

# **The Production outsourcing in emerging countries: the analysis of the opportunities under the theory of costs economy**

Leonardo Caixeta de Castro Maia  
Universidade Federal de Uberlândia - UFU - Brasil  
Email of the corresponding author: leonardocaixeta@fagen.ufu.br

Edgar Rodrigues Fonseca  
Universidade Federal de Uberlândia - UFU - Brasil  
edgarrf@msn.com

Michelle de Castro Carrijo  
Universidade Federal de Uberlândia - UFU - Brasil  
michellectcarrijo@fagen.ufu.br

## **Abstract**

Based on the transaction costs economics, the production outsourcing was evaluated criteria to the assumptions of good governance. In this case study, we identified divergences from the theoretical model. Features of the products influence the decision. Recommendations were made to establish mechanisms to reduce opportunism generated in transactions.

**Keywords:** transaction costs economics, outsourcing, emerging countries, manufacturing.

## **Main subject text**

This work shows the results of a case study on the outsourcing of the production process of tomato products and olive oils. The detailed analysis of the production process addresses interesting aspects about the processes of verticalization, and may contribute to future studies on the topic, since the strategies for cost reduction and resource analysis, which are distinctive skills, or critical success factors for a company, can easily be applied to products other than olive oil and tomato.

From the perspective of Canez *et al.* (2000), the make or buy decisions are evaluated by the strategy committee of the company aimed at improving costs of developing capabilities in the long run. Outsourcing production means, in most cases, a reduction in costs of the goods sold to the final consumer, which creates competitiveness in business (Bardhan *et al.*, 2007).

According to Bardhan *et al.* (2007), one of the main reasons for production outsourcing lies in the search for lower costs associated with scale economies and improved manufacturing efficiency provided by third parties. These authors clarify that contracting companies often present limitations and do not have access to specific skills and productive resources to develop an effective productive performance.

Because of such limitations, the option to outsourcing the manufacturing process means the transfer of risks associated with the volatility of the market and potential technology obsolescence. Besides that, outsourcing of the production processes allows for greater flexibility in the development of resources in light of rapid technological changes and the complexity growth in product development.

From the knowledge governance categories it is possible to analyze the factors that interact in the transaction, understand them and seek appropriate ways to reduce their costs with a focus on productive efficiency and profit maximization in the organization (Mcivor, 1997). The make or buy strategies are closely linked with business growth objectives and these can be found both within the senior management as well as the tactical and operational level.

According to Porter (2004), the outsourcing of production can be set under various dimensions and complexities, encompassing elements such as speed and productive efficiency, lead-time, risks related to quality and delivery.

On the other hand, production fragmentation can lead to dependence on the sales force to perform routine tasks, loss of management control and institutional knowledge, resulting in higher transaction costs (Bardhan *et al.*, 2007).

The observance of the high transaction cost suggests to the company that they should adopt vertical integration, i.e. horizontalizing production. The opposite analysis is also valid, the smaller the transaction cost, the more companies tend to choose to purchase the item on the market (Araújo Júnior, 2013).

The importance of the theme can be found in why the company decided to outsource olive oil and tomato products at a time considered positive in relation to demand for such items in the country. At the same time check, supported by theory, if such an attitude creates superior performance in the competitive market. The present study also analyzes the situation of a pioneering soybean processing company in the Brazilian cerrado active since 1978. The company jumped from 90th position in 2010, to 55th in 2013 in the ranking of the best and biggest agribusiness companies in Brazil (Exame, 2013). Additionally, The relevance of the theme can be evaluated by the outsourcing industry turnover, which in 2013 moved 82.3 billion dollars (Statista, 2014).

To diagnose the situation of the company, were prepared questions aimed at understanding the assets specificity, frequency and what criteria was adopted for the selection of suppliers and what governance was adopted to establish interaction with them (Williamson, 1995; McIvor, 2009). In addition, an approach was made to understand the policy of deadlines for delivery of the products, demand fulfillment, service quality and what the main benefits that impacted the choice for outsourcing were.

Thus, the study aims to understand the outsourcing of the production process of olive oil and tomato products (tomato sauce and paste), at a point considered positive in the country compared to its consumption by checking the main factors that prompted the company to pass them to other organizations from the theoretical framework of Theory of transaction costs.

For the specific objectives, the following clarifications were outlined: present the analysis criteria concerning the theory of transaction costs and recognize its limitations; expose what outsourcing is, the benefits and risks that managers face performing these activities outside organizational boundaries; identify mechanisms for planning and control of the process within the context of outsourcing of the production of a *commodity*;

The study was conducted using a qualitative approach followed by a bibliographic search. To search for content and articles on the topic, the following sources for data collection were

utilized: Google Scholar, Brazilian Digital Library of theses and dissertations (BDTD), Lume Digital Repository, Brazilian Business Management Magazines, Specialized Magazine *TomatoNews*, World Processing Tomato Council, the Foreign Trade Studies Center Foundation (FUNCEX), National and International magazines specialised in the food and trade sector, institutional sites of major agribusiness companies, internal reports and spreadsheets of the contracting company.

The research was guided by the main key terms: Theory of Transaction Costs Economics, Outsourcing, Strategic Alliances, emerging countries, manufacturing and Tomato Market and Olive Oil Market.

## Study case

Analyzing the strategy of outsourcing the production process of olive oil and tomato products, we identified that it was formulated and implemented by the Marketing sector. Initially, a market research was carried out to obtain the relation of which product or products had attractive and profitable niches. After this survey the best ranking companies that could be incorporated into the business were chosen. Then, this information was passed on to sales representatives.

Thus, the potential market for olive oil and tomato products was identified and the next step was determining the *mix* of products to be offered. The sales program and operation was set, which included the sales targets by region and also by salesperson. It is explained that each salesperson is responsible for a specific region and a set of cities, according to the potential consumption index (PCI), which is provided by legitimate organs such as the Brazilian Institute of geography and statistics (IBGE), in each region.

With the sales forecast ready, a purchase batch is dimensioned considering the size of the minimum production batches of the supplier and the *lead time*. That is, the time is calculated between the moment of material input until its output from inventory and the time required for the issuance of the order until the effective delivery of the products purchased. In short, one acknowledges the logistical processes involved in supply chain and inventory level policy. It was noted that in the case of olive oil, since it is imported, it requires, on average, 90 days for the completion of the order cycle while for tomato, forty days. The need of high integration between the contractor and its suppliers to maintain their level of service is evidenced.

As the market for olive oil and tomato has a limited number of qualified suppliers, or that meet the demands of the company, the contractor has little flexibility regarding the dynamism of the logistics of products and the negotiation of pricing and terms of purchase, i.e. the organization establishes a relationship of great dependence on the partner company, which raises certain uncertainties and difficulties, making the process rigid and bureaucratic.

These suppliers are approved based on product quality, dynamism and transparency in procedures. To become partners in the production chain, the contractor requires the following documents from their suppliers: the sanitary permit, the operating permit, the Fire Department license, the environmental license, the establishment inspection document, the chromatographic reports, the physical-chemical reports and volumetric control.

With the steps mentioned above fulfilled, the Marketing sector performs the purchase order and is responsible for the follow-up of the purchase order, inventory levels, order control coordination, customer service for medium and large retailers, as well as the evaluation of

planned versus achieved by region, the new purchase orders and if necessary, the recalculation of the time interval between orders.

## Empirical study

*Table 1. Reasons for the choice of outsourcing the production process*

<b>Empirical study</b>	<b>Transaction costs economics</b>
Access new consumer markets	Strengthen the market and reach new ones, sharing costs in order to promote customer perceived value (Heimeriks & Duysters, 2007)
Enable focus in business	Search for business competitiveness (Bardhan <i>et al.</i> , 2007)
Absence of processing structure (tomato and olive oil)	Search for complementarity by means of strategic alliances (Zawislak, 2002)

Source: Prepared by the authors

*Table 2. Specificity of the asset and transaction frequency*

<b>Empirical study</b>	<b>Transaction costs economics</b>
Production operations are focused on milling and refining soybean oil	The higher the specificity of the asset, the greater the dependence on the supplier (Cox & Lamming, 1997)
The absence of a specialized structure in the processing of tomatoes and olives	The absence of an internal process of production increases the dependence on the external agent (Cox & Lamming, 1997)

Source: Prepared by the authors

*Table 3. Level of obsolescence of the asset*

<b>Empirical study</b>	<b>Transaction costs economics</b>
Tomato and olive oil products have a relatively high level of perishability	The production process of perishable products requires speed and structures that ensure quality control (Williamson, 1995)

Source: Prepared by the authors

*Table 4. Characteristics of marketed products*

<b>Empirical study</b>	<b>Transaction costs economics</b>
Olive oil and tomato products have great seasonality regarding the production process (crop)	The physical specificity refers to the necessity of use of equipment and specialized machinery entailing the seasonal changes (Williamson, 1995)
The products require advanced planting technologies	Vendors can ensure production and quality for the contracting company through specialized technological apparatus (Cox & Lamming, 1997)

Source: Prepared by the authors

*Table 5. Evaluation of strategic alliances*

<b>Empirical study</b>	<b>Transaction costs economics</b>
Formal cooperation governed by contract that delineates the commitments of both parties has terms of criteria for order winning and qualifying, such as: quality, speed and development of	Strategic alliances are important insofar as they allow the exchange of key experiences and information allowing adherence to the overall strategy of the organization (Porter, 2004).

## Method

This article is classified as a descriptive research, adopting the case study method with retrospective or *ex-post facto* features. That is, the data were collected at a certain point in order to describe actions taken in the past (Stuart et al., 2002).

It can also be affirmed that this case study is of the exploratory type because there was an analysis on the process of manufacturing *outsourcing* and of the single type. Additionally, it seeks to respond to key questions proposed by Yin (2001) about the method chosen: "How" and "Why". For this purpose, empirical research was performed to evaluate the contemporary phenomenon of the process of outsourcing the production process. Accordingly, it sought to recognize the order winning criteria as well as an analysis of which suppliers could offer standards requested.

As a mechanism of internal and external validity of the research, it sought multiple evidences for the definition of constructs set by literature (Stuart et al., 2002). To this end, the following actions were undertaken:

As a source of primary data, to conduct the interview, a research protocol was used with questions about the major constructs defined by the literature of Theory of Transaction Costs Economics (TCE) (Mcivor, 2009). In this context, evidence was sought about the potential obsolescence of assets, opportunistic actions arising from suppliers and competitors, asset specificity, frequency of use and the number of potential suppliers, totaling thirty-one questions.

As a secondary source of data, consulting reports were used on the subject of outsourcing, as well as the company's own internal information. In short, these actions seek to expose a reliability in the process so that the study can be replicated in other environments.

## Considerations

Analyzing the structure of outsourcing, it is possible, by means of the results, to find some important elements for the decision to *make or buy*, guided by the TCE. Initially, the company hired a consulting firm to analyze the market and identify trends and most profitable products for the various niches.

After this first investigation of supply and demand, the company did not heed the criteria of specificities of the asset. It is known that the product lines of tomato and olive oil are fairly specific items and, therefore, require a detailed analysis in order to reach an effective criterion of what governance model to be used. From there, the company did not do a wide research of the suppliers that conformed to the criteria of asset specificity and frequency of transactions. The choice criteria were reputation, product quality and delivery, which do not give adequate support to the choice of the way in which the company should organize itself.

Carvalho *et al.* (2014) point out to quality management as a decision making factor when it comes to food. It is possible to perceive that the company did not pay attention to this fact. In addition, according to Bardhan *et al.* (2007), outsourcing was based on current performance, instead of comparing potential improvements to the company. It is empirically observed that the

decision was associated with higher levels of initial performance, but lower levels of performance improvement. It is important to note that internal processes used by the contractor are highly bureaucratic and purchasing processes are centralized in marketing results.

From this scenario, it is necessary to reconfigure the internal processes and shift the purchases control to the supply sector, which will make efficient flow management and the marketing department can direct efforts to the most relevant aspects, such as actions in points of sales and positivization of cities.

Due to high asset specificity, it is of fundamental importance to search for new suppliers, which also offer quality and efficient service. This increase in the number of suppliers will reduce the stock out risk of the company and decrease the dependence on a single agent.

It is important to note that the selection of suppliers must be guided by the understanding of the specificities of the asset and the ability of those to service the contractor in the best possible way. In short, the main *gaps* in the process lie in the centralization of purchases of finished products by the marketing sector and the company's dependence on a single supply source. These two factors impact the organization's costs negatively.

## **Limitations and future studies**

It is worth noting that despite the limitations imposed by the method adopted, the case study, a theoretical contribution is searched to determine the ideal degree of vertical coordination of a particular activity. That is, transaction costs are elements that can contribute to a better selection of suppliers to introduce relevant parameters of evaluation that allow the enhancement and qualifying of the selection, whereas using only the traditional way of choice guided by price, delivery and quality is not enough for such a decision.

In this way, as the specifics of assets and other criteria of the theory are understood, it is possible to establish strategies for the reduction of *lead time*, ensuring constant supply of products without ruptures, leveraging improvements in transaction costs. Additionally, the contractual arrangements can be remodeled and defined according to the ideal governance of the company, to reduce the opportunism between organization relationships and seeking win-win scenarios.

In short, the use of the concept of transaction costs may still identify the *gaps* in internal processes and seek improvements and reconfigurations focused on such costs reductions. Therefore, there is a range of options where the TCE can intervene and help and it's up to the manager of the area to know the tool and scale it to the organization so that it becomes an instrument for sustainable competitive advantage.

## **Acknowledgements**

My acknowledgements to the FAPEMIG for financial resources for participation in congress.

## **References**

Araújo Júnior, J. T. *Fragmentação da Produção e Competitividade Internacional: O Caso Brasileiro*. 2013. Centro de Estudos de Integração e Desenvolvimento (CINDES). Available at: [http://www.funcex.org.br/publicacoes/rbce/material/rbce/115\\_JTA.pdf](http://www.funcex.org.br/publicacoes/rbce/material/rbce/115_JTA.pdf). Accessed date: feb. 11, 2014.

- Bardhan, I.S., Mithas, S., Lin. 2007. Performance impacts of strategy, information technology applications, and business process outsourcing in U.S. manufacturing plants. *Production and Operations Management*, **16**. Available at: <http://terp connect.umd.edu/~smithas/papers/outstrat2007.pdf>. Accessed date: feb. 11, 2014.
- Barney, J. B., 1999. How a firm's capabilities affect boundary decisions. *Sloan Management Review*.
- Canez, L.E., Probert, D., Plattz, K. 2000. Developing a framework for make-or-buy decisions. *International Journal of Operations and Productions Management*. Bradford: **20**.
- Carvalho, J. M.; Thomé, K. M.; Leitão, F. O., 2014. Quality management as a resource of transaction costs reduction: empirical inputs from the international fruit trade. *Revista Administração Mackenzie (RAM)*, **15**(1): 174-199.
- Chase, R. B., Jacobs, E. R., Aquilano, N. J., 2004. *Operations Management for Competitive Advantage*. ed. 10. New York: McGraw Hill.
- Cox, A., Lamming, R., 1997. Managing supply in the firm of the future. *European Journal of Purchasing & Supply Management*, **3**(2).
- EXAME, Revista Exame. 2013. *Melhores & Maiores Empresas do Agronegócio*. São Paulo: Editora Abril.
- Heimeriks, K.H., Duysters, G., 2007. Alliance capability as a mediator between experience and alliance performance: an empirical investigation into the alliance capability development process. *Journal of Management Studies*, **44**.
- McIvor, R.T., Humphreys, P.K., Mcaleer, W.E. 1997. A strategic model for the formulation of an effective make or buy decision. *Management Decision*, **35**(2): 169-178.
- McIvor, R.T., 2009. How the transaction cost and resource-based theories of the firm inform outsourcing evaluation. *Journal of Operations Management*., **27**(1): 45-63.
- Porter, M. E. 2004. *Estratégia Competitiva: Técnicas para análise de indústrias e da concorrência*. ed. 2. Rio de Janeiro: Elsevier.
- Statista, 2014. *Global market size of outsourced services from 2000 to 2013* (in billion U.S. dollars). Available at: <http://www.statista.com/statistics/189788/global-outsourcing-market-size/>. Accessed date: nov. 17, 2014.
- Stuart, I., Mccutcheon, D., Handfield, R., Mclachlin, R., Samson, D. 2002. Effective case research in operations management: a process perspective. *Journal of Operations Management*, **20**(5): 419-433.
- Venkatesan, R. 1992. Strategic sourcing: to make or not to make. *Harvard Business Review*. Boston, **70**(6).
- Williamson, O. E. 1995. *Transaction cost economics and organization theory*. New York: Oxford University,.
- Zawislak, P. *Modelo de gestão para alianças estratégicas em PMEs*. 2002. Grupo de estudos da cadeia automotiva do Rio Grande do Sul. Dissertação (Mestrado em Administração) - Universidade Federal do Rio Grande do Sul. Porto Alegre. Available at: <http://www.lume.ufrgs.br/bitstream/handle/10183/56555/000348588.pdf?sequence=1> >. Accessed date: jan. 22, 2014.
- Yin, R. K. *Estudo de Caso – Planejamento e Método*. ed. 2. São Paulo: Bookman, 2001.