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FAMILY FARMING AND AGRICULTURAL COOPERATIVES UNDER THE OPTICS OF THE TRANSACTION COST THEORY: AN ANALYSIS ON THE PRODUCTION OF FRUITS AND VEGETABLES IN THE MICROREGION OF TOLEDO – PARANA STATE

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Abstract

The objective of this paper is to analyze how the transaction cost theory explains the option for family organization and the presence of cooperatives in the agricultural production sector. The paper seeks to demonstrate empirical evidence to prove the theoretical assumptions in the fruit and vegetable production sector in the microregion of Toledo – Parana State, in Brazil. The research approach is qualitative, carried out primarily through bibliographical research and, integrated by the analysis and understanding of the phenomenon, through direct interaction with agricultural producers, associated and non-associated with cooperatives or associations. Empirical evidence has confirmed the theoretical assumptions of transaction cost theory. Family organization is a structure that minimizes costs with agricultural labor monitoring and agricultural cooperatives provide farmers with benefits in terms of economies of scale, especially with the dilution of bureaucracy costs.

Keywords: Cooperatives. Transaction cost. Family agricultural organization. Fruit and vegetable chain.

Introduction

Agricultural modernization and changes in the food trade system are occurrences which have changed the nature of the farmer, thus demanding from small producers new responsibilities and the ability to develop and implement different organizational tools, so that they can participate in such dynamic market (KAGANZI et al., 2009).

Among the main difficulties faced by small producers, in addition to having access to markets, is the access to information and new technologies. Nevertheless, small producers have the advantage of potentially lower labor costs, which, being family-owned, presents lower monitoring

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costs. Thus, it is noted that small producers face high costs in most transactions, with the exception of the use of labor, which in general is provided by the family (POULTON; DORWARD; KYDD, 2010).

In general, transaction costs are likely to be higher for family farmers. The small size of the rural property is not consistent with economies of scale, which causes higher unit costs for the acquisition of inputs, financial services, technical assistance, certification, marketing services, fixed investments, among others (WIGGINS; KIRSTEN; LLAMBI, 2010). Besides, small agricultural producers occur in difficulties to effectively operate in the market, once their bargaining power is reduced. This ends up giving room to the opportunistic behavior of agents with greater market power (FISCHER; QAIM, 2012).

From the perspective of organizational theory, authors have argued that the agricultural cooperative organization can be a structure that minimizes transaction costs (BONUS, 1986; STAATZ, 1987; HANSMANN, 1996; VALENTINOV, 2007; CHADDAD, 2012). Empirical studies have shown that participation in collective actions, such as cooperatives and associations, has a positive impact on agricultural producers' activities by reducing transaction costs and providing better and greater access to markets. Hellin, Lundy, and Meijer (2009), for instance, showed that participation in collective agricultural organizations improves access to markets, especially in the vegetable sector. Bernard and Taffesse (2012), demonstrated better performance in the market among cooperative participants. Fischer and Qaim (2012) discussed the mechanisms and benefits of participating in collective actions, including increasing family income for producers who trade collectively. Yet, Verhofstadt and Maertens (2014) and Hoken and Su (2015), discussed the positive influence of cooperative participation in increasing income and reducing poverty.

In the same idea, the main objective of this work is to analyze how the transaction cost theory explains the option for family farming organizations and the existence of cooperatives in the agricultural production sector. With the support of the theoretical foundation, explaining the existence of these organizational structures, the work aims at demonstrating empirical evidence to prove the theoretical assumptions in the fruit and vegetable production sector in the microregion of Toledo – Paraná State, in Brazil. Therefore, the paper is organized in five parts, which unfold beyond this introduction, in theoretical assumptions, methodological procedures, empirical evidence found, and finally, the concluding remarks.

Family organization and cooperatives in agriculture: theoretical assumptions

The advantages of family organization, as well as cooperatives, in agricultural activity in contrast to other organizational forms, can be analyzed under different aspects. In this work, the focus will be on the approach of transaction costs, which seeks to explain the advantages and disadvantages of choosing such organizational structure.

Transaction costs and the choice of governance structure

Transaction costs were defined by Williamson (1993) as the *ex-ante* costs of effecting the transaction, necessary to prepare, negotiate and safeguard an agreement, as well as the *ex-post* costs of effecting the transaction, which refer to adaptations when the execution of a contract is affected by failures, errors, or any other unexpected change. For Coase (1937), these costs can inhibit transactions and give rise to governance structures that seek to minimize them.

The acknowledgment of the existence of transaction costs assumes that the list of factors that constitute the agents' behavior includes the behavioral factors of limited rationality and opportunism. It is recognized that economic agents have the intention to act with total rationality. However, that is not possible, because due to cognitive limitations, only part of the existing knowledge and information can be processed by a person. In addition, it is considered that individuals are strongly tempted to act in a way that is most convenient to themselves. In other words, as long as there is a possibility, the human being will act in order to seek advantages (FARINA, 1997; SYKUTA; CHADDAD, 1999).

Another factor that must be taken into account when choosing the best governance structure is uncertainty. It is related to the impossibility of making realistic and accurate predictions about the attitudes that economic agents may assume after the completion of a transaction (ROCHA JR, 2004). The difficulty of knowing in the present what will happen in the future widens the gaps that a contract cannot cover, which increases the space for renegotiation, opening the way for opportunistic

behavior. The contracts, instruments necessary for mitigating the risks of that environment, due to limited rationality, are incomplete. The agents, aware of this incompleteness, build mechanisms to deal with the gaps within those contracts (AZEVEDO, 2000).

Yet, other elements influence transaction costs. One of them is the specificity of the assets. If the production of a particular good requires the investment of specific assets, being this specificity the impossibility of being used in an alternative way, the agent who afforded that investment is subject to some degree of opportunistic action by the other party (FARINA, 1997). Thus, the greater the specificity of the assets, the greater the potential for loss related to an opportunistic action by the other agent, and consequently, the higher the transaction costs (AZEVEDO, 2000).

The frequency of transactions also influences transaction costs. This is a measure of the regularity or recurrence with which economic agents carry out a given transaction (AZEVEDO, 2000).

The model for selecting the most appropriate governance structure for each type of transaction is represented by the response to the necessity of minimizing transaction costs. The internalization of the transaction by a firm, for instance, is the result of a comparison between costs with bureaucracy and hierarchy internal to the firm, compared to the costs of transacting in the market. The crescent increases in transaction costs create a continuum whose extremes are the *market* and the *hierarchy*, which are intermediated by *hybrid* forms, which have characteristics of both (WILLIAMSON, 1991).

The governance structure through the *market* is basically established on the price system. It would be more efficient when the specificity of the assets is null, and thus, the transaction costs negligible. If, on the contrary, the specificity of assets is high, the cost to break a contract is also high, which requires high transaction costs. In this case, greater control over transactions is required, so *hierarchy* is chosen. In this type of organization, the company decides to internalize the activity segment that immediately comes downstream and upstream from its main activity (WILLIAMSON, 1991).

Regarding intermediate forms, Ménard (2004) states that in addition to the terms "hybrid", "complex" and "network", other nomenclatures are also found, such as franchises, collective brands, partnerships, cooperatives, alliances, *clusters*, arrangements, among others. According to Bouroullec and Paulillo (2010), hybrid forms of governance incorporate agents who carry out their transactions, or part of them, through governance mechanisms which differ from the market, but they also do not compromise their property rights in hierarchical structures, in addition to being able to use common resources. Ménard (2004), on the other hand, states that resource pooling is a way of acting cooperatively and dealing with uncertainties in competitive markets. Despite this, they can maintain competition for space in the same market. Thus, they can cooperate in certain activities, and compete in others.

Main attributes inherent to agricultural activity and potential problems as results

Agriculture, as a productive activity, has a series of attributes that distinguish it from other sectors of the economy. As a result, these characteristics have an influence on the organizational form adopted to guide transactions.

An important attribute inherent to agricultural activity refers to the specificity of the assets. In general, the farm's capital, or a good part of it, is specialized, which means that it has little alternative use. This results in relatively low mobility of the factors of production. In a special way, it is necessary to emphasize that land and climate are specific to each region and cannot be moved. On the other hand, although capital and labor can be moved in some circumstances, they are also specific to a location (CHAVAS, 2001).

According to Valentinov (2007), agriculture is the sector of the economy where the use of specific assets stands out most clearly. However, for the author, the main attribute of the agricultural sector is its dependence on nature, which generates high uncertainty. In addition, Allen and Lueck (2005) state that the agricultural production process is strongly linked to nature to a greater degree than other forms of production. This connection submits agricultural production to the forces of climate, pests, seasons, geology and hydrography (ALLEN; LUECK, 2005).

The use of specific assets and the dependence on nature are due to particularities inherent to agricultural activity. Specific assets are important in transactions in the agricultural sector. A transaction agreement regarding goods produced with specific assets, with specific partners, brings risk to the agent who made the investment in the specific asset, since the buying agent may not want

to buy the asset or even demand to renegotiate the price. As the investment has already been made, the investor of the specific asset is stuck in the transaction (APPIAH et al., 2010).

In agricultural production particularly, the use of specific assets exacerbates an inter-organizational problem. As farms are generally agents with less market power, when compared to business organizations that supply inputs, agricultural producers are exposed to the monopoly price, set by a small number of large input supplier companies. The use of specific assets gives rise to quasi-rents that can be pursued in an opportunistic way by input firms, as they have greater market power compared to agricultural producers (VALENTINOV, 2007). Likewise, when the sector that purchases agricultural products is formed by a small number of companies, the use of specific assets may have to deal with risk situations for the farmer in relation to his commercial partners (STAATZ, 1987).

Regarding the dependence on nature, there are further implications for agricultural activity. The high dependence on nature implies a low level of control during the production process and also on its results, causing problems in planning, monitoring, and supervision, as highlighted by Schmitt (1993).

Prices of agricultural products are often more volatile than non-agricultural products. The behavior of the prices of agricultural products is directly linked to the biological nature of their production process (TOMEK; KAISER, 2014). This is a phenomenon also verified by Chavas (2001), for whom a notable characteristic in the agricultural sector is its market instability. It results from climatic effects, which affect production, prices, and farm income, as well as from the inelasticity in the demand for agricultural products in relation to prices (CHAVAS, 2001).

Directly linked to dependence on nature is seasonality, which refers to the number and length of the production cycles. The natural order is to plant, cultivate and harvest. This precludes productive specialization with potential economies of scale because different tasks must be performed by workers over time. Thus, in general, nature brings random occurrences to agricultural cultivation, making it even more difficult for farmers to specialize (ALLEN; LUECK, 2005).

The necessity to involve individuals in different tasks at the same time, with the cultivation of different cultures with different productive cycles, increases the cost of monitoring (ALLEN; LUECK, 2005). The monitoring of work is also hampered by the technical impossibility of assigning workers to the same location and by the difficulty in relating the result of production to the applied work. In both situations, there is an asymmetric distribution of information between the employer and the employee, constituting a principal-agent problem (SCHMITT, 1993).

Sectors with a high level of use of specific assets, and an environment with high volatility and uncertainty, are conducive to the choice of hierarchy as a governance structure (WILLIAMSON, 1991). However, the difficulties in monitoring and supervising work, limit the choice of such, and family organization may be an adequate answer to the problem. In addition, cooperatives can be considered as governance structures capable of governing transactions in cases in which the hierarchy would require prohibitively high transaction costs (VALENTINOV, 2007).

Family agricultural organization as an answer to the problem of monitoring work and productive flexibility

According to Allen and Lueck (2005), hired labor plays a limited role in agricultural production. Mostly, family members provide most of the necessary labor in the property. In the same sense, Calus and Van Huylenbroeck (2010) state that in family farming, most of the labor is provided by the family itself, being one of the advantages the fact that the family agricultural property can adjust to variations in demand for throughout the year, resulting from seasonal variations.

Pollak (1985) suggested, as an organizational solution to the problem of monitoring work in agriculture, the family farm. The author highlights as advantages of family organization: adequate interest of family members to apply efforts in the form of labor since the results are for the family; due to intra-family communication, there is no asymmetric distribution of information between members; the opportunistic behavior of family members is limited by affective relationships; family loyalty.

This is what Bonus (1986) also suggested. According to the author, what explains the fact that a firm does not operate in agricultural production in some production chains, but rather, more often, the family agricultural organization, are the characteristics of the activity itself, such as climate dependence and soil quality. Such characteristics demand experience and instinct from the farm

manager, being at the same time difficult to measure, bureaucratize or supervise. In this case, the best situation for the farmer is to be responsible for his own decisions.

In terms of flexibility, the family agricultural organization is characterized by the fact that management and entrepreneurship are under the control of the family (CALUS; VAN HUYLENBROECK, 2010). In addition, the household and the company are clustered into one institutional entity (AÏT ABDELMALEK, 2004), and there is no clear separation between domestic family life and work responsibilities (PFEFFER, 1989). Thus, the family agricultural organization has greater flexibility in the division of farm income, being able to decide between expanding production through new investments or family consumption (VAN DER PLOEG, 2000; CALUS; VAN HUYLENBROECK, 2010).

Despite being an adequate answer to the problem of monitoring and supervising labor and having greater productive flexibility, the family organization is also characterized by being limited by the size of the family; because, due to the specificities of agricultural production, the use of hired labor is difficult. This limitation on the size of the farm has two disadvantages: 1) intra-organizational, with the insufficiency to accomplish advantages in terms of economies of scale; and 2) inter-organizational, with less market power to negotiate with commercial partners downstream and upstream of agricultural units (VALENTINOV, 2007). Thus, the family farm gains in terms of monitoring costs but loses in relation to economies of scale (ALLEN; LUECK, 2005). In this perspective, agricultural cooperatives appear as potential answers to these problems.

The role of agricultural cooperatives

Cooperatives have the potential to contribute to the capture of economies of scale, for example, by forming a pool of equipment or by contracting specialized services. In these cases, the cooperatives are configured as extensions of family organizations, combining the advantages of monitoring labor, with economies of scale for the acquisition of necessary goods and services, and maintaining the economic and legal independence of their members (VALENTINOV, 2007).

For Bonus (1986), the transaction cost theory explains the advantage of cooperative action through economies of scale. For instance, regarding the productive link of a production chain, the cooperative action of agents for the manufacture of inputs is only justified in sectors with a large production scale, that is, in which the demand for inputs is relatively wide. Otherwise, it is more advantageous to carry out the purchase of inputs through the market, with external suppliers.

Through the cooperative, members can centralize several transactions, both downstream and upstream in the agricultural productive operation. The advantage of such joint action is that, instead of an individual searching for attractive prices, negotiating prices with buyers and suppliers, and drawing up and monitoring various contracts, all of these activities can be carried out by a single entity. This will result in economies of scale and lower individual costs with these activities. The producer will also have a greater capacity to focus on his basic production activities (BONUS, 1986; KARANTININIS; NILSSON, 2007).

Regarding inter-organizational disadvantage, within the framework of transaction cost theory, Bonus (1986) and Staatz (1987) justify the advantage of cooperative action due to the internalization of transactions of specific assets. This could prevent the “quasi-rent” generated by specific assets from being captured, through opportunistic behavior, by agents with whom associates conduct transactions.

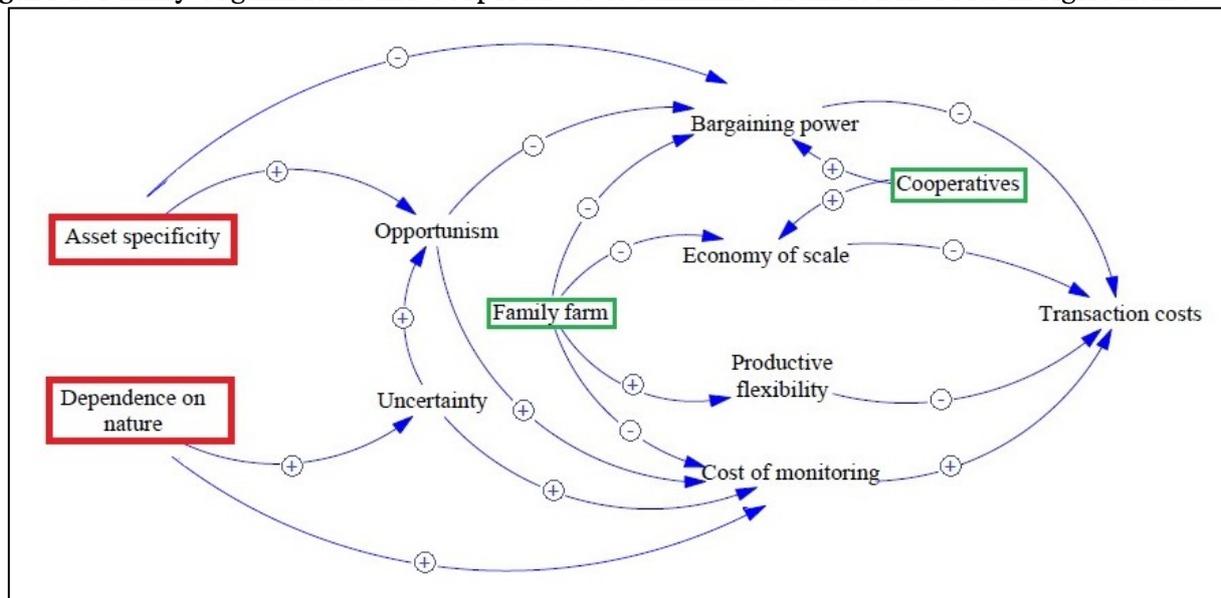
Hansmann (1996) argues that the cooperative offers advantages to agricultural producers in contrast to other organizational forms. In the same sense, Bonus (1986) states that acting in an associated way in the sale of products can yield higher selling prices, provided that the association allows the practice of selling prices with some degree of monopoly (Bonus, 1986) since centralized negotiation can improve the market power of members (CHADDAD, 2012).

Valentinov (2007), Bonus (1986), Staatz (1987) and Hansmann (1996) also recognize that the performance in agricultural cooperatives brings advantages to producers by balancing a disadvantaged position in relation to their commercial partners. From this perspective, the authors identify some specific organizational attributes associated with agricultural activity: high level of use of specific assets; high degree of uncertainty; and the existence of externalities that can be captured through economies of scale.

Family organization and agricultural cooperatives: complementation to minimize transaction costs

Based on the explored theory, a systemic model can be built to understand the relations between the fundamental characteristics of the agricultural production unit, aspects of the theory of transaction costs, and the family organization and the agricultural cooperative as governance structures that minimize transaction costs (Figure 1).

Figure 1: Family Organization and Cooperatives to Minimize Transaction Costs in Agriculture



Source: the authors (2018) based on the literature.

According to Figure 1, agricultural production has as its main attributes the use of specific assets and dependence on nature. Being intensive in the use of specific assets opens space for opportunistic behavior by agents with greater market power, in this case, the commercial partners downstream and upstream of the agricultural production sector. Dependence on nature increases the environment of uncertainty, which in addition to expanding the space for opportunistic behavior, also increases the cost of monitoring agricultural labor.

Family organization is an efficient response by the agricultural production sector to the cost of the labor monitoring problem. Besides, the family organization is more flexible in terms of production. Thus, the family agricultural organization minimizes the cost of monitoring, it is more flexible and, consequently, reduces the costs of total transactions. Despite this, the family agricultural organization has disadvantages in terms of economies of scale and bargaining power.

In order to face the disadvantages of economies of scale and bargaining power, agricultural cooperatives are governance structures capable of minimizing transaction costs. In this sense, they have the potential to reduce total transaction costs.

Methodological procedures

In order to meet the main objective of this research, a bibliographic search was first carried out. Theoretical references published through scientific articles and books on the subject were collected. Hence, it was possible to understand what the theory presents about the existence of family organizations and cooperatives in agricultural production.

Next, in order to verify empirical evidence for the theoretical assumptions about the existence of family organizations and agricultural cooperatives, a field survey was conducted, in which structured questionnaires were applied to fruit and vegetable producers (FVL) of the micro-region of Toledo – Parana State from December 2016 to January 2017⁴. The questionnaires sought to understand the role of collective organizations and also to capture some characteristics of family

⁴ The questionnaire is part of a larger project which seeks to assess the level of sustainability of agricultural producers in the microregion. The questions related to collective actions refer to a smaller part of the questionnaire.

farming. The sample of this work is composed of 99 agricultural producers, being 66 members and 33 non-members of FVL cooperatives or associations in the micro-region of Toledo – Parana state, covering a total of 20 municipalities.

The approach of the research is qualitative so that the search for a theoretical and empirical explanation was made by analyzing and understanding the phenomenon through direct interaction with agricultural producers, members and non-members of cooperatives or associations. From this, it was sought to describe the characteristics of the phenomenon, based on the responses to the questionnaires and also on the observation of the researchers.

Access to producers was obtained through farmers market in the cities where such activity occurs, in contact with cooperatives or associations of producers and also in contact with city halls and Emater (Company of Rural Technical Assistance and Expansion).

Empirical evidence in the fvl productive chain in the microregion of Toledo – Parana State

The microregion of Toledo is located in the western mesoregion of Parana state (Brazil) and is formed by 21 municipalities, with a total area of 8,754,994 km². The total population of the microregion is 402,056 inhabitants (IBGE, 2010). Regarding the family farming in the microregion, the high proportion of this type of establishment stands out, which in 2006 corresponded to 84.16% of agricultural establishments (IBGE, 2009).

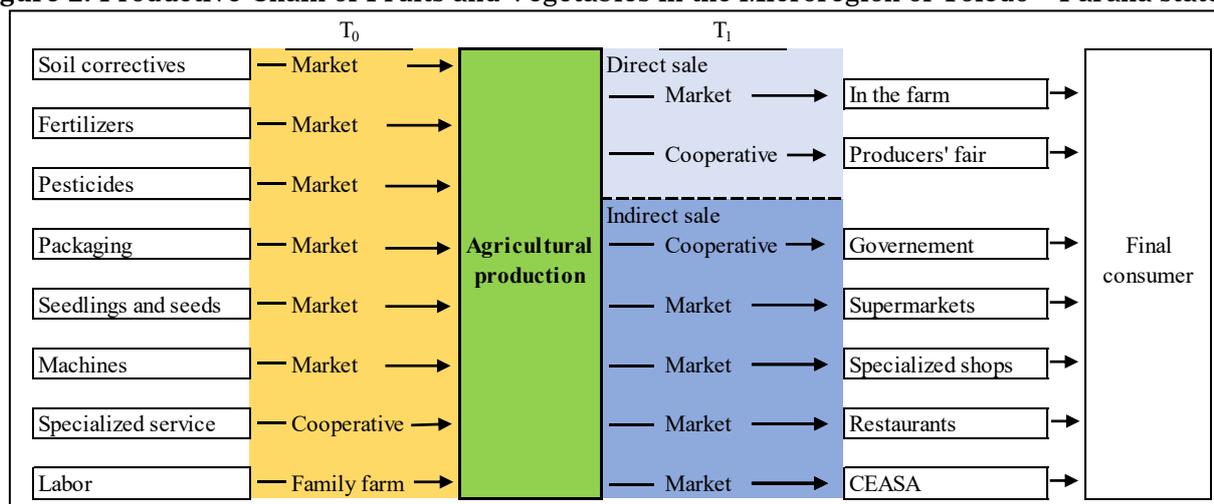
Due to the concentration of commodity production, the area dedicated to the production of fruits and vegetables in the microregion is directed, mostly, to meet local demand only. Thus, production fits, considering the typology of production and marketing circuits, in short circuits, which, as suggested by Marsden, Banks, and Bristow (2000) and Mundler (2008), are characterized by the direct sale of products to consumers, or indirect sale, with the participation of only one intermediary between producer and consumer (Figure 2).

In the aforementioned production chain, the beginning is with the supply of inputs, such as soil amendments, fertilizers, pesticides, packaging, seeds and seedlings, and machinery and equipment. This supply takes place, in general, through specialized agricultural stores located in the region, through transactions via the market. The set of T₀ transactions is formed also by the transactions of specialized services, in this case, the hiring of a certifier organic production company, for organic producers only, for example. This transaction is made via cooperative or association. The T₀ set also belongs to the transaction relating to the acquisition of agricultural labor, which in the case under analysis, is carried out mainly by the family itself.

Then, there is the link of agricultural production itself, which is the focus of analysis in this work. At this stage in the chain, farmers may or may not participate in cooperatives or associations. If not a member, the sale of the producer is made on the farm itself, to supermarkets, specialized stores, restaurants or through CEASA, which is a state-owned company whose function is to improve the commercialization of fruits and vegetables in different regions.

If the producer is a member of a cooperative or association, in addition to the sales possibilities already mentioned, he has two other marketing channels. One is selling through farmers markets. They can operate during business hours and every day of the week or on specific days and time schedules. The cooperative or association is responsible for the organization, including the adequacy and compliance with health surveillance norms, and other norms necessary for the food trade. It should be noted that the sale through farmers market is not necessarily done through cooperatives or associations, but they are important facilitators of the process.

Figure 2: Productive Chain of Fruits and Vegetables in the Microregion of Toledo – Parana state



Source: the authors (2018).

Another important marketing channel that member producers have is selling to government bodies. In this respect, two government programs have an important role. The first is the PAA (Food Acquisition Program) created in 2003, which, with an improvement in 2012, allows states, municipalities and the federation to make institutional purchases from family farmers, with a low level of bureaucracy. The products are used for providing food to schools, daycare centers, hospitals, barracks, prisons, university restaurants, among others. The other program is the PNAE (National School Feeding Program), which, although it already exists, underwent a relevant change in 2009 in order to strengthen the possibility of family farmers to participate in institutional markets. Under the PNAE, at least 30% of the federal budget, aimed at school meals, must be used to purchase food produced by family farming (GRISA; SCHNEIDER, 2015). It should be noted that, due to some bureaucratic norms of the programs, this marketing channel is made possible through cooperatives and producer associations.

Family farm organization, uncertainty and the monitoring problem

The analysis of the data collected during the research showed that the average size of the agricultural properties is relatively small, of 9.92 hectares, with an average area directed to the production of fruits and vegetables of 1.56 hectares (Table 1).

Regarding the organizational structure, family farming prevails, with no vertical integration in the aforementioned production chain. Table 1 also shows the number of workers used in each agricultural property, with an average of 2.98 family workers and 0.48 contract workers. In this case, the empirical data suggest the confirmation of the theoretical assumption that family organization is an answer to the monitoring problem, as producers choose to use family work more regularly, and among members of cooperatives and associations, that quantity corresponds to 85% of the total, and among non-members, corresponds to 88% of the total.

Table 1: Size of the Agricultural Property and Quantity of Labor

	Members	Non-members	Overall
Average area (hectares)			
Fruits and vegetables	1,57	1,55	1,56
Total	12,3	5,16	9,92
Average number of workers			
Family	3,1	2,73	2,98
Hired	0,53	0,37	0,48

Source: the authors (2018).

It is noteworthy that agriculture is an activity immersed in a strong context of uncertainty, due to its dependence on climatic factors, perishable products and uncertainty regarding sale prices.

These characteristics seem to be highlighted in the analyzed productive sector, because, on average, both members, and non-members of cooperatives or associations, reported having had, on average, 2.1 occasions losses caused by climatic factors in the previous three years. In addition, the interviewed producers reported that, in the previous 3 years, in at least 2 opportunities, they had problems selling the production, due to low prices, including moments when it was necessary to discard the products.

The uncertainty environment, associated with the fact that the sector is highly labor-intensive, with the consequent possible monitoring problem, makes it possible to understand why producers do not increase the FVL cultivated area since they have a larger amount of land than what is being used with this crop. The expansion could only be done with the hiring of more workers, a move that, according to evaluation by farmers at risk and return, is not viable. Despite this, among the members of cooperatives and associations, the number of workers dedicated to the production of FVL is greater, which indicates that these collective actions contribute in some way to the reduction of uncertainty for members.

Market power, economies of scale and the role of agricultural cooperatives

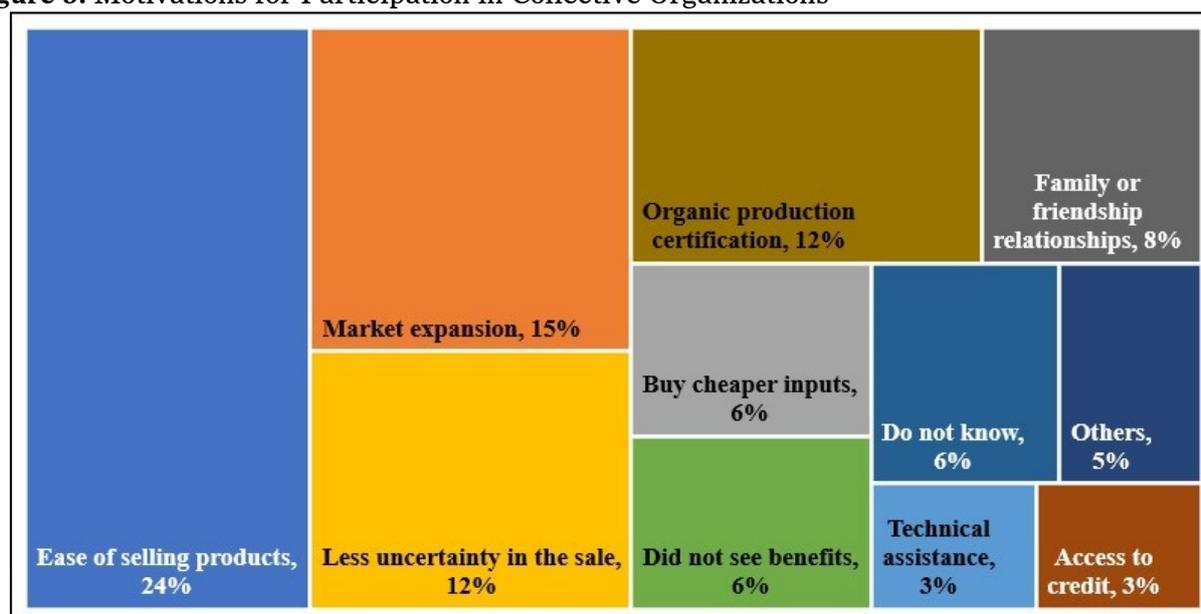
The FVL agricultural production sector analyzed in the research is not capable, or has no potential, due to the low scale, to act cooperatively in the production of inputs. Members also do not see an advantage in buying collectively, since due to the size of the cooperatives (47.1 members on average), even together, the demand would not be sufficient to achieve significant reductions in input prices. Thus, the purchase of inputs is usually done individually, in specialized stores in the region, that is, transactions are carried out via the market.

The ease of purchasing inputs, due to the number of specialized stores in the region, was also cited by producers as a reason for not acting collectively in the purchase of inputs most of the time. Due to the variety of establishments, producers claim that it is possible to research and negotiate for better prices, even acting individually. Despite this, on some occasions, the purchase of input is made collectively, directly from the factory, with a significant reduction in the shipping costs. But this is not the general rule, occurring only occasionally.

A service that is becoming important in the analyzed sector is the certification of organic products, which requires the hiring of a third party. In this case, the contracting of the certifying company individually by the producer is not viable due to the low scale, and collective contracting is more appropriate and has been occurring in some cases in the region. Of the sample analyzed, twelve producers are currently certified for organic products. These producers pointed out, as an important benefit of participating in associations or cooperatives, the possibility of claiming the certifying stamp at a lower cost than if they did it individually.

In the interviews, agricultural producers who were members of cooperatives or associations were asked what was the main reason to engage in such a collective organization. As can be seen in Figure 3, the main motivations are related to the easier sale of products, the expansion of the market, the reduction of uncertainties regarding the sale and the possibility of obtaining an organic product certificate collectively.

As can be seen, the members claim to have benefits in terms of placing their products on the market. This is basically the result of two additional marketing channels that members of collective organizations have access to, namely, sales through farmers' markets and government purchases. At these points, cooperatives and associations have a more relevant role, in order to reduce the bureaucracy of small producers' trade. This is because this type of trade requires some formalization and bureaucracy, which results in costs making it unfeasible for small-scale producers to act individually.

Figure 3: Motivations for Participation in Collective Organizations

Source: the authors (2018).

According to Mior et al. (2014), these organizations, referred by the authors as decentralized cooperatives, have an important role in the formalization of small associated rural producers, contributing, in a decisive way, to the ordering of tax, health, labor, commercial and social security issues. In operational terms, the main difference in relation to traditional cooperatives is the possibility of carrying out production and processing in the agricultural property and, through a lending contract, the associated producer assigns the rights and duties of what was produced on the farm so that the cooperative can commercialize it. Thus, decentralized cooperatives, in general, have a central office, which functions as a business center, and production and processing operations take place in the farms (LANZARINI, 2017). According to Mior et al. (2014), these cooperatives contribute decisively to the feasibility of entry and maintenance of small family producers in the market.

In this sense, it is understood that the transaction cost theory supports the logic about the importance of the existence of cooperatives and associations in the productive sector of FVL in the microregion of Toledo – Parana state because, although they do not present a scale large enough to exercise any monopoly price power, they make it possible to reduce bureaucracy costs of sales transactions, that is, transaction costs. This is possible because bureaucratic costs are diluted among members.

Conclusions

This paper aimed at analyzing how the transaction cost theory justifies the option for family farming organizations and the existence of agricultural cooperatives. With the support of the theoretical foundation, explaining the existence of these organizational structures, the work sought to demonstrate empirical evidence to prove the theoretical assumptions in the fruit and vegetable production sector of the microregion of Toledo – Parana state.

The empirical evidence confirmed the theoretical assumptions of the economics of transaction costs, that the family organization is a structure that minimizes the costs of monitoring agricultural labor, and that agricultural cooperatives are minimizers of transaction costs, as they enable producers to benefit from economies of scale, with a dilution of bureaucratic costs among members.

It was not part of the scope of this article to analyze other potential gains or motivations that cooperative action can bring. As an example, the exchange of information and knowledge between members capable of promoting collective learning, which can influence the adoption of new production technologies, new equipment, new varieties of seeds, manures, and fertilizers, among others. In addition, participation in training and farmers' markets are actions that occur with some frequency and are organized by cooperatives and associations. It can also be mentioned, as a driving force for improving the sustainability of farmers, the greatest strength when demanding services,

especially from public agencies, such as technical assistance and improvements of roads throughout the region. Such questions can be the subject of debate and research in future studies.

References

Aït Abdelmalek, A. **L'exploitation familiale agricole: entre permanence et évolution**. Paper presented at the Colloque SFER, 2004.

ALLEN, D. W.; LUECK, D. Agricultural contracts. In: **Handbook of New Institutional Economics**. Springer, Boston, MA, p. 465-490, 2005.

APPIAH, P.; BIAH, W. A.; CHAUHAN, U.; CHILENGA, W.; REDDY, R. **Exploring transactions costs in commodity chains - Analysis of institutional arrangements that could reduce transaction costs in cashew value chains in the Brong Ahafo Region of Ghana**. Working Document 138 Ghana, 2010.

AZEVEDO, P. F. Nova economia institucional: referencial geral e aplicações para a agricultura. **Instituto de Economia Agrícola**, São Paulo, SP, v. 47, n. 1, p. 33-52, 2000.

BERNARD, T.; TAFFESSE; A.S. Returns to scope? Smallholders' commercialization through multipurpose cooperatives in Ethiopia. **Journal of African Economies**, v. 21, n. 3, p. 440-464, 2012.

BONUS, H. The cooperative association as a business enterprise: a study in the economics of transactions. **Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift für die gesamte Staatswissenschaft**, p. 310-339, 1986.

BOUROULLEC, M. D. M.; PAULILLO, L. F. Governança híbridas complementares aos contratos no comércio justo citrícola internacional. **Gestão & Produção**, v. 17, n. 4, p. 761-773, 2010.

CALUS, M.; VAN HUYLENBROECK, G. The persistence of family farming: A review of explanatory socio-economic and historical factors. **Journal of Comparative Family Studies**, p. 639-660, 2010.

CHADDAD, F. Advancing the theory of the cooperative organization: The cooperative as a true hybrid. **Annals of Public and Cooperative Economics**, v. 83, n. 4, p. 445-461, 2012.

CHAVAS, Jean-Paul. Structural change in agricultural production: economics, technology and policy. **Handbook of agricultural economics**, v. 1, p. 263-285, 2001.

COASE, R. H. **The Nature of the Firm**. *Econômica*, n. 4, 1937.

FARINA, E. M. M. Q. Abordagem Sistêmica dos Negócios Agroindustriais e a Economia dos Custos de Transação. In: FARINA, E. M. M. Q.; AZEVEDO, P. F.; SAES, S. **Competitividade: Mercado, Estado e Organizações**. São Paulo: Editora Singular, 1997.

FISCHER, E., QAIM, M. Linking smallholders to markets: Determinants and impacts of farmer collective action in Kenya. **World Development**, v. 40, n. 6, p. 1255-1268, 2012.

GRISA, C.; SCHNEIDER, S.. Três gerações de políticas públicas para a agricultura familiar e formas de interação entre sociedade e Estado no Brasil. In **Políticas públicas de desenvolvimento rural no Brasil** / Organizadores Catia Grisa [e] Sergio Schneider. Porto Alegre: Editora da UFRGS, 2015. 624 p.

HANSMANN, H. **The Ownership of Enterprise**. Cambridge: The Belknap Press of Harvard University Press, 1996.

HELLIN, J.; LUNDY, M.; MEIJER, M. Farmer organization, collective action and market access in Meso-America. **Food Policy**, v. 34, n. 1, p.16-22, 2009.

HOKEN, H.; SU, Q. **Measuring the effect of agricultural cooperatives on household income using PSM-DID: a case study of a rice-producing cooperative in China**. Institute of Developing Economies. Japan External Trade Organization. Discussion Paper No. 539, 2015.

IBGE. Instituto Brasileiro de Geografia e Estatística. **Censo Demográfico 2010**. Disponível em: < <http://www.ibge.gov.br/home/estatistica/populacao/censo2010/>>. Acesso em 01 nov. 2017.

IBGE – Instituto Brasileiro de Geografia e Estatística. **Censo agropecuário 2006: agricultura familiar, primeiros resultados**. 2009. Disponível em http://biblioteca.ibge.gov.br/visualizacao/periodicos/50/agro_2006_agricultura_familiar.pdf. Acesso em: 09 ago. 2017.

KAGANZI, E.; FERRIS, S.; BARHAM, J.; ABENAKYO, A.; SANGINGA, P.; NJUKI, J. Sustaining linkages to high value markets through collective action in Uganda. **Food policy**, v. 34, n. 1, p. 23-30, 2009.

KARANTININIS, K.; NILSSON, J. **Vertical markets and cooperative hierarchies - the role of cooperatives in the agri-food industry**. Springer. 2007.

LANZARINI, J. J. S. **Cooperativas descentralizadas de agricultores familiares: aspectos do contrato de comodato**. Dissertação apresentada ao Programa de Pós-Graduação em Desenvolvimento Socioeconômico da Universidade do Extremo Sul Catarinense – UNESC, Criciúma, 2017. 144f.

MÉNARD, C. The economics of hybrid organizations. **Journal of Institutional and Theoretical Economics**. JITE 160, p. 345-376, 2004.

MIOR, L. C.; FERRARI, D.; MARCONDES, T.; REITER, J. M. W.; ARAUJO, L. A. Inovações organizacionais da agricultura familiar: as agroindústrias e cooperativas descentralizadas no sul catarinense. In: Anais da **SOBER**, v. 52, p. 1-20, 2014.

MUNDLER, P. (Org.). **Petites exploitations diversifiées en circuits courts. Soutenabilité sociale et économique**. Lyon: Isara, 2008. 34p.

PFEFFER, M. J. Part-time farming and the stability of family farms in the Federal Republic of Germany. **European Review of Agricultural Economics**, v. 16, n. 4, p. 425-444, 1989.

POLLAK, R. A Transaction Cost Approach to Families and Households. **Journal of Economic Literature**, v. 23, p. 581-608, 1985.

POULTON, C.; DORWARD, A.; KYDD, J. The future of small farms: New directions for services, institutions, and intermediation. **World Development**, v. 38, n. 10, p. 1413-1428, 2010.

ROCHA JR, W. F. A nova economia institucional revisitada. **Revista de Economia e Administração**, v. 3, n. 4, p. 301 – 319, 2004.

SCHMITT, G. Why collectivization of agriculture in socialist countries has failed: a transaction cost approach. **Agricultural cooperatives in transition**, p. 143-159, 1993.

STAATZ, J. M. Farmer's Incentive to take collective action via cooperatives: A transaction cost approach. **Cooperative theory: New approaches**, p. 87-107, 1987.

SYKUTA, M. E.; CHADDAD, F. R. Putting theories of the firm in their place: A supplemental digest of the new institutional economics. **Journal of Cooperatives**, v. 14, p. 68-76, 1999.

TOMEK, W. G.; KAISER, H. M. **Agricultural product prices**. Cornell University Press, 2014.

VALENTINOV, V. Why are cooperatives important in agriculture? An organizational economics perspective. **Journal of Institutional Economics**, v. 3, n. 1, p. 55, 2007.

WILLIAMSON, O. E. Transaction cost economics and organization. **Strategic Management Journal**, n. 12, p. 75-94. 1993.

WILLIAMSON, O. E. Comparative economic organization: the analysis of discrete structural alternatives. **Administrative science quarterly**, v. 36, n. 2, p. 269 – 296, 1991.

WIGGINS, S.; KIRSTEN, J.; LLAMBI´, L. The future of small farms. **World Development**, v. 38, n. 10, p. 1341–1348, 2010.



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