

A reference for purchasing and the development of trust in the coffee supply chain

*José Márcio Carvalho – jmcarvalho@unb.br
Universidade de Brasília
Departamento de Administração - FACE
Prédio da FACE – Campus Dary Ribeiro
Brasília, DF – Brazil*

*Ely Laureano Paiva – ely.paiva@fgv.br
Fundação Getúlio Vargas
Escola de Administração de Empresas de São Paulo
Av. 09 de Julho, 2029, Bela Vista
São Paulo, SP – Brazil*

*José Marcos Mendonça – jose.mendonca@muz.ifsuldeminas.edu.br
Instituto Federal do Sul de Minas – Campus Muzambinho
Laboratório de Classificação e Industrialização do Café
Muzambinho, MG – Brazil*

Abstract

A new reference for purchasing, capable of extending the communication precision, creates a favorable environment for trust development between traders. Secondary data and interviews indicate that in Brazil-USA coffee trade, the traditional COB classification system is partially replaced by the more precise system of the Specialty Coffee Association of America.

Keywords: Trust, Communication precision, Purchasing

Introduction

The traditional purchasing methods are based on a large scale supply base, have a lower flexibility to deal with suppliers, make use of the low price bidding system, and adopt a short-term perspective to deal with the supplying partners. Such a system is less apt to evolve or to build long-term advantages that can be shared by both sides of the transaction (De Toni, Nassimbeni, 2000; Yeung, 2008).

The importance of trust between buyers and sellers was studied by a large variety authors. It is already accepted that for modern Supply Chain Management (SCM), considerable transaction costs can be saved when suppliers do all the necessary investments to modernize, adapt and scale their production capacity in order to supply a reliable client. If trust was not present, such cooperative behavior would not evolve or would take longer to become a reality. On the other hand, buyers would find it difficult to focus on their core activities if they had to spend higher levels of administrative energy to search for a desirable component part or for the necessary raw materials (Modi and Mabert, 2007; Yeung, 2008).

The most advanced purchasing practices are centered around a sustainable buyer-supplier relationship which make it possible to exchange information about product specifications, process improvements and market opportunities. In most of these cases, exchanged goods or services are possible to standardize so it will not be so costly to reach price agreement. Once the price is established there will be no need to change it so frequently, thus resulting in saved transaction costs.

Taking this into account, a question should be asked. Is it possible to find the same advanced and cooperative buyer-supplier relations when the exchanged product cannot be standardized? Or, Is it possible to find cooperative SCM relations for a product that can have varying quality attributes? The trade of coffee offers a very interesting opportunity to investigate such questions.

The price of coffee in a transaction is affected by the international prices of the product, apart from that the same price is even more affected by the intrinsic attributes of the coffee beans traded in other words, a higher quality coffee will have higher prices and a lower quality coffee will have lower prices. This situation generates an unfavorable environment for managed and long-term buyer-seller relations since both parties will always need to reach agreement regarding prices. Reaching this agreement will take energy from both sides.

A more recent structural change in the coffee market made it possible to reduce all the arguing regarding price settling and also to establish more rational relations between buyers and sellers of coffee. It is important to try to understand the main variables that can affect such relations.

The present paper intends to clarify this issue. The second part of the article covers the theoretical discussions regarding professional knowledge, communication precision, informational justice and trust while also taking into account particularities of the coffee trade that are relevant to this research. The third part discloses the employed research methods, and the fourth part presents the results. It is in the sixth part that the main conclusions are presented. In the last section, we clarify on the main limitations of this research. The article finishes with suggestions for future research.

Literature Review

Since there are several ways to build trust, an abstract construct, a variety of approaches can be adopted for better understanding. In this study, the relations proposed by Zhang, Viswanathan and Henke Jr. (2011) were applied as they indicate that professional knowledge, ability to reach compromise and strategic communication are of major importance in the process of building trust between buyers and sellers in a supply chain.

Professional Knowledge

Grant (1996) recognized early that an organization learns from each other by collaborating and especially by sharing tactics, critical information and knowledge. Anderson and Narus (1990), analyzing the same issue, recognized that the exchange of information on operational matters tends to build cooperation and trust. Using the terminology of transaction cost economics, it is possible to say that the interorganizational exchange of information may lead to more transparency, and as a consequence, the information asymmetry will decrease (Heide and Miner, 1992; Dyer, 1997; Pauraj, Lado and Chen, 2008). This can be a crucial resource for price settlement.

Suppliers will feel more confident in their buyers when they perceive that the counterpart is knowledgeable about the product being transacted. It means that both sides share a common base of information and have similar perceptions (Schroeder, Linderman, Liedtke and Choo, 2008). More recently, Zhang, Viswanathan and Henke Jr. (2011) reach the

conclusion that “purchasing agents’ professional knowledge enhances suppliers’ trust in the purchasing agents”. From this we can infer that if the buying firm wants to gain the confidence of their suppliers, they must guarantee that, at the purchasing stage of a negotiation, there will be a professional capable of an open dialogue with the supplier and that he will have the necessary professional knowledge to do it (Germain, Droge and Christensen, 2000; Hult, Ketchen, Cavusgil, and Calantone, 2006).

Strategic Communication

Early discussions about the importance of interorganizational communications were proposed by Reinsch (2001) and also by Fulk and Boyd (1991). They recognized that an organization will overcome its isolation by using the resources of professional communication. Claycomb and Frankwick (2004) acknowledged the importance of communication as a tool capable of reducing conflicts between buyers and sellers. Prahinski and Benton (2004) recognized strategic communication as a concept that can be developed to improve the performance of suppliers.

More recently, Pauraj, Lado and Chen (2008) stated that “interorganizational communication can be viewed as a relational competency that yields strategic advantage for the collaborating firms”. They also concluded that communication can enhance the performance of suppliers and buyers. Both sides can be more precise when exchanging information and by doing so they can better perceive the nuances of their interactions.

Zhang, Viswanathan and Henke Jr. (2011) analyzed both electronics and food industries and concluded that strategic communication has a positive and considerable effect on a supplier’s trust in a buying firm and that this constructed trust can be the base of more sustainable relations. This conclusion confirmed the earlier findings of Perrone, Zaheer, and McEvily (2003), who said that purchasing agents can use strategic communication to provide strategic directions and to create a trustworthy image for the buying firms.

Ability to reach compromise

The buyers’ attitude to solve conflicts and to be proactive in order to anticipate and ameliorate potential conflicts with suppliers is very much connected to the ability to reach compromise. Perrone, Zaheer, and McEvily (2003) recognized the importance of this strategy for the organizations. Friedman and Podolny (1992) highlighted that buyers can act in favor of the suppliers by making sure that decisions taken by colleagues will not damage a long-term, strategic relationship. Again, this attitude can be called ability to reach compromise.

Zhang, Viswanathan and Henke Jr. (2011) concluded that “by balancing the interests of the supplier with the interests of their firm, purchasing agents can effectively mediate between the buying and supplier firms, reducing antagonism and adversarial feelings—particularly on the part of the supplier. The purchasing agent’s ability to compromise in mediation situations deals with engaging an external organization, i.e., the supplier, in such a way as to build the perception that the purchasing agent cares about the needs of the supplier and thus can be trusted.” The ability to reach compromise can be particularly important when buyers and sellers are discussing price issues.

Trust and Price

Mari Sako (1992) analysed price, quality and trust as elements of inter-firm relations in Britain and Japan. The particular sector examined by her was the electronics industry, she concluded that in this highly dynamic and competitive sector, quality management is an inseparable part of the trust construction process. She mentioned in particular the issue of quality inspection. Sako (1992) argues that conjoint quality management programs are capable of generating savings on transaction cost for both suppliers and users of electronics

components. She also mentioned that the just-in-time (JIT) system is only possible when the transacted goods embody an acceptable level of quality (Chu and Lee, 2006; Dyer and Chu, 2000).

The question is what is the acceptable level of quality? In the electronic industry it can be easier to establish the exact specifications. In most cases this task is done by the buyer, or in a more open approach, buyer and supplier will do it together. Once the specifications are established, both parties will discuss the price that will be the reference for the transactions. The total number of the goods to be traded will be of great influence. The price settlement can be a difficult task, but when is done both sides can focus their attention on the improvement of performance and how to share mutual gains from efficiencies obtained.

The scenario will be different for a product that cannot be standardised due to being the result of biological or natural processes. In this case, finding a suitable price acceptable for both sides will always be a recurring need. The constant adversarial position regarding price acts against any attempt to develop mutual trust or to obtain the efficiency gains associated to this strategy. From this reasoning it is possible to formulate the research question of this study.

RQ: Is it possible that a more precise product evaluation system can be employed to bring advantages for both suppliers and buyers?

We can try to clarify on these research question by analysing the trade of coffee. It is important first to understand the main specificities of the coffee trade.

Research Method

It is important to consider first the specificities of the coffee trade. As any grain, the majority of coffee is traded as a commodity. In other words, the product is standardized in lots according to international specifications. As a commodity, the price will be determined by the levels of supply and demand in the different markets.

There are, however, some consumers that do not want to drink commodity coffee, they prefer to have a higher quality coffee and are willing to pay more for it. These consumers are the base of the specialty coffee market.

USA and Brazil have a very long tradition in the coffee trade, the U.S. being the main importer, and Brazil the main exporter. Still today, Coffee is a very important product for the trade between the two countries, since it is the second most imported product by US from Brazil. In 2011, it was imported 2.176.948 tons of coffee, a merchandize that reached the value of US\$ 1.496.320 (MAPA, 2013).

Being a good/commodity that is not homogeneous, both low and high quality coffee is traded (some of it being specialty coffee). To find the price of the product between traders (high or low quality), a grading and evaluation system was developed. In 2003, the Brazilian Ministry of Agriculture updated a norm based on trade practices and methodologies with the goal of better regulating the sector. It is called Brazilian Official Classification (Classificação Oficial Brasileira), better known by its Portuguese acronym COB (Rufino, and Arêdes, 2009). This norm became the main reference for the coffee trade between Brazil and US. Traders from both sides of the market would use this norm to grade their coffee, to discuss coffee quality and, as a consequence to reach an acceptable price for the transaction (MAPA, 2003).

On the consumption side, coffee traders in the US founded the Specialty Coffee Association of America (SCAA) in 1982. Its original purpose was to discuss coffee issues and to set quality standards for the industry. At this time, the American costumer was already willing to drink higher quality coffee. The first edition of the “Coffee Cuppers Handbook”

was published in 1985, and since then SCAA has managed to publish a long list of documents (some of them protocols and standards) that have become new references for the coffee trade between Brazil and the US. Among all these documents, it is important to draw attention to the protocol for ‘Cupping Specialty Coffee’ and for “Grading Green Coffee” protocol (SCAA, 2009a; SCAA 2009b).

Since the publication of the different standards and protocols by SCAA, Brazilian exporters and American importers of specialty coffee have begun to make use of the new norms. It is important to try to understand the reasons for this change.

It is important now, to consider the research approach and methods that were employed. Any fact can pass unnoticeable, unless it is perceived as relevant and then examined. A way to do this is to examine currently relevant facts while highlighting their different conditions at different times. If some change occurred at different times, it then becomes possible to look for causal mechanisms and consequential explanations. Sayer (2000), Miller and Tsang (2011) and also Paiva and Brito (2013) recognized the importance of causal mechanisms as the base of explanations and possibly theories.

Miller and Tsang (2011) proposed a four-step critical realist approach to theory testing, these steps are:

- Step 1: Identify the hypothesized mechanisms;
- Step 2: Test for the presence of the mechanisms in the empirical setting;
- Step 3: Test isolated causal relations;
- Step 4: Test the theoretical system.

In this study the aim is to reach only steps 1 and 2. The hypothesized mechanisms were already disclosed. To test for the presence of mechanisms, the supply chain of coffee was chosen, or to be more specific, the supply relations present in the US coffee imports from Brazil.

As the main method, the content analysis of specific documents was used (Bardin, 1970). The content analysis of the document followed this sequence:

- a) Exploration of the norms used by traders for coffee grading – this search led to three main documents, the “Brazilian Official Classification” (COB), the “Cupping Specialty Coffee” protocol and the “Grading Green Coffee” protocol, both from SCAA. Apart from these documents, the following were also analyzed: SCAA standards for cupping spoons, cupping tables, cupping vessel, cupping water, cupping water temperature, grid for cupping, roast-for-cupping, surface for grading. SCAA standards for green coffee: allowable defects for specialty coffee, green grading sample size, lighting for green grading, surface for grading;
- b) Preparation of the material for the analysis – at this stage the COB norm was employed as the initial reference since it is the main norm for coffee grading in Brazil. The norm was then divided into its 16 main constituent parts. For each of these parts it was found the correspondent parts at the SCAA protocols and standards.
- c) Each element of the COB norm was then compared with the correspondent elements at the SCAA standards and protocols. The aim of this comparison was to verify the level of precision of each element of each norm. To better take this decision, a certified coffee grader was invited to give advice.
- d) It was then possible to compare the level of accuracy of both classification systems.

After the content analysis, three coffee graders were interviewed about the result. They were asked to verify if the level of accuracy of each set of norms is related to the three variables: level of professional knowledge used to transact products, strategic

communications used by both sides in order to transact the product, and also ability to compromise.

Data Analysis and Results

It is becoming more evident that Brazilian coffee exporters and American coffee importers are using the SCAA standards and protocols more and more to grade and to negotiate a price for the traded coffee. Producers want to differentiate their coffee and by doing so they expect to receive better prices. There are several ways to do this. Muradian and Pelupessy (2005) described voluntary regulatory systems such as Fair Trade, Organic, Shade grown, Utz Kapeh and 4C that are employed by coffee growers to differentiate. Nunes et al (2013) also mentioned “certification by origin” is a scheme that relates a regional geographic region to a group of attributes. It is the specialty coffee market, however, that is experiencing the most expressive growth.

For the specialty coffee market, the sensorial attributes of the coffee are the more relevant characteristics. It is necessary, therefore, that a system be accurate enough in order to adequately perceive the real attributes of a coffee. The documents’ content analysis pointed out the main differences of the COB system and SCAA system.

The COB classification system is divided into 16 component elements: Objective of the norm; Definition of coffee grain; Main definitions for classification purposes; Categories for classification purpose; Humidity level for the grains; Dross components; Unacceptable attributes; Characteristics for disqualification; Packaging specifications; Labeling; Sampling routines; Classification routine; Certificate of classification; Definitions of fraud; General considerations; and Official forms.

Each of the items mentioned above were compared to the corresponding elements in the different documents of the SCAA standards and protocols. It is important to mention that the COB is consolidated in one single document. The SCAA system of classification is guided by 18 main documents and forms.

Three elements of the COB have no direct correspondence at the SCAA. They are Main definitions for classification purposes, packaging specifications, definitions of fraud. In these three aspects the COB is more complete than SCAA.

For all the remaining elements of the COB, a correspondence it was found in one or more documents of the SCAA system. Two elements of the COB system were found to be more precise when compared to the equivalent elements in the SCAA system. These were: Unacceptable attributes; and Routines for sampling.

The remaining 11 elements of the COB system were found to be less precise when compared with the SCAA system. According to content analysis, the more precise elements of SCAA system are: Objective of the norm; Definition of coffee grain; Categories for classification purpose; Humidity level for the grains; Dross components; Characteristics for disqualification; Labeling; Classification routine; Certificate of classification; General considerations; and Official forms.

The interviews with specialists of coffee grading indicated that a more precise coffee classification system would help to improve the strategic communication between suppliers and buyers of specialty coffee as the attributes of the transacted coffee could be better disclosed. Both sides would then have the resources to specify where the possible quality problem could be and to speculate about the causes of the identified problem.

The interviewed specialists confirmed also that a certified SCAA system professional (also known as a Q-grader) would need to have better skills to follow the sensory analysis. Since the sensory attributes of the coffee are the most influential for the specialty coffee market, this professional knowledge can be regarded as fundamental for a professional coffee purchaser.

The ability to reach compromise is also affected by a more precise product classification system. The interviews with the coffee grading specialists indicated that the SCAA evaluation system makes it possible to know precisely the attributes of the traded coffee. This information will make it easier for the professional buyer to direct the coffee to the market that is more akin to the disclosed attributes. The producer of coffee that can consistently deliver the desirable attributes will be perceived as a valuable asset that cannot be lost to another buyer. Thus, the ability to reach a compromise can be regarded as valuable.

Conclusions

This study is a first organized attempt to disclose and understand the mechanisms behind the exchange process of a product that cannot be standardized and that will always require a price negotiation. In situations like this, where market type transactions would be the alternative, it is surprising that some sellers and buyers of coffee are able to develop long-term relationships through the use of SCM logic.

The results of this research indicate that a more precise product evaluation system helps to decrease transaction costs. It can be interesting to investigate in depth these relations using the logic of transaction costs economics.

When the Specialty Coffee Association of America (SCAA) published its protocols to classify coffee, it helped to bring more rationality to the coffee trade. Both sides of the transactions, suppliers and buyers, can now adopt standardized processes to objectively evaluate the transacted products. With a more precise evaluation it becomes easier to build trust through strategic communication, real employment of professional knowledge about the product and the ability to reach compromise in case that it is necessary.

It is important to observe that the SCAA protocols were conceived to be scientific, precise and replicable. By disclosing more precisely the real attributes of the transacted product it becomes easier to reach a price agreement. Since a growing number of producers and organizational buyers of specialty coffee prefer to use the SCAA system instead of the COB system, there is an indication that a more precise product evaluation system would be an improvement by both sides.

Limitations and Future Research

The main limitations of this research are connected to the low number of specialists interviewed. To have a more thorough disclosure of mechanisms described here, it would be fundamental to interview both producers and organizational buyers who make use of the SCAA system. The next step for this line of research can be the employment of quantitative methods to test isolated causal relations and to test the proposed theoretical mechanisms in an open system.

References

- Anderson, J.C., Narus, J., 1990. A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing* 54 (1), 42–58.
- Bardin, L. 1977. *Análise de conteúdo*. Edições 70: Lisbon.
- Bradach, J.L., Eccles, R.G., 1989. Price, authority, and trust: from ideal types to plural forms. *Annual Review of Sociology* 15, 97–118.
- Anderson, J.C., Narus, J., 1990. A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing* 54 (1), 42–58.
- Chu, W.H. J. and Lee, C.C. (2006). “Strategic information sharing in a supply chain”, *European Journal of Operational Research*, Vol. 174 No. 3, pp. 1567-1579.

- Claycomb, C., Frankwick, G.I., 2004. A contingency perspective of communication, conflict resolution and buyer search effort in buyer–supplier relationships. *Journal of Supply Chain Management* 40 (1), 18–34.
- De Toni, A., Nassimbeni, G., 2000. Just-in-time purchasing: an empirical study of operational practices, supplier development and performance. *Omega: The International Journal of Management Science* 28 (6), 631–651.
- Dyer, J.H., 1997. Effective interfirm collaboration: how transactors minimize transaction costs and maximize transaction value. *Strategic Management Journal* 18 (7), 535–556.
- Dyer, J.H. and Chu, W. (2000). “The determinants of trust in supplier-automaker relationships in the US, Japan and Korea”, *Journal of International Business Studies*, Vol. 31 No. 2, pp. 259-285.
- Friedman, R.A., Podolny, J., (1992). Differentiation of boundary spanning roles: labor negotiations and implications for role conflict. *Administrative Science Quarterly* 37 (1), 28–48.
- Fulk, J., Boyd, B., 1991. Emerging theories of communication in organizations. *Journal of Management* 17, 407–446.
- Germain, R., Droge, C. & Christensen, W., 2001. The mediating role of operations knowledge in the relationship of context with performance. *Journal of Operations Management* 19 (4), 453-469
- Grant, R., 1996. Prospering in dynamically-competitive environments: organizational capability as knowledge integration. *Organization Science* 7, 375–387.
- Heide, J.B., Miner, A., 1992. The shadow of the future: effects of anticipated interaction and frequency of contact on buyer–seller cooperation. *Academy of Management Journal* 35 (2), 265–291.
- Hult, G.T., Ketchen Jr., D.J., Cavusgil, S.T. & Calantone, R.J., 2006. Knowledge as strategic resource in supply chain. *Journal of Operations Management*, MAPA. 2012. *Intercâmbio comercial do agronegócio 2012*. Ministério da Agricultura, Pecuária e Abastecimento. Brasília.
- Modi, S. B., Mabert, V. A. 2007. Supplier development: Improving supplier performance through knowledge transfer. *Omega: Journal of Operations Management* 25 () 42–64.
- Miller, K. D; Tsang, E. W. K. 2011 Testing management theories: critical realist philosophy and research methods. *Strategic Management Journal*, v. 32, n. 2, p. 139-158.
- Muradian, R. and Pelupessy, W. (2005) Governing the Coffee Chain: The Role of Voluntary Regulatory Systems. *World Development* v. 33, n. 12, p. 2029–2044.
- Nunes, R.; Silva, L. dos; Saes, M. S.M.; Sousa, R.N.R.L.; Souza, R. C. (2013) Incentives to differentiation strategies for Brazilian coffee producers. *Revista de Economia e Administração*, v.12, n.2, p. 165-179.
- Paiva, E. L. and Brito, A. L. (2013) Produção científica brasileira em gestão de operações no período 2000-2010. *ERA*, v. 53, n. 1, p. 056-066
- Paulraj, A., Lado, A. A. and Chen, I. J. (2008) Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer–supplier relationships. *Journal of Operations Management* 26 () 45–64
- Perrone, V., Zaheer, A., McEvily, B. (2003). Free to be trusted? Organizational constraints on trust in boundary spanners. *Organization Science* 14 (4), 422–439.
- Prahinski, C., Benton, W.C., 2004. Supplier evaluations: communication strategies to improve supplier performance. *Journal of Operations Management* 22 (1), 39–62.
- Reinsch, N.L., 2001. Business performance: communication is a compound, not a mixture. *Vital Speeches of the Day* 67 (6), 172–174.
- Ring, P.S., Van De Ven, A.H., 1992. Structuring cooperative relationships between organizations. *Strategic Management Journal* 13 (7), 483–498.

- RUFINO, J. L. dos S. e ARÊDES, A. F. de. 2009. *Mercados interno e externo do café brasileiro*. Brasília: EMBRAPA.
- Sako, M., Helper, S., 1998. Determinants of trust in supplier relations: evidence from the automotive industry in Japan and the United States. *Journal of Economic Behavior and Organization* 34 (3), 387–417.
- Sayer A. 2000. *Realism and Social Science*. Sage: London, U.K.
- Schroeder, R.G., Linderman, K.L., Liedtke, C., Choo, A.S., 2008. Six sigma: definition and underlying theory. *Journal of Operations Management* 26 (4), 536–554.
- Yeung, A. C.L. 2008. Strategic supply management, quality initiatives, and organizational performance. *Journal of Operations Management*. 26 (2008) 490–502.
- Zhang, C., Viswanathan, I., and Henke Jr., J.W. (2011) The boundary spanning capabilities of purchasing agents in buyer–supplier trust development. *Journal of Operations Management* 29 (1) 318–328.