
BEHAVIORAL ASSUMPTIONS AND ATTRIBUTES OF TRANSACTION IN THE DAIRY PRODUCTION CHAIN IN GOIÁS STATE, BRAZIL*



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Abstract: the present study aims to analyze the behavioral assumptions of agents of the dairy chain and to identify the influences that such behaviors have on transaction costs, taking into account the relationship between the Mixed Farming Cooperative of Bela Vista de Goiás (Cooperbelgo) and its members. Attributes of transactions and market governance structure present in the dairy production chain are also described, taking into consideration the study region that is the municipality of Bela Vista de Goiás, Goiás state, Brazil, based in the principles of the New Institutional Economics (NIE). The study was done through exploratory and descriptive research, based on the case study, using documents, and literature review. It was mainly observed that behavioral assumptions and transaction attributes do not increase the amount of transaction costs in the dairy chain since the relations between cooperative and its members are characterized by high frequency, reliability, loyalty, and scarce presence of opportunistic behaviors and uncertainties. As a case study, results may not be simply extrapolated to other different realities. As a case study, results may not be simply extrapolated to other different realities but are useful to exemplify how the behavioral assumptions and the attributes of transactions may influence the magnitude of transaction cost in a real agri-food chain. Cooperative arrangements create trust among agents, reducing the risk for transaction cost promoting behaviors such as opportunism. Provides information about one of the most growing dairy regions in Brazil.

Keywords: Dairy production chain. Behavioral assumptions. Transaction attributes. Transaction costs.

PRESSUPOSTOS COMPORTAMENTAIS E ATRIBUTOS DAS TRANSAÇÕES NA CADEIA DE LÁCTEOS NO ESTADO DE GOIÁS, BRASIL

Resumo: o presente trabalho visa analisar os pressupostos comportamentais dos agentes na cadeia de lácteos e identificar as influências que estes comportamentos

possuem sobre os custos de transação, considerando a relação com a Cooperativa Mista de Bela Vista de Goiás (Cooperbelgo) e seus associados. Os atributos das transações e a estrutura de governança das transações presentes na cadeia de lácteos também são descritos, considerando como região de estudo o município de Bela Vista de Goiás, Goiás, Brasil, com base nos princípios da Nova Economia Institucional (NEI). O estudo foi exploratório e descritivo, baseado em estudo de caso, utilizando documentos e revisão de literatura. Foi observado, principalmente, que os pressupostos comportamentais e atributos das transações não ampliam o montante dos custos de transação na cadeia de lácteos porque as relações entre a cooperativa e seus associados são caracterizadas por alta frequência, confiabilidade, lealdade e rara presença de comportamentos oportunistas e incertezas. Como um estudo de caso, os resultados não podem ser extrapolados para outras realidades, mas são úteis para exemplificar como os pressupostos comportamentais e os atributos das transações podem influenciar a magnitude dos custos de transação em uma cadeia agroindustrial real. Arranjos cooperativos podem criar confiança entre os agentes, reduzindo riscos associados a comportamentos que promovam custos de transações como oportunismo. Fornece informações sobre uma das principais regiões produtoras de lácteos do Brasil.

Palavras-chave: Cadeia produtiva de lácteos. Pressupostos comportamentais. Atributos das transações. Custos de transações.

SUPOSICIONES DE COMPORTAMIENTO Y ATRIBUTOS DE LAS TRANSACCIONES EN LA CADENA LÁCTEA EN EL ESTADO DE GOIÁS, BRASIL

Resumen: el presente trabajo tiene como objetivo analizar los supuestos de comportamiento de los agentes en la cadena láctea e identificar las influencias que estos comportamientos tienen en los costos de transacción, considerando la relación con la Cooperativa Mixta Bela Vista de Goiás (Cooperbelgo) y sus asociados. También se describen los atributos de las transacciones y la estructura de gobierno de las transacciones en la cadena láctea, considerando la región de estudio como el municipio de Bela Vista de Goiás, Goiás, Brasil, basado en los principios de la Nueva Economía Institucional (NEI). El estudio fue exploratorio y descriptivo, basado en un estudio de caso, utilizando documentos y revisión de literatura. Se observó, principalmente, que los supuestos y atributos de comportamiento de las transacciones no aumentan la cantidad de costos de transacción en la cadena lechera porque las relaciones entre la cooperativa y sus asociados se caracterizan por una alta frecuencia, confiabilidad, lealtad y la rara presencia de comportamientos oportunistas e incertidumbres. Como estudio de caso, los resultados no pueden extrapolarse a otras realidades, pero son útiles para ejemplificar cómo los supuestos de comportamiento y los atributos de las transacciones pueden influir en la magnitud de los costos de transacción en una cadena agroindustrial real. Los acuerdos de cooperación pueden crear confianza entre los agentes, reduciendo los riesgos asociados con los comportamientos que promueven los costos de transacción, como el oportunismo. Proporciona información sobre una de las principales regiones productoras de lácteos en Brasil. Palabras clave: Cadena de producción de lácteos. Supuestos de comportamiento. Atributos de transacción. Costos de transacción.

Dairy is a strong agri-food chain of Brazilian agribusiness, contributing significantly to the economic and social development, as well as on the distribution of income and employment generation.

The dairy production is present in all 27 Brazilian states, being more concentrated in the South and Southeast regions of Brazil. According to statistical data (BRAZIL, 2018), at the national level, the production of dairy in 2018 was 33.8 billion liters of milk. Goiás state is one of the major production states. Milk production in Goiás state reached 657 million liters in 2018. In the state of Goiás, particularly in the municipality of Bela Vista de Goiás, production reached 79 million liters per year (12% of Goiás state). This

amount, approximately 80% of production is derived from what Brazil considers as “family farms”.

In the face of this reality, there is a need for studies focused on the identification of behavioral assumptions and attributes of the transactions between the actors who constitute the productive chain of milk, in particular, in the municipality of Bela Vista de Goiás that concentrates a great proportion of milk production in the state of Goiás, and afterward, a possible diagnosis of its implications in transaction costs.

This municipality is inserted geographically in the microregion of *Estrada de Ferro* which comprises 14 municipalities, which are *Bonfinópolis*, *Bela Vista de Goiás*, *Caldazinha*, *Leopoldo de Bulhões*, *Cristianópolis*, *Gameleira de Goiás*, *Orizona*, *Palmelo*, *Pires do Rio*, *Santa Cruz de Goiás*, *São Miguel do Passa Quatro*, *Silvânia*, *Urutaí* and *Vianópolis*, who are part of a Local Productive Arrangement (LPA), in order to promote the milk production of the region (GOIÁS, 2006).

It is notorious that the dairy supply chain, in general, is marked by the absence of institutional matrices to confer greater legal security and economic-financial stability to producers and processing industries and processing, and sometimes, conflicts in an environment surrounded by uncertainties.

The analysis of this environment and the behavior of agents that interact in the entire production chain, in a region whose milk activity is highlighted, mainly by family agriculture, it is of utmost importance, given the lack of technical information, which enables the development of specific studies to identify factors that influence negatively and/or positively in the chain and their forms of governance.

For these reasons, follow the rationale of this work, to the detriment of the absence of formal institutions and effective in the dairy chain, to verify which transaction attributes and behavioral assumptions are present in milk production in the study region, and what factors interfere in the transaction costs in the dairy chain.

THEORETICAL BACKGROUND

Analysis of Dairy Production Chain in Brazil, in Goiás State, and Bela Vista de Goiás Municipality

The milk activity in Brazil has evolved from continuous forms, causing significant growth to consistent production. In the last four decades, specifically from 1978 to 2018, national milk production almost quadrupled, going from 7.1 billion to more than 35.1 billion liters of milk. Although, from 2015 production has suffered a decline for two consecutive years, in 2017 it was recorded the restoration of production, where they overcame the period fall previously observed (EMBRAPA, 2018).

The milk production chain is of high importance for the Brazilian agricultural sector, both on a large scale, contributing to the country's economy, how to be a source of income for a large proportion of producers, as well as provide jobs and ensure raw material for their derivatives. The dairy production chain is of paramount importance for the Brazilian agricultural sector, both because, on a large scale, it contributes to the

country's economy, since the Livestock Branch represents 6.8% of Brazil's GDP, as well as being a source of income for a large portion of producers, in addition to providing jobs and guaranteeing raw material for their derivatives (CEPEA; ESALQ-USP; CNA, 2019). Also is the productive profile of Goiás state, in which the agricultural activity has been highlighted, especially concerning economic growth in the last ten years. Based on this context, is the dairy production chain in Bela Vista de Goiás municipality, object of study in this paper, which has an outstanding dairy production, where farmers are associated to Mixed Agricultural Cooperative of Bela Vista de Goiás (Cooperbelgo), installed in this municipality that composes the region of *Estrada de Ferro*.

Cooperbelgo was founded on May 9, 1971, by milk producers in the municipality of Bela Vista de Goiás, aiming mainly at the joint marketing of milk produced in the region.

The cooperative entity started its activities selling raw milk, and later started to supply its members with essential foodstuffs, fuels, and lubricants, veterinary products, dairy products, animal nutrition, and services, assisting producers in the management of their Business

Currently, Cooperbelgo has 2,068 registered producers, of which 224 are cooperative members who have a direct relationship with the cooperative, all belonging to the municipality of Bela Vista de Goiás, place of performance of the cooperative, being that their business operations are restricted to this geographical location (COOPERBELGO, 2019).

The analysis of the transactions that occurred between cooperative and its associated farmers is the scope of this study to facilitate the verification of behavioral assumptions of the actors and the attributes mentioned transactions that involve the costs of production. It is important to state that the link between these agents forms a binomial economic agroindustrial complex, including job creation.

Despite the benefits that the activity exudes, the milk production chain presents some adversities rooted, among which are the low technological level in rural properties of small producers, who are the great majority; high cost of production compared to the small population's purchasing power; unreasonable imports; scarcity of policies oriented to the sector, among others (CAMPOS; PIACENTI, 2007).

In contrast, the modernization of the dairy activity with the improvement of production systems and the adoption of new technologies can favor raising the productivity of milk with lower costs. All these factors will be explored during this theoretical reference, to enable reaching the proposed objectives.

Transaction Cost Theory

The theory of transaction costs was addressed by Ronald Coase in his article "The nature of the firm", published in the year 1937, in that it is the Transaction Cost Economics, part of the New Institutional Economics. In the study developed by Coase, sought to realign what seemed to be a gap in economic theory between the assumption that resources are allocated through the price mechanism and the assumption that this allocation depends on the management of the entrepreneur-coordinator, seeking to understand, in this scenario, the justification of certain resources are obtained through the market and other internally in the organization.

Founded in studies of Coase, came the understanding that the price cannot be counted as a single instrument for information, because it is unable, by itself, generate discernment about the fundamentals of a product or service.

Later, in mid-year 1960, Coase published another study where reaffirmed the existence of costs to transact in the market, reiterating that the firm exists to reduce the transaction costs that emerge during the production and exchange, representing an alternative to the organization of production, through the price system.

Perfecting the ideals of Coase, Williamson (1985) emphasizes that the non-observance of the transaction costs weakens the organization of economic activity, and stresses that the transaction is the instrument of analysis of research entities of capitalism.

The transaction costs are those from any market relations that arise because the agents do not possess the full capacity and/or information necessary for decision-making, in summary, the costs of negotiating, drafting contracts, and ensuring that these are met in their entirety.

To Coase (1937) transaction costs are derived from the efforts launched to obtain market information. Williamson (1985), treats them as those spent to plan and monitor the structures of governance. Arrow (1969) believes that transaction costs are the expense to avail itself of the economic system.

Williamson (1981) asserts that there is on the market some simple and other complex transactions that require greater attention and that, in consequence, contracts may be formal or informal, each with its specific characteristics; however, in all of them indicating the costs arising from transactions, and may be classified into *ex-ante* and *ex-post*.

The costs considered *ex-ante* relate to the costs of preparation and negotiation, leading to the conclusion of a contract, which are those characterized by the search for information about the negotiations and the actors involved in the transactions, as well as the desire to guarantee legal security through the formalization of a contract. Since the *ex-post* costs occur in the period of validity of the contract, to ensure its maintenance, and both should be considered as a means of measuring transaction costs, jointly, for which there are no limitations when the measurement of these costs (ZYLBERSZTAJN, 2003).

In this area, Williamson (1991) characterizes the behavioral assumptions of agents as bounded rationality and opportunism; and establishes the attributes of the transactions in asset specificity, uncertainty, and frequency, which will be discussed below.

Behavioral Assumptions of Agents

The behavioral assumptions of agents are classified by Oliver Williamson as fundamental principles to identify and understand the behavior of actors involved in transactions that fundamentally based on bounded rationality and opportunism.

The author in question highlights that identify such behavior in the negotiations, the agents are certain to ease in untangle those, assuring them the reduction of transaction costs that possibly will subsist.

The definition of bounded rationality was disseminated by Herbert Simon, an economist and social scientist, in the year 1950. The author described that individuals

make decisions seeking to satisfy their levels of pretense at an early stage enough to feel comfortable, and not necessarily to achieve optimal results.

It is important to mention that, according to Simon (1980), all existing rationality in the decision-making process is limited, even when the decision is made intuitively, time that intuition would also be limited. The manager/entrepreneur takes decisions that so only he meets and uncovers plausible solutions, being pleased with satisfactory alternatives. People do not have perfect rationality, because the human being does not have absolute knowledge.

The bounded rationality is characterized because of imperfect information and the inability of the actors in giving all the information they possess, to measure their actions and their probable results.

Regarding opportunism, this is determined as a requirement of a behavioral nature, and that agents of a negotiation act aiming at their interests without contributing to the preparation of contractual clauses. The opportunistic behavior arises primarily as a result of the imbalance in the management of information, where one of the agents can achieve advantages at the expense of the lack of knowledge of another agent party.

Under perspective, Zylbersztajn (1995) outlines the following perception:

Opportunism is the other behavioral assumption, being a concept that results from the action of individuals in the pursuit of their self-interest. However, the self-interest can be pursued in a way not opportunistic. Opportunism part of a principle of non-cooperative game, where the information that an agent may have about the reality is not accessible to another agent, you can allow the first enjoy some benefit from monopolistic type.

According to the author, all individuals act with opportunism. This fact suggests the need of using contracts to mitigate the effects of such assumptions, which will require time, costs for your monitoring, and consequently the increase of transaction costs.

According to Silva and Brito (2013), opportunistic behavior occurs because of his interests from bounded rationality. Santo and Padula (2012) stated that the presence of opportunism contributes to which the contracts are unfulfilled and in consequence, the transactions become full of uncertainties. Zylbersztajn (1995) emphasizes that recourse shall be had to the contracts from any opportunistic behavior of an agent and as a result, it will be essential to the execution of supervisory activities or the inclusion of contractual clauses, to restrict the opportunistic behavior of agents.

This done, concludes that the greater the legal structure present in transactions, that is, the more complete for the contract, the less will be the existence of opportunism.

The Transaction Attributes

The attributes of the transactions comprise asset specificity, uncertainty, and frequency. The asset specificity is regarded as the most important attribute to characterize a transaction, as well as in the determination of the structures of governance. According to Williamson (1985), the specification of an active promotes long-term transactions, factors directly coupled to the frequency or the number of times that a transaction is effective.

The same author conceptualizes the asset specificity, the more specific the investment in an activity the more difficult it will be to their relocation because the notion of specific assets is related to the difficulty in obtaining an alternative use for the same.

Williamson (1996) defines the specific assets in six types, namely: (1) asset specificity of location: relate to real estate and infrastructure used in a certain activity, whose reallocation becomes difficult for other purposes, here the figures of the buyer and seller are in a bond of dependence, which has repercussions on *ex-ante decisions* to reduce the cost of inventory and transaction; for example, the location in the vicinity of productive units reduces costs of transport and storage, enabling positive returns to units; (2) specificity of physical assets: are the physical investments, such as the purchase of specific equipment; (3) human asset specificity: concerns the formal training or need to practice of human resources; (4) specificity of dedicated assets: are the investments made by a vendor or manufacturer, who did not do it if did not have the opportunity to provide a certain amount of product for a specific customer, whose relationship generates dependence that activity; (5) specificity of a brand: are investments in a brand and the risks when you use it; (6) temporal specificity: is related to specific periods in which the transaction takes place, the example we have, the perishability of the food.

The specific assets described before are observed in the physical and organizational structure of the dairy production chain in the region object of this study.

The specificity of local assets is shown, in the case in question, by the existence of physical spaces on the cooperative's premises, which offer greater convenience to its members, among which can be mentioned: agricultural store, gas station, food industry. animal nutrition, storage, and transshipment, as well as a supermarket. Mentioned facilities directly affect the relations between the agents involved, since it promotes longer duration of activities, allowing for frequency and loyalty in transactions.

The specificity of physical assets can be characterized by investment in the equipment of mechanical milking machines, eventually used by producers. As for the specificity of human assets, it is possible to identify that, in the case of a region in which there is a predominance of exercise from the milk production chain, and these producers are inserted in subsistence and family activities, the necessary training for such a job, is usually acquired in practice, or even passed on from "father to son", which characterizes the lack of technical information in the chain. It is also important to mention that the cooperative itself promotes assistance services to producers when requested by them, assisting them in the management of their business. Also, eventually, there is also technical assistance provided by AGATERPA (Goiana Technical Assistance Agency, Rural Extension and Agricultural Research - former Emater) and the COAPRO cooperative (Orizona). Training courses take place via SEBRAE, SENAR and technical schools in Orizona (Farmer Field Schools) and Silvânia (CENTAF) and the IFG Campus Urutaí (CASTRO *et al.*, 2014).

It is possible to observe the assets dedicated in the physical structure invested by the cooperative, which enables efficiency in receiving raw materials, industrialization and commercialization of products.

The brand specificity was consolidated by the cooperative's own history, which has been in the market for more than 49 years, being recognized for the commitment and quality of its services and products.

Finally, with regard to temporal specificity, this can be exemplified by the perishable nature of the food, which is normally not a recurring factor, since the raw material is collected by the cooperative daily in small rural properties, and immediately afterwards, it is sent to the processing industry.

Another attribute of transactions is the uncertainty, which is the inability to recognize all relevant issues that may arise and affect a transaction. Farina (1999) emphasizes that the main function of uncertainty is the expansion of contractual gaps, which are not able to protect themselves. In a scenario of uncertainty, agents cannot predict possible future situations, and for this reason, it opens a range for renegotiations and in consequence, the greater will be the chances of occurrence of losses from the opportunistic behavior of the parties.

However, according to Dorneles et al. (2014), such actions not opportunists will manifest when there is a low level of uncertainty, linked to a solid relationship based on trust. Otherwise, it can be argued that a greater uncertainty can generate contractual breaks, whose losses incurred will be considerable, be deduced, therefore, that the more this uncertainty, if you do in a negotiation, the greater, will be the transaction costs.

Regarding the frequency, this stipulates that the transactions are usual or isolated, without repetitions. The higher the frequency, the greater the reduction of costs related to obtaining information and preparation of contracts. Soon, the frequency of transactions painless filling the gaps contract, to reduce uncertainty and, in consequence, the bounded rationality and opportunism.

According to Farina (1999), the frequency refers to the number of transactions carried out, emphasizes two aspects concerning this attribute. The first is that the higher the frequency, the greater the reduction of average fixed costs related to obtaining information and making a contract which establishes limiting clauses to opportunistic behavior. In the second aspect, Farina says that when the level of recurrence is high, agents have no reason to impose conditions that establish damage to his consort.

In this way, it can be concluded that the more frequent are the transactions, more stable will be the relations between the actors involved, and less will be the transaction costs, and it is this factor that will indicate the nature and complexity of the contract to be drawn up in every negotiation.

METHODOLOGY

This study was developed, initially, with the idea of field research, to be held next to the Cooperbelgo cooperative and his associates, to analyze the forms of governance; mode by which are carried out the operations of sale and purchase of milk; presence or not of formal institutions and the need to formalize contracts in their negotiations, so that they could check the implication of such factors in the transaction costs of the chain.

The object to be investigated in this case study empirical has as reference the milk producers from the city of Bela Vista de Goiás associated with Mixed Agricultural Cooperative of Bela Vista de Goiás (Cooperbelgo), which corresponds to the geographical area situated in the region of the *Estrada de Ferro*. Milk producer's cooperative studied here, are the great majority belonging to family agriculture as Article 3rd and its sections of Law 11,326, 24 July 2006.

However, the approach to comment was carried out through informal interviews with a representative of the cooperative and a representative of the cooperative, which provided the necessary information concerning the relations between the agents of the dairy production chain in the region, especially between cooperative and cooperative.

This paper will cover a case study from the perspective of a qualitative descriptive bibliographic research. Following Trivinos (1987) the case study is a species of research whose object is a unit that analyzes deeply. The scope is to investigate the description of a given reality. The author considers that the case study is a qualitative research method more relevant, however, the results are valid only for the case study. Trivinos still defends that the main objective of this method is to foster fruitful knowledge of a reality bounded and that the results achieved may allow the formulation of assumptions for the routing of other researches. However, it is worth mentioning that the results obtained in this study do not mean that the specificities of Cooperbelgo are the same as other cooperatives in Brazil.

RESULTS AND DISCUSSION

To perform this study interviews were done with the directors responsible for the management of the Mixed Agricultural Cooperative of Bela Vista de Goiás and with a producer representative of the category of members of the same cooperative, being that, the analysis of the factors which surround the productive chain of milk in the region object of study, enabled the characterization and understanding of the main particularities of behavioral assumptions, attributes of the transactions and structures of governance that will be pointed out in sequence.

Of the total number of active members, which are 224, it can be mentioned that 99% are characterized as a small milk producer and approximately 1% correspond to the large producers who deliver the raw material to the cooperative, with the majority having main activity is dairy production.

It is known that the milk market, which is characterized by an organization is unbalanced in the extent of their capacities and the bargaining power between their actors. It is observed on the one hand, producers of milk, which are mostly rural producers of small, geographically dispersed and lacking skills to articulate together in the negotiations. Now on the other side, there are the dairy industries, hyper catering, and come with a market structure more favorable.

In Goiás state, the milk and dairy products chain is concentrated in the south-central part of the state and its production is geared towards the supplying industry, and in the region under study, this characteristic remains, since it holds 5 dairy products that represent the processing industry. The region of the Railroad is highlighted in the dairy production

chain, given the existence of a market in the locality, in other words, the notoriety is due to the existence of dairy products and processing industries, being the main buyers of milk, in addition to Cooperbelgo, the dairy products Marajoara, Italac, Leite Bom, Piracanjuba, Itambé, and Nestlé (CASTRO *et al.*, 2014).

Thus, the market structure that is identified by the presence of a few buyers, who are hyper enough and many sellers, hyposufficient, whose bargaining power of the latter remains impaired in the face of the industry remains evident, and it is up to them to accept the sale of the product at the price offered by the cooperatives.

It is known that this market, in all the time was characterized as an environment surrounded by uncertainties, and as a result of confrontations between the producers and dairy products, while one of the main whys of these vulnerabilities is the uncertainties regarding the composition and predictability of the price of milk paid to producers.

In the specific case of the dairy production chain involving the Cooperbelgo and its members, this voltage is quite attenuated depending on the relationship that is established between these two agents involved in the transaction. At one end, is the production and delivery of the milk, on the other, downstream, the guarantee of the minimum price if the offer is above the total demand, in addition to the technical assistance provided by the cooperative to its members inside the gate.

It was observed that, in the relations between the producers and the cooperative, there is a strong presence of frequency in negotiations between such agents, since the cooperative offers a fixed price to be paid by milk, maintaining the value, even if the market and/or other dairy products the price is below the average.

It was also found that approximately 90% of the producers are faithful to the cooperative, concerning the sale and delivery of milk for the association; and also, the presence of opportunistic behavior is almost non-existent, considering the existing loyalty in this link, as well as, due to the many benefits that the coop offers to its associates, the example of technical assistance services (animal husbandry, veterinary and agronomy).

It was verified that the presence of opportunistic behavior when the price of milk on the market increases and the cooperative maintains the price previously pre-defined, the moment in which the producers decide to sell the milk into other dairy products that offer the highest price, which rarely happens.

The uncertainties are present all the time but are identified due to the loyalty that producers have to with the cooperative, being that there is hardly contractual dissolution in this connection, although the existing contracts in these transactions are verbal, in the absence of the formal contracts.

Uncertainties, namely, the unpredictability of the price of milk, absence of effective institutional matrices, informal negotiations, low technological level in small farms and scarcity of policies aimed at the production chain, are present at all times but are revealed due to the loyalty that producers have towards the cooperative, and there is hardly a contractual dissolution in this connection, even though the contracts existing in these transactions are verbal, with no formal contracts.

Because the milk production in the region is a routine activity and livelihood, there seem to be high investments in technology for the development of activity and specific

forms of governance, getting to the mercy of market governance, notably by the price system. Due to these factors, the asset specificity is characterized, in the meantime, as an attribute, convenient to the agents involved.

The view of the arguments described above notes the presence of low transaction costs involved in the milk production chain in the *Estrada de Ferro* region, especially concerning Cooperbelgo and its associates. Given that the behavioral assumptions of agents as well as attributes of the transactions, in the region object of study, there are attributes that cause inconveniences to jail, or which contribute to the increase in transaction costs.

FINAL REMARKS

After the analysis of data obtained through the study of existing features in the productive chain of milk in the municipality of Bela Vista de Goiás, enabled to identify that the behavioral assumptions of agents as well as attributes of the transactions that generally, contribute to the increase of transaction costs in the productive chains if they are managed inefficiently compared to the absence of effective institutional matrices, not negatively influence the magnitude of transaction costs that exist in the dairy chain, since the relations existing between cooperative and cooperated are marked by the frequency, reliability, loyalty, scarce presence of opportunistic behavior and uncertainty.

After analyzing the data obtained by studying the particularities existing in the milk production chain in the municipality of Bela Vista de Goiás, especially by verifying on the spot the behavioral assumptions and attributes of the transactions, it enabled the identification of which factors and under what circumstances these can be present in the dairy production chain in the study region

From the compulsion of the results obtained, it was observed that, in the existing relationship between Cooperbelgo and its cooperative members, there is no behavioral assumption of limited rationality, since the cooperative members have total freedom for decision making, as far as the sale is concerned. of their products, being able to weigh the pros and cons which, consequently, generates the opportunity to get rid of situations that are not favorable to them.

Opportunism is an almost nonexistent assumption in the transactions between the agents studied, in this case, since it is only present in the hypothesis of a rise in the price of milk in the market, while the cooperative maintains the value previously defined, a situation that exceptionally happens.

Regarding the attributes of transactions, uncertainty is based on the volatility of prices paid for milk, which is generally unstable, and frequency becomes an advantage since it is a striking feature of the relationship between cooperatives and members.

Thus, in the case at hand, the behavioral assumptions of the agents as well as the attributes of the transactions, which generally contribute to the increase in transaction costs in the production chains if they are managed inefficiently in the absence of effective institutional matrices, do not influence negatively in the measurement of transaction costs existing in the dairy chain, since the existing relations between cooperative and cooperati-

ve are marked by frequency, reliability, loyalty, little presence of opportunistic behaviors and uncertainties.

As a result, it can be concluded that the effect of the case study in the region of Bela Vista de Goiás, notably between the trade relations between the Cooperbelgo and its associates, we verified that these factors do not influence directly in the transaction costs of the chain, to the point of raising them.

Note

- 1 Although at a given moment in this study appear quantitative description, is not the main objective of this article the use of statistical procedure.

REFERENCES

- ARROW, K. J. The Organization of economic activity: issues pertinent to the choice of market versus nonmarket allocation. In: _____. *The Analysis and evaluation of public expenditure*. Cambridge: Harvard University Press. (1969).
- BRAZIL. SIDRA. The Brazilian Institute of Geography and Statistics (org.). **Municipal Livestock Survey**. 2018. Available at: <https://sidra.ibge.gov.br/research/ppm/frames/Brazil/2018>. Accessed January 23, 2020.
- CAMPOS, K.C.; PIACENTI, C. A. Agribusiness milk: current situation and prospects. In: XLV CONGRESS OF THE BRAZILIAN SOCIETY OF RURAL ECONOMY, ADMINISTRATION AND SOCIOLOGY (SOBER). *Anais...* Londrina: Parana state, Brazil, 2007.
- CASTRO, M. D. C. *et al.* Cadeia Produtiva do Leite em Goiás: uma análise para o Território Estrada de Ferro. *Conjuntura Econômica Goiana*, n.30, p.83-98. 2014. Available at: http://wwwold.imb.go.gov.br/pub/conj/conj30/artigo_06.pdf. Accessed June 10, 2020.
- CEPEA; ESALQ-USP; CNA (Brasil) (org.). *PIB do Agronegócio Brasileiro: participação do agronegócio no PIB do Brasil (em %). Participação do Agronegócio no PIB do Brasil (em %). 2019*. Available at: <https://www.cepea.esalq.usp.br/br/pib-do-agronegocio-brasileiro.aspx>. Accessed June 09, 2020.
- COASE, R. H. The nature of the firm. *Economica New Series*, v. 4, n. 16, p. 386-405, 1937.
- COOPERBELGO. *Cooperative members*. 2019. Available at: <https://cooperbelgo.com.br/cooperados>. Accessed October 28, 2019.
- DORNELES, T. M. *et al.* Análise dos atributos das transações e estruturas de governança do setor apícola de Mato Grosso do Sul. *Revista Brasileira de Gestão e Desenvolvimento Regional*, v. 10, n. 2, 2014. Available at: <https://anaiscbc.emnuvens.com.br/anais/article/viewFile/4428/4429>. Accessed June 09, 2020.
- EMBRAPA. *Milk Yearbook 2018: trends and opportunities for people who live in the dairy sector*. Embrapa. 2018. Available at <https://www.embrapa.br/busca-de-publicacoes/-/publicacao/1094149/anuario-leite-2018-indicadores-tendencias-e-opportunidades-para-quem-vive-no-setor-leiteiro>. Accessed October 27, 2019.
- FARINA, E. M.M.Q. Competitiveness and coordination of agroindustrial systems: a conceptual test. *Gestão & Produção*, v. 6, n. 3, p. 147-161, 1999.
- GOIÁS. Cíntia Araújo Amorim. The State Department of Science and Technology Superintendency of Studies and Strategic Projects (ed.). *Local Productive Arrangement of Milk of the Microregion of "Estrada de Ferro"*. 2006. Available at: <http://www.sgc.Goiás.gov.br/upload/arquivos/2012-03/apl-lacteo-da-estrada-de-ferro.pdf>. Accessed October 26, 2019.
- SILVA, A. A.; BRITO, E. P. Z. Uncertainty, bounded rationality and opportunistic behavior: a study in the Brazilian industry. *RAM. Revista de Administração Mackenzie*, São Paulo, v. 1, n. 14, p.176-201, 2013.
- SANTOS, M. S.; PADULA, A. D. The transaction as a structuring factor of the supply chain of biodiesel in Rio Grande do Sul. *Revista Eletrônica de Ciência Administrativa*, v. 11, n. 2, p. 178-192, 2012.

SIMON, H. A racionalidade do processo decisório em empresas. *Edições Multiplic*, v. 1, n. 1, p. 25-60, 1980.

TRIVINOS, A. N. S. *Introduction to social science research: qualitative research in education*. São Paulo: Atlas, 1987.

WILLIAMSON, O. E. *The economic institutions of capitalism*. New York: Free Press, 1985.

WILLIAMSON, O. E. The economics of organization: The transaction cost approach. *American Journal of Sociology*, v. 87, n. 3, p.548-577, 1981.

WILLIAMSON, O. E. *The Mechanisms of Governance*. New York: Oxford University Press, 1996.

ZYLBERSZTAJN, D. *Estruturas de governança e coordenação do agribusiness: uma aplicação da Nova Economia das Instituições*. Doctoral Thesis (PhD in Business Administration of Faculty of Economics, Business Administration and Accounting) - USP, São Paulo, 1995. Available at: http://www.erudito.fea.usp.br/PortalFEA/Repositorio/616/Documentos/Tese_Livre_Docencia_DZ.pdf. Accessed June 09, 2020.

ZYLBERSZTAJN, D. *Costs, Transactions and Transactions Costs: Are there simple answers for complex questions?* Working Paper, University of São Paulo, São Paulo, n. 3/006, Feb. 2003. Available at: http://www.fundacaofia.com.br/pensa/anexos/biblioteca/632007144820_.pdf. Accessed October 29, 2019.

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