 2002; PUTNAM, 1995). In this context, Putnam (1995) emphasizes that social capital can happen on

different and unequal networks. However, trust between them is a basic item and the explicit and implicit rules must exist. The authors consider trust as a kind of social capital. Thus, a group that maintains relations that permeate the trust is capable of greater accomplishments in front of those in which it does not exist.

According to Coleman (1988), capital can be further classified into human, physical and social. Human capital is one in which the individual develops acquiring knowledge and providing greater ability to make decisions in different situations. Physical capital is derived from the skills of the individual, it's the result of the transformation of raw material into tools that will be used to achieve other resources for their survival and comfort. The social capital arises from exchange in relationships with other individuals to facilitate their own actions. It is a resource, because the one who owns it knows that it has a value in the hands and that from it can take advantage.

In addressing social capital as a form of commitment, Coleman (1988) divided this resource into three categories: the obligation, expectations and reliability of the structure. In the case of the obligation, if an individual "A" makes an action for the benefit of another, "B", creates a credit with the latter (it is value). If "A" continues to make these benefits to various individuals, implies that, in most cases, A will have a portfolio of credits relating to expectations, which can be considered as future resources or values. In markets where there is a dependence on actor interaction, the obligation becomes a compromise between its members. For the existence of these resources, considered as social capital, it is necessary the trustworthiness. This category arises due to the dependence on relationships and for being immersed in the core of micro society, which is where the actors operate.

From this perspective, many researchers study the norms and effective sanctions as powerful tools, which can also be regarded as social capital. Coleman (1988) considers that the norms when acting concomitantly with status, honors, awards and other values, become a capital in building nations. He complements the affirmative saying that in the case of closed networks, there are greater chances of norms become a powerful social capital, stronger than when networks are open.

In this context of sanctions, the contract is a tool that supports and gives conditions for their application.

May be considered as tacit or explicit within a trust relationship (Campbell, 2004). Therefore, if one brings the contract to the context of social networking, it may be regarded as a social capital.

Another factor to be analyzed is information (Coleman, 1988). This item is considered as an important form of social capital in the relationship, and may be the basis for actions to be carried. However, information is costly when the organization has to acquire it. On this subject, Williamson (1981) says that information should have at least one transaction cost.

Relationships with colleagues, customers and suppliers can bring opportunities to transform the financial and human capital in profit. For Burt (1992), social capital theory describes how some resources are available to certain individuals and not for others. Individuals develop relationships with those who have similarities. Thus, people socially similar, even seeking different interests, spend time in the same places. Strong relationships between similar individuals are expected to bring correlated resources and opinions from their closest contacts.

In this approach, Graaf and Flap (1991) stated that individuals with large network of contacts achieve better results than those who belong to smaller networks. The authors state that the structure of contacts and resources that network can leverage between its individuals are social capital. From there, two factors are listed: how and who the individual reaches in the network. The "how" is considered important to Burt (1992), because who knows how to structure a network, to create great opportunities and advantages, will know "who" put in it. Thus, the identification with whom an actor is connected to in a network can tell a lot about the results of the contact. Supporting this idea, Granovetter (1973) says that the social distance between two individuals in the network is the shortest path between them, it is also regarded as a bridge.

The assumption of Burt (1992) is that actors with well-structured networks obtain high rates of return. The difficulty is to describe the benefits of networking within a competition environment and still be able to make sure that they are highlighted in the structure. With this, the author classifies benefits in information and control. Opportunities come from all sides, they are designs available, and demand for good ideas and financial resources. Who will be favored is the one who



knows how to enjoy the benefits contained in the information relayed through the network. Thus, subjects with a good social network will have higher chances of getting better returns on their investments.

Analyzing the difficulty of measuring the benefits brought by the use of the network, Lin (1999) developed a concept for measuring social capital. This idea is rooted in the social network and social relations, and should be measured according to such roots. This author defines social capital as the resources embedded within the social structure, which are accessed or mobilized in purposeful actions. Thus, social capital has three elements intersecting structure and action: the structural (embeddedness), opportunity (accessibility) and action-oriented aspects (use).

The theory of social resources has proposed that access and use of resources (immersed in the social network) may lead to a better economic status. These resources are determined by the position in the hierarchical structure of the network and the use of weak ties (Lin, 1982). This proposition is in accordance with Burt's (1992) studies, when the latter argues that position in the network is important and defines the best performances.

Granovetter (1973; 1985), Burt (1992), Borgatti, Jones and Everett (1998) highlight some measures for social capital, among them: the position in the network: whether near or far from the strategic position of the individual operator (bridge); density (many links); network size; closed networks (with data redundancy), and nodes (operators) important and well positioned who control information. So we see here that the position in the network is a factor of identification of the social capital.

By creating a model to measure social capital, Lin (1982) found that two types of results can be achieved: instrumental action: the return is the gain of added features, which so far are not owned by the central node (ego network); expressive action: the return is the maintenance of the assets owned by the central node (ego network).

Lin (1982) complements that in the instrumental action three possible returns can be identified: economic (direct); politician: represented by the hierarchical position; and social network: gaining reputation by network operators (alters), which are those that support the central node (the ego network).

Supporters (alters) that provide information to the ego network (core nodes) are aware of the asymmetry that compose the network, and do not expect to receive information back, but seek status because they are helping. The return they expect is to receive public recognition, which will promote their reputation in the environment they live. For the case of expressive action, three types of returns can be listed: physical health: maintenance of physical functional competence; mental health: the ability to withstand the pressures of demand from the network and maintaining emotional capacity and intelligence; satisfaction with life (with the environment, family, work, and the community in general).

Also in Social Resource Theory, Lin (1982) points out the health, power and status as parameters in measuring social capital. The measure of social resources can be specified as the network and contact resources. Thus, we have the network resource, such as one immersed in the central node (ego). The contact resource is one in which the resource is used as support immersed in an instrumental action (the return is the gain of added resources, which so far are not owned by the central node - ego from the network). In this, the measure of social capital directly influences the contact, *i.e.*, their health, their power and status.

According Nahapiet and Ghoshal (1998), the social capital creates intellectual capital, and it can be observed in 2 dimensions: tacit (knowing how) and explicit (knowing what), or in 2 levels: individual or social.

Due to the different approaches presented for measuring social capital, controversies among some authors may be found. Thus, Burt (1992; 2000), Aguiar *et al.* (2008), Granovetter (1985) and Bourdieu (2006) highlight the difficulty of measuring the benefits from the network. The authors state that still exists issues to be discussed to enhance the understanding of the dynamics and operation of networks, such as: what leads actors to strategic alliances, the real way of measuring the networks content, the ability of an actor to influence other's action and the real benefits brought.

Still evaluating the benefits of networking, Burt (1992, p. 57-58) complements the ideas of Coleman (1988, 1990) noting that "[...] an actor brings three types of capital: financial, human and social. The latter is the relationship with other actors. The social capital is very important within the imperfect competition and,

as critical as the human and financial capital". For Burt (2000), social capital is a function of the network operator and brings opportunities and gains. The bridges (or also called links) create competitive advantages for people who have relationships with each other, behaving and composing the social capital. The author adds that this issue has become a business concept and many studies are conducted on this topic, many focused on the metaphor of the social capital, where the actors are well positioned in the network.

The main bases of social capital are: the powerful technology and critical issue. The former corresponds to analysis of network and the second addresses performance. The analysis of social capital adopted by Burt (2000) focuses on senior managers, since they have more autonomy in the organization. According to the author, social capital complements human capital and the more active individuals are better connected to the network.

Ancona and Caldwell (1992), when dealing with the performance levels of organizational teams, highlight that those who manage the power structure and workflow have the capacity to maintain performance over time. This assertion finds support in the work of Burt (1992; 2000), when the author talks about the importance of controlling what goes through the network, and also in studies of Bourdieu (2006), when focuses on the position of the actor in the network, generating power and social capital.

Therefore, the position in the network can be an asset, and this is considered as social capital. In addressing this perspective, Burt (1992) is in line with the ideas of Bourdieu (2006), when considering social capital as the sum of resources, actual or virtual, that render an individual or cluster advantage for processing a network of contacts rich and durable.

Given all the concepts and approaches presented in the theoretical framework of this work, one sees the importance of the social networking, the information exchange, the interaction between actors and the capital for the development and maintenance of organizations, in environment they are inserted.

In cooperatives this perspective is no different. Even though they do not aim at profit, these institutions need to adapt to various changes in the market. As Antonialli (2000) said, cooperatives need to avoid isolation of its management process and monitor the

market in which they operate, with modern techniques and participatory management. Thus, one can see social networks as tools for facilitating the performance of cooperatives, streamlining business processes, reducing costs and facilitating the interaction of many individuals who work inside and outside the organization.

Based on the authors above mentioned, we propose the following model (Fig. 1) for measuring social network, social capital and performance of cooperatives.

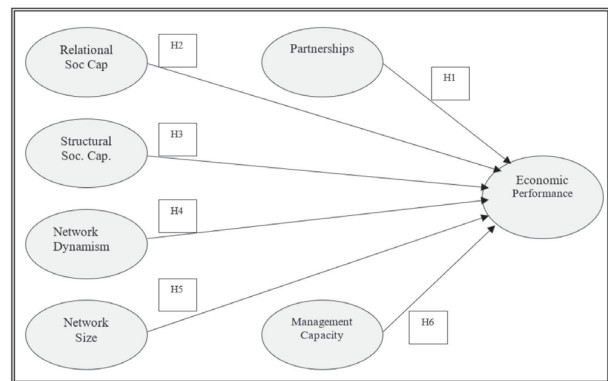


Figure 1: Networks, Social Capital and Economic Performance

Source: ???

The social capital contains 2 dimensions: **Structural Social Capital** (linkage configuration) and **Relational Social Capital** (relationship content). Regarding social network, there are 4 dimensions: **Network Size** (number of relationships); **Network Dynamism** (solution search); **Management Capacity** and **Partnership**. The Economic Performance is the dependent variable, formed by the follow items: process innovation, inside information, cost-cutting, profits, and managerial advantages.

The hypotheses tested were:

- H1: The **Partnership** positively influences the **Economic Performance**.
- H2: The **Relational Social Capital** positively influences the **Economic Performance**.
- H3: The **Structural Social Capital** positively influences the **Economic Performance**.
- H4: The **Network Dynamism** positively influences the **Economic Performance**.
- H5: The **Network Size** positively influences the **Economic Performance**.
- H6: The **Managerial Capabilities** positively influence the **Economic Performance**.



3 RESEARCH DESIGN

Regarding purpose, the research is descriptive. Hair *et al.* (2005, p. 86) states that “[...] descriptive research plans are typically structured and designed to evaluate the characteristics observed in the research questions”. In this study, the research is considered descriptive, as it has as objectives to evaluate the influence of social networks on organizational capabilities of dairy cooperatives segment.

As for the approach, the research was qualitative and quantitative. The qualitative phase was conducted to identify some indicators to compose the questionnaire of quantitative research, already partly identified through the literature review. Therefore, with the theoretical information and the data drawn from qualitative research, the questionnaire for the quantitative survey was composed.

The qualitative research was conducted through interviews with ten managers of six cooperatives from different municipalities of the Minas Gerais State, equidistant 100 km relative to each other, located in the Upper Paranaíba and Triângulo Mineiro Areas. There were 10 managers interviewed, among managers, directors and chairmen of cooperatives, with ages ranging from 37 to 65 years, experience in positions from 5 to 15 years time and working in that cooperatives from 5 to 20 years. The data collection period was from March to May 2012. The method used to analyze the qualitative research interviews was the Collective Subject Discourse, by Lefevre and Lefevre (2003).

The method used in quantitative research was a survey, which was based on the application of questionnaires to participants. The questionnaire was elaborated based on the constructs of the model, the theoretical framework and the data collected from qualitative research. Responses were assessed on 7-point interval scale, ranging from 1, strongly disagree to 7, strongly agree, as suggested by Malhotra (2004, p. 258), who indicates at least a 7 points scale, when data analysis is performed by statistical techniques.

The units of analysis were 414 dairy cooperatives, being 148 from Minas Gerais and border areas of the state, and other cooperatives in other states. The elements of observation were the managers, among them

we can mention: presidents, vice presidents, directors, deputy directors, managers and / or administrators.

The questionnaires were sent for respondents via the internet, initially, and by mail, due to the low return rate of electronic questionnaires. 2,000 questionnaires were printed and sent to the 414 cooperatives, seeking to reach all directors. At the end, 348 questionnaires were received.

The data analysis was made using PLS-SEM, due to data non normality and, according Hair, Ringle and Sarstedt (2011), the PLS should be used when the main purpose is maximizing the explained variance of the dependent latent construct.

4 RESULTS AND DISCUSSION

Of the 348 questionnaires returned, it was noted that 17 of them had a critical amount of missing data (> 10%) and were discarded. Therefore, the amount of questionnaires that became part of the valid sample for analysis of the model was 331.

Some outliers were identified, but we chose to maintain it because they could represent idiosyncratic behavior of some respondents.

Despite presenting univariate normality, the data showed no multivariate normality, as indicated by the Mardia coefficient, reinforcing the choice of PLS.

After preliminary analysis of data, socio-demographic profile of respondents of the quantitative research will be presented. 64% of managers have a college degree and some have reached management positions without having gone to college, maybe for length of service. It is observed from the data that about 90% of the respondents held positions of senior management. Therefore, it was expected that all have knowledge of the organization and this might contribute to the reliability of data.

84.7% of the cooperatives surveyed had leftovers in the financial year 2009, 90.8% in 2010 and 88.6% in 2011.

The following analysis was on indicators of each construct. After the exploratory factorial analysis, some indicators were excluded because they did not present statistical significance (loads below 0.45). Thus, the structural model, after exclusions, was well defined, as shown in Table 1.

Table 1: Factor Loadings

STRUCTURAL SOCIAL CAPITAL	WEIGHTS	RELATIONAL SOCIAL CAPITAL	WEIGHTS	NETWORK DYNAMISM	WEIGHTS	SIZE	WEIGHTS
1	0,85	1	0,61	1	0,81	1	0,62
2	0,83	2	0,75	2	0,75	2	0,56
4	0,69	3	0,76	3	0,82	3	0,63
5	0,72	4	0,68	4	0,56	4	0,54
6	0,0	5	0,67	5	0,79	5	0,78
11	0,61	6	0,73			6	0,58
		7	0,67			7	0,74
		13	0,56			8	0,63
						10	0,45
α	0,83	α	0,83	α	0,80	α	0,80
MANAGERIAL CAPABILITIES	WEIGHTS	PARTNERSHIP	WEIGHTS	ECONOMIC PERFORMANCE	WEIGHTS		
1	0,54	1	0,71	1	0,75		
2	0,58	2	0,80	2	0,79		
3	0,56	3	0,77	3	0,84		
4	0,54	4	0,71	4	0,80		
5	0,71	5	0,69	5	0,72		
6	0,68	6	0,67	6	0,78		
7	0,64	7	0,69	10	0,54		
8	0,64	8	0,65	11	0,60		
9	0,72			12	0,50		
				13	0,53		
				14	0,70		
α	0,81	α	0,86	α	0,89		

Source: ???

As suggested by Hair *et al.* (2010), Bagozzi and Yi (2012), it's important to assess the reliability, convergent and discriminant validity of the scales. As can be observed, all variables have significant factor loadings, which proves the convergent validity of the model. Based on the coefficients α Cronbach, we can attest the reliability of the constructs.

The discriminant validity was assessed by comparing the square root of the AVE and the correlation

coefficients between the constructs, data shown in Table 2. The ideal is to find correlation coefficients lower than the square root of the AVE, which was slightly violated in the case of some constructs: relational whit economic performance, dynamism and structure. Given the small magnitude of the violation and also considering the robustness of the set of indicators, we find it convenient to ignore the violation.



Table 2: Correlation Coefficients and AVE

	NETWORK DYNAMISM	ECONOMIC PERFORMANCE	MANAGERIAL CAPACITY	PARTNERSHIP	RELATIONAL SOCIAL CAPITAL	SIZE	STRUCTURAL SOCIAL CA- PITAL
Dynamism	0,75						
Econ. Perf.	0,72	0,70					
Man. Capacity	0,34	0,44	0,63				
Partnership	0,52	0,71	0,53	0,71			
Relational	0,76	0,75	0,31	0,55	0,68		
Size	0,65	0,66	0,40	0,53	0,61	0,62	
Structure	0,63	0,64	0,28	0,49	0,69	0,56	0,74

Source: ???

The variables of the construct social capital structure refer to contacts with other cooperatives and exchange confidences in these relationships. Show the type of connection between agents, reflecting the pattern of relationships, which confirms the propositions of Nahapiet and Ghoshal (1998).

In relational construct, variables that resulted from the purification relate to the content of relationships, highlighting the trust and the positive effects of the relationship in terms of new knowledge. It is also according to the cited authors like, Granovetter (1973), Burt (1992), Coleman (1988), Tomaél (2007), Uzzi (2008), Marteleto (2001), Aguiar *et al.* (2008), Nahapiet and Ghoshal (1998) among others.

In construct dynamism variables retained refers to the search for joint solutions to problem solving, which means exchange of knowledge and this is related to the defended by Bourdieu (1998), Coleman (2008) and Burt (1992) among other authors who researched the creation of social capital.

The construct network size indicates that the contacts are diverse, involving more than one employee in each cooperative and more of one cooperative. Moreover, there is also an indication of the time spent in relationships, which is usually large. These conclusions confirm the propositions of Burt (1992) on structural hole, of Granovetter (1973) on weak ties, of Buskens and Burger (2009) on the context and Lin (1999) on dense or closed networks.

The partnership construct is formed by variables related to the relationship with communities, involving the recognition given to the cooperative by the affected communities. Therefore, the variable partnerships can be regarded as social capital in the network between organizations and give back benefits (BURT, 1992; GRANOVETTER, 1973; COLEMAN, 1988; BOURDIEU *et al.*, 2006).

The construct managerial capacity shows variables related to product management, people, processes and strategic planning. As indicate an advantage position of cooperatives towards other organizations and has the ability to enhance their performance, it can also be considered a form of social capital, according to Burt (1992), Coleman (1988) and Lin (1982) and Ancona and Caldwell (1992).

The construct economic performance is related to the variables that explain the superior results of the cooperative, such as innovation, technological gains, business opportunities, contractual regularities, among others. According to the authors already quoted Granovetter (1973), Burt (1992, 2000), Coleman (1988), Tomaél (2007), Uzzi (2008), Marteleto (2001), Aguiar *et al.* (2008), Lin (1982) and Ancona and Caldwell (1992), these results can be regarded as consequences of social capital.

After the discussion of the structural model, we can evaluate the measurement model, shown in Table 3 and Figure 2.

Table 3: Path Coefficients

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PATH COEFFICIENT	R ²
Economic Performance	Relational Social Capital	0,299*	0,734
Economic Performance	Structural Social Capital	0,077 ^{ns}	
Economic Performance	Network Dynamism	0,177*	
Economic Performance	Network Size	0,129*	
Economic Performance	Partnership	0,318*	
Economic Performance	Managerial capabilities	0,050 ^{ns}	

The economic performance is largely explained by the constructs forming the network and social capital, R² of 0.7314. The coefficient of the relationship with the construct partnerships, valued at 0.318, indicates that this is its main antecedent. The result is in line with expectations, as partnerships are crucial when it comes to social networks.

Significance level: *: 1%, ns: non-significant.

Source: ???

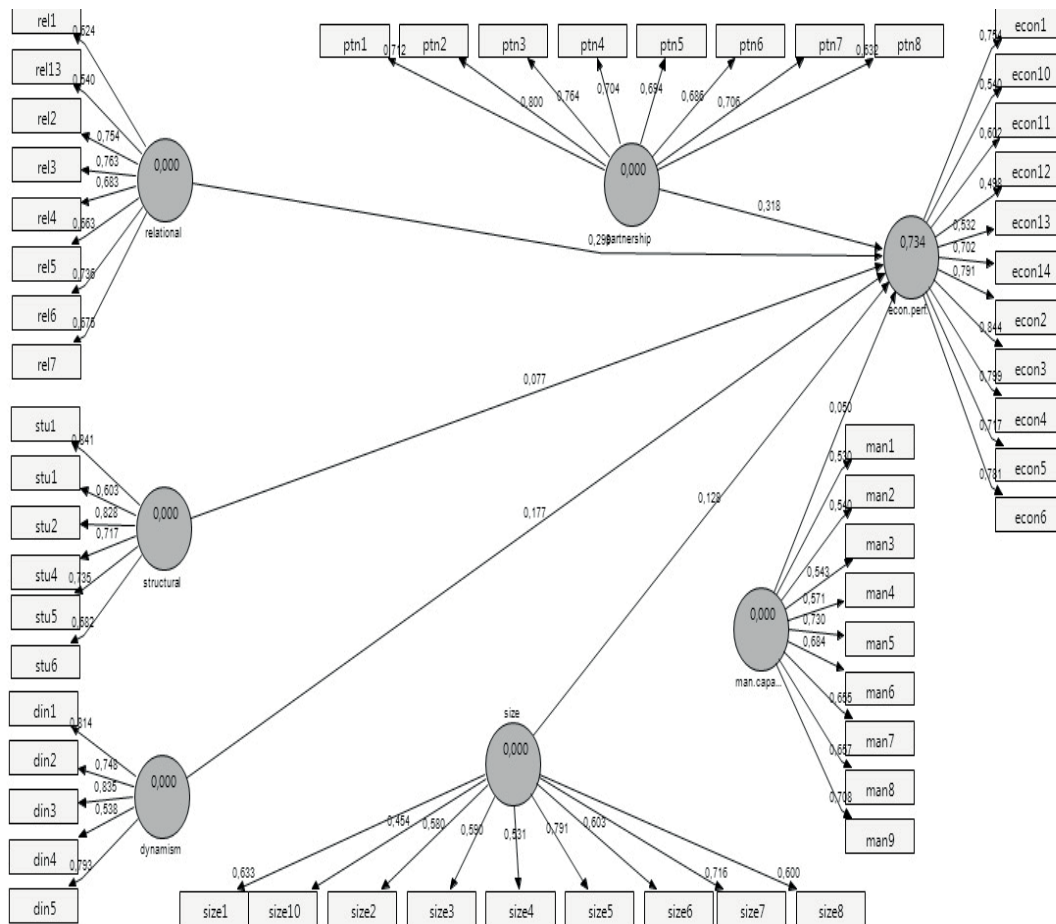


Figure 2: Dairy cooperatives. Networks, Social Capital and Economic Performance

Source: ???



The second construct most important is the relational, coefficient of 0.299. Refers to the content of relations, which is also extremely important in the formation of the network and hence the generation of higher performance.

Thirdly comes the construct dynamism, coefficient of 0.177, related to the search for joint solutions. It's in line with the propositions of social network and capital, showing that the joint action could actually cause better results.

Then we found the construct network size, with a coefficient of 0.129, referring to the number of contacts and network extension. Also this aspect may help in achieving superior results, but it depends on how the contacts are signed and also the quality of them. That is, a large network itself does not guarantee high performance.

The construct structure, coefficient of 0.077, non-significant, shows the connections of the network as a whole, with whom people relate and how relationships are given. Surprisingly, results showed no significant, indicating little relevance in explaining performance. This could be explained considering the meaning of this construct. It's more related to trust between directors, the kind of relationship they keep. Probably, it's important in terms of personal and managerial relations, but it does not cause influence in performance.

Finally, capacity management has coefficient of 0.05, non-significant. This result goes against the completely theoretical proposition, because in general, the more qualified is the management structure, the greater should be the results. The explanation for this result may lie in the composition of the management team. In many cooperatives, the choice of leaders obeys some political criterion and, therefore, the current directors, who responded to the questionnaires, may neglect management issues since his election or maintenance in office depends less on administrative issues and more on political relationships.

5 FINAL REMARKS

We seek to measure what is the importance of social networks and social capital on the performance of cooperatives. This study is justified due to the poor administration of the dairy cooperative in Brazil and

also because there aren't abundant studies that seek to measure social capital and its effects on the performance of organizations.

To achieve the main objective, we proposed a model to measure the influence of social capital, consisting of 6 dimensions (relational, structure, dynamism, size, management capacity and partnerships) on economic performance.

Of the six hypotheses tested, 4 were confirmed, highlighting the importance of the constructs: relational, dynamism, size and partnerships for achieving superior performance of cooperatives. The other two hypotheses concerning the importance of the constructs structure and management capacity had not been confirmed.

In general, our results are consistent with the theoretical framework that supports this research, confirming the importance of social networks and social capital as generating competitive advantages and therefore superior economic performance.

We noted that social inter-organizational networks can really bring a difference to the cooperatives, because the issues in the questionnaire that addressed topics as if the leaders had learned something new with the exchanges between cooperatives, was adamant that the leaders recognized that something new had developed with such relationships, with positive returns for their cooperatives.

It is also important to emphasize that, although they have very low frequency contacts, they mostly generate positive results in business of their cooperative, including generating innovation. This context shows that the contacts are in the position advocated by Granovetter (1973) and therefore they are weak ties and in turn bring positive results for cooperatives.

As managerial implications, we can identify areas to work on social inter-organizational network. We noted that leaders are open and eager for a tool to empower and enhance the business capabilities of their cooperatives. They understand they need a closer relationship between the cooperatives, but also understand that on the current template, they will not be able to fulfill this task. Therefore, something new has to be structured, a tool that minimizes the barrier which keeps the cooperative far apart.

We imagine that simply, if a leadership presents a robust plan, with appropriate tools, the effect will be highly positive. This could be undertaken, for instance,

by the Organization of Cooperatives of each State. We believe the most important is the development of social inter-organizational networks and its maintenance. This statement is based on the fact that some leaders assert that only by answering the questionnaire they realized they were very isolated and distant from the other directors and all this deserved a different attitude. As Granovetter (1973) and Burt (1992), among other authors state, a well-structured network drives organizations to better position compared to those without such a tool. To leverage the concept of inter-organizational networks, representative institutions could create work groups for micro region, in which the cooperatives of specific area could get together and work networks concepts.

As academic contributions, we can mention the proposal of a model for measuring organizational networks and social capital and its effects on organizational performance. In addition, the network approach in the context of the cooperative can also be cited as an academic contribution, since the lack of studies in this area.

Finally, we highlight research limitations and suggestions for future studies. The first limitation concerns the sample, once we have consulted all cooperatives of dairy segment, but there was no control over the type of cooperative that answered, so it may have been some bias. In addition, we searched only dairy segment cooperatives. Considering both the limitations, the generalization of the work becomes compromised.

Moreover, it is a research with a character to some extent innovative because we proposed a scale to measure networks, capital and performance. Therefore, new research that come to develop scales for this purpose and encompass other segments are likely to generate relevant academic and managerial contributions.

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APPENDIX A – QUESTIONNAIRE

Structure

1. I have frequent contact with the dairy cooperatives of my state.
2. Due to this contact, I have many close friends in the dairy cooperatives in the state.
4. I entrust my problems in my cooperative with my contacts in dairy cooperatives.
5. My contacts in the dairy cooperatives also entrust the problems of their cooperatives to me.
6. My cooperative has partnerships with dairy cooperatives which keep contact with us.
11. In my cooperatives network, there are some contacts with greatest influence.

Relational

1. I trust the people with whom I maintain contact in dairy cooperative.
2. The information I get from dairy cooperatives contribute positively in my decision making.
3. The information passed by the dairy cooperatives with whom we contact generate new knowledge in my cooperative.
4. Once I learn of important information, I step immediately to my contacts in other dairy cooperatives.
5. If we develop know-how in our cooperative, we move to our contacts in the dairy cooperatives.
6. In my contacts with cooperatives, we debate new ideas.
7. In the contacts maintained with dairy cooperatives, I discuss frankly the raised issues. 13. The innovations of my cooperative emerged from the trust placed by the contacts I have with dairy cooperatives.

Dynamism

1. In my contacts with dairy cooperatives, we seek joint solutions to our problems.
2. In my contacts with dairy cooperatives, I realize that people follow my suggestions.
3. Through my contacts with dairy cooperatives, I get key information to work efficiency in my cooperative.
4. I usually keep control over what information will be passed to the cooperatives.
5. In my contacts with dairy cooperatives, we discuss the issue of centralization of actions to perform some work.



Network Size

1. I Keep in touch with several people from the same dairy cooperative.
2. My networking is composed of a large number of dairy cooperatives.
3. In my cooperative, there are other employees who also make contacts with dairy cooperatives.
4. In my cooperative, there is freedom for employees to make contact with the cooperatives.
5. I'm always looking for new contacts in dairy cooperatives.
6. I often spend a lot of time with the contacts I establish with cooperatives.
7. I think I'm seen as a reference to my contact with cooperatives.
8. In my network, most often I am more consulted than I do queries.
10. The people with whom I keep in touch in cooperatives know the position I occupy in my cooperative.

Partnership

1. The innovation generated from contacts made with dairy cooperatives creates tools for forming new partnerships.
2. My cooperative establishes relationships with the community where it operates from contacts with dairy cooperatives.
3. My cooperative does many social activities in the community where it operates, due to network with cooperatives.
4. My cooperative is well accepted by the community where it is established due to network with cooperatives.
5. My cooperative is recognized in the community as a good company to work due to exchange experiences on existing networks between cooperatives.
6. The marketing actions taken by my cooperative are discussed by networks established between cooperatives.
7. In my cooperative there are partnerships to develop new products with the cooperative network.
8. My cooperative, with the cooperative network, participates in meetings with the class agencies, aiming at a milk macro policy in the state.

Management Capacity

1. My cooperative launches many products per year.
2. My cooperative provides varied products.
3. We have easy access to raw materials.
4. My cooperative pays benefits each year to our employees.
5. My cooperative always works strategic planning.
6. My cooperative always works with annual budget.
7. My cooperative makes performance evaluation of employees.
8. My cooperative makes events involving the families of our members.
9. The contacts we make enable improvements in our management capacity.

Economic Performance

1. The trust I place in my contacts in dairy cooperatives generate innovations with economic outcomes for my cooperative.
2. The information circulating in the network enables cooperative technological and efficiency gains.
3. The contacts I keep with dairy cooperatives generate innovations.
4. My contacts with the dairy cooperatives generate business opportunities.
5. Because of my contacts with dairy cooperatives, my cooperative gets inside information.
6. In my cooperative more effective procedures are generated due to contacts with other dairy cooperatives.
10. The financial results of my cooperative are partly influenced by the cooperative network.
11. The benefits distributed for workforce of my cooperative have resulted from cooperative network.
12. My cooperative always succors cooperatives that are in our network.
13. My cooperative makes legal/tax actions together with the cooperatives that we keep in touch.
14. In my cooperative we conduct joint work with cooperative network in order to reduce production costs.