

Coffee cooperatives' operation management: relevant factors for production diversification

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Abstract

Brazilian agricultural cooperatives experienced an unprecedented growth in the last decade leading to several diversification strategies. Studies in Brazil focus on the financial outcome of these but few empirical studies have been developed. This paper aims at comprehending strategies in operations management for production diversification in coffee cooperatives in Brazil.

Keywords: cooperatives, production, diversification.

Introduction

It is of primary interest for researchers to understand which factors lead cooperatives to succeed financially. This understanding is not only supported by studies that indicate that cooperatives are more efficient ways of income distribution (Cook, 1995), but also as a way of providing economical sustainability in the long term (Sexton, 1990). Although relevant for most countries, it is even more important for the BRIC economic reality in which cooperative results have considerable impact on the agricultural-husbandry sectors and national trade balance (Hollensen, 2010).

Anchored in these reasons, research on performance of Brazilian agricultural and husbandry cooperatives focuses on economic and financial aspects (Ferreira and Braga, 2007; Bialoskorki Neto and Costa, 2009, Diniz Pereira et al., 2009). This paper is upstream-oriented, studying factors already identified in the literature, limiting them to the ones directly related to diversification of production and operations management strategies in coffee-producing cooperatives which might ultimately impact financial performance.

Cooperatives in Brazil

Data from the Organization of Brazilian Cooperatives (OCB, 2012), demonstrate that more than 6,500 cooperatives are currently in operation in Brazil, with over 10 million associates and approximately 300 thousand employees. Within the Brazilian cooperative scenario there is a highlight for the productive sector, growing from 1.9% of Brazilian exports in 2005 to 2.4% in 2011 and being indirectly responsible for maintaining a positive trade balance of the country, impacting only 0.2% of imports in 2011.

Among the Brazilian cooperatives, the agricultural-husbandry ones account for 23% of all cooperatives. Moreover, the agricultural cooperatives have only 10% of registered associates in Brazil and 49% of direct jobs generated. The Southeast region of Brazil leads the overall number of cooperatives in the country with 34%, followed by the Northeast (26%) and South (18%). The number of national cooperatives had a growth of 56% between 1994 and 2010, but the agricultural sector has remained largely unchanged - ranging between 1398 (in 2004) and 1624 (2002) - and the number of associates increased by 308% over the same period. The agricultural-husbandry cooperatives are also responsible for 97.3% of exports of all Brazilian cooperatives (OCB, 2012), with 39.3% of these exports originated from the sugarcane/alcohol production complex, 25.6% of the soybean complex, 16.9% of meat production complex, 9.2% of coffee, tea and spices and the remain divided among cereals, milk and dairy products, vegetable products, cotton and fruits.

Coffee cooperatives

Coffee is usually grown in tropical and subtropical areas of the world, mainly in third world countries, which concentrate most producers (Milan, 2008) and Brazil has a strong tradition in the production and exportation of coffee. As for the economic overview, Saes, Santos and Pinto (1995), explain that during the first half of the last century, coffee production in Brazil has been bound to macroeconomic policies, whose goal was to profit from the quasi-monopoly status Brazil sustained during the period in the international coffee market.

Ferrari (2006) cites the heavy frosts in 1918 and the Great Depression, especially in 1929, as factors that aggravated the economic situation for coffee producers, and claims the intervention policies adopted by the Brazilian government in the 60s and 70s to boost internal production and consumption by the internal market based on freezing prices and controlling food imports (including coffee) as one of the quality lowering factors which collaborated to the Brazilian's losing of market share. Farina and Zylberstajn (1998) also appoint lack of quality, high production costs, coffee producers' high debts, climatic problems and price oscillations as a few of the main reasons for Brazil to lose space in the international coffee market.

Coffee has been the main product of coffee cooperatives yet aversion to risk, market stagnation for the last 20 years and climatic disasters obliged cooperatives to start considering diversification strategies in order to survive. Ferreira and Braga (2004) demonstrate that cooperatives which did not focus on coffee also started purchasing it to diversify their production, even though it was a minor production in some states. Saes, Santos and Pinto (1995) blame the aversion to risk – especially under conditions of fixed costs and great market value fluctuation – as one of the main reasons for coffee cooperatives in Minas Gerais to be gradually switching production towards other cultures, as has already happened more intensively in Sao Paulo and Parana. In Minas Gerais, heavy frosts in 1979 and 1982 reduced significantly coffee production and forced cooperatives to diversify their production in order to maintain their industries and processing plants. However, as a response to the stagnation and loss of market share, Farina and Zylberstajn (1998) affirm that the main challenges to national production nowadays is to diversify and respond to the new demands of the consumer countries.

Diversification of production

The foundation of this paper is that diversification strategies affect the financial performance of agricultural-husbandry cooperatives as it is a form of benefitting from their current production structure, organisational structure and economies of scale to add value to their production. Oijen and Hendrikse (2002) attest the unavailability of literature that associate cooperatives and product diversification yet they argue other sources of literature exist for diversification in other fields. Ansoff (1957) states that diversification is one of four core alternatives companies must choose – besides increased market penetration, market development and product development – and that its acceptance implies in continually weighing and comparing the advantages of all them. He also provides a simple but useful framework to describe diversification by classifying its possibilities in three main groups: vertical diversification, horizontal diversification (within the main activity) and lateral diversification (outside the main activity). Prymon (2011) demonstrates that only diversification strategies are truly consolidated and have real implementation possibility as the other strategies depend on external conditions to the company's reality to be fully applied.

Culas and Mahendrarajah (2005) have studied reasons why agricultural production is more prone to diversify its production considering that while all fields of activities are exposed to risk and uncertainty, climate and natural factors have a substantial effect on the production outcome. They also add other factors related to marketing, price uncertainties, opportunistic behaviour and local policies. In this sense they follow Pope and Prescott (1980), who acknowledged that larger farms tend to be more diversified whereas smaller farms have an inclination not only to be less diversified but also managed by less experienced owners.

Methodology

In this paper we aim at comparing decisions between strategies in production diversification for coffee-producing cooperatives in south-eastern Brazil. As our objective is to investigate the relation between coffee-producing cooperatives, we have empirically tried to classify the possible strategies and build propositions that might explain the reasons for their adoption. A number of authors have employed classification as a means to develop constructs and theories (Bailey, 1994) and this is consistently used in organisational and operations' management studies. This paper is based on the grounded theory according to Strauss and Corbin (1998), whose goal is the generation of propositions and further explanation of the theory on the data obtained. Following their approach, the development of the research was split in four parts: 1) definition of the constructs; 2) discussion – obtaining data from interviews and Paprika; 3) analysis and contrast with constructs; 4) comparison with the literature and final limitations.

To do so, we selected six cooperatives whose production was concentrated on coffee but that also purchase and process crops and other products. Although the number of cooperatives obtained might not suffice to generalise, other researchers have successfully given evidence of strong theoretical and practical implication with a similar pool sample (Wu and Choi, 2005).

To support and counterbalance the interviews, we decided to re-test their choices based on the Potentially All Pairwise Rankings of all Possible Alternatives (Paprika) method (HANSEN; OMBLER, 2009). This method equates verbal decisions to values and sorts out all the criteria into groups and ranking of choices. The outcomes can also be interpreted as non-mathematical values to have decision-making easier. Comparison

between the interviews' analyses and ranking outputs from Paprika are useful to validate the strategies chosen in product diversification and their results perceived by cooperative boards.

Constructs

Prior to interviewing cooperative members, it is necessary to develop constructs as basic assumptions. These assumptions are the basis for the interviews and the decision-making matrix.

Operating time

The first construct obtained from previous works deals with the Brazilian cooperatives' length of operating time as a factor of success and failure in their development and survival. One of the reports of The Brazilian South Region Development Bank (BRDE, 2003) states that from the 30s and especially after the 40s this movement was heavily influenced by the presence of the first development agencies, under the new economical intervention policies enacted by the federal government (as a response to the Great Depression).

During the 50s and 60s the government's actions shifted from stimulating the growth of cooperatives in Brazil to the prioritisation of industrialisation in the existing cooperative. Lima (1974) notes that until 1957 there was a low rate of cooperatives engaged in coffee production.

In 1965 the National Rural Credit System was created and the "golden age" of cooperatives in Brazil started with the easy access to credit. This period would endure until the 80s and culminated in the crisis of cooperativism as Brazil plunged in bankruptcy, which led to self-management of the sector. In addition, abrupt changes in the monetary, exchange-rate and budgetary policies aggravated the cooperatives' financial performance. In the 90s cooperatives have regained balance, and despite many having shut down operations, the ones that remained nowadays benefit from and capitalise with the more stable economic environment. Consequently, the time a cooperative has had to develop and mature may be closely tied to the way it performs.

Risk Aversion

Many different opinions exist about the risk aversion especially concerning cooperatives. Nielsen (2000) remarks that the farmer faces a risk when balancing the pros and cons of being a member and not having full control of the sales and their margins and being a non-member and having to face all the risks of non-insertion in the Market on their own. As for agricultural and husbandry cooperatives this is even more important as there are more incontrollable factors involved in the production activities. Also, as not all cooperatives assume a verticalisation process, their dependency on commodities and the uncertainty about the possibly wavering prices might add a good amount of risk.

Thus the need of gathering in groups is part of the basis for the creation of a cooperative. However, some cooperatives have an even more conservative profile, as Bialoskorski Neto (2000) recalls, and end up sharing operations with non-members as a form of diminishing risk, particularly when these third-party associates are professional ones. This author also adverts that there is also a tendency of cooperatives that largely show aversion to risk usually being the ones to mask their situations and conceal their reality. Nielsen also notes that cooperative members generally tend to be conservative towards risk when it comes to "diversification and global investment" (p. 56). Thus, risk

is present at all phases of agricultural and husbandry cooperative operations, be it production, insertion in the market, pricing, processing, selling and so on.

Natural disasters and climatic conditions

Natural disasters are part of the risks of all agricultural and husbandry cooperatives but coffee plantations are especially prone to die due to frost damage and during the 70s a series of heavy frosts ruined most of the coffee production – particularly the one in 1975 which almost decimated the coffee plants. The harvest in 1975 (before the frost) in Paraná State amounted to 10.2 million bags – approximately 48% of the Brazilian production, which made Paraná the biggest exporter inside Brazil then – and the next year the harvested coffee summed up 3.8 thousand bags of coffee, equivalent to 0.1% of all Brazilian production. That had two main consequences: the shift from the production of coffee to other crops – mainly soya and wheat – and the migration of the farmers to others states north.

Other states also suffered – and are still vulnerable to – the consequences of the frost and other natural disasters. Nowadays it is one of the main concerns of both the Brazilian cooperatives and government funding agencies to protect and develop ways of enhancing the agricultural production to these climatic disorders but it is an always present risk and fear. Hence some cooperatives may choose to trade less income from coffee for obtaining long term financial sustainability.

Expansion of associates

In Brazil, the number of agricultural cooperatives has largely seen no changes varying approximately 15% whereas the number of associates increased by 308% between 1994 and 2010. Many reasons could explain this phenomenon, but the restructuration of Brazilian agribusiness both in cooperatives as in fully market-driven companies, the local currency exchange rates (similarly to other third-world countries) and the professionalization of agribusiness are probably the main explanations.

Moreover, as in other countries, the Brazilian cooperatives have also woken to external market investment and started playing with mergers, acquisitions and other vertical and horizontal absorption strategies (MERLO, 1998), which also led to the expansion in the number of associates to each cooperative. Thus, having an increase in the number of associates is an important advantage to any cooperatives but especially in Brazil, where local laws do not obligate associates to sell or even maintain a pre-determined level of financial interaction with the cooperative, hence putting associates in a comfortable position to analyse the pros and cons of selling their produce to the cooperative or directly to the market, which might undermine the cooperatives' strategic planning, including their diversification strategies.

Increase of area

No studies could be found in the Brazilian agricultural and husbandry cooperative sector about the direct impact of the increase of operation area of the cooperatives in their production and financial outcomes.

Differently of only increasing associates numbers – who may be concentrated in the area around the cooperative – opting for increase the operation area encompasses new costs and new strategies as it may be useful to have not only a network of warehouses to absorb local production but also pre- or full processing facilities. It may also involve the choice of keep focusing on the previous product(s) or opening their cooperative to newer products.

Economic crisis

As mentioned before, Brazilian cooperatives have benefitted from large sums of money lent by the government and also suffered from their withdrawal in times of need. Brazilian economy agonised during the 80s and in the end of that decade a new model of agricultural production has arisen, concentrating the purchasing power in the hands of few broker companies, leading to different economic scenarios and even oligopsonistic ones (GONÇALVES; VEGRO, 1994), where full-fledged speculation and total lack of liability between the brokers and sellers predominates.

On the strength of it, big farmers may keep playing in the market, but for small and medium farmers that possibility sound sombre. Thus, they feel compelled to join or form cooperatives to avoid a completely helpless situation, and if this is the main reason for the existence of the cooperative, it may induce the cooperatives to base their strategies in the most conservative scenarios.

Discussion

The selected cooperatives were first contacted by telephone and agreed to be interviewed on the condition that their names, places or any other information that might lead to their identification would be undisclosed, as is the common practice in Brazil. The interviews were long enough to grasp the importance that the role of diversification plays on these cooperatives' daily lives, yet an *in loco* visit could add a broader perspective as it could or not match the information provided.

For the six cooperatives, the same order was followed: semi-structured interview and Paprika questions. As for the Paprika methodology, it is usually sent a questionnaire with option pairs so that the interviewee can choose the one he prefers or that explains better the situation in case. We chose to do this differently as the number of options was short, and could be done as an extension to the telephone interview.

The first cooperative (A) is a traditional cooperative, existing for approximately thirty years in the state of Sao Paulo. Their main interest is in expanding the number of associates so that they may have a better financial basis to trade coffee and other products. The interview revolved around their plans to expand operations which explained their need of more associates who would provide not only more income to expand but also more production.

When clearly asked about their choice of diversification strategy it was stated that it took place whenever and wherever it was needed and that even if there were some guidelines discussed during internal meetings and associates' gatherings they were not strictly enforced.

The next cooperative (B) displayed a different behaviour by stating that one of their priorities is to expanding operations but not by putting all their eggs in one basket. This seemingly conservative profile is supported by their history of almost 40 years in operation, even if coffee was not always their main product.

During the interview, their line of thought suggested that their good financial situation of late is due to the fact that previous boards of directors have had the courage to break up with their past production focused on coffee to a more modern way of seeing their cooperative by opening space to other products and activities. When asked whether this option would weaken their coffee production, it was replied by asking another question: what good would it do to have higher income with coffee if it could all change in a second, be it as a result of a bad harvest or financial market turmoil?

This last question raised the issue of the lack of apparent knowledge of their own strategy: was it aversion to risk, fear of natural climatic changes or economic crisis the main reason for this cooperative do diversify? The answer lies in the results of the

Paprika questionnaire, in which it was clearly showed through question after question that their main concern was the financial situation. Whenever they had to choose between climatic changes or aversion to risk and economic crisis, the later was always appointed as the rationale for their decision.

The third cooperative (C) has been working for approximately 35 years and has a pretty diversified portfolio of products absorbed by the cooperative but still coffee is their main product. They show an example of apparent lack of direction in their diversification strategies since different strategies were adopted in the last two decades without passing a full evaluation by their associates or not being followed for time enough to see their efforts paid off. In addition, their board of directors has been kept unaltered for the last 15 years. Cooperative C maintains a position close to the cooperative A, in which they expect an expansion of their operations (especially processing and distributing coffee), but this expansion is done according to the local needs and it does not follow any guidelines, rather than being decided when needed.

They also opt for the search of new associates as a diversification strategy as they need a bigger production to vindicate their processing plants, in view of a previous wave of diversification that led to more products absorbed by the cooperative but with less concentration.

The fourth cooperative (D) was the only one to choose a different factor for their diversification strategy: climatic conditions. According to the interviewee the cooperative has suffered a lot from several pests in the 90s that afflicted the whole production including coffee. However after answering the Paprika questionnaire, it has showed a certain amount of doubt between this factor and the economic crisis that these pests initiated. Due to the similar or consequential aspect of the factors they may be interpreted as climatic conditions being followed by a subsequent economic crisis as a reason for their diversification.

The fifth cooperative (E) was the smallest and youngest of the cooperatives interviewed. According to the interviewee, the reason for their foundation was the economic crisis, and the fragile position the farmers found themselves into. As such, they formed a cooperative, but it is centred in the production of coffee. They display a low level of diversification but it was stated that the plans of the cooperative include diversify to other crops and husbandry-milk activities in order to complement their production.

The sixth and last cooperative's positioning (F) is to increase their associates' basis. According to the interviewee, they are planning to open several local warehouses to increase absorption of local production and invest in processing facilities. Their diversification strategy is to migrate from coffee to other crops (corn and soya) in the commodity market and keep investing in the processing of coffee towards final consumers.

During the interviews it was stated that one of the reasons for their diversification was also the economic crisis in the 80s and 90s and that this crisis would not have affected them as much as it did if they had increased the number of associates during these decades.

Analysis and contrast

This work aimed at better comprehending agricultural cooperative's point of view concerning diversification strategies. To study more profoundly this subject a group of 6 coffee producing cooperatives was chosen, which provided a homogeneous environment but – due to the low number of cases – was not able to be a source of generalisation to the whole cooperative universe in Brazil.

Nonetheless, it provides useful insights on the way Brazilian cooperatives choose their strategies as it demonstrates that their choices are not based on a thoughtful strategic plan, but rather on a daily basis. This might find its origin in the fact that none of the interviewed cooperatives would fit in the top category of financial performance, according to the classification of the Brazilian National Economic and Social Development Bank (BNDES, 2011).

Even if the study has shown that half of the interviewed cooperatives have decided on diversifying their productions due to increasing number of associates, it might be also due to its connection to the increase in the larger geographical area the cooperative decided to work with.

After analysing all the cooperatives' interviews and Paprika questionnaires, it can be understood that the main reason for cooperatives to diversify their activities is the drive for expansion of associates. That may be linked to the literature concept of value migration strategy in which the coordination of the chain is primordial. It also appoint to the double nature of such cooperatives which split their activities in the buying-selling commodities and their processing and selling to the final consumer. In order to achieve those, in a context where cooperatives depend on the purchases from their associates to keeps their processing facilities working – and especially in a fluctuating market which means risk to them – it is necessary to reinforce their associate basis as a first step in preparation for bigger plans.

Second, almost all cooperatives also listed economic crisis as the main or minor reason for their diversification. This may be one of the reasons for none of them to fit in the BNDES's top financial performance category. It is also indicative of their lack of strategic planning and their waiving specialised external consultancies.

Only one cooperative (A) has not cited economic crisis in the reasons for their diversification. Their motives for diversification are centred in the increase of associates which is closely tied to the increase of area. It seems that even in their lack of strategic planning, they have at least a direction to pursue which is the expansion of their production through the increase of associates.

Thus we can break down their main and secondary factors for diversification as such:

Cooperatives' diversification factors						
Coop.	A	B	C	D	E	F
1 st	<i>Increase of Associates</i>	Economic Crisis	<i>Increase of Associates</i>	Climatic Conditions	Economic Crisis	<i>Increase of Associates</i>
2 nd	Increase of Area	Aversion to risk	Economic Crisis	Economic Crisis	Aversion to risk	Economic Crisis

This leads to the comprehension of the connection between the two main reasons for cooperatives to diversify their productions: economic crisis as a source and increase of associates as the solution most cooperatives have chosen to end their economic turmoil history. It also demonstrates that – at least for the cooperatives interviewed – climatic conditions, increase of area and aversion to risk are secondary and subjected to the main factors.

Limitations

Although providing important evidence for the pursuing of studies in the area, this paper should not be held able to generalise its conclusions to the whole universe of coffee producing cooperatives in Brazil. This is due to the fact that coffee production in

Brazil is concentrated in 3 states (Sao Paulo, Minas Gerais and Espirito Santo) but new growing areas emerge everyday (Bahia, Brazilian Midwest), presenting a broad geographical area, which prevented in loco interviews.

A second important limitation is that the number of cooperatives is low compared to the hundreds of cooperatives available. Also, the constructs are all linked in their conception and should not be understood separately. Other studies aimed at comprehending better these constructs and expanding them may arise.

This study also concentrated in medium-sized cooperatives, which still struggle with the economic difficulties inherited from the 80s and 90s and this scenario may be different for top tier cooperatives, which have most probably overcome this situation.

Another limitation is that the Paprika methodology works only on personal choices which may or may not reflect reality. The methodology itself is planned to avoid such research problems, but *in loco* interviews could have been used to complement its results.

Other studies may also be developed to confirm these constructs and results and expand their comprehension by using a quantitative-statistical approach.

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REFERENCES

- Ansoff, I. Strategies for Diversification. *Harvard Business Review*, v. 35, n. 5, pp. 113-124, sep/oct. 1957.
- Bailey, K.D., 1994. *Typologies and Taxonomies: An Introduction to Classification Techniques*. Sage Publications Inc., CA: Thousand Oaks.
- Bialoskorski Neto, S. *II Workshop Internacional de Tendências do Cooperativismo*. Faculdade de Economia, Administração e Contabilidade – USP. Ribeirão Preto, agosto de 2000.
- Bialoskorski Neto, S; Costa, Davi Rogério de Moura. Metodologia de rating em cooperativas agropecuárias: um estudo de caso. *Gestão e Produção*, São Carlos, v. 16, n. 04, pp. 612-623, 2009.
- Cook, Michael J. The future if U.S. agricultural cooperatives: a neo-institutional approach. *American Journal of Agricultural Economics*, v. 77, n. 05, pp. 1153-1159, 1995.
- Culas, Richard; Mahendrarajah, Mahen. Causes of diversification in Agriculture over time: evidence from Norwegian farming sector. *11th EAAE Congress – The future of rural Europe in the global agri-food system*, Copenhagen, Denmark, aug. 24-27, 2005.
- Diniz Pereira, Breno A.; Cardona Venturini, Jonas; Ceretta, Paulo S.; Dutra, Vanessa R. Análise da eficiência em cooperativas agropecuárias no estado do Rio Grande do Sul. *Universo Contábil*, v. 5, n. 02, pp. 39-57, 2009.
- Ferrari, Cristina. *Utilização do modelo matemático de otimização para identificação de locais para instalação de unidades armazenadoras de soja no estado do Mato Grosso*. Thesis (Master's in Applied Economics) Piracicaba, ESALQ/USP, 2006.
- Ferreira, Marco Aurélio Marques; Braga, M. J. . Fatores associados à decisão de diversificação nas cooperativas agropecuárias nos Estados de Minas Gerais e São Paulo. *Agricultura em São Paulo* (Stopped publishing in 2006). Cont. ISSN 1981-4771 Revista de Economia Agrícola, São Paulo-SP, v. 49, n.2, p. 111-123, 2002.
- Ferreira, Marco Aurélio Marques; Braga, M. J. Impacto da estratégia de diversificação nas cooperativas agropecuárias. *Perspectiva Econômica* (UNISINOS. Impresso), Erechim-RS, v. 37, p. 79-100, 2003.
- Ferreira, Marco Aurélio Marques; Braga, M. J. Diversificação e competitividade nas cooperativas agropecuárias. *Revista de Administração Contemporânea* (Impresso), Curitiba-PR, v. 8, n.4, p. 33-55, 2004.
- Ferreira, Marco Aurélio Marques; Gonçalves, Rosiane M. L. Desempenho das cooperativas na indústria de laticínios do Brasil: uma abordagem por grupos estratégicos. *Revista de Administração*, São Paulo, v. 42, n. 03, pp. 302-312, jul./ago./set., 2007.

- Ferreira, Marco Aurélio Marques; Gonçalves, Rosiane M. L.; Braga, Marceo J. Investigação do desempenho das cooperativas de crédito de Minas Gerais por meio da Análise Envoltória de Dados (DEA). *Economia Aplicada*, v.11 no.3, Ribeirão Preto July/Sept. 2007
- Gonçalves, José S.; Vegro, Celso L. R. Crise econômica e cooperativismo agrícola: uma discussão sobre os condicionantes das dificuldades financeiras da cooperativa agrícola de Cotia. *Agricultura em São Paulo*, SP, 41(2):57-87, 1994.
- Hansen, Paul; Omler, Franz. A new method for scoring additive multi-attribute value models using pairwise rankings of alternatives. *Journal of Multi-criteria decision analysis*, n. 15, pp. 87-107, 2009.
- Hollensen, Svend. *Global Marketing: A Decision-oriented Approach*. New York: Financial Times / Prentice-hall, 5th edition , 2010.
- Lima, Luiz Mendes de. Histórico do cooperativismo no Paraná. *Revista paranaense de desenvolvimento*, n. 43, 1974.
- Merlo, Catherine. When cooperatives combine. *Rural Cooperatives* 65(5),18S23, U.S. Department of Agriculture/Rural Development, Washington, DC, 1998.
- Milan, Patricia. *Modelagem matemática para a otimização da produção de cafés finos*. Master's thesis in Applied Economics, ESALQ/USP, 2008.
- Nielsen, Holger Hasle. In: Bialoskorski Neto, S. *II Workshop Internacional de Tendências do Cooperativismo*. Faculdade de Economia, Administração e Contabilidade – USP. Ribeirão Preto, agosto de 2000.
- OCB (Organização das Cooperativas Brasileiras). *OCB Relatório de Gestão 2011*. Brasília, may 2012.
- Oijen, Aswin A van.; Hendrikse, George W. Governance structure, product diversification, and performance. *ERIM Report Series*, ERS-2002-51-ORG. Rotterdam School of Management, Erasmus Universiteit Rotterdam, Rotterdam, Netherlands, May 2002.
- Pereira, Breno Augusto D.; Braga, Ayala Liberato; Stefanello, Marines; Venturini, Jonas C. Evaluation of Strategies for Economic and Social Development through the Implementation of Productive Chains of Fruits in Espírito Santo state. *Organizações Rurais & Agroindustriais*, Lavras, v. 12, n. 2, p. 275-289, 2010.
- Pope, R. D.; Prescott, R. Diversification in Relation to Farm Size and Other Socio-economic Characteristics. *American Journal of Agricultural Economics*, v. 62 , n. 03, 1980, pp. 554-559.
- Prymon, Marek. The Role of Diversification in Strategies of Global Companies – Research Results. Nashville: *AABRI Conference*, 2011.
- Ribeiro Neto, Antonio B. *Fatores que impactam o desempenho de pequenas empresas*. Thesis (Doctor in Industrial Engineering) – Federal University of Rio de Janeiro, 2008.
- Saes, Maria S. Machine; Santos, Antonio Carlos; Pinto, Emerson Mathias. Cooxupé: um projeto de diversificação. *5th PENSA Seminar*. 1995.
- Sexton, R. J. Imperfect competition in agricultural market and the role of cooperatives: a spatial analysis. *American Journal of Agricultural Economics*, Menasha, v. 72, n. 3, aug. 1990. pp. 709-720.
- Strauss, A.; Corbin, J. *Basics of qualitative research: techniques and procedures for developing grounded theory*. 2 ed. London: Sage Publications, 1998.
- Wu, Zhaohui; Choi, Thomas Y. Supplier-supplier relationships in the buyer-supplier triad: building theories from eight case studies. *Journal of Operations Management*, n. 24 (2005), pp. 27-52.