

## Collaborative practices and transaction costs in the coffee sector in Mexico

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### Abstract

The commercialization of differentiated coffees has taken on great relevance because it is an option for small producers to access international markets and improve their economic well-being. This requires new strategies to respond to changes in demand along the supply chain. Through the development of a case study that includes a total of seventeen interviews, ten to producers, five interviews applied to the representatives of each cooperative, one to the representative of the company Integrator INCAFESAM, and one to the representative of the company Malongo, the present study shows how the collaborative practices adopted allow to be a solution to achieve a reduction in transaction costs and greater coordination in the coffee supply chain of the region of Córdoba, Veracruz. The research was carried out between the months of September 2015 and May 2016. The results obtained show that the standardization, certification and associated procurement practices have contributed to the reduction of transaction costs such as information on the quantity of supply, quality of the product, and costs for monitoring and negotiation. On the other hand, the practical exchange of information has made it possible to improve coordination among members of the supply chain, which results in better product planning and availability based on the quality required in the market.

**Keywords:** *Coffea arabica*, supply chain, technical solutions, uncertainty.

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## Introduction

In the coffee sector, as an alternative to conventional coffee, the marketing of quality and certified differentiated coffee stands out. This alternative offers producers the opportunity to obtain better income (Pérez, 2010); however, it alters the characteristics of the transaction between the producer and its buyer, which can hinder the transactions between both. Two problems can be identified. First, producers, by carrying out a specialization and differentiation in their product, can generate transaction costs.

Second, greater coordination with the buyer is required to make the marketing process more efficient (Taylor *et al.*, 2005). Although authors such as Hobbs and Young (2000) have cited that greater coordination in agri-food chains can be achieved by reducing transaction costs, few studies have suggested how collaborative practices can reduce such costs in the management of agrifood chains (Van der Vorst *et al.*, 2001; Kannan and Tan, 2005).

The objective of this research is to show through a case study how the collaborative practices adopted in one of the main specialized coffee supply chain in Veracruz, Mexico have allowed to reduce transaction costs and facilitated economic transactions between producers and buyers. A total of one hundred and forty-four producers, grouped in five cooperatives, the Specialty Coffee Integrator of The High Mountains SA of CV (INCAFESAM) and the international company Malongo participate in this chain.

The cooperatives that make up the INCAFESAM Integrator are located in municipalities of the coffee region of Córdoba and Huatusco, Veracruz and the coffee region of the Sierra Negra of Puebla. The cultivation of coffee is of great relevance in the regions mentioned because it represents one of the main economic activities. The producers with an average of 2.5 hectares sown, are distributed in five cooperatives. Together they produce and market on average a total of 750 t of cherry coffee whose estimated annual value is 7 million pesos. All producers are certified and 87% have certified organic and fair trade coffee and only 13% have a fair-trade certification (Table 1).

The producers who are members of the cooperatives, can decide if they sell their product through their respective cooperative or to an independent buyer. Through the cooperative they sell 69% of their product, and the rest they sell directly to independent buyers such as United Agroindustries of Mexico (AMSA), which purchases 18.5% of the coffee and the rest, 12.5%, is purchased by buyers of the region.

The INCAFESAM integrator carries out the marketing activities of the coffee delivered by the cooperatives. Its main buyer is the company Malongo with whom it signs contracts each cycle. The company Malongo based in France, buys green coffee from various parts of the world since 1980, and handles the roasting and processing of a wide range of products such as coffee beans, ground coffee packed in metal boxes, freeze-dried coffees and coffees in capsules. Next, the theoretical arguments for the development of the investigation are presented.

**Table 1. Cooperatives that make up the Specialty Coffee Integrator of The High Mountains SA of CV.**

| Name of the cooperative             | Foundation year | Number of member producers | Production (t year <sup>-1</sup> ) | Type of coffee that the cooperative collects | Type of certification  |
|-------------------------------------|-----------------|----------------------------|------------------------------------|--|------------------------|
| Yellow Catuai                       | 1980            | 26                         | 135                                | Cherry                                       | Organic and fair trade |
| Sustainable producers of Ocozaca    | 2002            | 21                         | 275                                | Cherry                                       | Organic and fair trade |
| Coffee makers of Neria              | 2007            | 9                          | 37                                 | Cherry                                       | Organic and fair trade |
| Sierra Madre Oriental working group | 2011            | 13                         | 194                                | Cherry                                       | Fair trade             |
| San Sebastián Tlacotepec Ipantepetl | 2005            | 75                         | 109                                | Pergamino                                    | Organic and fair trade |

Source: elaboration with interview data.

### Transaction costs

Buyers and sellers may face costs when carrying out a transaction (Hobbs and Young, 2000). Two transaction costs are identified in the economic literature. Uncertainty related to the business environment that arises prior to the transaction due to the loss of time and resources to identify the ideal agent with whom the exchange will take place, the identification of product quality, access to information prices. Within this same category are the “negotiation costs” related to the determination of the contractual terms. Uncertainty of behavior that arises after the transaction due to monitoring and compliance with the agreements established prior to the transaction (Cheung, 1987). These uncertainties will have a greater relevance to make the transaction to the extent of greater specificity in the investment between the parties involved in the transaction (Geyskens *et al.*, 2006).

### Collaborative practices in the supply chain and transaction costs

The collaborative practices present in a supply chain occur when two or more agents of the chain share the responsibility of carrying out the planning, direction, execution and measurement of performance (Barratt and Oliveira, 2001). When these practices are adopted, a reduction in transaction costs is expected (Reardon *et al.*, 2001).

The associated provisioning practice implies the establishment of a bilateral relationship between suppliers and buyers. It is chosen in situations where the quality and reliability of the supply of products are important (Kannan and Tan, 2005) since it offers the opportunity to obtain information at lower cost, as well as, a coordinated response to the requirements of high quality. When this partnership is developed, the costs of coordination and opportunism can be mitigated (Power, 2008). Mechanisms such as commitment and trust in this practice can increase collaboration between the parties and reduce transaction costs in the presence of greater specificity in assets (Dyer and Singh, 1998).

The implementation of the practice of standardization results in a reduction in the costs of selection, monitoring (Reardon *et al.*, 2001) and negotiation (Reardon *et al.*, 2001) for buyers because the products become more homogeneous by defining and standardizing their processes.

Certification is the procedure by which an organization gives a written guarantee that a product, process or service meets the specified requirements (Pons and Sivardière, 2002). Its existence informs external agents that a supplier has documented quality, which reduces the transaction costs related to monitoring (Holleran *et al.*, 1999).

The exchange of information is a typical solution to the problem of uncertainty. The producers present uncertainty in terms of demand, that is, quantity to be delivered, product quality, market preferences, delivery programs, etc. (Noordewier *et al.*, 1990). On the other hand, the buyers present uncertainty in terms of the offer and quality of the product that can be supplied by the producer. One way to reduce such uncertainty is through the collection and processing of information from both the production area and the market side (Hobbs and Young, 2000). Finally, the exchange of more and better information is also a solution to the problem of adaptation or coordination. Having this information can reduce costs related to excess or lack of product. (Noordewier *et al.*, 1990; Grover and Malhotra, 2003).

For the preparation of this case study the information was obtained from two sources: interviews and document review. The interviews were conducted in the months of September 2015, April and May 2016, 10 producers from the five cooperatives that make up the INCAFESAM integrator were interviewed and in addition, another 07 interviews were made, which included the representatives of each of the cooperatives; the manager of the coffee process that goes to INCAFESAM and the manager of the international mission of Malongo in Mexico. The questions that were included in the interviews were based on previous studies on transaction costs and supply chain management (Noordewier *et al.*, 1990; Buvik y John, 2000; Arana *et al.*, 2013). The documents that were used were obtained from various sources, such as publications from government institutions and previous research related to the coffee sector in Mexico.

Next, it shows how collaborative practices have allowed both a reduction in transaction costs and coordination.

The reliable supply has been guaranteed through the associated provisioning. The joint collaboration between producers, cooperatives, INCAFESAM and Malongo have allowed a reliable product supply in quantity, quality and less time. Repeated interaction facilitates the exchange of information, which reduces the uncertainty regarding market requirements (Noordewier *et al.*, 1990). Additionally, greater interaction allows for greater trust between the parties (Poppo and Zenger, 2002), which results in lower monitoring costs related to opportunism (Gulati, 1995). Lijia and Xuexi (2014) in a study conducted in the apple sector in China reports that trust is an important element in the financing relationships between buyers and producers.

The commitment has also been present between Malongo and the cooperatives. Malongo assumes part of the costs of production of coffee and transport, since it is responsible for the supply of some inputs required for production and financing of technical advice to producers in the

management of the crop. Luna and Wilson (2015) in an exploratory analysis of the coffee chain in Chiapas find that the commitment is relevant to explain the relationship between cooperatives and buyers.

Coffee quality is mainly related to organoleptic aspects which depend on a series of factors including the cultivated variety (Sualeh *et al.*, 2014). The associated supply has allowed to guarantee the quality of the product through the renewal of the coffee plantations of the producers (introduction of plants of the Geisha variety) with the financial support of Malongo.

The standardization of the product has also helped to improve the quality of the product. This starts from the renewal of the coffee plantations, and continues with the cultivation, harvest and processing practices. In the harvest, fruit with the optimum degree of maturity is selected. During processing, exact procedures are followed in each operation according to the type of product that you want to obtain. As a result, a product with a homogeneous quality level is obtained, which reduces monitoring costs. Similar results are reported by Lijia and Xuexi (2014) with respect to standardizing processes within the cooperatives of apple producers.

The practical exchange of information has allowed for greater coordination among the participants in the chain. The information flows from Malongo to the producers and vice versa. Malongo shares with the other participants of the chain, quantity and quality required, trends in consumption, forecasts in the demand for coffee in the long term, and information related to the purchasing schedule to be followed throughout the cycle. This information is transmitted to the producers through the integrator and the representatives of the cooperatives.

The integrator as a counterpart provides Malongo with detailed information on the quantity and characteristics of the coffee that will be available in each cycle and the possible problems that may affect production. The exchange of information has allowed producers, cooperatives and the integrator to access information related to market requirements, which has allowed the alignment between supply and demand. Noordewier *et al.* (1990) argues that the exchange of information allows to reduce the uncertainty of the buyer's requirements, which allows a correct alignment between supply and demand.

The exchange of information has also allowed producers to plan their deliveries of coffee to the cooperative, the integrator to anticipate their storage needs and Malongo anticipate possible problems in the supply of coffee so the adaptation costs are reduced.

Finally, most of the producers have the certifications of fair trade and organic. The fair-trade certification guarantees that coffee has been produced following the ethical values of justice, equity, solidarity and opposition to the dominant relationships within the conventional market (Renard, 1999). The organic certification guarantees in writing that the coffee was produced under norms that promote the care of the ecosystems through the use of shade trees and the restriction in the use of chemical pesticides (Weber, 2011). Certimex is the body in charge of inspecting and giving credibility that the rules of each certification scheme are met. In addition,

the company Malongo as a coffee marketer has certified its processes and way of doing business with producers through the FLO CERT companies in fair trade, and by AGRICERT in organic certifications recognized by the target market which facilitates market access (Holleran *et al.*, 1999).

## Conclusions

In the present study, the collaborative practices associated supply, standardization and certification have contributed to the reduction of transaction costs, as the collaborative practice of information exchange has allowed greater coordination in the supply chain.

The associated provisioning has resulted in a reliable supply of the product. The above has been achieved through the commitment of the buyer, and trust between the parties. As a result, the coordination and opportunism costs associated with compliance in the supply of the product in terms of quality, quantity and time are reduced.

The practices of associated supply and standardization have respectively generated a better quality and homogeneity of the product. While the associated supply through trust and commitment has allowed for greater collaboration between producers and the Malongo buyer, standardization has reduced the costs of monitoring and negotiation,

The certification of the product has allowed the credibility with respect to the quality of the product before the processors and consumers. Thus, while processors are assured that certain regulations have been applied in production, which reduces their monitoring costs, consumers have information related to production conditions, which reduces the costs of searching for information.

The exchange of information has helped participants reduce the costs of searching for information, facilitate planning and allow a correct alignment between supply and demand.

Finally, this research has limitations in that it does not investigate the effect of cooperatives in reducing transaction costs related to bargaining power and compliance with payment conditions.

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