

## **Transaction cost economics and its impact on interorganizational cost management in Brazilian coffee growing**

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## **Abstract**

Interorganizational relationships, in its more specific context of interorganizational cost management (IOCM), create difficulties for participants in terms of lack of trust, the way in which benefits will be shared, if the information is truthful, among other problems. In this context, the IOCM variables end up being influenced by the Transaction Cost Economics (TCE). Thus, this research aims to verify if and how the configuration of the TCE variables is established in relation to the IOCM variables in the relationship of the rural producer with the cooperatives and investor-owned firms (IOFs) in the coffee value chain. Qualitative research was used, with semi-structured, individual interviews with rural producers, representatives of cooperatives and IOFs, who trade coffee and have a direct relationship, geographically delimited in the states of São Paulo and Minas Gerais in Brazil. A pre-test was carried out for subsequent interviews, the answers were transcribed using the Atlas TI and IRAMUTEQ software for counting and word variations, checking which ones were related to each of the variables to organize and analyze contents. As a result, the relationship of the variables was identified, with emphasis on the benefit variable that was related to all the TCE variables, it was noted that the quality-functionality variable is used to increase the price and the future market to minimize uncertainty in the oscillation of the market. Also in specific assets, it was found that cooperatives offer more specifics than IOFs, to the point that the rural producer generates commercial loyalty in a non-exclusive way.

**Keywords:** Interorganizational Cost Management. Transaction Cost Economics. Coffee growing.

## **1. Introduction**

Research in the interorganizational context, especially in the investor-owned firms (IOFs), has increased in different areas of the social sciences, but until recently they were still not very expressive among accounting researchers (COOPER; SLAGMULDER, 2004, DEKKER, 2004). Over the years, however, the interorganizational context has gained ground among researchers. As stated by Castro, Hey, Castro and Lara (2015), in their bibliographical work, research in the field of interorganizational cooperation, in the years 2000 to 2014, had 260 published works, demonstrating the interest of researchers in the topic.

Among the techniques present in management accounting studies, with an emphasis on the interorganizational context, we have interorganizational cost management (IOCM). IOCM is a cooperative process in which costs are managed, including in this process other organizations in a value chain, in addition to the company itself (SOUZA; ROCHA, 2009). For Cooper and Slagmulder (1999), this process takes place through a set of actions aimed at achieving an improvement in the supply network and a reduction in the total cost. Fehr and Duarte (2018) define an IOCM as a cost management instrument which seeks, through a cooperative relationship (mutual or compulsory) between associations, the best management of processes and cost determinants to increase profitability or net surplus of the parties involved.

In this sense, considering that interorganizational relationships seek for an assessment and management of relationships, development of trust, commitment and reciprocity, understanding the balance of dependence on power and understanding the past, present and future directions of relationships (CROPPER; EBERS; HUXHAM; RING, 2014), it is observed that the companies involved in this process need some factors for the practice of IOCM, such as: interdependence, stability, cooperation, mutual benefit and trust (COOPER; SLAGMULDER, 1999).

In this context, it appears that many topics covered in the IOCM were influenced by the Transaction Cost Economics (TCE) and maintain a relationship with it, an aspect already observed in several studies (Coad; Cullen, 2006, Gonzaga; Aillon; Fehr; Borinelli; Rocha, 2015, Uddin, 2013), with the TCE being most famous in the works of Williamson (1985, 1989, 1991).

Based on this relationship and understanding that TCE seeks to extend the spectrum of applications of neoclassical theory, considering that property rights and transaction costs affect the incentives and behavior of economic agents (FURUBOTN; RICHTER, 1991), it should be clarified that transaction costs are the costs arising from the act of conducting the economic system, that is, the ex-ante costs of preparing, negotiating and safeguarding an

agreement; as well as the ex-post costs of adjustments and adaptations, which result when the execution of the contract is carried out with failures, errors, omissions and unexpected changes (WILLIAMSON, 1989).

In order to corroborate the aforementioned data, Schepker, Oh, Martynov and Poppo (2014) indicate that TCE is the most prominent perspective in informing the optimal governance structure and the function of safeguarding contracts, highlighting, however, that other perspectives are necessary for understanding how contracts are structured, considering relational capabilities (that is, building cooperation and building trust) as well as relational contracts between companies. The growing cooperative relationship between firms can be analyzed from two perspectives: horizontal (ie, strategic alliances, joint ventures and technology licensing), in which there is cooperation between organizations that compete with each other; and vertical (outsourcing), in which the relationship takes place between firms positioned along a single production chain (BAUDRY; CHASSAGNON, 2012).

In this sense, Malhotra and Lumineau (2011) point out that the presence of cooperation in the relations established between firms is not automatic and that its insertion is not always easily executed, given the presence of two main obstacles: the possible exploitation by others relationship participants; and for failures in the coordination of the relationship.

Thus, cooperatives establish, with their members, relationships that are different from those established by the investor-owned firms (IOFs) with their suppliers or customers. The cooperative is an option of economic organization that coexists with companies that are sometimes customers, sometimes suppliers, unlike the IOFs, which maintain the relationship only regarding the mercantile interests of the parties (CATTANI, 2003).

Considering the influence of TCE variables on IOCM, the differentiation of cooperative organizations and IOFs and the lack of studies that evaluated this relationship, there is a gap that needs to be filled with new studies. From this analysis, the following questions emerged: How are they configured, distinguished and/or complemented by the TCE variables with the conceptual model and the practice of IOCM in the relationship between rural producers, cooperative organizations and IOFs in the coffee sector?

Thus, the objective of this study is to verify if and how the configuration of the TCE variables in relation to the IOCM in the relationship of the rural producer with the cooperatives and IOFs in the coffee value chain.

In your organization, this work is divided into five sections. The first section deals with the introduction, the second deals with the theoretical platform. In the third, the

trajectory of the research is discussed, while the fourth is responsible for developing the study. Finally, the fifth section comprises the conclusions about the analyzes and recommendations for future research.

## **2. Literature Review**

### **2.1. Interorganizational cost management**

Due to the intensification of research in the interorganizational context, a way is opened to study cost management in interorganizational relationships, called interorganizational cost management.

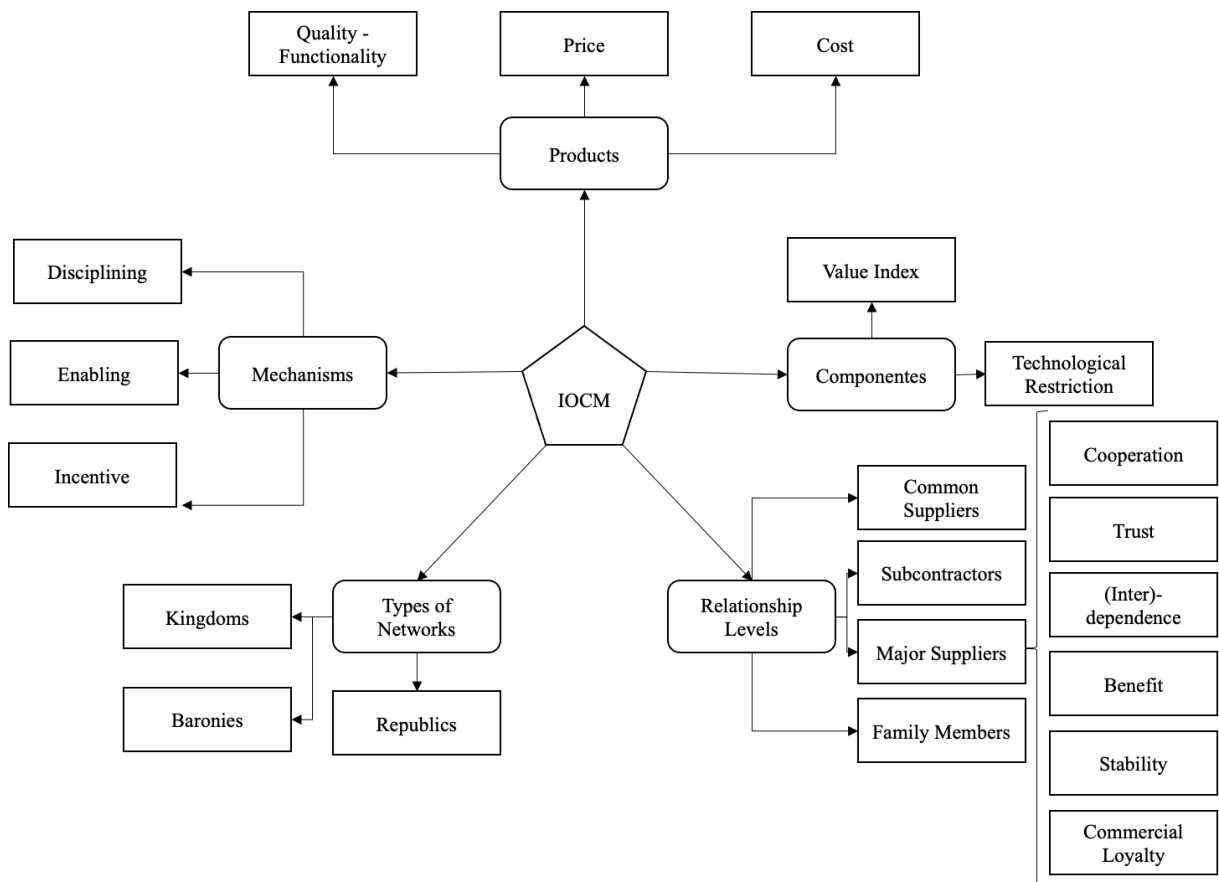
Cooper and Slagmulder (1999) define the IOCM as a set of actions organized to improve the supply network, such actions must be worked on to obtain a reduction in the total cost of the network. It is important to emphasize that, although the definition presented brings the reduction of the total cost of the network as one of the purposes of the IOCM, it cannot be placed as the focus of this technique, since the main objective of the company is to earn profit. As defended by Friedman (1970), in a market economy, in which fierce competition is an inherent characteristic of the environment, the objective of companies is to maximize profits, and the actions of executives must always be focused on this, being the cost management the best way to achieve this goal.

Souza and Rocha (2009) define the IOCM as a cooperative cost management process, which includes other organizations in a value chain beyond the company itself. In the view of Agnadal and Nilson (2009), the IOCM consists of a coordinated effort between buyers and suppliers to reduce costs, corroborating the thought of Cooper and Slagmulder (1999) when they state that, in companies that practice the IOCM, the efforts are focused on cost reduction. Fehr and Duarte (2018), when discussing, in the theoretical essay, the similarities and distinctions between IOCM and OBA, define IOCM as a process of managing cost determinants between companies in a relationship, with the objective of increasing profits or net surplus.

In this way, it is possible to define an IOCM as a cost management instrument which seeks, through a cooperative relationship (mutual or compulsory) between associations, the best management of processes and cost determinants to increase profitability or net surplus of the parties involved (FEHR; DUARTE, 2018).

Considering the IOCM as a cost management tool, its uses can be diverse, such as: in the field of transaction economics (defining maximum prices to be paid and how to improve contracts between agents); in total return (expanding investment and managing prices); in managing cost drivers (changing processes); and in the strategic possibilities (review planning, expand interorganizational budgeting tools and make collaborative demand forecasts).

In this context, the application of the IOCM follows a conceptual model, Figure 1, adapted by Cooper and Slagmulder (1999, 2003, 2004) e Souza (2008), which is based on five dimensions and their respective subdivisions: products (functionality, quality, price and costs); mechanisms (disciplining, enabling and Incentive); components (value index and technological restriction); types of networks (kingdoms, baronies and republics); and relationship levels (family members, major suppliers, subcontractors, and common suppliers). Each dimension presents factors that influence the IOCM implementation process in a value chain. It is possible to see that the five dimensions mentioned above are directly and specifically related to the network or the value chain.



**Figure 1: Conceptual Model of Interorganizational Cost Management.**

In the first subdivision, products, while the selling price can be disconnected from cost temporarily, if the company wants to remain profitable in the long run, the cost must be aligned with selling prices.

Quality is defined as meeting specifications (COOPER; SLAGMULDER, 1999). For this research, the configuration exposed by Cooper and Slagmulder was adopted, considering that the coffee product has specifications defined by the “Ministério da Agricultura, Pecuária e Abastecimento” (MAPA), by Normative Instruction n. 8, 2003 (BRASIL, 2003). It was also decided to use quality and functionality as the only variable, as for the coffee product there is already the right number of specifications, and compliance with these specifications will define the level of quality.

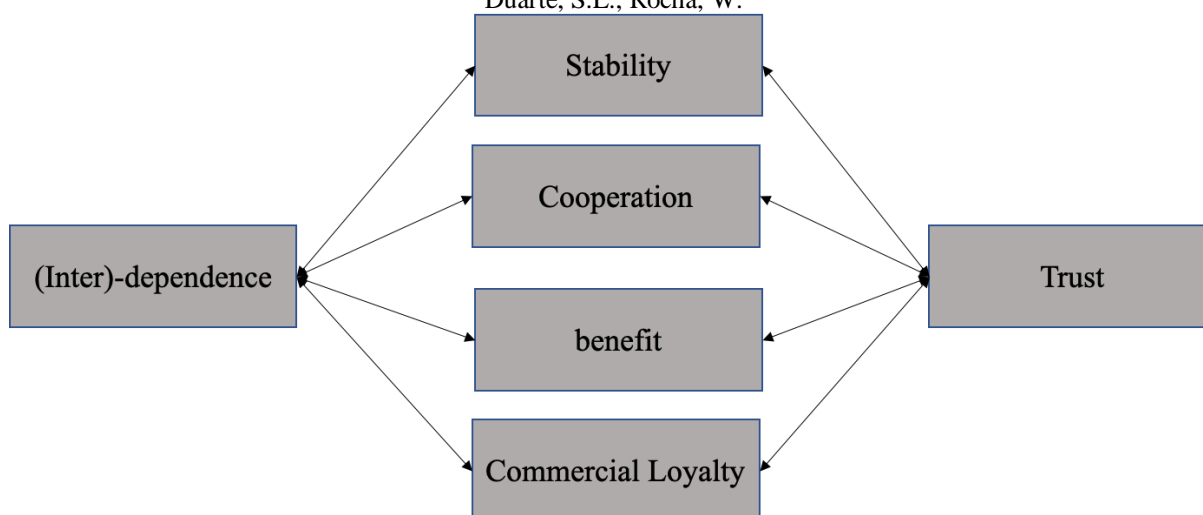
When research began on the IOCM, most of the time, it was about products that could be broken down into components and, therefore, the company could apply the IOCM to each component separately. It is not correct to treat the coffee product as divisible, but it is possible to investigate its production process as parts of a final finished product. Talking about the hypothesis that the product is divisible and, thus, allowing to analyze its components separately, two variables are considered: value index; and level of technological restriction. Due to the indivisibility of the coffee product into components, the value index variable will not be analyzed in this research.

As for the second variable, level of technological restriction, Cooper and Slagmulder (1999) state that, if technology is strategic, it must remain restricted to the company, and should not be transferred to third parties. This makes the level of technological restriction an obstacle to the application or not of the IOCM.

Thus, it is expected, therefore, that companies holding more technological secrets do not make them available to partners, keeping such information confidential in the relationship, minimizing the possibility of applying the IOCM. In the case of coffee, as mentioned in relation to indivisibility into components, this variable will be studied in this research in a broader context, relating technology to the amplitude of the production process.

But for the application of the IOCM, there are certain factors that determine success or failure. According to Cooper and Slagmulder (1999), the practice of IOCM is conditioned to the existence of factors, figure 2. It is understood that the occurrence of the IOCM does not require a bilateral dependence and that the benefits occur reciprocally, therefore, it is treated as (inter)-dependence and only benefit. This is justified mainly because the relationship can occur in environments of tyranny.

Duarte, S.L.; Rocha, W.



**Figure 2: Nature of Buyer-Supplier Relations**

Source: Adapted by Cooper and Slagmulder (1999).

(Inter)-dependence must be understood as the dependence between network participants, with each isolated decision affecting one another (COOPER; SLAGMULDER, 1999). In this sense, considering that interdependence must happen reciprocally, it restricts the possibility of a differentiated arrangement, in which only one agent of the relationship is dependent on the relationship. Thus, as a variable for this research, only dependence will be used, not necessarily bilateral, for this reason it will be described as (Inter)-dependence.

Stability occurs because, in the first place, both sides believe that it takes time to develop a mature and trusting relationship. Second, stable relationships help ensure that goal congruence is achieved. Third, stability increases the willingness of both sides to make mutually beneficial investments. Finally, the knowledge to coordinate interorganizational activities more efficiently (COOPER; SLAGMULDER, 1999). This variable will be researched together with the variable frequency of TCE, as it is expected that the higher the frequency of transactions, the greater the stability of the relationship, being directly proportional and complementary.

Cooperation is something opposite to the competitive environment and will exist when there are common goals, joint and coordinated activities and actions, interaction, collaboration, complementarity, and reciprocity. The act of cooperating leads to something together so that both agents can achieve a common goal, which tends to be, for example, increasing profitability. However, if one of the agents does not feel comfortable in practicing such collaboration, there is the possibility of a mandatory cooperation, in which the mandatory agent forces the dependent to practice cooperation.

Benefit is understood as sharing gains, but it is important that each participant clearly sees an advantage in using the IOCM so as not to generate any distributive conflict (COOPER; SLAGMULDER, 1999). If it is not possible to visualize the possibility of benefits among agents who practice the IOCM, this relationship tends to weaken and end (KAJUTER; KULMALA, 2005).

In the case of the coffee sector, benefits are expected to come in monetary form (payment of premium, freight, fees, others) and non-monetary (technical assistance, courses, lectures, certification process, others).

Commercial loyalty can be defined when there is exclusivity between partners, even when there are better negotiation options, that is, in addition to the relationship being stable and there being or not a frequency in transactions, the producer tends to negotiate only with one agent, realizing that this relationship brings you greater benefits.

Considering the factors that influence the application of the IOCM, there are levels of relationship that are subdivided into four partnerships: common, auxiliary, main and familiar. Souza and Rocha (2009) explain that, to classify the partnership, it is first necessary to determine the relationship levels, which are the factors that determine the success of the application of the IOCM.

When it comes to the types of chain, Cooper and Slagmulder (1999) list three possibilities: kingdoms; baronies; and republics, considered then, type of chain, as a research variable in this research. In the kingdoms chain typification, only one company dominates the entire network and, therefore, has high bargaining power, the baronies, the bargaining power is divided between two or more companies, allowing these companies to dominate the entire network. Republics chain there is no company that commands the network; organizations have to form alliances to achieve their goal; cooperation tends to be mutual, as there is no dependence on a tyrant company; the benefits tend to be mutual and trust is probably greater than in the other two types of chain (SOUZA, 2008).

The mechanisms used to control the IOCM, according to Cooper and Slagmulder (1999), are two: disciplining and enabling. Also according to these authors, the disciplining mechanism is aimed at putting pressure on cost management to obtain a total return for the value chain; the enabling mechanism, on the other hand, has the function of ensuring that the stipulated goals for total return are achieved. Souza and Rocha (2009) insert a third mechanism, the encourager, which is based on providing participants with bonuses for the goals achieved.

## 2.2. Fundamentals of transaction cost economics and their assumptions

Argote and Greve (2007) explain that organizational economics is a sub-area of economic theory, interested in explaining the boundaries of the firm, but that it has also expanded in the sense of exploring issues about organizational structure, coordination, decision rights and internal behaviors as influencing and political activities.

In this environment of organizational economics, TCE seeks to extend the spectrum of applications of neoclassical theory, considering that property rights and transaction costs affect the incentives and behavior of economic agents (FURUBOTN; RICHTER, 1991).

The property right is thus explained by Zylbersztajn (1995): "The definition of a good cannot be limited to its physical aspects and technical characteristics but must necessarily involve the delimitation of property rights over that good".

Also according to Zylbersztajn (1995), the property right can be represented in three ways: the right of use; the right to usufruct; and the right to abuse.

The concept of transaction costs initially appears in Coase's work (1937), entitled "The nature of the firm", where he points out the existence of costs to carry out transactions and warns that there should be costs to use the market. For Schepker et al. (2014), seen by the TCE, contracts are governance mechanisms structured to minimize transaction costs, these being costs related to contract preparation, relationship management, and losses caused by opportunistic behavior and lack of adaptation of the parties.

Regarding the effectiveness of contracts, assumptions about human nature and decision-making are related to transaction characteristics (SCHEPKER et al., 2014). Therefore, TCE uses two behavioral assumptions for its understanding: limited rationality, whose main reference is Simon (1955); and opportunism. Under unrealistic premises, where there was no opportunism and the transaction actors were armed with all the information about a given context at a given time (perfect rationality), the chances of the transaction (or cooperation) failing would be nil. If agents do not have all the information and if opportunistic behavior is likely, the complexity and uncertainty of the business situation will increase, making it increasingly difficult to make a "correct" decision (WILLIAMSON, 1985).

In this sense, Farina, Azevedo and Saes (1997) state that both opportunism and limited rationality are related to the incompleteness of contracts, since, due to the contracts being incomplete, transaction costs are fully discovered ex-ante, or that is, transaction costs cannot be reduced to the drafting of the contract, as there are also ex-post costs. The reasons that guide the incompleteness of contracts can have different natures, the most common of which is linked to the fact that environmental conditions cannot be anticipated ex-ante (Zylbersztajn, 1995). As individuals are rational, more limitedly, and opportunistic, they are led to design institutions that have the function of alleviating the adaptation problems between them and, in this way, facilitating transactions (Farina, et al., 1997).

Simon (1978), observes that the limited rationality of individuals encourages the agents' incompetence to anticipate all future contingencies associated with a transaction, making contracts incomplete. Rationality presents a style of behavior that is conducive to achieving certain goals, considering the limits imposed by certain conditions and limitations. The limitation of this rationality can happen due to factors such as risk, uncertainty, incomplete information about alternatives and their consequences, as well as environmental complexity (SIMON, 1982).

In the existence of market failures, managers cannot easily draw up a contract to safeguard transactions from risks arising from the context. Thus, transactions become difficult to be managed only through formal contracts, leading to an increase in transaction costs and a minimization of performance efficiency, due to the costs of adjusting to an organizational form appropriate to the characteristics of the transactions (NICKERSON; SILVERMAN, 2003; SCHEPKER et al., 2014).

Asset specificity is manifested when an investment, made in support of a transaction, has a lower value in alternative uses, which can be considered specific assets: location specificity; physical asset specificity; specificity of human assets; specificity of dedicated assets; temporal specificity (WILLIAMSON, 1991). This condition, together with the behavioral assumptions of opportunism and bounded rationality, implies the complexity of structured contracts for a transaction (WILLIAMSON, 1985).

Houston and Johnson (2000) point out the supplier's relationship with asset specificity and opportunism, starting with the supplier's investment in specific assets. The supplier is vulnerable to making futures contracts because of assets and/or expropriation of applied knowledge in technology; the buyer is vulnerable to doing so because of the switching cost.

Uncertainty, risk, is related to unanticipated changes that are unpredictable for the agents involved in the transaction, in the circumstances in which the relationship is inserted,

challenging the coordination of exchanges, by creating the need to adapt to operations and strategies (ZHOU; POPPO; YANG, 2008).

### 2.3. Comparison between cooperatives and IOFs

In this topic, a comparison will be made between IOFs, which focus exclusively on profit, and cooperative organizations, whose focus is not on obtaining profit, in terms of the nature and capital structure of these organizations.

According to the International Cooperative Alliance – ICA (<https://ica.coop/en/what-co-operative>), a cooperative is an autonomous association of people who come together voluntarily to meet economic, social and cultural aspirations and needs through a jointly owned and democratically managed enterprise. Feng and Hendrikse (2012) state that a cooperative is a collectively owned enterprise, formed by many independent farmers, as input suppliers in a production chain.

Bialoskorski Neto (1998) states that the cooperative form is only advantageous if the coordination of the economic activities of its agents results in advantages greater than the costs of renouncing a free market condition. Given this characterization, cooperative societies represent adequate organizational forms to coordinate processes with this evidence of specificity and governance, in comparison to non-cooperative companies and the market-level pricing system itself (BIALOSKORSKI NETO, 1995).

Cooperatives have net surpluses and non-profits as in the IOFs, which are invested or transferred to the cooperative members, as established in Law n. 5,764, of 1971, in art. 4th item VII – “return of the net surplus for the year, in proportion to the operations carried out by the member, unless otherwise decided by the General Meeting” (BRASIL, 1971).

The IOFs, in a traditional perspective, have as their main objective to obtain profit, and the focus of their executives is aimed at seeking profit maximization in favor of their shareholders (FRIEDMAN, 1970). On the other hand, cooperative companies present themselves as an intermediary between members and markets, with a more democratic aspect and a non-profit vision (POLONIO, 2004).

It is important to emphasize that the cooperative differs from the environment identified in the IOFs precisely because of the principles and values that constitute it. Cooperativism has different foundations, such as humanism, freedom, equality, solidarity, and rationality. Cooperative members are driven by ethical values, such as honesty, social responsibility, and interest in the collective good (BENATO, 1994). Benato (1994) also

observes, when dealing with the cooperative society, that this is a serious society, and that opportunism, casuistry and individualism do not belong to the context. When specifically discussing opportunism, he claims to be a fundamentally mercantilist characteristic, and that, in cooperativism, it would only destroy its main objectives.

Zylbersztajn (2002) observes that, in cooperative organizations, based on the theory of contracts, in the financial aspect, the cooperative member contributes capital to the cooperative, in its structuring, not varying the value of their shares in relation to the value of the company, different from what happens in the value of the shareholding in a capitalist company.

When making a comparison between societies, Benato (1994) highlights that, unlike capitalist societies, which have capital as the main element, cooperatives have man as their focus. This view is confirmed by Bialoskorki Neto (2006) when he observes that cooperative societies aim to provide services, that is, a social nature. Hendrikse and Feng, (2013) observe that the cooperative member sometimes plays the role of supplier and sometimes the role of owner adjacent to the production process, while in IOF's the ownership belongs to investors outside the production chain.

Benato (1994) raises the question of the member being the owner of society, while Bialoskorski Neto (1998) states that, in cooperatives, because the member is, at the same time, user and owner of their business, they will be, simultaneously, agent and principal agent of the same contractual relationship. In capital companies, on the other hand, the property belongs to investors outside the production chain (HENDRIKSE; FENG, 2013).

**Chart 1: Comparative table between cooperatives and IOFs**

<b>Cooperatives</b>	<b>IOFs</b>
The cooperative member sometimes plays the role of supplier and sometimes the role of owner adjacent to the production process (HENDRIKSE AND FENG, 2013).	Ownership belongs to investors outside the production chain (HENDRIKSE AND FENG, 2013).
Members are independent and do not necessarily collaborate with each other in their individual aspects of their farms (HENDRIKSE AND FENG, 2013).	Investors commit only certain issues to the group's decision (HENDRIKSE AND FENG, 2013).
Acquisitions and radical changes in control are uncommon (ZYLBERSZTAJN, 1994).	A change in the management body works as a strong incentive for an alignment of the manager's actions with the wishes of the capital owner (ZYLBERSZTAJN, 1994).
The member contributes capital to the cooperative when structuring it. Thereafter, the value of their shares does not vary according to the value of the company (ZYLBERSZTAJN, 2002).	The investor buys a share and its value changes according to the value of the company (ZYLBERSZTAJN, 2002).
On the cooperative board they are always exposed to the problem of the conflict between	The board exists to monitor the actions of the executives and shareholders may use the board,

Duarte, S.L.; Rocha, W.

maximizing the value of the cooperative or their own individual enterprise (ZYLBERSZTAJN, 2002).	aiming to ensure control of possible opportunism by the manager (ZYLBERSZTAJN, 2002).
The rural producer is paid a “pooling price” for all members and does not keep any surplus (LIANG AND HENDRIKSE, 2016).	The price paid to the rural producer is in accordance with the quality of the product offered, maximizing his profit (LIANG AND HENDRIKSE, 2016).
Lower marginal costs due to the elimination of the double mark-up (LIANG AND HENDRIKSE, 2016).	Higher marginal costs, as it has a double mark-up (LIANG AND HENDRIKSE, 2016).
Legal aspects are governed, in Brazil, by Law n. 5,764, of December 16, 1971 (BRASIL, 1971).	When the IOF is a corporation, for example, the legal aspects are dealt with by Law n. 6.404, of December 15, 1976 (BRASIL, 1976).
With no profit objective, the return on the result (net surplus) for the year will be proportional to the operations carried out by the associate, unless otherwise decided by the General Meeting (Law No. 5.764, of December 16, 1971) (BRASIL, 1971)..	With a view to profit, the result at the end of the year should, if positive, be decided on its allocation and distribution of dividends (Law n. 6.404, of December 15, 1976) (BRASIL, 1976)..
They have less product diversification (SPORLEDER AND SKINNER, 1977; DUNN, INGALSBE AND ARMSTRONG, 1979; CHEN, BABB, AND SCHRADER, 1985; OUSTAPASSIDIS AND NOTTA, 1997; VAN OIJEN AND HENDRIKSE, 2002).	They have greater product diversification (SPORLEDER AND SKINNER, 1977; DUNN, INGALSBE, AND ARMSTRONG, 1979; CHEN, BABB, AND SCHRADER, 1985; OUSTAPASSIDIS AND NOTTA, 1997; VAN OIJEN AND HENDRIKSE, 2002).

Source: search result.

The comparisons shown between cooperatives and IOFs, in Chart 1, facilitate the visualization of the differences between the organizations that will be the object of study in this research.

### 3. Methodology

For the development of this article, regarding the research typology, as it is research with an emphasis on the practice of problem solving, it stands out for being applied. Regarding the nature of the method, a qualitative research approach was adopted which, according to Marconi and Lakatos (2011), seeks to analyze and interpret deeper aspects of investigations, habits, attitudes, trends, etc.

Regarding the objective, this research is classified as explanatory, given that its purpose is to identify factors that determine or contribute to the occurrence of phenomena, having a greater depth in the knowledge of reality, since its purpose is to explain the reason, the why of the things (Gil, 2010). As for the technical procedure, this research can be classified as field research.

In this research, the data collection technique used was the in-depth interview, which aims to expand the ability to analyze the problem of the study in the agents involved.

Basically, the interview is the preferred approach whenever: there is a need to obtain highly personalized data; and opportunities for deepening are needed (GRAY, 2012).

The population of the present study was formed by the group of rural coffee producers, coffee cooperatives and IOFs that traded coffee with rural producers. For rural producers, cooperatives and IOFs to be included as a sample in this research, it was verified whether there was any transaction between these agents for at least three consecutive harvests. If no transaction had taken place, that is, without this requirement, they were removed from the sample.

To select the producers, the snowball methodological technique was used. This methodology, by means of a non-probabilistic sample, works based on the initial interviewees indicating new participants and so on, until the so-called saturation point is reached, that is, the contents obtained with the new interviewees become no longer add relevant information to the research carried out (WHA, 1994).

For the delimitation of the region to be researched, it was decided to seek participants in the regions with the highest productivity in Brazil, that is, in the states of Espírito Santo, Minas Gerais and São Paulo. The research took place in a total of nine cities, six in the state of Minas Gerais (Araguari, Uberlândia, Estrela do Sul, Monte Carmelo, Indianópolis and Patrocínio) and three in the state of São Paulo (Altinópolis, Cajuru and Santo Antônio da Alegria), due to the fall in production and possible reduction in the number of producers, the state of Espírito Santo was removed from the survey. Franca, in the state of São Paulo, was initially to be part of the cities surveyed, however, when contacting the producer and cooperative, there was no interest in participating, excluding the city from the survey.

The discussion on the theoretical platform was used to outline the variables that would be studied (Chart 2), aiming to achieve the objectives and answer the research question of the research.

**Chart 2: TCE variables**

n.º	Variables	Authors	Variable Summary
1	Specific Assets	Williamson (1985, 1989, 1991); Johnson e Houston (2000)	Investments that are durable in the partnership, with five parameters for analysis of specificities (location, physical assets, human assets, dedicated and temporal assets)
2	Opportunism	Simon (1955); Williamson (1985, 1989); Zylbersztajn (1995); Farina et al. (1997); Johnson e Houston (2000); Schepker et al. (2014);	Search for personal interest with intent.

3	Uncertainty	(Simon, 1982); Williamson (1989); Zylbersztajn (1995); Zhou, Poppo e Yang, (2008); Windolph e Moeller, (2012)	Unanticipated and unpredictable changes in the circumstances in which the relationship is inserted.
4	Limited Rationality	Simon (1955); Williamson (1985, 1989); Zylbersztajn (1995); Farina et al. (1997); Schepker et al. (2014).	Incomplete information about possible alternatives.
5	Frequency	Williamson (1985, 1989); Zylbersztajn (1995)	The number of transactions carried out between partners.

Source: search result.

Regarding the specificity of assets, the parameter used is shown in Chart 3.

**Chart 3: Parameter of Specificity Assets**

Specific asset type	Parameter
Location specificity	The distance between the rural property and the store or buyer
Specificity of physical assets	Investments in machinery or other physical asset of great value
Human asset specificity	Technical assistance or training courses offered
Dedicated asset specificity	Investment to serve a specific buyer, for example, specialty coffees
Temporal specificity	Sales within the harvest year

Source: search result.

The TCE variables will be analyzed in relation to the following IOCM variables already discussed in the theoretical platform: quality – functionality; price; costs; (inter)-dependence; stability; cooperation; trust; benefit; commercial loyalty; and information sharing.

A preliminary interview, in the form of a pre-test, was carried out to correct possible flaws in the data collection instrument. For the analysis of the pre-test, the audios were transcribed, in an *ipsis litteris* way, one hour, thirty-three minutes and fifty-six seconds of interviews, generating fifty-two pages.

The IRAMUTEQ program (R Interface for Multidimensional Analyzes of *Textes et de Questionnaires*) was used, which is anchored in the statistical environment of the R software and in the python language ([www.python.org](http://www.python.org)), which enables an investigation of textual data from lexicographic textual to multivariate analyzes (descending hierarchical classification, similarity analyses), organizing in a clear and easily understandable way (CAMARGO; JUSTO, 2013).

Content analysis of the pre-test of the cooperative and the IOF allowed us to examine four questions that needed to be broken down so that the answers were more scored, thus, four

new questions were included. Seven questions had changes in some words to explain the meaning of the question.

The interviews took place between 06/08/2016 and 07/27/2016. The interviews in the cooperatives had a total duration of 02:26:56, which, after transcribed, in an *ipsis litteris* form, had 62 pages. The duration of the interviews in the five IOFs was 01:21:03, generating a total of 45 pages transcribed in an *ipsis litteris* manner. The information from the interviews of rural producers also follows the line of information provided in the cooperatives and IOFs, with a total of 22 rural producers interviewed, with a total duration of interviews of 08:48:04, with a total of 256 transcribed pages, *ipsis litteris*.

After transcription, the Atlas TI software was used to count words, verify word variations and check which ones are related to each of the variables, in order to organize the content analysis. After analysis in the Atlas TI software, a total of 5,457 different words and 102,980 words were counted, together with the frequency of these words.

#### **4. Results and Discussions**

The cooperatives that supported the interviews for this research are in the states of São Paulo and Minas Gerais. Half of them have coffee as their only trading product; the other half trade, in addition to coffee, other products such as corn, soy, sugar cane, citrus and others. However, it is noteworthy that all of them have coffee as their main trading product.

The set of six cooperatives will be identified as COOP, followed by the cardinal number successively, in the same way as the IOFs, which will be IOF and rural producers as PROD.

Regarding the IOFs, a total of five interviews were carried out, one in the state of São Paulo and four in Minas Gerais. Of these five IOFs, only one marketed product other than coffee. Unlike cooperatives, the volume of sales and storage of IOFs is much smaller, corresponding to 8.77% of the total volume of cooperatives. None of the IOFs offer the sale of inputs and pesticides to rural producers.

In the third and last group of interviewees are rural producers, who are also concentrated in the states of Minas Gerais and São Paulo. Of the total of 22 interviewees, 12 produce some other product besides coffee, but only one does not have coffee as its main product in the composition of the revenue.

It is interesting to note that, of the 22 rural producers interviewed, 50% maintain relationships exclusively with cooperatives, while 9.1% only with IOFs, 22.7% with [Custos e @gronegocio on line](http://www.custoseagronegocioonline.com.br) - v. 18, n. 2, Apr/Jun - 2022. ISSN 1808-2882

cooperatives and IOFs, and 18.2% with cooperatives and a broker. It was also found that eight producers maintain a relationship only with one cooperative, and only one producer maintains a relationship only with an IOF. The remaining (13 producers) maintain relationships with more than one partner.

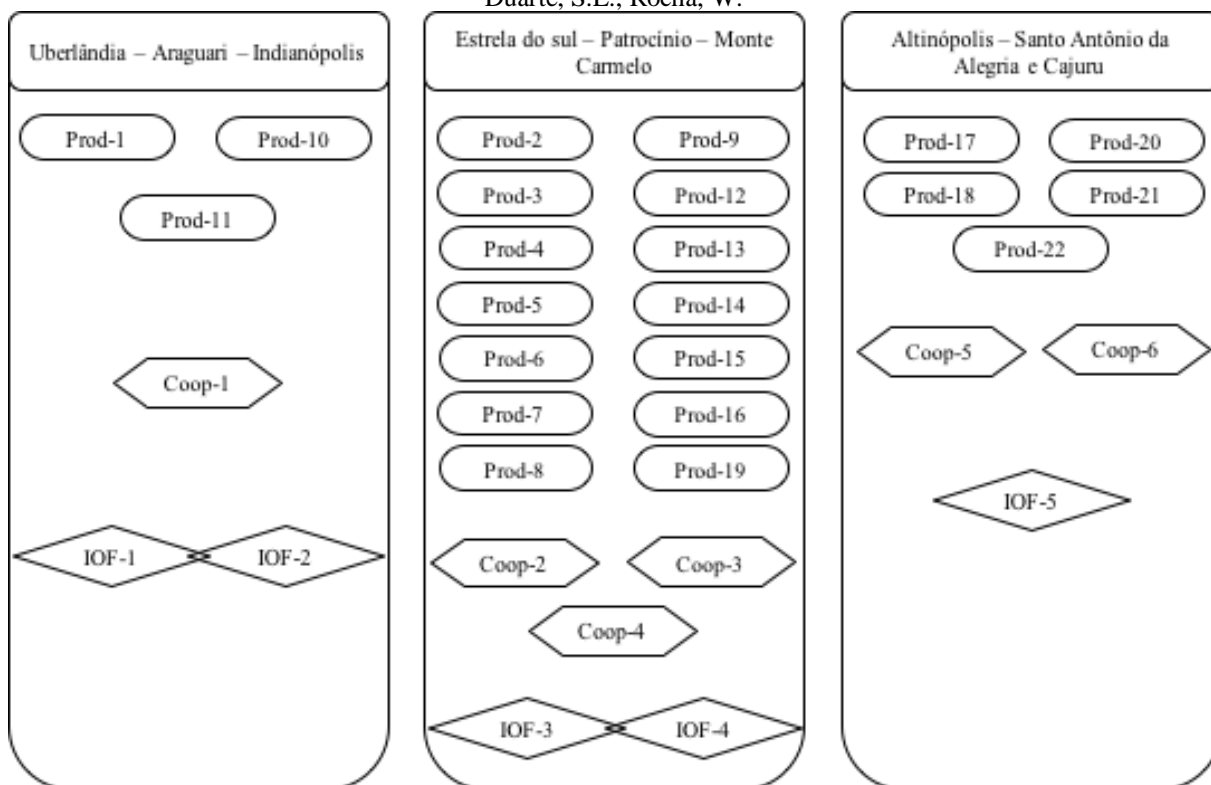
The first variable to be analyzed is investments in specific assets, for this purpose, five types of specificities were considered, according to the literature already exposed: location specificity; physical asset specificity; specificity of human assets; specificity of dedicated assets; temporal specificity (Williamson, 1991). It will also not be analyzed separately by respondent, but by specificity, analyzing the three agents (rural producers, cooperatives and IOFs) together.

Regarding the specificity of physical assets, producers, cooperatives and IOFs were asked if there was any machinery or physical assets made to order in their possession by partners, or if there were any specific assets of their own in the partners. In all cases, the answer was negative, there was no machinery or specific assets of the rural producer in the cooperatives and IOFs, nor the opposite. As in the specificity dedicated to coffee, it may be the investment made to serve a specific seller, such as specialty coffees and coffee with certification to serve the foreign market, was also not detected in the interviews.

In the temporal specificity, it was verified as to the time a crop was tied and transacted, because the longer it is stored, the lower the quality of the grain. In this sense, all producers keep the harvest for a maximum of one year and, for the most part, in cooperatives so that the product does not reduce its quality.

In the locational specificity, Figure 3, it was verified if there was any effort on the part of the cooperatives and the IOFs to maintain offices or warehouses close to the producers. To define whether there was locational specificity between the partners, it was defined that the delivery of coffee between producers-cooperatives and producers-IOFs should take place within 60 m, or a distance of 60 km, thus dividing the space into three regions: Region 1 (Uberlândia – Araguari – Indianópolis) with 3 producers, one cooperative and two IOFs, Region 2 (Estrela do Sul – Patrocínio – Monte Carmelo) with 14 producers, three cooperatives and two IOFs and Region 3 (Altinópolis – Santo Antônio da Alegria and Cajuru) with five producers, two cooperatives and one IOF, showing the relationship of producers in these three regions, confirming their locational specificity, which facilitates the transport of coffee between partners.

Duarte, S.L.; Rocha, W.



**Figure 3: List of producers, cooperatives and IOFs, according to their locational specificity**

Source: search result.

It can be observed that the close location between producers, cooperatives and IOFs tends to minimize the cost of transport and storage, thus providing a return to partners, the focus of cost management exposed by the IOCM. In the comparison between cooperatives and IOFs, both are located close to the producers, and both enjoy the benefit of minimizing transport and storage costs, directly relating to the variable benefit of the IOCM.

To analyze the specificity of human assets, the availability of technical assistance or training courses by cooperatives and IOFs to rural producers was investigated. All investigated cooperatives offer technical assistance, through agronomists, a team to help in the farm certification process and courses for cooperative producers, while none of the IOFs offer assistance or courses to producers.

In fact, what is important here is to verify that, comparatively, while the specificity of human assets in cooperatives is observed, the same does not occur with IOFs. In the relationship with the specificity of human assets, the relationship with the IOCM benefit variables is verified.

In Chart 4, the results found about the specific assets were shown, verifying each form of specificity in isolation and contradicting the literature. In the specific case of Brazilian coffee, cooperatives tend to have more specificities than IOFs.

**Chart 4: Results found compared to the literature (Specific Assets)**

Specific Assets	
Results found	Literature
- Location specificity: cooperatives and IOFs tend to minimize the cost of transport and storage, thus providing a return for partners. In the comparison between cooperatives and IOFs, both are located close to the producers and both enjoy the benefit of minimizing transport and storage costs;	Investments in specific assets correspond to investments that are durable, that are made on the basis of particular transactions, of which the opportunity cost is much lower in the best alternative uses if the original transaction ends prematurely (Williamson, 1985). There are five types of asset specificities already reported in the theoretical platform: locational specificity; physical asset specificity; specificity of human assets; specificity of dedicated assets; temporal specificity (Williamson, 1991).
- Specificity of physical assets: None of the agents have specificity in physical assets;	
- Specificity of human assets: all investigated cooperatives offer technical assistance, through agronomists, a team to help in the farm certification process and courses for cooperative producers; on the other hand, the IOFs, none of them offer assistance or courses to producers;	
- Specificity of dedicated assets: In the interviews, no statement was found about investment that had been made to serve a specific buyer, so it cannot be affirmed that there was dedicated specificity;	
- Temporal specificity: all producers keep the harvest for a maximum of one year and, mostly, in cooperatives, so that the product does not reduce its quality.	
It was noted that, in relation to specific assets, that cooperatives offer more than the IOFs, which can be justified by the difference in the trading volume of both and also by having used, as parameters of the thesis, only the companies that listed directly with the producer without intermediaries.	Cooperatives invest in rural producers, and these assets may be more or less specific (ZYLBERSZTAJN 2004). Hendrikse and Veerman (2001) state that cooperatives can be a viable organization for intermediate asset specificity levels, and, after a certain level, IOFs have a lower organizational governance cost than the cooperative.

Source: search result.

The second variable to be analyzed, opportunism, presupposed by Williamson (1989) is the pursuit of self-interest with intent, it is worth noting that agents do not always act opportunistic, only that some agents may act opportunistic sometimes, which ends up generating monitoring costs in the contracts.

Some producers, as stated by PROD-3, linked the assistance offered by the cooperatives to the purchase of products, thus forcing the sale of products from the

cooperative's stores to the producers, also relating a certain opportunism on the part of the cooperatives. In this sense, COOP-2 considered an opportunist and dependent way of keeping the member's coffee in the cooperative, due to the differentiated storage cost, thus relating the variable cost of the IOCM.

From the point of view of rural producers, there is indeed help with assistance to improve the quality-functionality, a variable of the IOCM, however, the limitation of information at the beginning of the partnership and the opportunism on the part of the cooperative, leads the producer to have to make a delivery future of its coffee to the cooperative and minimize possible losses with storage and brokerage fees, also relating to the variable price of the IOCM.

The (inter)-dependence (IOCM variable) can generate pressure from one of the parties in the relationship to generate an opportunistic relationship, in which the benefit is unilateral, but bilateral interdependence can also occur, to extinguish opportunism and the benefits are more advantageous to both partners.

There are speeches, initially predetermined with the view that the cooperative starts with the principle of cooperation (variable of the IOCM), that it mutually helps the cooperative producer, but the same producer already changes the discussion with the possibility of opening an association to the instead of a cooperative, which demonstrates a certain insecurity and an uncertainty in the relationship. Other discourses present the cooperative with an opportunistic view of earnings, granting it the union of producers for joint purchases and sales, which is like cooperativism, but with the name of association, not considered, however, in the literature, the relationship between cooperation, trust, uncertainty and opportunism.

Producers buy inputs from cooperatives and end up maintaining a storage and marketing relationship, due to the technical assistance provided by them as a form of collaboration. An agronomic technical assistance, which ends up acting as a seller, and there is an example of opportunism by the cooperative towards the producer, for the acquisition of their inputs, and which leads the producer not to see, initially, the agronomist's intention (limited rationality). It was this dissatisfaction in the provision of technical assistance by the cooperatives that led some producers to seek private assistance or even assistance provided by a store that sells inputs and pesticides. Again, relating to opportunism on the part of the cooperative.

Trading in the futures market carried out by rural producers reduces uncertainty in relation to gains, strengthens trust between producer-cooperatives, tending to reduce opportunism, reducing safeguard mechanisms, and thus reducing transaction costs.

Limited rationality was the third variable analyzed, focused on lack of information, it was related to three IOCM variables (quality-functionality, (inter)-dependence and cooperation). Thus, according to PROD-4, assistance for quality improvement ends up linked to a future delivery of the coffee produced, often related to limited information (limited rationality). In this way, the cooperative opportunistically forces the producer to deliver his coffee, if there is assistance provided by it.

When carrying out the classification of the producer's coffee, the cooperative maintains a somewhat opportunistic relationship with the producer, limiting the predictability of future contingencies (limited rationality), being dependent on the delivery of his coffee to the cooperative so as not to lose in the price, not paying fees for the withdrawal of their coffee and not losing technical assistance, thus creating a risk for the producer in terms of business uncertainty. This requires the producer to maintain commercial loyalty with the cooperative, due to the classified quality of the coffee.

Considering that COOP-1, COOP-2 and COOP-5 have input stores, COOP-3 buys inputs for a group of producers via cooperative, whereas COOP-4 has "a purchasing department where it brings together several volumes, the volume of each property that wants to participate in this pool and closes negotiation, but is billed directly from the manufacturer to the producer", and the COOP-6 report that "every sale that we make here, the product also comes from São José do Rio Pardo direct to the property", producers linked to these cooperatives, who purchase their inputs, do so in exchange for coffee, or, often, via credit with the cooperative itself, which, in most cases, generates an opportunistic relationship, in which the cooperative induces the delivery and commercialization of the coffee by it or they end up with a debt to the cooperative, the producer being unable to foresee it initially (limited rationality).

The advantage cited by PROD-8 is that the cooperative is not a buyer, as it reported that, when the cooperative is a buyer, it acts in an opportunistic manner, forcing the producer to sell to it, also relating a dependence of the producer on the cooperative, in most sometimes, due to non-prediction of the producer (limited rationality).

Regarding the variable uncertainty, the rural producer, reported by PROD-5, usually works with the sale in the future market, around 60% to 70% of the production, linked to a specific quality of coffee, after harvesting they try to analyze the quality obtained in the

harvested coffee, with a commitment to quality negotiated in the futures market so that it can carry out the delivery, reducing uncertainty regarding market fluctuations. As quality studies do not contemplate the relationship between quality and uncertainty, this research seeks to draw a parallel between these variables, in the producers' reports.

The rural producer, when trying to minimize the uncertainty of market fluctuations, negotiates coffee on the futures market for up to two years, but the negotiation takes place in an X quality-functionality, and when the coffee delivery period arrives, this quality-functionality must be attended to. In addition, the rural producer generates uncertainty as to the future benefit.

For PROD-14, delivering to COOP-4 strengthens the cooperative as much as its company, thus strengthening the relationship (cooperation variable), but does not maintain commercial loyalty, does not maintain an exclusive attitude regarding the delivery of the coffee, thus trying to minimize the risk and uncertainty regarding its earnings, verifying the relationship of the uncertainty variable with the price variable and with stability.

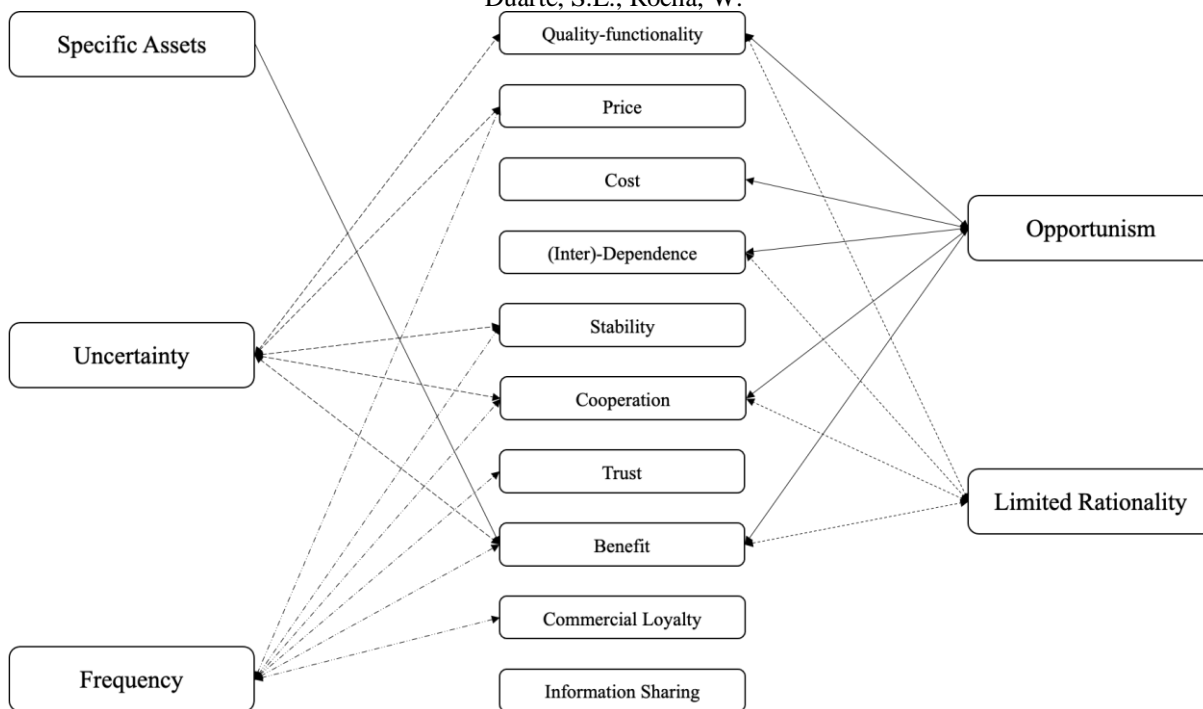
Finally, the frequency variable, which in transactions between partners highlights the issue of identity of the agents involved, which stipulates the development of a relationship of trust, providing commercial loyalty between agents (MARTINS, XAVIER; SPROESSER, 2010) and that it is related to the IOCM variables (price, stability, trust, cooperation, benefit, and commercial loyalty).

Corroborating the interconnection between cooperation and trust, and now also with stability and frequency, the producer tends to wait a period to analyze whether or not he trusts the partnership, checking how the partner will remain in the market, as stated by PROD-18 which deals with COOP-5.

Cooperatives have more forms of incentive for cooperation with rural producers than IOFs. But, as already mentioned, producers depend directly on a stability in the relationship, with a frequency in transactions, so that the cooperation is effective and that they have all the benefits made available by the cooperative, as stated by COOP-1.

The producer reaches a degree of trust that maintains commercial loyalty with the cooperative, causing an increase in the frequency of transactions, providing stability in the relationship between producer-cooperative, not covered in the literature.

After content analysis, the following list of TCE and IOCM variables was arrived at according to the respondents' responses, as shown in Figure 4.



**Figure 4: Relationship of TCE variables with IOCM variables in the coffee sector in Brazil.**

Source: search result.

The only variable that was not mentioned or listed by respondents was information sharing, but this does not imply that the variable is not influenced by TCE, as, as discussed in the work by Fehr and Duarte (2018), information sharing is related directly with the IOCM.

## 5. Conclusions

This research was initially intended to understand the relationship of the TCE variables in relation to the practice and conceptual structure of the IOCM, with the final aim of confronting the two forms of relationship, answering the following question: How are they configured, distinguished and/ or are the TCE variables complemented with the conceptual model and practice of the IOCM in the relationship between rural producers, cooperative organizations and IOFs in the coffee sector in Brazil?

For this, the objective was to verify if and how the configuration of the TCE variables in relation to the IOCM variables in the relationship of the rural producer with the cooperatives and IOFs of the coffee value chain is established.

Separated by analysis variables, the results discussed five TCE variables in relation to ten IOCM variables. Starting the discussion on specific assets, its direct relationship with the variable benefits of TCE was verified, because with the specificity of human assets,

cooperatives maintain technical assistance and offer support to rural producers for certification, in addition to locational specificity, which adds both benefits. for the producer and for the cooperatives in relation to freight.

It was observed that the opportunism variable was related to the variables quality-functionality (providing advice linked to the future delivery of coffee), costs (add value if coffee is not delivered to the cooperative), (inter)-dependence (unilateral dependence of producers on cooperative), cooperation and benefit (offering technical assistance as a means of cooperation, but linked to the sale of products).

The limited rationality variable was related to the quality-functionality, (inter)-dependence, cooperation and benefit variables, which in most cases were related to the lack of information of the rural producer in the concessions of benefits to increase the partnership and improve the product quality, leading to a certain dependence on the relationship.

Finally, the frequency directly affects the time of the relationship, to the point of making the producer loyal, as well as the price paid for the coffee, given the classified quality, thus generating benefits. The only variable that, in the view of producers, would negatively affect stability would be uncertainty. Stability and frequency are related to commercial loyalty; however, this loyalty is not exclusive.

Thus, the relationships described here, established between the TCE variables, when compared with the IOCM variables, also corroborate the findings of Gonzaga et. al. (2015). When they considered that the IOCM disciplining mechanisms seek to manage relationships along the chain, reducing the possibility of dysfunctional behaviors and transaction costs (SOUZA; ROCHA, 2009), and that TCE uses governance mechanisms to reduce the transaction costs of contractual relations (WILLIAMSON, 1996), the authors concluded that the governance mechanisms used by the TCE are related to the IOCM disciplining mechanisms, that is, the IOCM disciplining mechanisms converge to the TCE governance mechanisms.

Thus contributing to the themes of Transaction Costs, by relating TCE variables (specific assets, uncertainty, frequency, opportunism and limited rationality) with those of IOCM and Strategic Cost Management, when approaching contemporary cost topics, seeking to the integration of these variables in the coffee environment.

As future research, it is suggested a greater amplitude in the existing segments of agribusiness, as well as in other segments that involve cooperativism. It is possible to go deeper into each of the variables, using statistical resources to confirm them and be able to relate them numerically.

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