

The role of social capital to the governance of hybrid forms in agribusiness: an analysis of Brazilian Beef Alliances

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Luís Otávio Bau Macedo

Universidade Federal de Mato Grosso

Campus de *Rondonópolis* - Rodovia *Rondonópolis-Guiratinga*, KM 06 (MT-270) –

Bairro Sagrada Família, Rondonópolis, Mato Grosso, Brazil

CEP: 78735-910

E-mail: luis_otavio@ufmt.br

Abstract

The objective of this paper is to propose an analytical framework to the study of the role of social capital to the governance of hybrid forms in agribusiness. The theoretical foundation of the analysis is based on TCE – Transaction Cost Economics, in the first instance, and on Economic Sociology approach of embeddedness and social capital, in the second instance. The paper proposes that in hybrid forms relational density is an important component of governance because it reduces transaction costs. However TCE does not provide a theoretical analysis of the evolution of relational density, whereas Economic Sociology approach relies on the concept of social capital as a resource to enhance social density. The assessment of the role of social capital to governance was based on four Brazilian beef alliances which have distinctive organizational forms based on horizontal and hierarchical arrangements. The analysis performed indicates that hybrids richer in social capital provide governance based on producers' horizontal coordination. On the other hand, relational density also can be delivered by an alliance “captain” that enforces cooperative behavior by the use of economic incentives and vertical control. The empirical illustration of the role of social capital to the governance of four Brazilian beef alliances confirms that relational density is a deciding factor to the choice of hybrid organizational forms in agribusiness.

Key words: social capital, collective action, institutional analysis, agribusiness

1. Introduction

The coordination in agro food chains based on complex organizational forms is a strategy to increase competitiveness in agribusiness systems. Agriculture markets face increasing requirements for players to follow production practices that deliver quality standards, healthy products, and social and environmental commitments. The supply of those attributes by agribusiness systems requires the formation of dense networks of commercial relations among input suppliers, agriculture producers, industry processors, wholesale and retail operators. The capability to coordinate transactions in order to provide the right incentives to deliver cooperation among players is therefore of key importance to agribusiness systems (Zylberstajn and Farina, 2010; Saes and Silveira, 2014).

The main explicative perspective to the governance of agribusiness systems is based on the study of economic transactions. That approach applies the ideas of TCE – Transaction Cost Economics to the analysis of governance structures in agribusiness systems. The main trait of that theoretical approach is that minimizing transactions costs entails the choice of the governance structures in a spectrum that varies from firm to hybrid and market forms. The main premises are that individuals operate with bounded rationality in markets in which

uncertainty and opportunism are pervasive (Zylbersztajn and Farina, 1999; Zylbersztajn, 2005).

Nonetheless the importance and reliability of the TCE contributions, the diversity of governance structures perceived in real agribusiness organizations is greater than the one it predicts. The so called “plural forms” designate diverse governance structures that deal with similar transaction costs. In recent years there was a rush in research to explain organizational forms that do not fit into the theoretical framework of TCE (Ménard et al. 2014).

A promising explicative agenda is related to social attributes that induce trust and cooperation. Collective action faces the challenge of building governance arrangements that entail coordination and mutual dependence among players without reducing their individual autonomy. That requires players to abide to cooperative behaviors based on economic incentives and institutional norms and sanctions that strengthen relational density. That challenge is not a trivial one and is solved in accordance to the idiosyncratic characteristics of each agribusiness system and so it requires specific empirical studies (Ménard, 2013; Ménard et al, 2014; Miranda and Chaddad, 2014).

Regarding to relational density in the last decades there were increasing efforts to the understanding of the non-economic resources that induce agents to cooperate. That field of study is multidisciplinary and has a focus on the analysis of social capital embedded in relationships based on trust and cooperation (Coleman, 1990; Putman, 2000). In accordance to Sporleder and Wu (2006), the link between social capital and its prevalent role in agro food chains is related to its capability to strengthen the generalized trust that emerges from knowledge about members’ cooperative patterns along time. Social capital plays a crucial role for facilitating generalized trust that turns relational contracts feasible to govern transactions.

Facing the diversity of organizational forms perceived in agribusiness in nowadays, the fundamental idea developed in this paper is that the governance of hybrid forms is based not only on transaction costs as predicted by Williamson (1985, 1991). But also on the features of the relational density that foster coordination along the supply chain. The choice of the governance structure depends upon the features of social capital embedded among players that provide the relational density required to foster trust and cooperative behavior. When that is not the case it is necessary to deliver coordination by the use of controls and incentives to strengthen alignment to organizational objectives.

Brazilian beef agribusiness system provides interesting clues to applying the social capital concept to the analysis of agri-food supply chains. Brazilian beef agribusiness system has an institutional environment in which transactions have low coordination. Transactions are mainly on cash for fed cattle and there is a high degree of uncertainty about the financial fragility of packers. Also there are recurrent complains among cattle breeders about the lack of reliability of carcasses’ post slaughter classifications. On the other hand, quality certification programs that aim to strengthen coordination have low adherence among breeders and packers (Caleman *et al.*, 2003). To face that challenges, new commercialization schemes have arisen: i) cattle associations to pool together inputs acquisition and to supply fed animals to slaughter; ii) alliances among breeders, packers and retailers to marketing brand quality cuts; iii) electronic auction arrangements to marketing animals; iv) exports of live cattle to slaughter abroad (Macedo and Moraes, 2009).

Facing the diversity of organizational arrangements envisioned in agribusiness to deliver coordination, a blended analytical framework is proposed in the paper. The theoretical background is rooted in the concepts of transaction costs and social capital in order to explain the choice for the governance form (horizontal or vertical). The study provides an illustration based on four case studies of Brazilian beef alliances that operate in accordance to distinctive models of governance in order to assess their comparative performances.

2. Theoretical foundations

2.1 A comparative assessment of New Institutional Economics and the Relational Perspective to the governance of hybrid forms.

This section intends to present a brief comparative review of the Transaction Cost Economics (TCE) and the Relational Perspective in order to assess their contributions to the governance of hybrid forms. For hybrids TCE refers to all organizational forms of governance that lies in between the spectrum of the firm and the market. The analysis of TCE's contributions to the understanding of hybrid forms is based on the works of Williamson (1991) and Ménard (2004). The description of the relational approach lies on Granovetter's (1985) concept of embeddedness and Burt's (1992) definition of structural hole. At the end of the section is described the literature concerned to combine both theoretical approaches to the analysis of hybrid forms.

TCE is based on Williamson's (1985, 1991) analysis of the comparative efficacy to economize on transaction costs of alternative forms of governance - markets, hybrids, and hierarchy. In accordance to Williamson's model the choice for the hybrid governance aim at reducing uncertainty and opportunism in transactions of bilateral dependency. Hybrids are structures that require lower governance costs than hierarchy, but provide lower uncertainty and greater control over opportunism than market transactions. Williamson's (1991) analysis of discrete forms faces the objections that TCE deals with polar forms – market and the firm – to the neglect of intermediate forms. In that seminal paper is advanced the hypothesis that each generic form of governance – market, hybrid, and hierarchy – needs to be supported by a different form of contract law. Market transactions are related to the classical contract law that is congruent with and supports the autonomous market forms of organization and transactions that buyers and sellers bear no dependency relation to each other. Hybrid transactions, on the other hand, face the neoclassical contract law and excuse doctrine which relieves parties from strict enforcement, hence, partners maintain their autonomy, and have profound bilateral dependency. Contracts are adaptive and incomplete and require an elastic spectrum of contractual mechanisms in face to unanticipated disturbances. In summary, in accordance to Williamson (1991, pp. 281) the hybrid form of governance is characterized by “[...] semi-strong incentives, and intermediate degree of administrative apparatus, display semi-strong adaptations of both kinds, and works out of a semi-legalist contract law regime”. As compared with market and hierarchy, which are polar opposites, the hybrid is located between the two.

The analysis of Ménard (2004) is another key contribution in line to TCE theoretical approach for the understanding of hybrid forms. Ménard (2004) provides a description of three fundamental regularities: pooling resources, contracting, and competing. First, hybrid forms are related to inter-firm coordination and cooperation to explore resources and capabilities in common grounds. On the positive side, that enables to search for rents that markets and firms are not the most effective governance modes, on the negative side, sharing rents requires discretionary choices that can entail conflicts among parties. Hence it poses the risks of opportunistic behavior. Hybrids are selective systems and not open, it is required complementarities, joint planning, and the sharing of information to the selection of partners. Second, hybrids require “transactional reciprocity” and that demands relational density among partners. Third, the cooperation in hybrids is based on independent partners that cooperate to enhance residuals, but compete to the sharing of those residuals. So always there is the risk of *free riding*. Also hybrids tend to develop in high competitive markets in which the pooling of resources is a way to deal with common uncertainties.

The absence of the *fiat* related with the hierarchy of the firm, requires in hybrid forms the development of what Menard (2004) calls “private government”. This device pairs the autonomy of partners with the transfer of decisions to a distinct entity in charge of their actions. The degree of centralization of these arrangements depends on the degree of mutual dependence among partners, and on the degree of complexity of the environment in which hybrids operate.

In summary TCE provides an analytical framework that explains the choice for the organizational forms of governance based on the comparative efficacy to economize on transaction costs. Hybrids are organizational forms that deliver greater coordination than market, however require greater costs of governance than market and impose higher risks of opportunism than firm. On the other hand, the competition for the sharing of the rents entails conflicts that are solved by incomplete contracts, so hybrids efficacy require reciprocity among the partners. The legal independence of the partners in hybrid forms increases the complexity to solve *ex post* contractual disturbances. The development of specific mechanisms to solve disputes requires relational density for its efficacy. In that regard TCE does not explore the dynamics of relational density among agents, because of its focus on transaction costs. That is a theoretical handicap for TCE given the importance of relational density to organizational efficacy in hybrid governance structures.

On the other hand the relational approach had its origin from Economic Sociology as an alternative to the governance of economic systems. Granovetter (1985) criticized New Institutional Economics because it relied on efficient behavior and not on the social structure to explain organizational choices. Granovetter (1985) stressed out that Williamson (1985) disregarded individual’s embeddedness in the social network and its importance to the evolvement of trust. The embeddedness concept highlights the connection of network linkages to individual behavior, in accordance to Granovetter (1985, pp. 487) “Actors do not behave or decide as atoms outside a social context”. The theory refers to networks as the defining quality of the governance structures and to the relational patterns that evolve among agents. Granovetter’s approach (1985) provides clues to the identification of the coordination determinants in relational networks. He pointed out that cooperative gains in dense networks are due to greater information and knowledge flows and to the emergence of common goals that work against opportunistic behavior.

The Economic Sociology literature offers another approach from Burt (1992), that highlights relations which are the result of opportunities from connecting individuals with complementary information or resources in networks, the so called “structural holes”. That approach pointed out to the importance of relevant contacts should not to be redundant, in other words, should provide linkages to specific assets that can be connected to individuals. The role of the *tertius gaudens* in the network is to link complementary assets and it is able to profit from the bargaining process that emerges from those transactions.

Both approaches, Granovetter’s (1985) and Burt’s (1992), improved the understanding of economic relationships based on a criteria that highlights the importance of the network of relations to the efficacy of economic systems. Economic actors are members of networks in which their relative positions, and the choice for organizational forms, are not the result of individual decisions but a by-product of social organization.

In that regard network and supply chains are distinctive organizational arrangements. The applied analysis of supply chains has a focus on the vertical interdependencies regarding to resource allocation and the information flow in sequential stages of production, while network analysis focus on the horizontal ties between firms. However, more recently there is a trend in the literature looking for the relationships based on vertical and horizontal linkages in what is called as *netchains* (Lazzarini et al., 2001, Storer et al. 2003, Theuvsen, 2004, Zylbersztajn and Farina, 2010). That strand of literature argues that *netchains* are sources of

value to agribusiness systems because provide social structures that enhance trust and learning based on pooled and reciprocal vertical and horizontal interdependencies. In accordance to the diverse set of governance arrangements, Ménard and Klein (2004) distinguished networks that are organized by a leader firm with vertical coordination, mainly when quality certification is important, from more “egalitarian” (horizontal) networks in which participants share the same rights and duties. Ménard (2004) also pointed that hybrid forms have a regularity based on pooled resources that requires inter-firm coordination. The importance of the relational dimension is to enable the operation of incomplete contracts, monitor partners and solve conflicts. That requires (i) the investment in mutual dependence; and (ii) to monitor uncertainty, in order to enhance the private order of governance. In summary the literature reviewed makes clear that relational density is a key determinant to organizational efficacy. The societal resource that delivers organization capacity to cooperate is described in the next section.

2.2 Social capital and the governance of organizational forms

In the last thirty years emerged a vast literature that aims to understand the non-economic resources that make cooperation possible. That multidisciplinary approach has as main focus the analysis of the social capital embedded in relationships based on trust and cooperation. Social capital provides a valuable set of assets to economic transactions - trust, cooperation and collective action - that are the result of formal and informal norms and values shared by individuals (Coleman, 1990; Putman, 1995). Nahapiet and Ghoshal (1998) summoned the characteristics of social capital in three dimensions: structural social capital, relational social capital and cognitive social capital. In accordance to Toscano *et al* (2013), the structural dimension of social capital is related to interpersonal linkages between individuals and groups in accordance to three classifications: bonding, bridging and linking social capital. Bonding social capital refers to internal ties among individuals in homogeneous groups that increase the density of relationships, bridging are internal linkages that unite individuals in heterogeneous groups, and linking social capital are external ties among groups in society (Putman, 2000; Narayan, 1999).

The literature usually points to a dual influence of social capital over economic productivity. First, bonding capital strengthens members' relationships in homogeneous groups and weakens external ties to heterogeneous groups and individuals. Therefore it lowers economic productivity. On the other hand, bridging and linking social capital enable linkages among heterogeneous individuals and groups, and therefore it is able to increase economic productivity by connecting scarce resources (Burt, 1992). Second, the relational dimension of social capital is related to relationships evolved through interactions based on trust, norms, social sanctions, and reciprocity. In that approach economic transactions are embedded in a network of social relationships developed on long-term interactions (Granovetter, 1992). Social structure provides the framework that rules economic transactions, and the choices of individuals are based on heuristic behavior that is able to sign incentives with low cost (e.g. trustworthiness). Third, the cognitive dimension of social capital is the resource that provides a collective code and shared paradigm that facilitates the understanding of common goals. The civic engagement of individuals to the public well-being facilitates cooperation and provides knowledge about problems and opportunities. Community cohesiveness and shared values predisposes people to cooperate and makes possible to combine short-term altruism to long-term self interest (Ostrom, 2000).

The importance of social capital to the emergence of a social environment in which trust and cooperation are possible faces questioning arguments. The contribution of Williamson (1993) argued that trust and risk are interchangeable and a preexisting concept of

“calculativeness” represents a clearer concept to economic analysis. Williamson (1993) pointed out to the absence of calculativeness with regard to “personal” trust which he characterizes as (i) the absence of monitoring, (ii) favorable or forgiving predilections, and (iii) discreteness, such definitions are circumscribed to affective relationships and in economic transactions are extremely rare. On a distinctive approach, McEvily (2011) proposed a blended framework in which the concepts of trust and risk usually co-occur and overlap. Social judgments are hybrid because combine both elements. Risk involves probabilistic decision in line to Williamson’s calculativeness critique. However trust involves heuristic decision making and more automatic information processing.

Regarding to agribusiness, in accordance to Sporleder and Wu (2006), the link between social capital and the governance of agro-food supply chains is related to its role to enhance generalized trust. That is a consequence of full-fledged knowledge about members’ cooperative patterns along time. Any deviation from the expected cooperative behavior may be punished by collective sanctions and that turns trust and cooperation feasible even in initial business dealings. Social capital plays a crucial role to generalized trust and turns relational contracts feasible to govern transactions. Thus, social capital enables people to learn about each other and establishes reputations in a network that can enhance the level of generalized trust. In agro-food supply chains the importance of social capital is derived from the increasing consumers’ awareness regarding food quality, health and ecological matters. Those concerns increased the risks associated to the lost of brand value. Both factors enhanced the choice for the governance based on cohesive networks that enhance trust and cooperation (Sporleder and Wu, 2006).

Related to strengthening cohesiveness, Zylbersztajn and Zuurbier (2010) pointed out that supply chains have two pervasive incentives in relationships among agents (i) to cooperate and (ii) to compete in sharing the residuals. Incomplete contracts must be efficient in an environment in which bounded rationality and opportunism are at the core of business decisions. Trusting behavior is enforced by “reputational” effects in repetitive games that increase the cost of defection from cooperative behavior. In agro-food chains there is a trend to stricter production requirements to deliver safety assurance and quality standards that requires strengthening ties among retailers, processing industries and agriculture producers. Also the increase in food branding fosters longer-term relationships that increase the costs of opportunism and work in favor of cooperative behavior.

The literature reviewed indicated a diverse set of approaches about social capital’s role to enhance governance efficacy, specially related to arrangements based on networks. Social capital in that approach is essential for delivering with low transaction costs the relational density necessary to players to solve coordinating problems. Following that theoretical alignment in the next section an analytical framework of the role of social capital to the governance of hybrid forms is presented. Next an empirical assessment regarding four Brazilian beef alliance is performed as an illustration of an applied analysis to agribusiness.

3. Social capital and the governance of hybrid forms in agribusiness

3.1 The analytical framework

The analytical model developed in this section follows a blended framework in which both transaction costs and relational analysis are used to explain the governance of hybrids forms. The framework relies on (i) transaction costs in order to answer the reasons for the choice of the hybrid form, and on (ii) the social capital concept to understand the organizational arrangements (vertical or horizontal).

On the first enquiry ground the transaction costs’ dimensions (asset specificities,

frequency and uncertainty) direct the use of hybrid forms as the structure to govern transactions. On the second enquiry ground social capital induce the definition of control mechanisms (horizontal or vertical) that mold the network of dense relationships.

Transaction Cost Economics is able to explain the determinants of market and firm governance structures (Williamson, 1985), and in extension to explain hybrid forms like alliances (Williamson, 1991; Menard, 2004). Limited rational agents try to minimize transaction costs through asset internalization, market transactions, or hybrid arrangements in which the defining variables to decision making are asset specificity, frequency and uncertainty.

Asset specificity in beef agribusiness is related to investments required to raising animals that have attributes like early slaughter age (steers), farm practices to guarantee standardized carcasses, and breed certification, to mention just a few. Those specificities are valued by higher prices by consumers that are able to purchase higher quality food and to attend trade and sanitary requirements posed by foreign markets. The frequency variable is related to a constant supply of animals to slaughter. Future contracts are used by packers and feedlot operators to guarantee the supply of fed cattle during the dry season that takes place from July to October months. Greater transactions' frequency leads to deeper bilateral dependency and also stronger commitment to collective objectives. The uncertainty variable emerges from the difficulty to foresee *ex ante* market conditions that are related to transactions only in *ex post* terms. Commitments to investments in specific assets bring about uncertainty about possible changes in the market environment that are not envisioned. Brazilian beef agribusiness system faces drastic fluctuations in meat and cattle prices, changes in sanitary requirements, mainly due to new foreign markets standards, and also domestic and international business cycles. That reasoning is translated by the proposition 1A:

Proposition 1: Transaction costs are related to the choice for the hybrid form of governance based on the three dimensions: asset specificity, frequency and uncertainty

Nonetheless the importance and relevance of Transaction Costs Economics it does not provide a theoretical background to explain the governance arrangements implemented by hybrid forms. The understanding of the transaction costs do answers the first enquiry ground that explains the choice for the hybrid form, based on asset specificity (early slaughter age, carcass standardization and breed certification), higher transaction frequency (long-term contracting), and lower uncertainty (forward pricing, quality and sanitary certifications). The plural forms literature illustrates several situations in which diverse organizational forms have the same transaction costs (Ménard, 2013; Ménard et al, 2014; Miranda and Chaddad, 2014).

Hence the second enquiry ground refers to the determinants of distinctive characteristics among hybrid forms that are based upon the relational theoretical background. That approach follows Sporer and Moss (2002) to support the notion that agribusiness systems rely heavily on intangible assets like knowledge and relational density to add value. The concept of social capital was developed to explain the incentives that arise from collective action. The relational density depends upon the existence of social capital that is an intangible resource that enables collective action (Bourdieu, 1986; Coleman, 1988). Transactions based on mutual dependence and reciprocity is able to deepen the density of the relationships that improve the efficacy of horizontal arrangements. Granovetter's approach (1985) provides clues to the identification of the determinants of coordination in relational networks. He pointed out that cooperative gains in dense relational networks are due to greater information and knowledge flows and to the emergence of common goals that work against opportunistic behavior. Dense relational networks in beef agribusiness system should provide horizontal linkages based on collective participation from cattle breeders, packers and retailers in parity conditions. That

arrangement should be able to diminish uncertainty and to provide incentives to increase productivity. The first amendment of the second ground of enquiry is posed by the following proposition:

Proposition 2A: In hybrid forms the greater the level of social capital among participants the greater will be the organizational efficacy to deliver horizontal coordination with low transaction costs.

The Economic Sociology literature offers another approach from Burt (1992) which highlights that dense relations are also consequence of gain opportunities available from connecting individuals with complementary information and resources, the so called “structural holes”. The role of the *tertius gaudens* in the network is to link members with complementary assets and to be able to profit from the bargaining process that emerges from those transactions.

Beef agribusiness relations based on Burt’s approach should have the leadership performed by a *tertius* member that is able to swap specific assets against economic incentives across the relational network. The *tertius gaudens* should have a strong position in the network and have competitive advantages seen by others participants as strategic, like logistical and access to markets. The second amendment of second ground of enquiry is stated by the following proposition:

Proposition 2B: When there is a lack of social capital embedded among the participants of the hybrid form it is required that one player delivers coordination by the use of vertical arrangements of control and incentives.

The figure 1 below provides the logical presentation of the model proposed in which the transaction costs dimensions - frequency, uncertainty and asset specificity - induce individuals to chose the hybrid form of coordination. Social capital defines the mode of governance used by the alliance, in accordance to vertical, horizontal or hybrid controls. Finally that coordination arrangement will make to emerge a relational pattern based on the relational density and the efficacy of the organizational efficacy. The structural dimension describes the strength of the linkages between individuals, the differentiation between bonding, bridging, and linking social capital relies on the pattern of interactions. Bonding is related to a pattern of interactions based on the homogeneity of members, bridging to the capacity to induce relationships among diverse agents, and linking describes ties connecting individuals and groups along the supply chain (Nahapiet and Ghoshal, 1998).

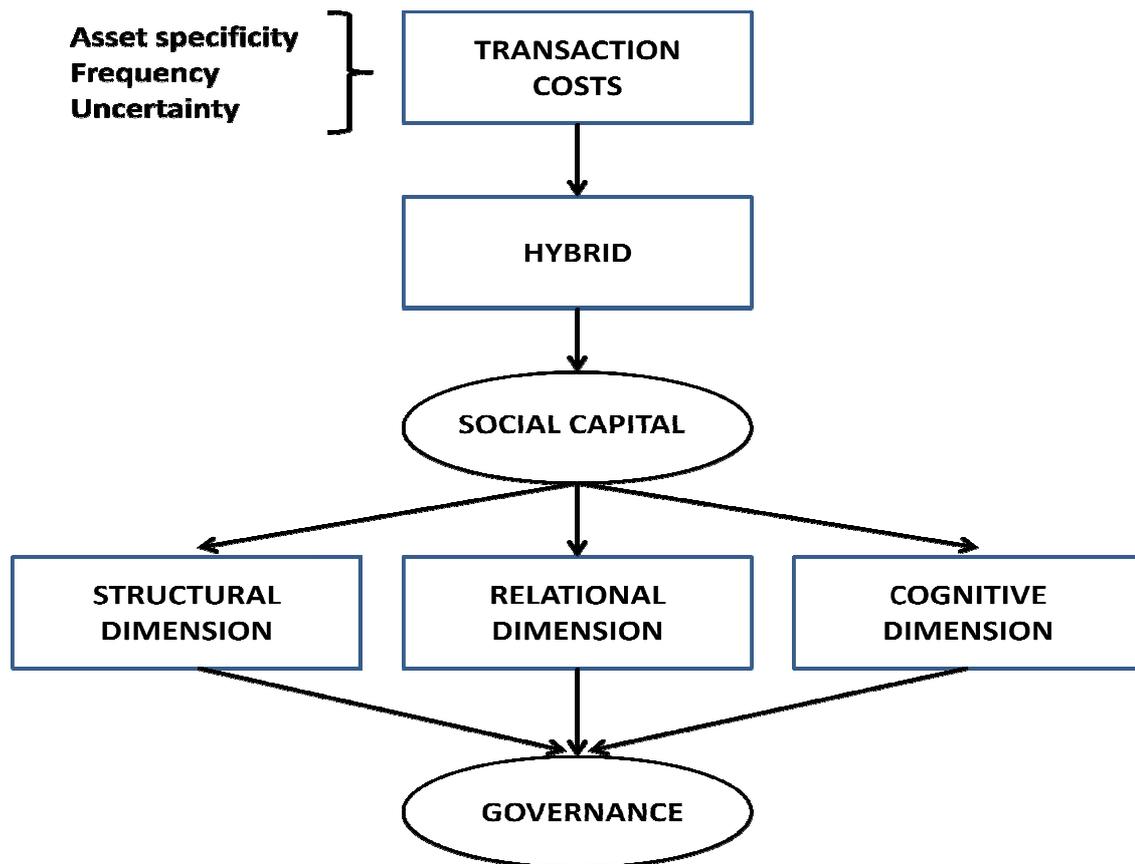


Figure 1: Analytical framework of social capital dimensions and the hybrid governance
 Source: Elaborated by authors based on Nahapiet and Ghoshal, 1998.

In accordance to the preceding discussion, one may associate the hypothesis that the choice for horizontal or vertical arrangements to govern beef alliances is related to social capital. The strength of social capital dimensions – structural, relational, and cognitive – provide the relational density that enables the horizontal governance. On the other hand, the weakness of relational density related to a low stock of social capital requires the coordinating role of an external player, in the case of beef alliances usually a retailer chain or a packer industry. The alliance’s “captain” establishes norms and economic incentives and lends its brand name as a credible commitment to other players. In that sense, alliance’s vertical governance aims to mimic the relational density that lies in horizontal networks through hierarchical control.

In beef alliances bonding social capital is related to cattle breeders’ productive, geographical and social common traits that tend to facilitate mutual understanding and commitment (Kovanda and Schroeder, 2003). However if the bonding is too strong it may prevent partners to forge relationships with diverse individuals. So forth it can undermine growth potential. Bridging is usually viewed as a more advantageous capacity. Because it strengthens ties among heterogeneous individuals, and hence allows for the cooperation of a greater spectrum of players. Alliances provide economies of scale necessary to the standardization of carcasses and greater operational efficiency at industrial plants (Hueth and Lawrence, 2004). The linking resource is related to ties along the supply chain that connect breeders to input suppliers, industry and distribution channels, and hence is a variable important for systemic coordination.

The relational dimension describes how individuals build up interactions along time that induce trust and reciprocity among players. Those are related to breeders’ trust on the organizational devices of the alliance that work against opportunistic behavior and induce (i)

the perceived trust on alliance's management decisions, (ii) the degree of reciprocity and common goals, and (iii) the development of a common identity (Bliska et al., 1996; Vinholis, 1999; Caleman, 2010).

Finally, the cognitive dimension refers to a resource that offers a joint code or a share paradigm that enables a common understanding of collective goals. In beef alliances that can be obtained from (i) the homogeneity of productive practices, (ii) the open access to alliance's financial reports, (iii) the technical slaughter supervision provided by the alliance to cattle breeders at the packer plant, and (iv) the flows of information and knowledge among alliance's participants (Saab et al., 2009; Macedo, 2009; Macedo and Moraes, 2009; Braga, 2010).

These three dimensions of social capital work together to facilitate cooperation in beef alliances, the structural dimension (bonding, bridging and linking social capital) organizes the network of relationships, the relational dimension (trust and reciprocity) provides an environment in which cooperation becomes expected, and the cognitive dimension (information and knowledge) predisposes people to cooperate (Toscano et al. 2013).

3.2 Illustrations

The current section aims at providing some empirical evidence to the proposed analytical framework based on a case study analysis of social capital's role to the governance of hybrid forms in agribusiness. The research was based upon primary and secondary data obtained from a multiple case study analysis conducted on four Brazilian beef strategic alliances in 2014. Each alliance has the leadership performed by a specific productive agent: cattle breeders, breed association, packer industry and retailer chain. The choice for that sample of organizational forms is based on Saab et al. (2009), Macedo (2009) and Macedo & Moraes (2009) that have described that Brazilian beef alliances rely on three governance models. The first one is based on horizontal coordination of cattle breeders organized in closed networks of dense relationships. The second one is the result of vertical coordination provided by a retailer chain that establishes and guarantees quality and operational standards. The third one relies on marketing arrangements in which the industry (slaughter house) establishes grid price schemes that offer premiums to cattle breeders that deliver the desired pattern of carcasses.

The variables of the research protocol pursued to identify: (i) alliances' operational standards; (ii) administrative arrangements; (iii) geographical location; (iv) reward mechanisms; (v) members' relational characteristics. The research was performed in *locus* and also through phone and electronic interviews with alliances' managers and was based on a protocol of data collection. Variables have been grouped together in three dimensions: structural, relational and cognitive (Table 1). The choice for the interviews with the alliances' managers was made because the research aimed at comparing the performance between the alliances, and not on the specifics of their participants' points of view about the alliances' performance (Chaddad and Mulrony, 2005; Boucher et al., 2006; Hueth and Lawrence, 2006).

Table 1: Protocol of variables

Structural dimension	Pattern of participation in alliance's gatherings; Degree of participation of external players in alliance's decisions; Degree of collective discussion on management's decisions; Collective input acquisition; Collective genetic breeding program; Homogeneity of productive practices
Relational Dimension	Perceived trust about alliance's management decisions; Degree of reciprocity and common goals; Degree of common identity;
Cognitive Dimension	Open access to alliance's financial reports; Alliance's slaughter supervision at the packer plant; Flow of information and knowledge.

Source: Developed by the author(s) based on the case study research

Starting with the previous information it was conducted an analysis of the governance structures. Table 2 provides the results found to the variables of each alliance that were used to assess their organizational arrangements in accordance to the theoretical background described in the previous sections. Next it will be presented the information gathered for each alliance in accordance to the research protocol.

- Cooperaliança - Guarapuava Marketing Alliance:

It is an alliance formed in 1998 by 18 steer breeders at the Guarapuava town in Paraná, south Brazilian region. The alliance has direct marketing agreements with retailers to distribute slaughtered carcasses. Initially cattle breeders used the Charolês breed because the major goal of the livestock in the region was for dairy production. Now the Angus breed is growing as the base of cattle genetics of the alliance. The alliance has a contract with a local slaughter plant that does not debone the carcasses and deliver them to retailers located in Paraná state. Each retailer pays directly to cattle breeders and the alliance pays to the slaughter plant in accordance to its slaughter services. The amount of animals slaughtered is in the average of 12.000 heads a year. The alliance delivers steers to slaughter at an age between 13 to 15 months, males with carcasses' weight from 270 kg to 300 kg, and females from 200 kg to 240 kg. The price rewarding scheme to conformance reaches 15% above market level. The degree of carcass standardization reaches almost 98% and the supply scheme is planned with a year of advance. The supply of animals to slaughter follows in accordance to contracts of distribution with retailers and restaurants. In 2013 Cooperaliança reached 107 members and it joined the Angus Beef Program and it intends to reach 18.000 heads slaughtered in a year. The alliance started a new investment plan of US\$ 16 million in order to build its own slaughter plant that will employ 120 workers and will have federal sanitary inspection (SIF). That will enable it to sell their products to all the States of the country and to start to export abroad.

- Montana Premium Beef:

It is a project developed in 2001 by the singers Chitãozinho & Chororó that today still have the control over the Montana Grill brand and have a fast food chain called Montana Express and barbecue restaurants. However, Montana beef alliance has the operational management performed by Marfrig group to produce top quality cuts that are sold at Pão de Açúcar and Bourbon retailer chains in Brazil. The alliance does not require breed certification and also there is no collective cattle supply arrangements, transactions are based on spot

market premium established on a grid price scheme that pays 2% to 4% over market prices in accordance to carcass classification. The alliance produces steers of 30 months downwards to slaughter with minimum carcass weight of 249 kg to males and 189 kg to females. Because of the lack of a collective schedule to supply animals to slaughter, Marfrig is required to manage the supply of carcasses with the required standard in accordance to its marketing necessities. The definition of the carcasses that will be used for the Montana cuts depends upon carcasses' classification during the slaughter process. Most of cattle breeders do not know the final destination of the carcasses delivered, the price premium is obtained in accordance to the grid classification. Hence the definition of the final destination of carcasses is the result of marketing priorities of Marfrig that has three quality beef brands: Montana, Palatare, and Bassi Gourmet.

- Pão de Açúcar Meat Quality Program (TAEC):

It is the result of Pão de Açúcar retailer group (GPA) efforts since 2005 to gather cattle breeders of Rubia Gallega Spanish breed to deliver young steers of 12 to 20 months of age and live weight between 420 kg to 490 kg to be slaughtered by Marfrig packer. There are 40 cattle breeders that supply an average of 300 heads in a weekly basis to slaughter. The alliance requires that all food and medicine inputs should have GPA's prior certification in order to be ministered to cattle. The alliance pays 15% over market price, but it requires supply exclusivity and long-term contracts with breeders that are located in the States of Mato Grosso and Goiás states. GPA alliance operates a cross breeding genetic program with Rubia Gallega bulls and Nelore cows. Breeders should operate a management system and a traceability program in accordance to GPA's requirements. Also the alliance requires environmental and social sustainable practices and it is required to breeders to follow an environmental plan of good practices in all farms that participate in the alliance. GPA signed a partnership with IAC – Instituto Agrônômico de Campinas in order to provide technical assistance to breeders to reach the environmental certification of good practices.

- Certified Angus Meat Program:

It is a breed certification from BAA – Brazilian Angus Association to cattle that are slaughtered by Mercosul (Rio Grande do Sul State) and Marfrig (São Paulo State) packers and has meat distributed by GPA and Zaffari retailer chains. The amount of slaughtered cattle by Mercosul equals an amount of 55.000 animals from 270 producers, and to a number of 10.000 animals from 20 breeders by Marfrig both in a yearly basis. There is a certification team from BAA that works at the packers' industrial plants that guarantees Angus genetics and the carcasses classification procedures performed by packers. The grid price scheme provides a quality reward in the range of 2% to 5% over market prices depending on carcass classification. Mercosul packer classifies carcasses from steers of 30 months downwards of age and Marfrig packer accepts steers only with age between 24 to 28 months.

Table 2: Comparative governance assessment of Brazilian beef alliances

TRANSACTION COSTS	Asset Specificity	Variable	Guarapuava	Angus	Montana Grill	Pão de Açúcar
		Weigh (males)	Carcass weigh from 270 to 300 kg	Carcass weigh Minimum of 240 kg	Carcass weigh Minimum of 249 kg	Live weigh from 420 kg to 490 kg
		Fat layer	4mm to 6mm	3mm to 5mm	2mm to 3mm	
		Slaughter precocity	From 13 to 15 months	Up to 24 months	Up to 30 months	From 12 to 20 months
		Breeding	Angus + cross breeding with charolês	Angus + cross breeding with Nelore	No breeding pattern	Cross breeding Rubia Gallega + Nelore
Frequency	Supply Schedule	Long term contract	Fidelity incentive	Market Transactions	Long term contract	
	Uncertainty	Beef market Environment	High	High	High	High
SOCIAL CAPITAL	Structural Dimension	Participation in alliance's gatherings	High	High	Low	High
		Participation of external players	High	High	Low	High
		Degree of collective discussion on management's decisions	High	Low	Low	High
		Collective input acquisition	High	Low	Low	High
		Collective genetic breeding program	Angus + cross breeding with charolês	Angus + cross breeding with Nelore	No breeding pattern	Cross breeding Rubia Gallega + Nelore
		Homogeneity of productive practices	High	High	Low	High
		Relational Density	Perceived trust about alliance's management decisions	High	High	Low
	Degree of reciprocity and common goals		High	High	Low	High
	Degree of common identity		High	High	Low	High
	Cognitive Dimension	Open access to alliance's financial reports	High	Low	Low	Low
		Alliance's slaughter supervision at the packer plant	High	High	Low	High
		Flow of information and knowledge	High	High	Low	High

Source: Developed by the author(s) based on the case study research

The comparative assessment of alliances' governance was based on the literature of social capital that enables to compare and to classify the information available by the case study. The analysis of alliances' governance structures provides the identification of four distinctive organizational arrangements to deliver coordination. In the first instance there is the Guarapuava's arrangement that is based on the horizontal network of dense relationships that was forged from a long flow of recurrent interactions among cattle breeders (since 1998). Members were motivated to have a collective marketing arrangement that enabled them to prevent marketing their animals to slaughter houses that were prone to non-payment problems. Trust among members was the driven force of the initiative, the alliance was managed on informal basis, and the transactions among members and retailers were contracted individually. The role of the alliance was to coordinate the schedules of supply, and to guarantee carcasses' standards to deliver early fed animals up to 15 months to slaughter. However, as the alliance increased its size it was necessary to formalize the arrangement with the development of a cooperative called Coopercarne that now has the judicial *fiat* over the alliance. Also in 2012 it was signed an agreement with ABA – Brazilian Angus Association and the alliance was joined to the Angus breed program. Today the alliance is investing in its own slaughter house that will enable it to marketing beef to all States of the country and to export. The alliance started up as a closed horizontal network, but as it grew it was required to start using formal bureaucratic devices to coordinate transactions, and to maintain the density of the relationships. The arrangements to strengthen collective action and to curb opportunism are a mix of formal and informal arrangements. There are written supply contracts between alliance's breeders and retailers in which are stated all transactions' criteria. However there are important informal arrangements to control opportunism like the past relational experience among alliance's members and the geographical nearness of cattle breeders. All of them are located in west and south regions of the Paraná state and have a homogeneous cultural background originated from German immigrated families. Those features paved the way to the emergence of social capital and to deepen relational density in favor of collective action.

Next to the analysis, Angus alliance was an initiative to foster Angus breeding first in the south of the country, but later in South-West and Mid-West regions. ABA – Brazilian Angus Association followed the example of the American Angus Association that developed the Certified Angus Beef brand. Angus Beef is distributed by GPA and Zaffari retailer chains and ABA operates as the coordinator of the alliance in favor of breeders that invest in Angus breeding. Also it provides technical assistance and supervision to breeders during slaughters at packers' plants. Angus alliance does not require a formal association of its members. Participation is based on carcasses' classification after slaughters. If carcasses have the standard required by ABA there is a price premium that is calculated in accordance to the grid price scheme. The alliance is coordinated by ABA without a formal cooperative arrangement, because all financial transactions are contracted directly by breeders and packers. The governance model is more flexible and open than Guarapuava's model. But it entails some cooperative requirements in accordance to common breeding practices and the schedule of supply of animals. The breed association has a leadership based on the relational density among Angus cattle breeders due to collective objectives. ABA organizes periodical meetings in order to diffuse new production techniques and to increase carcass standards among cattle breeders. The commitment to supply animals to slaughter is stimulated through market incentives based on grid price schemes. There are no forward supply contracts or supply exclusivity to the alliance. The consequence is that relational density is smaller than the one found in the Guarapuava alliance.

In the case of Montana Grill the alliance was devised with the goal to provide a vertical arrangement to Montana cattle breeders to integrate production from farms to

consumers. The purpose was to develop a project based on a barbecue and fast-food chain called Montana Grill. The fast food chain is operated by franchise agreements. Also the project aimed to produce quality cuts with Montana Grill brand name and to deliver them to consumers by GPA and Bourbon retailer chains. Marfrig packer was chosen to be the responsible for slaughtering and deboning carcasses, and also to distribute beef to retailers. However as sales increased the supply capacity from Montana breeders was not able to fulfill the demand required. So it was necessary to start supplying cattle by open market transactions. Marfrig packer started to classify carcasses by Montana Grill's desired standards, and to pay breeders in accordance to a grid price scheme. Today the alliance has no association with cattle breeders organized to deliver animals to Montana Grill alliance. All fed animals are acquired via market transactions. Montana Grill operates a market arrangement based only on a grid price scheme. There was no emergence of a dense relational network, all cattle supply is result of spot transactions. Cattle breeders usually do not sell their animals previously intending to market them to Montana Grill, it is only after slaughter that carcass classification is performed and purchasing grid price is determined. Alliance's cattle supply is discontinuous and it is usual that production orders are not fully accomplished. In those situations, Marfrig is required to transfer frozen carcasses across its industrial plants to fulfill Montana Grill contracts and that results in higher logistical costs. Hence coordination relies on market incentives to reward quality conformance. There is no relational density needed to curb uncertainty and to foster the frequency of transactions. Nor the alliance induces specific investments (breed certification, early slaughter age, and carcass standardization) required to a constant flow of production.

Finally, the GPA alliance has the similarity to Burt's (1992) structural hole concept in which the retailer chain was able to gather 33 cattlemen, input food and medication suppliers, and the Marfrig packer in a vertical coordination arrangement. GPA acts as the alliance's *tertius gaudens* in the sense that all members' transactions are the result of the prior certification provided by the retailer chain. All food and medication suppliers need to be certified by GPA in order to be ministered to cattle. Members also should follow the production provisions established by the hierarchical control of GPA. Marfrig works to the alliance delivering slaughter and deboning services and has no direct commercial transactions with breeders, just with GPA. All breeders have transactions only with GPA, because there is an exclusivity rule that forbids them to marketing Rubia Gallega breed to transactions outside the alliance. The incentives to the participation in the alliance arise from economic gains offered by the retailer that aims at delivering high quality meat to its customers. Hence in this alliance GPA operates as a "captain" that coordinates transactions among the members of the alliance. That is required because GPA was persuaded that the required relational density among the members of the supply chain was not available. Coordination was needed to be built from scratch by GPA's role as a vertical inducer of conformance, providing economic incentives to the commitment to alliance's standards.

In accordance to analytical framework developed along the section it is possible to realize the organizational character of the alliances to provide coordination to transactions. Alliances are able to develop distinctive arrangements to enforce practices that are followed by input suppliers, cattle breeders, slaughter houses and retailers. The arrangements which are used are dependent upon the pattern of coordination delivered by the alliance – horizontal (Guarapuava and Angus) and vertical (GPA). Transaction costs are important to the choice for the hybrid form of governance. But do not play an important role to the distinction of organizational arrangements, because all alliances, with the exception of Montana Grill, rely on similar transaction costs measured by asset specificity, uncertainty and frequency (Proposition 1).

Nonetheless, the governance arrangements differ profoundly. In the case of the Guarapuava alliance there was a high level of social capital embedded spontaneously among cattle breeders. In accordance to the analytical framework, the alliance has developed organizational arrangements based on horizontal ties that were able initially to deliver the required coordination. However, as the alliance expanded it was necessary to strengthen bureaucratic arrangements and to improve knowledge transfer from external players (e.g. the participation in the Angus program). The assessment of the organizational efficacy points that the previous social capital available among cattle breeders paved the way for the success of the horizontal governance (Proposition 2).

On the other hand, in the GPA alliance the retailer chain provides economics incentives in return to the adherence of participants to the rules and norms of behavior. The main characteristic of that alliance is that GPA was required to internalize to its business operation the coordination of the alliance. GPA's concern was related to the capability of cattle breeders and the packer industry to operate autonomously in order to deliver the required standards. That included the standards of finished animals, and specially the productive practices related to environmental and social good practices (Proposition 3).

The strategy of ABA alliance differed from the previous two cases, because it required lesser relational density, its main concern was to expand the genetics of the Angus breed in the country. So it was based on a governance structure that increased coordination, but not in the same amount of both Guarapuava and GPA alliances. Finally, Montana Grill was found to rely on market transactions to deliver coordination. As a consequence it was not able to enforce the relational density required to increase cooperation and participation by cattle breeders.

The analysis of the four alliances makes clear that transaction costs are not the only determinant to organizational arrangements in agribusiness. Although related to specificities of the beef agribusiness the performed analysis resembles several constitutive aspects related to the study of complex organizational forms (Ménard et al, 2014). Relational density is a decisive factor for the efficacy to deliver collective action. Social capital is a resource that delivers the collective capability for individuals to work together with efficacy. The lack of previous social capital, nonetheless, is not an impediment for the emergence of coordination. The leadership exercised by a strategic player may provide the commitment in favor to collective objectives by the use of vertical arrangements. In that sense the analytical framework developed in this paper provides a vast array of empirical applications.

4. Concluding remarks

Agribusiness in nowadays require the development of dense relationships to enforce cooperative behavior that are able to face the increasing requirements related to quality assurance, health and environmental concerns. According to that challenge, the analysis of governance structures in agribusiness is usually performed based on the assumptions of the efficacy to economize on transaction costs (Williamson, 1985; Zylbersztajn and Farina, 1999; Zylbersztajn, 2005). However there are several instances in which transaction costs are not the only determinant for organizational efficacy. That is specially the case related to hybrid forms that require relational density to be able to enforce behaviors (Ménard and Klein, 2004; Ménard 2004; Saes and Silveira, 2014).

Facing that handicap, the framework developed in the paper is based on the Economic Sociology concept of social capital as an additional variable to the understanding of the choice for organizational arrangements in hybrid forms. The illustration of four Brazilian beef alliances indicates that social capital is a key determinant for the choice of horizontal

arrangements in agribusiness. Relationships embedded in social capital provide governance based on producers' horizontal coordination (Guarapuava and Angus Beef). On the other hand, relational density also can be delivered by an alliance "captain" that guarantees cooperative behavior by the use of economic incentives and vertical control (GPA). The alliance based on packer's coordination (Montana Grill), does not offer the same relational density and as a consequence provides lesser governance efficacy. It is important to stress that the goal of the paper was to illustrate the hypothesis that social capital has a profound role on the governance of hybrid forms in agro food chains and not to provide quantitative estimates of this relationship.

References

Bliska, F.M. de M., Marques, P.V., Ribeiro, B.A.M., RODRIGUES, M.T (1996). Cadeia agroindustrial de carne bovina no Brasil: a desossa como agente de reorganização. In: CONGRESSO BRASILEIRO DE ECONOMIA E SOCIOLOGIA RURAL, 34. Aracaju. Anais... Brasília: SOBER, 1996. pp. 1252–1274.

Bourdieu P. (1986). The forms of capital. In: RICHARDSON, J.G. (Ed.). Handbook of theory and research in the sociology of education. New York: Greenwood Press, pp. 46–57.

Braga, M.J (2010) Revista Brasileira de Zootecnia, 39: 11-16.

Burt, R.S (1992) Structural holes: the social structure of competition. Cambridge: Harvard University Press, 313 pp.

Caleman, S.M.Q., Gonzales, F.G., Sproesser, R.L. (2003) The mercadological alliance between the sul-matogrossense alliance of steer producers with the Carrefour supermarket chain. In: INTERNATIONAL PENSA CONFERENCE, 3. São Paulo: USP, FEA.

Caleman, S.M.Q. (2010) Coordenação em sistemas agroindustriais complexos: uma aplicação na agroindústria da carne bovina. 186 pp.. Tese (Doutorado em Administração) – Programa de Pós-Graduação em Administração, Departamento de Administração, Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo.

Chaddad, F.R.; Mulrony, B.R (2005). Strategic alliances in the U.S beef supply chain. Journal of Food Distribution Research, Atlanta, 36(3): 18–32.

Coleman, J.S. (1988) Social capital in the creation of human capital. The American Journal of Sociology, 94(S1): S95–S120.

Granovetter, M. (1985) Economic action and social structure: the problem of embeddedness. American Journal of Sociology, 91(3): 481–510.

Hueth, B.; Lawrence, J. (2004) Information transmission in cattle markets: a case study of the Chariton Valley beef alliance. Journal of Agribusiness, Athens, 24(1): 93-107.

Kovanda, J.; Schroeder, T.C. (2003) Beef alliances: motivations, extent, and future prospects. The Veterinary Clinics of North America Food Animal Practice, 19(2): 397–417.

Lazzarini, G.; Chaddad, F.R.; Cook, M.L. (2001) Integrating supply chain and network analysis: the study of netchains. *Journal of Chain and Network Science*, 1(1): pp. 7-22.

Macedo, L.O.B. (2009) Perfil de governança e a coordenação de alianças estratégicas do sistema agroindustrial da carne bovina brasileira. Piracicaba, 2009. pp. 206. Tese (Doutorado em Economia Aplicada) – Programa de Pós-Graduação em Economia Aplicada, Departamento de Economia, Sociologia e Administração, Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo, Piracicaba.

Macedo, L.O.B., Moraes, M.A.D. de. (2009) Perfil de governança e a coordenação de alianças estratégicas da carne bovina brasileira. *Informações Econômicas*, São Paulo, 39(3): 23-45.

McEvily, B (2011). reorganizing the boundaries of trust: from discrete alternatives to hybrid forms. *Organization Science*, 22(5): 1266-1276.

Menard, C (2004). The economics of hybrid organizations. *Journal of Institutional and Theoretical Economics*, Tübingen, 160(3): 345–376.

Ménard, C. (2013). Plural forms of organization: where do we stand? *Managerial and Decision Economics*, 34: 129-139.

Ménard, C.; Saes, M.S.M.; Santos, V.L.S dos; Raynauld, E.(2014) *Economia das organizações : formas plurais e desafios*, São Paulo: Atlas, 2014, 296 p.

Menard, C., Klein, P. (2004) Organizational Issues in the Agrifood Sector: toward a Comparative Approach, *American Journal of Agricultural Economics*, 86(3): 746-751.

Miranda, B.V.; Chaddad, F.R. (2014) Explaining organizational diversity in emerging industries: the role of capabilities. *Journal on Chain and Network Science*, 14(3): 171-188.

Nahapiet, J., Ghoshal, S. (1998) Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2): 242 – 286.

Narayan, D. (1999) Bonds and bridges: social capital and poverty. World Bank, Proverty Group, 25 pp.

Ostrom, E. (2000) Social capital: a fad or a fundamental concept? In.: DAGUPTA, P.; SERGELDIN, I. *Social Capital: a multifaceted perspective*. Whashington DC: The World Bank., 45 pp

Putman, R. D. (2000) *Bowling alone: the collapse and revival of American community*. New York: Simon & Schuster.

Saes, M. S. S.; Silveira, R. L. F. (2014), “Novas formas de organização nas cadeias agropecuárias brasileiras: tendências recentes”, *Estudos Sociedade e Agricultura*, 22(2): 386-407.

Saab, M.S.B.L.M., Neves, M.F.; Claudio, L.G. (2009) O desafio da coordenação e seus impactos sobre a competitividade de cadeias e sistemas agroindustriais. *Revista Brasileira de Zootecnia*, 38 (special suppl.): 23-35.

Sporleder, T. L., MOSS, L. E. (2002) Knowledge management in the global food system: network embeddedness and social capital. *American Journal of Agricultural Economics*, 84(5): 1345–1352.

Sporleder, T. L.; Wu, S. Y. Social capital and vertical ties in agrifood supply chains. *Journal of Chain and Network Science*, 6(1): 1–6.

Storer, C.E, Holmen, E., Pedersen, A.C (2003), Exploration of customer horizons to measure understanding of netchains, *Supply Chain Management: An International Journal*, 8(5): pp.455 - 466

Theuvsen, L., (2004) Transparency in netchains as an organizational phenomenon: exploring the role of interdependencies. *Journal on Chain and Network Science*, 4(2): 125-138.

Toscano, E. V., Fernandez, F. E. G., Limon, J. A. G.; Reche, J. L. C. (2013) Are theories about social capital empirically supported? Evidence from the farming sector. *Social Indicators Research*, 114: 1331 – 1359.

Vinholis, M. de M. B. (1999) Uma análise da aliança mercadológica da carne bovina baseada nos conceitos da economia dos custos de transação, In: *WORKSHOP BRASILEIRO DE GESTÃO DE SISTEMAS AGROALIMENTARES*, 2., Ribeirão Preto: USP, FEARP, 1999. pp. 189-199.

Williamson, O.E. (1985) *The economic institutions of capitalism*. New York: Free Press, 449 pp.

Williamson, O.E. (1991) Comparative economic organizations: the analysis of discrete structural alternatives. *Administrative Science Quarterly*, 36(2):269–296.

Williamson, O. E. (1993) Calculativeness, trust, and economic organization. *Journal of Law and Economics*, 36(1):453 – 486.

Zybersztajn, D. (1995), “Estruturas de governança e coordenação do agribusiness: uma aplicação da Nova Economia das Instituições”, Tese de livre docência apresentada no Departamento de Administração da Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo.

Zylbersztajn, D., Farina, E. M. M. Q. (1999), “Strictly Coordinated Food-Systems: Exploring the Limits of Coasian Firm”, *International Food And Agribusiness Management Review*, 2(2): 249-265.

Zylbersztajn, D.; Farina, E. M. M. Q (2010) Dynamics of network governance: a contribution to the study of complex forms. *Revista Eletrônica de Administração*, 16(1):01–19.

Zylbersztajn, D., Zuurbier, P. J. P (1999) A non-naive explanation of trust: avoiding mistaken decisions for agribusiness chain management. Série Estudos Temáticos , n. 0029, Universidade de São Paulo, São Paulo, SP.