Cooperatives and Informal Relational Contracts in Brazilian Agribusiness

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Resumo:
No Brasil, há uma sociedade de características coletivistas em um ambiente institucional constituído por um sistema legal não flexível, dependência histórica com a burocracia e a hierarquia, que influenciam o tipo de contrato em organizações cooperativas. É possível observar que as organizações cooperativas no Brasil apresentam maior coletivismo, e comportamento de seus associados de modo mais informal e relacional, em comparação a cooperativas em outros países que apresentam uma relação contratual mais formal. Este trabalho procura analisar os contratos informais e relacionais nas cooperativas em sociedades coletivistas, e discutir a sua lógica. Ao final conclui que os contratos relacionais e informais podem minimizar custos de transação e que “direitos de influência” nas sociedades cooperativas apresentam custos organizacionais, mas também podem ser considerados como um incentivo contratual à participação, uma vez que propiciam a utilização de direitos ao resíduo e ao controle em organizações com “direitos a cooperação”.

Palavras chave: Contratos relacionais, Cooperativas, Nova Economia Institucional.

1. Introduction
In agribusiness organizations, institutions, property rights and contracts are the fundamental bases of analyzes. Formal contracts are incomplete because of the bounded rationality and information asymmetry among the economic actors; in this situation relational contracts are important to complete the “incompleteness” of formal contractual arrangements. (Furubotn and Richter 2000, Williamson 1996)

For the economic actor it is impossible to understand, know and preview all events that will occur in future, this situation increases the uncertainty in contracts and the likelihood that opportunist actions will be placed in future.

If the uncertainty is high, and the institutional environment is more unstable, it can be expected for more formal contracts among economic actors plus the effort by economic actors to write as much of a complete contract as possible. But, there is a limit, a boundary, which is the high cost of transactions to build the most complete contractual relation as possible. So, it is also possible to complete an incomplete formal contractual relation with informal rules, or relational contracts.

Hofstede (2001, p212) argues that culture allows comparisons between societies, and show that Brazil is a more collectivist society, in terms of individualism and collectivism - Individualism Index Value. This characteristic increases, according to the author, “... collectivist societies call for greater emotional dependence of members on their organizations....” and assume that where collectivism values prevail, there is more “moral” involvement within the organizations.

Culture implies in institutions, which have influence on contracts and transactions, and on organizations contractual architecture and design. North (1990) compares different countries and institutional environments to conclude that institutions are the bases of organizations and transactions. Brazil has a particular culture and institutional environment that can also have influence on contracts in agribusiness organizations.

1 Acknowledgements to Michael Cook, Harvey James, Michael Sykuta, for the their comments, in special to University of São Paulo - School of Business and Economics, University of Missouri - Agricultural Economics Department and FAPESP – São Paulo Governmental Research Agency for the sponsorship, during the sabbatical period in University of Missouri
Law and economic environment are important institutional sets. In Brazil, there is a single national law for cooperatives that is inflexible as to the design of organizations. In the economy, the agricultural prices have significant volatility because of the open economy and the little protection to agriculture income. There is also the little trust people have in justice and people are careful in trusting other people (World Value Survey 2003, Bialoskorski Neto, 2003)

In this institutional environment, it is possible to expect more careful transactions, and economic actors’ behavior to protect the transactions terms in the future and avoid opportunism. Thus, it is necessary to improve forms of safeguarding contracts. Formal contracts can be appropriate forms of establishing transactions.

But, on the other side of the problem, in this environment of uncertainty in Brazil, agricultural cooperatives are formed by risk-averse rural producers, show few formal contractual relations, more collectivism and more relational contractual relation. Cooperatives in Brazil are built on relational bases. The president and board do not have social conditions of improving formal contracts and explaining the logics on formal contracts – as the U.S. New Generation Cooperatives\(^2\) - does not apply to the real word of agricultural cooperatives in Brazil.

Demsetz (2002) argues that more risk make people more hesitant to accept dependencies that come with specialization. Lazzarini, Miller and Zenger (2002) describe that before social and economic uncertainty, the contractors search for non-committed or non-contractual relations.

In another point of view, Cook (1995) analyzing the contract design in US cooperatives conclude that formal contracts can improve solutions to five “Vaguely Defined Property Rights” VDPR problems: a) Free rider problem, when the cooperative gain can be accessed by non-member, b) Horizon problem, when the results from residual claims do not extent as far as the economic life of the asset, c) Portfolio problem, occurs when the investment does not reflect the position of the member, d) Control problem, similar as I.O.F. but without the market control, and e) Influence costs problem, that occurs because of the wealth distributions among members.

The same author argues that VDPR occurs because of ownership rights in cooperatives is restrict to patron-members, the member’s residual return rights are non-transferable, non-appreciable and redeemable, and the benefits are distributed to the members in proportion to patronage. This situation implies in high residual claims and residual rights of control. The same author points to different ways in which cooperatives can solve problems in function of VDPR; but the important way is to move to formal contract relations such as NGC’s case in of the U.S.

On the other hand, at the same time that formal relations can promote a resolution of VDPR, according to Cook (1995), Lazzarini, Miller and Zenger (2002a) define that there are complementarities and substitution of formal and informal arrangements, contracts, and conclude that the formal contract is important to improve a self-enforcement in informal dealings. Contracts facilitate the self-enforcement of non-contractible dimensions, but do not find evidence that contracts can be substituted by social norms.

It is also important to observe different concepts of cooperation in this debate, authors such as Granovetter, Hofstede, Lazzarini, Miller and Zenger, and others consider cooperation in markets as an economic commitment between agents. On the

\(^2\) New Generation Cooperatives are organizations classify as Sapiro III (Cook, 1995) and show a formal contractual relation between cooperative and its members through contracts that specify “delivery rights”.

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other hand authors as Cook, Chaddad, and Bialoskorski Neto consider cooperation as a committed relation within a particular organization, a cooperative.

To analyze cooperatives in Brazil, or some traditional cooperatives in the U.S., it is necessary to consider that there is in the organizational logic member rights to transact with his firm if this transaction is better than markets, in case of traditional cooperatives with free member entrance, open membership, without contractual agreements. Therefore, there is a member free commitment to cooperate in sometime.

So, there can be in this case, in traditional cooperatives, an informal committed relation and an informal uncommitted relation, in the first case the economic agent received the benefits of his action, in the second case the economic agent did not lose his rights to make transactions with the cooperative in future. There is a member “cooperation right” logic in the traditional owned member firm.

In traditional cooperatives there is a formal contract for members to agree in the organization and accept the bylaw, but, later on, there is an abroad free commitment in economic actions, in this case there are high problems due to the vaguely defined property rights. But, when cooperative organizations move to more formal contracts to resolve VDPR, as “delivery rights” contracts in NGC’s in US, there is a formal contractual commitment that implies that the member is obliged to have economic relations with his cooperative. This is a different situation; formal contracts exist to complete and enforce the informal rules.

In case of Brazil, it is possible to find a major proportion of relational contracts and informal rules. Differently from cooperatives in the US, cooperatives in Brazil do not show an evolution to more defined property rights thought formal contracts, and, in another way, improve the relational contracts that imply in major non-definitions in VDPR.

The explanation of these different proportions of formal and relational contracts among cooperative types and among countries can be functions of culture and institutions (Hofstede, 2001 and North 1990), of social and exchange value uncertainty (Lazzarini, Miller and Zenger, 2002b), of the function of formal contracts to improve self-enforcement in relational forms (Lazzarini, Miller and Zenger, 2002a) and, this same proportions in formal and informal rules can imply in different intensity of perception of VDPR, therefore, in the degree of organizational problems in cooperatives too (Cook, 1995).

So, it is possible to put the question about the bases of relational contracts in cooperatives in Brazil: Is it a temporary stage of cooperative organizations, until institutions modify and law for cooperatives changes in Brazil, or is there a specific logic in these organizations and in relational contracts in function of culture?

The objective of this paper is to answer the questions above by explaining relational contracts logics in agricultural organizations producers owned and controlled in Brazil. The initial hypothesis is that there is a particular logic in relational contracts; trust and social embeddedness are only two of all important characteristics, others as the “rights of committed relations” that permit the uncommitted relation and raise economic flexibility, or “influence rights” to permit to get benefits in welfare distribution within the organizations in function of residual control rights, are important to understand relational contracts in cooperatives.

This paper initially presents a theoretical discussion on relational contracts and describes relational contracts in agricultural cooperatives in Brazil. Then, it develops a

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3 Some Marketing Cooperatives and New Generation Cooperatives in U.S. have formal contractual relations – agreements - in which the member is obliged to deliver his product in the cooperative. In this case there is a member free choosing before the agreement but after there is a member obligation.
model to explain relational contracts and shows an empirical analysis. In the end, there are considerations and conclusions.

2. Relational contracts

Coase (1937) defines the firm as a contractual architecture where the transactions costs are important to explain relations inside and outside of the organization. North (1990) discusses the importance of institutions to diminish the uncertainty and establish a stable background to human relations. Institutions can determine opportunities for the society and organizations are created to take advantage of those opportunities. So, organizations are influenced and created by the direct intervention of institutions.

Institutions are the “rules of the game” and, in organizations, transaction costs increase if there is an inefficient property rights allocation, according to North (1990). On the other hand, Hart (2001) looks for the firm as an institution in it arising incompleteness of contracts and need to allocate residual control rights. So, it is important that the property rights approach to explain the firm logics.

Eggertsson (1990) defines property rights as the rights to use an asset, or to obtain income for the assets or the rights to transfer the assets. When the assets or the rights are transferred among economic actors, there are transactions costs. The allocation of property rights, in the presence of bounded rationality and contractual incompleteness, cause residual control rights and residuals claims.

In special in cooperatives, when the employers or others agents can decide about of how to use assets without a clear formal contractual rule there are residual control rights, and if there is not clear rights on the residual income created by asset in cooperative organizations – typically situation in equity redemption or in patronage refund incomplete programs - there are an increasing residual claims situation.

The problems to define property rights in cooperative organizations imply in high residual rights of control, decision and claims, (Cook, 1995) and can increase problems with contractual incompleteness and create difficulties of building efficient and complete contracts. It occurs also because of the bounded rationality of the economic actors and the impossibility to take into account all of future events. This incompleteness gives the chance to expose contractual relations to opportunism.

Furubotn and Richter (2000) state that relational contracts can be understood as contracts that do not try to take into account all future contingencies. In this type of contracts there is a degree of implicit, informal and nonbinding characteristics. These transactions, informal contracts, must have also an intrinsic relation with bilateral dependence of contractual parties. These authors explain that it is necessary to understand bounded rationality to analyze contractual incompleteness. Because it is impossible to agree ex-ante on all future eventualities, this situation cause high transactions costs.

Baker, Gibbons and Murphy (2002) argue that relational contracts, as informal agreements and unwritten codes of conduct, affect behavior of individuals within firms. The third party must verify the formal contract, but relational contracts based on outcomes are observed only by contracting parties, being self-enforced.

Lazzarini, Miller and Zenger (2002a) argue that there is a complementary task between formal and informal rules, or incomplete contracts complement informal dealings. So, low cost contracts are an important mechanism to support cooperation. Another important fact is that contracts facilitate the self-enforcement of non-contractible dimensions, and do not find evidence that contracts substitute for social norms.
Relational contracts are long-term agreements between contractual parties that do not present a formal writer party and are enforced by the parties in a “private ordering” and not by a third party or in presence of a court. Williamson (1996) argues that “private ordering” is used in the environment of incomplete contracts and is self-created and self-enforced.

For informal and relational contracts the self-enforcement and the mutual trust are important tools. The first guarantees the enforcement of unwritten rules, and the second guarantees the transaction in all future time. In this case, cooperative organizations do not enforce informal relations because of the particular agency problem, or, i.e. the member is another party of the unwritten contract and the party to be enforced, but this member has also rights to transact with the cooperative and the ownership rights.

On the other hand, trust can be understood as a General Trust to refer to the expectation that people in general will not act opportunistically and Knowledge Based Trust refers to expectation that known people do not act opportunistically (Yamagishi e Yamagishi, 1994, Shapiro, Sheppard, & Cheraskin, 1992, cited in Lazzarini, Miller and Zenger 2002b).

Williamson (1996) refers to a three types of trust, Calculative Trust, which have origin in calculative act and contracts, Personal Trust, and Institutional Trust, this type of trust depends on the social and organizational context within which contracts are embedded.

Granovetter (1985) discusses the “shadow of the past”, which occurs when the parties of relations interact in long term and create norms, attachments and trust, the economic agent reputation occurs in consequence of the past behavior information. On the other hand, the “shadow of future” can be created in a commitment in present due to the uncertainty in relations in future, and the needs of both contractual parties in having the same relations in future. Lazzarini, Miller and Zenger (2002b) describe the importance of the “shadow of the past” and “shadow of the future” in preserving relations and cooperation among contractors.

Also, if organizations have social embeddedness, defined by Granovetter (1985) as a social acknowledgment and link among actors, there is a generation of trust and discouragement of malfeasance. This is the case of networks and can be the case of cooperatives too. Cooperative organizations, on the other hand, can also have the advantage of its social embeddedness, because some of the members of a specific community know the family tree, the past behavior, and the social needs in the future, for each actor or member, in this condition the social relations can create social capital, Glaeser, Laibson and Sacerdote (2000), and in this particular case a strong social bases in cooperative organizations.

This argument enables a reduction in transactions costs, as contractual opportunism, moral hazard, hold up and adverse selection. In the same direction, the cooperative is a consequence of social capital and can improve social capital and reduce the asymmetry of information in the community (Bialoskorski Neto, 2001)

Therefore, cooperatives have a particular architectural organization form, a specific contractual logic and the member relations are embedded also in individual values and culture of society.

In cooperatives, there are formal and informal relations in different proportions, and in Brazil producer-oriented firms are based on informal relational contracts with a specific logic.
3. Relational contract in producer’s owned and controlled organizations

In agribusiness cooperative organizations are important coalitions of interest that can protect the rural producers in concentrated markets and can add value to agricultural commodities thought the agro industrial processing plants.

These organizations allow producers to have market power and have the bargain power to control the price level in specific markets, as when cooperatives buy inputs in greater amounts or put a high commodity price in market. So, cooperatives increase positive economic externalities in agricultural markets to members and to non-members as well.

In Brazil, cooperatives are organized according to narrow International Cooperative Alliance and Rochdale cooperative principles, i.e., the member is the owner, the member is the patron, and the beneficiaries are the members. In this type of organization in agribusiness, the members have free entrance in society and free exit of society. For the entry in society new members agree with the cooperative bylaws and have some rights, such as the right to vote, one-member-one-vote, and participate at some level of decision in the general assembly, and if the member is designated, he can participate at management levels.

The member has also liabilities with the organization, but limit to the amount of his social capital. The member can have economic activities with the society or not, and the cooperative income can be shared through the patronage refund. The member is not obligated to have economic relations with the cooperative. All members have the right to use the services, information, technical assistance, acquire inputs, among others rights. Frequently only the first agreement is done, the membership agreement. The member can sign bills to pay in the future, have a financial account, and have new contracts only in special cases, as in grains cooperatives, where members can have contracts to receive inputs in time and deliver the grain to the cooperative in the future.

In cooperatives in Brazil, the C.E.O. is the president, a member and a rural producer; only rural producer members form the board too. So, there is not a separation between ownership and management. The financial guarantees are signed by the president and board members, without an insurance system. The board represents a party of active associates and can decided in favor of their own objectives or according to their own voting group objectives, or in others worlds, there is not separation about ownership and management.

The traditional cooperative governance is based in long-term relational contracts among members and the organization. The member can put his production in the cooperative or buy inputs through the cooperative or not. The cooperative offers prices and services.

The cooperative organization can have two different objective functions and strategies toward its members. One is the economic results objective function. In this case the cooperative improves the largest possible financial result to refund in patronage these results to the members. In this case the cooperative does not improve services or immediate best prices for producers, because the objective is to maximize financial results in order to distribute among the members later on.

But, in Brazil, the objective function is frequently another; it is improving the member “welfare” offering best prices for the agricultural commodities or for the

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4 Rochdale principles are the cooperative organization principles established in 1844 in the UK in the first modern cooperative organization for the International Cooperative Alliance. More international cooperative principles details are in www.coop.org
inputs in the stores. Plus, cooperatives have services such as soil chemical analyses, technical support, market information, credit, special rural developing programs, satellite production monitoring, among others. In this case the cooperative tries to improve members’ “welfare” immediately and does not make patronage refunds or distribution of financial results to member. The benefits for the members occur in prices, services, information and technology in time, or there are the non-price return in quality of services and a non-cash return in services.

So, in this case, important relations occur between the member and the cooperative employees. Without boundaries between ownership and management, with the lack between the board and the employees or professional managers, the cooperative shows high residual decisions and control rights. These rights go away from board to an employee hand, and permit to the employee use the assets, without a contractual control or with a few monitoring process between the board and the employees, to improve benefits and welfare to a particular member or situation.

This situation creates logics to use the residual decisions and control rights in the “common” assets. If the member is active with the presence in general assemblies, councils or committees and is present in the cooperative, as social committed member, he also has the right to influence the employees to receive more benefits, or attention, or priority, or information than the member who is not socially committed and has no presence.

On the other hand, this committed action has costs to the the member, such as transactions costs, costs of participation, and costs to create social relations; this economic logic implies that the benefits of influence and the rights on residual decisions and control rights in assets must be high and significant to incentive the member to have this behavior and costs.

In cooperatives the member “usage” dimension represents only benefits, but the dimensions of the member ownership, control, and investor have costs of participation, uncertainty, and time costs.

Free cooperative committed relations, i.e. the member cooperation behavior occurs only when the member wants, has the advantage of benefits of member user dimension and does not imply in costs of participation, control, and manager, among others. The economic logic puts the member objective in the dimension of “usage”. On the other hand, the benefits of “influence rights”, defined as the rights of influence to use the residual decisions and control rights of assets, are an important incentive in the participation process.

This characteristic occurs with more intensity if the cooperative is larger in the number of members. In this case, the monitoring costs are high, the distribution of services and “welfare” to the member can have more problems, and the patron “influence rights” is more important to improve priority, attention and privilege in informational process, and in services distributions.

There are two different focuses on influence problem; the first is the influence costs constraint, described in Cook (1995), characteristic consequence of problems with non-clearly definition in property rights. Influence costs is a not efficient choice in organization and means the cost of decisions because of influence of party of members and not in function of the organizational objective, or decisions that have benefits to only a part of members. Second is the influence rights, describing in this essay, or the member informal and relational rights to use the residuals in the organization, this problem can be a contractual characteristic in particular governance architecture.

Trust is also important to improve the member’s relation and the decision in
choosing the cooperative organization to have economic relations with. Moglia (2003) shows a survey with more than one thousand members of CAROL, the biggest grain cooperative in Sao Paulo State Brazil, which members declare that the principal reason to have operations with the cooperative is the confidence in quality, scale to verify the grain weight, and confidence in information, among others. The principal reason to not improve economic relations and commitment with the cooperative is the prices of the competitors.

Members can trust and have confidence in the cooperative organization, but this trust does not represent an obligation for the member to have transactions with the cooperative, and if it is possible the member could look for prices and opportunities and deliver in the market. These informal relational contracts allow the member to do that and minimize transactions costs, since both parties of the contractual relations are familiar with that.

The influence costs, defined by Cook (1995), are strong and increasing in this situation with a high proportion of informal relational contracts, and this type of contractual relation can show a special commitment among members. Some cooperative organizations prefer to go close to the risk of bankrupt, asking for governmental aid, than to break informal relational contracts among members and go out of the organization the inefficient rural producer member.

On the other hand, informal relational contracts can promote a different commitment in proportion to influence rights. If the cooperative shows economic performance efficiency and success and more informal relational commitment, the member should not spend his time and resources to participate or improve his influence.

The relational contracts and social commitment have a particular and different logic too. In Brazil, some Paraná state agricultural cooperatives promote Educational Committees in rural producer communities to improve member participation, flow of information, and promote relational agreements. The cooperative leaders, presidents and board members believe that this situation increases the commitment, fidelity, social and economic activities in the cooperative, and it is good for organization.

In the state of Minas Gerais, agricultural cooperative leaders, as well as residents and board members, do not permit this strategy and argue that Educational Committees improve only social relations that imply in the growth of political power in the community and this situation is bad, because cause it disturbs relations. Maybe, in others words it can also cause disturbance in distributions of influence rights among members or increase influence costs. This situation can be modeled and analyzed.

The main hypothesis of this essay is that the logics of influence exist because of the presence of residual control rights in collective organizations, with problems of the definitions and allocation of property rights in more collectivist societies. Therefore, it is possible to consider this logic as a specific arrangement to minimize transactions costs, to permit that the informal relational contract flows freely and can also be described as a contractual incentive to members’ participation in the cooperative organization.

Influence rights in the presence of rights to cooperate are important to guarantee member participation in cooperative organizations and improve stable informal relations. Only informal relational contracts can allow this situation.

4. Modeling cooperative governance logics and relational contracts

Before modeling the problem and the logics of informal relational contracts in
cooperatives within a collectivist culture, it is necessary to define the main variables in qualitative terms, and distinguish the idea of influence rights and incentive in contracts from the influence costs, which is a governance problem in organizations with democratic bases of decisions.

4.1. A game theory approach

Considering the importance of cooperation and member relations with the cooperative organization it is initially possible to understand the problem through a game theory approach. The supposition is that the cooperative organization – owned by member – acts with commitment, and the member has only relational contracts or does not have economic obligations with the organization. This game is recurrent, but the result of the game does not depend on recurrence because the member has the property rights on the cooperative and the rights to cooperate in future. The non-cooperation in the time $t-1$ does not influence in the payoff of the next time $t-0$.

Cooperatives can have different strategies, income objective and refund patronage, or services objective and non-refund patronage; the member can pursue the rights for the benefits in these different manners, in cash or services, the game is showed in figure 1.

$\begin{align*}
\text{Cooperative} \\
\text{Non-commitment} & \quad \text{Commitment} \\
\text{(Not-exist)} & \quad \text{(Member cooperation right)} \\
\text{Exit (0,0)} & \quad \text{Member} \\
\text{Not-committed} & \quad \text{Committed} \\
&& \quad \text{trust} \\
&& \quad (-Er/n, Be + Di) \\
&& \quad (Er/n, Be + Bw - Cp/n + PRc [(Er/n - Cc/n)/(1+r)^t])
\end{align*}$

**Figure 1.** Representation of the decision tree – game – among cooperative organization and members.

$Di$ is the differential income when the member does not have business with the cooperative organization and chose a private way. $Be$ is the benefits of economic externalities, in function of the cooperative presence in economy, reflected on general prices level. $Bw$ is the results in welfare and services only for the member if the member chose to transact with the cooperative organization in welfare and $Cp$ is the participation cost, and $n$, the number of cooperators. $P$ is the mathematical expectation that the benefits - residual claim – $Rc$ - can occur in the future, $Er/n$ is the cooperative economic result created because of the member economic activity. $Cc$ is the cooperative costs. These probable results are discounted by interest rate $r$ in time $t$, until the devolution of the residual claim to the member in cash at end of financial
period.

So, the total benefits of cooperation to members depend on the economic performance of cooperative organizations, but also on the number of members, the trust among members, the cooperative strategy to share the benefits, and the time between the members’ economic act and the effective patronage refund in cash - discounted of the opportunity costs, interest rate.

The way of cooperative organization non-commitment never occurs because the member has the “rights to cooperate”. In this case \( (0, 0) \) exit of game does not occur to cooperative organization.

So, the question is if \( D_i > B_w - C/n \) plus \( PRe \left[ \frac{(Er/n - Cc/n)}{(1+r)^t} \right] \) or not. In this situation \( D_i > B_w - C/n + PRe \left[ \frac{(Er/n - Cc/n)}{(1+r)^t} \right] \) the member can be not committed in this period, but have the property rights to cooperate in another future moment. Therefore this game is recurrent, but the payoffs do not depend on the recurrence and the cooperative does not move in future to a non-committed position because the member has the ownership and the rights to cooperate.

The value of \( PRe \left[ \frac{(Er/n - Cc/n)}{(1+r)^t} \right] \) depend on the \( Er \), the number of actives members \( n \), the \( Cc \) costs of the cooperative organization and most importantly, it depends on the likelihood of cooperative economic performance success \( P \) and then, it also depends on the horizon to receive the benefits – refund patronage – \( t \) and the discount rate \( r \).

If the cooperative organization has the objective function of maximizing economic results to refund patronage, this expression \( PRe \left[ \frac{(Er/n - Cc/n)}{(1+r)^t} \right] \) is very important, and \( Be \) and \( Bw \) can be minimized. But, if the cooperative must maximize welfare and services to members, \( Be \) and \( Bw \) are important and this expression can be minimized or disappear.

In case of particular institutional environment with major discount rates, major interest rates in economic environment, and long time to refund the patronage, this expression may tend to a lower value or zero in limit. It is the case of cooperatives in Brazil because the level of interest rates and the law, that determines patronage refund only at the end of the account period. Then, the logic for the cooperative organization is the objective function to maximize \( Be \) and \( Bw \).

This situation reduced the comparison between the value of \( D_i \) and \( Bw \), plus considerations about \( n \) and \( Cp \). But, it is necessary that member perceives \( Bw \), services and welfare. In uncertainty economic environment with high interest rates, the benefits in better commodity price on time \( Be \) improving the immediate cash for rural producer and tend to diminishing \( D_i \), and major benefits in services \( Bw \) that not suffer discount rate, can improve major commitment in member economic activity.

But, this game is not complete because there are relational contracts, externalities, and there can be or not an economic alternative business to the member. On the other hand of the problem, if the benefits are shared as services and welfare, the influence to use residual control rights are important to the model.

4.2. Economic efficiency and contracts

To continue with the model, consider a cooperative organization with relational contracts logics, without strong formal contracts, and with the objective function on services and welfare, because of the institutional environment and economic uncertainty. \( Pc \) is the likelihood that the cooperative organization has an economic performance good enough to create a vector \( Be \) of economic benefits in price levels of commodities or inputs and that it is a public choice with economic
externalities, and a vector $\text{Bw}$ of benefits from welfare and services exclusive to activity members.

Consider also that the economic environment, with cooperative organization objective function maximizing $\text{Be}$ and $\text{Bw}$, present an economic equilibrium where $\text{Be}$ is the price equilibrium among firms, or $\text{Di}$, in limit is zero, because of the market and for the others firms the income equals the $\text{Bw}$ level.

To complete the model considers also the cooperative organization, with objective functions maximizing welfare, with the obligation of distributing this welfare and services. Relational contracts bases improve more VDPR and this situation can create high level of residual control rights, then, there is $\text{Bi}$ as a vector of benefits composed also of economic benefits improved by influence – that can be written as $\text{Bw} + \text{i}$ where $\text{i}$ are the differential benefits of influence rights - exclusive to members that have a special relational commitment with the cooperative or “influence rights”, according to the definitions in Table 1. The cooperative benefits can be understood as a vector formed by the sum of all benefits in different proportions in each case.

There is also $\text{Cp}$ the costs of participation and create a relational commitment with the cooperative organization, and $\text{n}$ number of members and $\text{m}$ the number of members not relational committed if the cooperative organization does not have a good economic performance.

The contract is relational and it is not an economic obligation among the members; only rights for cooperate with benefits and patronage. Then, it is possible to write the model, in consequence of figure 1:

$$\text{Pc} (\text{Be} + \text{Bw} - \text{Cp}/\text{n}) + (1-\text{Pc}) (\text{Bi} - \text{Cp}/\text{n} - \text{m}) > \text{Pc} (\text{Be}) + (1-\text{Pc}) (0)$$

This model represents, on the left side of inequality, all benefits to relational to members committed with the cooperative, whether the cooperative organization has a good economic performance or not, and on the right side, the benefits for the members who are not committed with the organization or non-member producers, only if the cooperative has a good economic performance. If the cooperative organization is not good in its economic performance it is impossible for the cooperative to create economic externalities.

In this model the first left term represents the likelihood of the cooperative to be well and offers economic benefits for all the community plus welfare benefits to committed members, minus the costs of participation for each $\text{n}$ member. The second term on left side represents the likelihood of the cooperative organization to be unwell and, in this case, to be offering only benefits from “influence rights” minus the costs of special relational commitment to each member $\text{n}$ minus $\text{m}$ members that go out of relational commitment.

For the members’ commitment and the social stability of the cooperative organization the left side term, that represents all benefits to members in relational contracts, must be higher than the right side term, which represents the likelihood that the cooperative has a good economic performance and offers benefits as an economic externalist to all rural producers of the community. Transforming and reducing this model, it is possible find (2):

$$\text{Pc} > \{- \text{Bi} + (\text{Cp}/\text{n} - \text{m})\} / (\text{Bw} - \text{Bi}) + (\text{Cp}/\text{n} - \text{m} - \text{Cp}/\text{n})$$

In this case, the model has the presumptions:
Bi, Bw and Cp are >0 and m<n, then Cp/n-m > Cp/n. The model also assumes that benefits are higher than costs for economic logics.

In model (2) \{-Bi+(Cp/n-m)\} is a negative expression and (Cp/n-m – Cp/n) is a positive expression.

First proposition, for, Pc >0 positive it is necessary that Bi>Bw – or in another way Bw+i > Bw i.e. i>0 - in this case, the benefits of influence for the member relational committed with the cooperative organization must be higher than the benefits in welfare and services to all members, that is apparently coherent with the organizational theory.

Second proposition, for, Pc=0 or very low and close to zero in limit Bi=(Cp/n-m) or the benefits of influence must be higher or the same in limit to costs of relational commitment when the cooperative organization is not economically well.

Third proposition, for Pc=1 or very high close to one in limit, the cooperative organization is very well in its economic performance, Bw>(Cp/n) or the benefits in welfare and services must be higher then the costs of participation to create relational committed in cooperative organization. In this case benefits of “influence rights” are close to zero.

Fourth proposition, for n very high the costs of relational commitment are in limit close to zero, and for Pc>0 it must be that Bi>Bw. There must be a positive and greater benefit of “influence rights”.

Relational contracts allow social commitment in cooperative organizations and the logics of “influence rights” benefits to use residual control and decisions rights.

This model shows that there are relational commitment logics: a) rights to cooperate and therefore to uncommitted relations, and b) Influence rights to obtain benefits of use residual control and decision rights. So, the value of informal relational commitment depends on the benefits of influence in function of the degree of residual control and decisions rights.

Collective organizations, in collectivist cultures, show more intense vaguely defined property rights. Because this characteristic can present more intensity of residual control rights, in this case, the logic of influence is very important.

For cooperatives within the collectivist logic only the major proportion of informal relational contracts permit to sustain influence rights logics.

5. Participation and economic performance

A risk-aversion rural producer cooperative member has a higher value of utility for losses and costs than the utility of benefits (Hendrickse, 2003). The costs of participation can be high because of the utility function of the risk-aversion member.

In the case of model (1) and (2), if the cooperative is not well in its economic performance with (Cp/n-m)>(Cp/n) and n-m in the low limit number. This proportion between n and m influence the necessary size of Bi. For high m, that represents uncommitment in relational contracts, the cooperative organization must be showing a high Bi.

The marginal social commitment in cooperative organization can be understood as the difference between (Cp/n-m) and (Cp/n), and must imply in greater marginal benefits from i.

This value must occur directly in proportion to the difference of utility function value. The loss or costs present more utility value than the value of utility of gain in the case of the rural producer’s risk aversion (Hendrickse, 2003). The more instability in the economic environment and more risk aversion, the highest would be the necessary difference of marginal values. In the case of Brazil, the collectivist
culture and the more macroeconomic uncertainty improves this situation and this differential.

The benefits of services and “welfare” created by the cooperative are sufficient, and the costs of participation can be higher than the benefits of participation. The “usage” dimension has only benefits and the informal relational commitment has costs.

But if the cooperative organization presents a poor economic performance, the member whether goes out of organization or tries to participate and put his time to find solutions or information, in others words, the member that believes in the organization does not go out and puts his effort in cooperation. In this case, growth can be the necessary relational commitment with the cooperative. It is explained by the second term in left the side of the model (1). In this situation, the necessary benefits of influence to incentive informal relational contract and member participation appeared.

This logic explains correlations among economic performances of cooperatives and the intensity of member participation, in the general assembly and/or in educational committees at the community level.

If the cooperative is better in its economic performance, the member does not have reasons to spend resources to improve or create informal relational commitments, the participation is low and the economic participation can be high.

On the other hand, if the cooperative is worse in its economic performance some members go out of organization, but others improve the participation, and because of the costs in participation, the organization improves benefits to each extra marginal commitment costs, or benefits are created to “influence rights”.

Participation can be a function of the member economic activity in cooperative also due to the intensity of technical assistance through agronomists, responsible for the direct relations among the organization and its members in rural areas, which can improve participation and relational commitments. Another important function for participation can be a proportion of members associated in cooperative among all regional farmers, this characteristic shows how cooperative is locally important and can also show the distance between the member and the cooperative organization. In the end, an important function is the proportion of regional agricultural products delivered in the cooperative, if this proportion is high the monopsony power of organization is also high and can influence in participation as well.

5.2. Participation and the number of members

The number of members is also important. Figure 2, shows the relations between the number of members in cooperative organizations and the relative participation in the general assembly. Maybe, because of this importance the regression weighted by the number of members presented different significant results.

The relations are a logarithm function, as in regressions, and if the cooperative has a larger amount of members, the tendency of proportional participation is lower. This situation is probably due to the fact that if the cooperative has a high number of members, the division of decisions rights is high too. Each member has only one vote, but this vote does not have the same value as the vote in a smaller cooperative, with few members.

In the case of cooperatives with a greater number of members, there are probably serious problems with monitoring the action of their members. The residual decisions and control rights are greater and the benefits of “influence rights” are higher too. In this case, a lower participation can create a lower informal relational
commitment with the cooperative, and the member that maintains the commitment must more benefits for this option. The cooperative organization has the same services and facilities for all members, but only the relational committed member has the rights of influence and the rights to received differential benefits in services or information, table 1.

The “influence rights” on residual control and decisions rights can be creating a special class of members. So, it is only possible establish this special social order if the relational basis is not a formal contract.

Formal contracts impose constraints to relations, and if the objective function of cooperative is distributing results to members in cash by refund patronage, a transparent situation to member monitoring the cooperative behavior is created.

**Figure 2.** Relations between cooperative member participation and number of member in cooperative organizations for the 20 Parana State – Brazil agricultural cooperatives. The tendency line is a logarithm function.

So, the objective function of distributing welfare without formal contracts in the presence of vaguely defined property rights give rise to residual decisions and control rights. In this situation influence rights appear and refund participation, patronage, for a special class of members with the special relational commitment.

**6. Considerations**

Hofstede (2001) shows that in terms of individualism and collectivism, Individualism Index Value, Brazil is a more collectivist society. This collectivism improves, according to the author, more “moral” involvement of people within the organizations.

The institutions have influence on transactions, and organizational contractual architecture is a consequence of institutions (North, 1990). In Brazil there is a particular culture and institutional environment that can also have influence on contracts in agribusiness organizations.
Cooperatives in Brazil are built in relational contractual bases with few formal contracts embedded in an environment of social and economic uncertainty. These organizations show vaguely defined property rights (Cook, 1995) and few formal contracts, but, in another way, improve the informal relational contracts.

The question is if it is a temporary stage until the society moves to more individualism because the capitalist logic and culture modify institutions and cooperative organizations in Brazil, or there is a specific logic in these organizations and in the informal relational contracts.

The initial hypothesis is that there is a particular logic in informal relational contracts; trust and social embeddedness are only two of the all important characteristics. Others, as the rights of cooperation that permit uncommitted relations, and a recurrent game with non-recurrent payoff, and influence rights that permit high organizational benefits for members are important to understand relational contracts.

In cooperatives the member usage dimension represents only benefits, but the dimensions of the member ownership, control, and member/investor have costs of participation, uncertainty, time costs and transactions costs. Free cooperative committed relations have the advantage of benefits of member usage dimension and do not imply in costs of participation, control, and manager, among others.

The economic logic puts the member objective in the dimension of usage. On the other hand, the benefits of influence rights to use the residual decisions and control rights of assets allocation are important to incentive in the participation process.

This problem is greater if the cooperative is bigger and has more members. In this case, the monitoring costs are high, the distribution of services and welfare to the member can have more problems, and the patron influence rights is more important to improve priority, attention and privilege in informational process, and in services distributions. The logics of influence only exist because of the presence of residual decisions and control rights and problems with definitions and allocation of property rights.

On the other hand, relational contracts may promote a different commitment in proportion to influence rights. If the cooperative shows worse economic performance, the member should spend his time and resources to participate or improve his influence.

For these members, influence rights are important to guarantee his participation in cooperative organization and improve stable relations. Only relational contracts can allow this situation. Relational contracts permit social commitment in cooperative organizations and the logics of influence benefits to use residual decisions and control rights.

The models show that there is an informal relational commitment logics, with rights to cooperate, and consequently rights to uncommitted relations too, and influence rights to obtain benefits of usage of residual decision rights. The model also explains that value of marginal relational commitment depends on the benefits of influence and the degree of residual decisions rights.

The hypothesis is if the cooperative organization has a better economic and financial performance, the member participation in committees decreases, and if the proportion of relations with rural extension service increases, so does the relations and participation in cooperative organization. In this situation, the informal relational contract is an important piece of the contractual logics.

On the other hand, if the cooperative organization is not good in its economic performance, the benefits to members probably decrease, but the member
participation in organization increases. This situation must create benefits to influence rights in present and in the future to improve informal relational commitment.

The cooperative organization offers the same services and facilities to all members, but only the relational committed member has the rights of influence and the rights to receive different benefits in services or information.

This is a special class of members. It is possible to establish this special social relational order, because there is a relational contract with a few constraints of formal form, and because the objective function of cooperative is distributing results to members in services.

So, only in the presence of vaguely defined property rights, residual control rights may arise and increase influence rights to refund, for a special class of members, the special relational commitment.

References


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