

# QUALITY MANAGEMENT AS A RESOURCE OF TRANSACTION COSTS REDUCTION: EMPIRICAL INPUTS FROM THE INTERNATIONAL FRUIT TRADE

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## ABSTRACT

Fruit is a highly perishable product, susceptible to biological, physical and chemical hazards. All these risks are higher when fruit are transacted in international trade. In this case fruit suppliers and fruit buyers are exposed to elevated transaction costs, since both sides need to deal with questions like product specifications, post-harvest processing and logistics. Quality management can be employed in order to organize all production, processing and logistics operations. Our aim in this paper was to verify if producers, exporters and importers of fruit are making use of quality management concepts in order to reduce risks and transaction costs. As investigation method, semi-structured interviews were conducted in Brazil and the UK. The content of the semi-structured interview questions was chosen based on the literature review of TCE, the international fruit trade and quality management. The questions were carefully chosen to reveal the factors which are determinant for the configuration of transaction arrangements in the fruit trade. The topics investigated were: the technical activities performed by the organisations operating in the fruit commerce; the main types of commercial clients (partners) of the firm; the nature of the market type relations maintained by the firm; the level of quality problems perceived by the firm; and the quality management strategies adopted by the firm. These topics served as the foundation for the elaboration of the main questions and the probe questions. They also gave the direction for possible follow-up questions. The results of the interviews support the idea that quality consciousness is fundamental in the fruit trade. The majority of companies approached in the research were shown not to perceive as a problem the several parameters that affect the quality of the final product. In other words, the results suggest that firms that are incapable of handling quality issues satisfactorily find little place in the fruit trade. Quality management concepts are commonly employed in order to guarantee product specifications and rationality in the operation processes and, by doing so, it contributes to reduce transaction costs between the trading parties.

## KEYWORDS

Transaction Costs Economics. Quality management. British-Brazilian trade. International trade operations. Product specifications.

## 1 INTRODUCTION

When a supplier deals with a client they will need to discuss several issues. For sure two will be considered, the price and the attributes of the goods transacted. This type of discussion can lead to endless arguing with each side defending its own position. This is a very common situation in the business environment. How to overcome this obstacle and to foster arguments that are at the same time more technical, precise and constructive? In other words, how can suppliers and buyers find a common ground more easily? These are no ordinary questions, since many businesses cannot evolve when the transacting parts fail to overcome this initial barrier.

A production and consumption chain is ultimately a group of trading partners that developed the ability to systematically overcome the barriers of negotiation. In this case each organization component of the vertical chain found a niche with a scope of action inside the chain. Jacobides (2008, p. 318) studying the banking sector in the UK using Transaction Costs Economics (TCE), found that

the market is really the set of firms that are willing to co-specialize with other firms at given prices. Whether a market is more economical than in-house production really depends on the incentives, capabilities, and capacities of the firms that comprise the market.

He also states that the scope of action of each organization depends on the competitive struggles between pairs of co-specialized participants. These interactions are affected by how each trading partner is more or less active than the other co-specialized participants.

These interactions do not take place by chance, they tend to occur in a constructed space called by Abell, Felin e Foss (2008) as the “micro-foundations” of the exchange between organizations. The aforementioned authors recognize that the micro-level ultimately replaces the macro-level in the explanation of how routines/capabilities and performance are linked. Routines, which are recognized as a patterned, repetitive interaction in the form of predetermined sequences, will set the tone for the interactions between organizations that trade regularly.

Fernandez-Olmos, Rosowell-Martinez and Espitia-Escuer (2009) pointed out that quality management is a resource that can be used to guide the interactions of the transacting parts in the food sector. These authors, together with Holleran, Bredahl and Zaibet (1999), highlight that, in the food sector, a company that aims to be competitive in both internal and external markets will need to adopt production processes which meet elevated quality standards. Fernandez-Olmos *et al.* (2009) also state that food production systems with higher levels of product quality are more apt for vertical integration since quality management can help to protect relationship specific investments and to mitigate potential conflicts between partners.

This article wants to help to clarify that quality management can be employed as a resource capable of reducing transaction costs. The organizations and the transactions present in the international fruit trade were chosen to help to illuminate this question.

An issue that appears to be of growing importance for the fruit sector is quality. A considerable number of authors recognised the importance of this research theme for the fruit trade; however, only a limited number of articles linking Transaction Cost Economics and quality management have been published in Brazil.

Pinazza and Alimandro (1999) observed that the quality of Brazilian fruit is a serious obstacle to any substantial increase in the volume of exports. They argue that Brazilian fruit growers and traders are capable of identifying and satisfying the needs of the internal market but are less efficient in dealing with the international market. Those authors advocate an intensive use of marketing research in order to identify the specific needs of the different fruit importers. By adopting a more proactive marketing strategy, it would be possible to develop quality standards better suited to the international market.

According to Silva and Tranquilini (1999), a considerable proportion of Brazilian fruit growers are capable of using advanced fruit production technologies, making it possible to produce a great diversity of fruit (temperate, tropical and subtropical) in the Northeast region of Brazil. The majority of these producers however are shown to have difficulties in using concepts of quality to organize their trade activities. Silva and Tranquilini (1999) mentioned that these fruit producers need to invest more resources in order to learn quality management concepts and to make more active use of fruit quality management techniques.

Quality management can be an effective instrument to reduce waste in the fruit trade. Garcia, Marques, Silva and Ferreira (1999) observed that waste is generally high during trade operations with fresh produce in Brazil. This market disorder contributes greatly to the increase of the transaction costs of the whole fruit trade system and consequently has a negative effect on fruit export operations.

Garcia *et al.* (1999) argue that a more intensive use of quality management concepts to guide the trade operations will help to drastically reduce fruit wastage. Additionally, they mention that a business environment more favorable to quality could also contribute to creating among fruit growers and traders an attitude more propitious to the increase of the fruit export activities.

Fruit quality management is an issue that is used by fruit exporters and fruit importers at the same time. In addition, both sides need to agree about the quality management procedures used to handle the fruit traded. This fact offers the chance to characterize and to compare the perceptions of both sides (exporters and importers) regarding fruit quality management. Fornazier and Waquil (2012) studied the apple production and trade in Brazil and found that integrated fruit production can raise the standards of the fruit transacted. They pointed out that the final aim was to raise the quality of apples.

Campos and Lima (2011) analysed the fruit chain in Brazil. Their aim was to characterize the impact of the “Globalgap” (an international certification program) in the commerce of fruit. It was found by them that the certification process was an intensive learning activity for the fruit producers. The organizations that were able to change their operations could obtain gains in the quality of their produce.

The fair trade of fruit was analysed by Vieira, Aguiar and Barcelos (2010), who pointed out that an intensive flow of information between trade partners is vital to guarantee the fruit standards. Meneses and Rodríguez (2009) analysed the consumption of “ecological” fruit. They pointed out that consumers need to know about the way that the fresh produce is carried, an attitude that can be connected to quality management principles.

Quality management is an issue that is important not only for fruit producers and exporters. Fruit importers and retailers also make active use of concepts of quality management. In this article there follows a brief analysis of the importance of quality management for the traders (importers) operating in one of the main markets for the Brazilian fruit: the United Kingdom.

In sustaining such a high level of imports, British importers are showing the capacity to overcome serious logistical barriers. It is important to verify if they are using concepts of quality in their commercial activities (Carvalho, 2003). After analysing the EU legislation on fresh fruit trade, Malins and Woodhead (1996) concluded that the fruit importers tend to persuade their suppliers to adopt an active use of quality management in their operations. They mentioned that there are latent commercial opportunities for those importers capable of making improvements in production and post-harvest processes that are critical for fruit quality.

The commercial transactions organised by British organisational buyers of fresh produce with their suppliers were analysed by White (2000). She concluded that product quality is a prerequisite for the initiation of a relationship with the British fruit traders. Only after acceptable levels of quality management were reached did fresh produce buyers consider the suppliers for the possible development of a further relationship. A similar view is voiced by Wilson (1996). According to her, the trade of fresh produce in the UK is highly influenced by the supermarket chains and these powerful corporations are particularly demanding in terms of quality levels. Wilson (1996, p. 29) mentioned that

[...] there are obvious economies of information in reducing the amount of time in negotiation and monitoring the quality of the products concerned, and this has the effect of providing opportunities for increased control over the product supplied.

Carvalho (2006), analysing the international trade of fresh produce, was able to develop and describe categories to group the transacting parties: 1. Fruit producers; 2. Integrated production-export organizations; 3. Export agents; 4. Export companies; 5. Import companies; 6. Integrated multinationals; 7. Supermarket chains. Each type of organization is responsible for a set of technical activities in the fruit trade. These categories were employed to present the data obtained in the fieldwork of this research.

## **2 THEORETICAL APPROACH: TRANSACTION COSTS ECONOMICS AND QUALITY**

### **2.1 THEORETICAL LINKS**

The association between quality management and transaction cost is direct for the hierarchical type transactions. Coase (1937), Williamson (1975, 1985), North (1990) and Hodgson (1988) recognise that managerial control activities are an indissociable part of the hierarchical transactions. Since quality management is essentially a managerial control activity, the link is established. Based on the previous ideas, it is then possible to affirm that quality management is a resource employed by hierarchical organisations in order to decrease internal transaction costs.

For market type transactions, the connection between quality management and transaction cost is less direct. Some particular types of interorganisational transactions make use of market coordination as an alternative way of governing production and exchange. Quality management is then employed as a market coordination instrument.

Akerlof (1970) was a pioneer in the establishment of the theoretical links between quality and market type transactions. In his historic article “The Market for Lemons: Quality Uncertainty and the Market Mechanism”, he noticed that the uncertainty about the characteristics of a product under negotiation is capable of generating transaction barriers, some of them impossible to overcome. To illustrate his ideas, Akerlof (1970) assessed the market for used cars in the USA. He observed the existence of predominant prices (the market price) for the different categories of used cars. Akerlof (1970) argues that the owners of the cars with better technical specifications than the average cars, would not agree with the “market price” and tend not to offer their cars for negotiation. On the other hand, the owners of cars with second-rate technical conditions (lemons) have an incentive to sell their cars according to the market price. This is a vicious mechanism which tends to drive the prices down until only the worst cars are transacted or until the market collapses.

Akerlof (1970) claims that the transacting parts can develop some institutional alternatives in order to stop the degenerative cycle described above. He maintains that, in most cases, these alternatives are centred on the concepts of quality guarantee and brand name quality. Akerlof (1970) states that numerous institutions arise to counteract the effects of quality uncertainty. One obvious institution is guarantees. Most consumer durables carry guarantees to ensure the buyer of some normal expected quality. A second example of an institution which counteracts the effects of quality uncertainty are brand-name goods. Brand names not only indicate quality but also give the consumer a means of retaliation if quality does not meet expectations since the consumer will then curtail future purchases. Often, too, new products are associated with old brand names. This assures the prospective consumer of the quality of the product.

Stigler (1961) developed the concept of “search cost” as a type of transaction cost. According to him, buyers need to spend time and effort in order to find the highest quality product at the lowest price. Stigler (1961) maintains that buyers will pursue their search until the expected marginal gains from searching equal the marginal costs of continued searching. To avoid search costs the transacting organisations can develop quality assurance mechanisms.

Barzel (1982) observed that measuring and pricing all characteristics of a product can be difficult and costly. Occasionally, these measurement costs can be a significant obstacle to the market transactions. Among other issues, Barzel

(1982) presented quality management as a market and organisational response to the measurement costs problem.

## 2.2 EMPIRICAL LINKS

Quality management can be employed as a resource capable of reducing both internal and external transaction costs. A considerable number of authors have used empirical data to clarify this relation.

Bello and Gilliland (1997) conducted a comprehensive survey with American manufacturers and their foreign-based distributors. The final objective was to analyse the performance-enhancing effects of quality control and cooperation processes within the export channel. The authors concluded that distributors and manufacturers make extensive use of quality control mechanisms in order to reduce transaction costs.

Bessant, Levy and Sang (1994) employed the concept of quality management aiming to analyse the relationship between a major UK organisational purchaser and its suppliers. The authors arrived at the conclusion that quality management has a pivotal role in supply relationships. According to them, quality management concepts were employed to:

- define the purpose for the relationship;
- define the boundaries of the transacting organisations;
- guide and monitor the progress of the relationships;
- establish and develop behavioural norms;
- identify people and attitudes capable of promoting relationship development;
- ensure long-term development and learning within the relationship.

Mari Sako (1992) analysed price, quality and trust as elements of inter-firm relations in Britain and Japan. The particular sector analysed by her was the electronics industry, and she concluded that in this highly dynamic and competitive sector, quality management is an indissociable part of the trust construction process. She mentioned in particular the quality inspection issue. 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.

Dolan, Humphrey and Harris-Pascal (1999) analysed a completely different sector, the international trade of fresh vegetables. The authors observed that African exporters and British importers of fresh vegetables make extensive use of quality management concepts. Dolan *et al.* (1999, p. 29) mentioned that



[...] success in the fresh vegetable chain depends on meeting (and exceeding) the exacting requirements of UK supermarkets. These are the non-negotiable conditions of market entry for the fresh vegetable trade. There is little scope for exporters who lack the investment capabilities to ensure a consistent, quality product that complies with regulatory requirements to participate in the current market.

Loader (1997) found similar results to Dolan *et al.* (1999). He analysed the imports of fresh Egyptian potatoes to the UK. The empirical data collected by Loader (1997) revealed that the potato trade between Egypt and the UK is highly influenced by the British supermarket chains and that these organisations make use of quality management techniques in order to reduce transaction costs.

An interesting analysis of transaction costs and quality was carried out by Hobbs (1996). The sector he examined was UK beef retailing. Hobbs (1996) argues that the desire for beef suppliers of consistent quality would tend to mitigate against short term supply relationships between retailers and a large number of occasional suppliers since the resulting information and monitoring costs in finding appropriate suppliers and ensuring that their products were of a consistent quality would be too high. Instead, long-term relationships between retailers and processors would reduce the transaction costs incurred by the retailer. This might take the form of strategic alliances and partnerships with processors and producers marketing groups or long-term supply agreements (contractual and informal) with few processors. Hobbs (1996) also argues that quality management concepts are a constituting element of the strategic alliances and the long-term agreements.

The French poultry industry was examined by Menard (1996, 1998). He observed the existence of hybrid type transactions within the sector (clusters and networks). In this case, poultry producers and traders are able to maintain their individuality and to make use of transaction features that are typical of hierarchies. Menard (1996, 1998) analysed in particular the coordination processes implemented by the transacting parties. He noticed that quality management concepts, quality control in special, were extensively employed with the aim of reducing transaction costs between the negotiating counterparts.

Menard (1996, 1998) noted the existence of certifying organisations. He argues that these bodies are present in the French poultry industry with the aim of guaranteeing quality standards and reducing transaction costs. According to him, the certifying organisations are responsible for setting and monitoring the quality requirements. Menard (1998, p. 415) maintains that these “requirements must be accepted *ex-ante* (through contracts), must be implemented during process

(conditions of feeding, space, and ventilation), and must be confirmed *ex-post* (respect of duration of growth and delivery dates).”

### **3 TRANSACTION COST ECONOMICS: SOME LIMITATIONS**

Despite the fact that Transaction Cost Economics (TCE) is becoming more frequently used as a framework for the analysis of agricultural marketing questions, it has some limitations. The first limitation comes from the fact that TCE is based on a series of very subjective concepts and relations. This is a serious constraint in terms of research techniques that can be employed to raise data from the universe under investigation. A researcher using TCE as a foundation for his investigation will find it difficult to properly employ tools of mathematical modelling or statistics in the analysis of their information. The quantification of TCE concepts is a task that still needs to be done.

To deal with the subjectivity of TCE's concepts it is possible to use qualitative research techniques. By adopting this strategy, researchers will have the capacity to obtain data more suitable to be analysed by TCE. Quantitative research methods will only work if carefully tailored measurements are taken from reality.

The second limitation of TCE is related to the fact that transaction analysis is still mainly an academic topic. Few people outside academia are using (or even know about) TCE as a point of reference for their business. In other words, TCE as a “language” is not employed in day-to-day trade activities. This situation has serious implications in terms of scientific research. For instance, a researcher cannot make direct use of TCE terminology in his questionnaires or interviews, simply because the chances are high that the interviewees (or respondents) will not recognise the terminology. To overcome this constraint it is possible to use conversion strategies. In this case, TCE terminology is converted into the trade jargon of a specific sector. In other words, a researcher who wishes to use TCE theory to raise data will need to create a sort of glossary to translate TCE terminology into trade jargon and vice-versa.

A third limitation of TCE derives from the complexity of its theory. There is not a sole interpretation of the theory; in fact, the construct is built around the contributions of three prominent authors: Ronald Coase, who set the foundations of the theory (Coase, 1937, 1978, 1984); Oliver Williamson, who developed a framework to analyse transaction arrangements (Williamson, 1975, 1981, 1985, 1994, 1996, 1999); and Douglass North, who developed a framework to analyse transaction environments (North, 1978, 1981, 1989, 1990, 1994). However, these three authors developed their ideas based on concepts created by a myriad of

other scholars, most of them with a broad range of backgrounds (law, economics, sociology, and management). The final outcome is that TCE is a complex and multilateral construct. To minimise this problem, it is possible for a researcher to restrict the focus of his analysis, reducing the themes under investigation and the concepts utilized to analyse the data.

## **4 THE ORGANISATIONAL FAILURES FRAMEWORK AND QUALITY MANAGEMENT**

TCE and quality management are independent theoretical constructs, which different authors with different objectives created independently. The literature review conducted in the previous sections shows that it is possible to establish links between some concepts of the two constructs. It is important to see that TCE aims to identify ways to decrease transaction costs and that quality management can be used as an instrument to decrease transaction costs. This relation is easily seen when the Organisational Failures Framework is utilized as a reference. The reasoning follows.

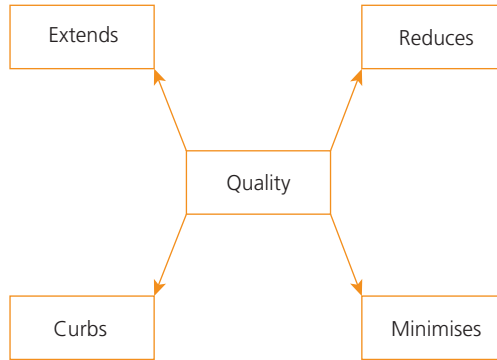
The central concept of the Organisational Failures Framework is information impactedness. This is an unfavourable condition for market type transactions, which emerges when in a sector there are high levels of: bounded rationality, uncertainty/complexity, opportunism and the small-number condition (Williamson, 1975). It results that any measure adopted to minimize information impactedness will be favourable to the increase in the number of market transactions.

It was possible to see in the previous sections that quality is a concept actively used by trade partners (suppliers and buyers) to regulate their commercial relations. By elevating the quality levels of products and processes, trade partners achieve a capacity for reducing costs (including transaction costs) and consequently increasing their trade.

One can say that quality management is a favourable condition for market type transactions or, in other words, it is a resource that can be used to reduce information impactedness. By extending this idea it is possible to assume that quality management can be used as an instrument capable of minimising the difficulties posed by the constituents of information impactedness: bounded rationality, uncertainty/complexity, opportunism and the small-number condition. In the following paragraphs each of these relations are examined. These relations are represented by Figure 1, which is inspired by Williamson's graphical representation of the organisational failures framework (Williamson, 1975).

FIGURE I

QUALITY MANAGEMENT INFLUENCE ON THE ORGANISATIONAL FAILURES FRAMEWORK



Source: Developed by the authors based on Williamson (1975, p. 40).

*Quality management can help to reduce uncertainty/complexity in the trade of a product.* In most cases, uncertainty arises in transactions when the buyers have doubts about the capacity of producers to deliver products with the required quality level. A way to guarantee the desired attributes in the products and, consequently, reduce the level of uncertainty would be to use quality management procedures in the production processes. It is important to observe that once uncertainty is under control the chances are high that the complexity of the trade relations will also decrease. This happens mainly for the reason that buyers and sellers do not need to negotiate or handle quality related problems.

*Quality management can help to extend the bounds of the rationality in the trade of a product.* It is common for buyers and sellers to have little information about each other, especially information concerning technical procedures. If quality management techniques are to be used, both sides have the incentive to learn about every technical aspect of the product cycle. This approach leads to a situation where trade counterparts have the capacity to trace the origin of problems when they materialize.

*Quality management can help to curb opportunistic behaviour.* It is not difficult to find situations where a buyer rejects a product alleging quality problems. The allegation may be true, or it may be only a strategy devised to obtain some gains from the seller (better prices, or better payment conditions). This type of opportunistic behaviour is unlikely to occur when buyers and sellers are using quality management systems to conduct their business. In this case, any allegation of poor quality needs to be based on technical grounds, not on subjective evaluation.

*Quality management can help to overcome the small-number condition.* It is not difficult to find unbalanced business relations where one side has excessive ascendancy over the other side. The problem typically results in the prominent side using its power to obtain excessive gains from the weak side. This unbalanced situation can lead to the deterioration of the trade relationship. When the quality management approach is adopted both sides are committed to obtaining gains not from each other but from the improvement of the quality of products and processes. The efficiency gains obtained can then be divided between the partners.

Finally, one can say that, by reducing information impactedness in a trade relation, buyers and sellers have more chance of achieving a favourable business atmosphere. In other words the interaction will not be perceived as neutral anymore but as a valuable asset that has the capacity of resolving specific transaction problems with accuracy.

## **5 QUALITY MANAGEMENT AND TRANSACTION COSTS MINIMISATION**

After concluding the literature review concerning fruit quality management, quality, and transaction cost economics, it then becomes possible to formulate the general hypotheses of this investigation.

In relation to the first research question (Are the different factors that affect quality perceived as a cause of problems in the British-Brazilian fruit trade?), it is possible to hypothesise that fruit traders tend to adopt quality management techniques in order to minimise transaction costs, or, in other words, the viable international fruit traders are capable of dealing effectively with the different factors that affect quality in the British-Brazilian fruit trade.

The simplest way to express the hypothesis would be: the different factors that affect fruit quality are not perceived as a cause of problems in the British-Brazilian fruit trade. It is possible to test this hypothesis by asking the fruit traders to indicate the perceived level of quality problems in each technical aspect that affects fruit quality. These technical aspects are: field production techniques; use of defensives (chemicals) in the production fields; grade of maturity, harvesting practices; fruit appearance; fruit texture; fruit nutritive value; fruit flavour; safety requirements for fruits; use of chemicals during the post-harvest processing activities; fruit packing; pallet consolidation; transport from the production fields to the main carrier (airplane or ships); transport in the main carrier; unloading the main carrier (at the destination port); and transport from the main carrier to the importer facilities.

In relation to the second research question (Which are the strategies adopted by exporters and importers in order to guarantee product quality in the international fruit trade?), it is possible to hypothesise that fruit traders in Brazil and the UK tend to make use of quality management strategies such as: Product Specification, Production Process Quality Management, Production Environment Quality Management, Logistics Quality Management, Alliances with Trade Partners.

## 6 METHODS

The Anglo-Brazilian fruit trade is a theme of research that combines two complex topics: international trade and fruit commerce. International trade is an intricate topic mainly because it is affected by a considerable number of factors. A company or a person involved in international trade needs to handle such issues as: differing legislation; different cultures; difficulties in terms of contract enforcement, and distance (Phillips, Doole, & Lowe, 1994). It is important to notice that each of these issues is again influenced by a high number of other variables.

The second subject approached in this investigation, fruit commerce, derives its complexity from two distinct factors, the technical fragility of fruit and the high degree of instability that can be found in the world fruit market. In order to answer the proposed research questions, an investigation programme was executed in Brazil and the UK. The objective of this strategy was to describe, analyse and compare the positions of fruit exporters in Brazil and fruit importers in the UK.

In this research, the trade in fruit is investigated by category of products. Six different fruit were used as the basis for the investigation: melons, grapes, mangoes, papayas, oranges and apples. These were the six most exported types of fruit in Brazil. Three distinct research techniques were used in the investigation: secondary data analysis, direct observation and interviews. It is important to clarify that this research is part of a more comprehensive research about British-Brazilian fruit trade and that, due to article length limitation, the survey results of this research will be presented in a different article.

In contrast to surveys, which are destined to provide the general picture of a reality, qualitative research aims at the details. It makes use of flexible research techniques that create the possibility of accumulating factual information about the circumstances of specific cases, of collecting statements and opinions and of exploring, in some depth, experiences, motivations and reasoning (Nachmias & Nachmias, 1997; Drever, 1997).

The problem with the selection of cases to study in the Brazilian fruit export sector is that all the exporters are scattered around Brazil, making it difficult to select the relevant cases and to arrange the interviews. The support of someone who already knows the local reality of each fruit export region is essential to better select the cases. According to Rubin and Rubin (1995, p. 66),

[...] when you first enter a research arena which you may not know that much, to get acquainted with the field you want to talk with a variety of people [...] you need to interview those who have particular knowledge or can discuss specific experiences that you want to know about.

Based on this perspective, the strategy adopted in this research was that of contacting local institutions (research organisations, universities or trade associations) that could help to better select cases to investigate. In order to avoid possible bias in the case selection, the tactic was adopted of contacting at least three professionals in each fruit production region. They were asked to indicate cases to be described. The lists obtained were then compared to make the final selection. In the majority of cases, the professionals had been contacted previously by telephone.

The institutions consulted in Brazil were: Brazilian Agricultural Research Company (Embrapa – Semiárido), Petrolina, Pernambuco State; Bahia State University (Ueba), Juazeiro, Bahia State; Semiárido Federal Rural University (Ufersa), Mossoro, Rio Grande do Norte State; Santa Catarina State Agricultural Research Company (Epagri), Cacador, Santa Catarina State; and Brazilian Fruit Institute (Ibraf), Sao Paulo, Sao Paulo State.

To select the cases for characterisation in the UK, a similar procedure was adopted. The informants contacted were: Western International Market (wholesalers and market administrators) – Heathrow area; Spitalfields Market (wholesalers and market administrators) – London metropolitan area; New Covent Garden (wholesalers and market administrators) – London metropolitan area; Fresh Produce Consortium – London.

The content of the semi-structured interview questions was chosen based on the literature review of TCE, the international fruit trade and quality management. The questions were carefully chosen to reveal the factors which are determinant for the configuration of transaction arrangements in the fruit trade. The topics investigated were: the technical activities performed by the organisations operating in the fruit commerce; the main types of commercial clients (partners) of the firm; the nature of the market type relations maintained by the firm; the level of quality problems perceived by the firm; and the quality management

strategies adopted by the firm. These topics served as the foundation for the elaboration of the main questions and the probe questions. They also gave the direction for possible follow-up questions.

From the total of 26 calls for interview visits in Brazil, it was possible to obtain 19 valid interviews. In the UK, it was possible to get 15 valid interviews from a total of 22 interview calls.

Invariably at the end of each interview, the respondents were asked to show the production facilities, in most of the cases packing-houses and in some cases fruit production fields. In all opportunities (except during three phone interviews), it was possible to do a rich direct observation to confirm or to clarify the data obtained during the interviews.

To present the results of the interviews we used the categories of transacting organizations present in the fruit trade that were developed by Carvalho (2006) in a research about fresh produce trade.

## **7 DATA ANALYSIS AND DISCUSSION**

The interviews with 19 fruit exporters in Brazil, confirmed that the following activities in the fruit business are performed by exporters: 1. pre-harvest activities; 2. harvesting; 3. short distance transport; 4. receiving operations; 5. treatment; 6. selection and grading; 7. packing and labelling; 8. pallet consolidation; 9. cooling; 10. storage; 11. short distance transport to the port or airport; 12. contracting the long distance transport.

In general the 19 interviews conducted in Brazil support the idea that the perceived technical problems related to fruit quality management are associated with each type of fruit. The interviews also lead to the conclusion that each type of fruit has problems in a specific stage of the production and trade cycles. Apple and orange exporters manifested concern about the pre-harvest activities. Orange exporters also indicated that they were worried about the appearance of their product. Papaya exporters showed apprehension about transport factors. Mango and grape exporters mentioned problems with the post-harvest processing activities at the packinghouse. Finally, melon exporters expressed concern about their fruit attributes (appearance and flavour mainly).

The interviews with 15 importers in the UK indicated that the following activities in the fruit business are performed by the importers: unloading the main carrier (at the destination port); transport from the main carrier to the importer facilities; processing; packing; distribution to the retail distribution centre. It is up to the retailers to distribute to their stores and to display the fruit at their shelves.



After analysing the quality management strategies of the fruit importers present in the British market, it is possible to conclude that Integrated Multinationals and Import Agents are the categories of importers who adopt the most advanced and comprehensive strategies for handling fruit quality issues.

Since Integrated Multinationals execute an extensive range of technical activities in the international fruit trade (from fruit production abroad to logistics activities in the UK), these organisations have a better chance to harmonise all the technical activities that have influence in the fruit trade. Integrated Multinationals also have more favourable conditions to obtain scale and scope gains as this category of organisations has sizeable fruit trade operations.

Import Agents indicated that they have the capacity of organising strategic alliances with suppliers abroad and with organisational buyers in the UK (supermarket chains, catering companies and wholesalers). These alliances create a business environment favourable to the full employment of advanced quality management strategies in the fruit trade.

Independent Importers and Regional Wholesalers have shown a limited technical capacity for dealing with quality management issues. Since these categories of organisations do not maintain fresh processing units in the UK, they can offer in terms of quality management only restricted support to their fruit suppliers and also to their clients in Britain.

Supermarket Chains, despite not importing fruit directly, were shown to be at the head of the fruit import trade. These organisations were shown to promote the adoption of advanced quality management strategies among their suppliers.

## 8 ANSWERING THE RESEARCH QUESTION

Since fruit quality management is not perceived as a cause of problems to the fruit trade, it is important to verify which strategies are used by British fruit importers and Brazilian fruit exporters in order to make the international fruit commerce viable, or in other words *which strategies are adopted by exporters and importers in order to guarantee product quality in the international fruit trade*. According to the results of this study, the above-formulated research question has the following answer:

The interviews conducted with 19 fruit exporters in Brazil and 15 fruit importers in the UK confirmed that the following quality management strategies are used in the international fruit trade: detailed product specifications; quality control during the production processes; production environment monitoring;

integrated logistics management; and strategic alliances with trade partners. However, these strategies are not uniformly used by the different categories of organisations trading fruit. The main differences are described in the following paragraphs.

*Detailed product specification* – All the different categories of fruit trade organisations revealed that they make use of detailed product specifications in their commercial operations.

Comprehensive specifications are used by fruit exporters as guides for their production, post-harvest and export operations. Importers, on the other hand, use the specifications as the main reference for quality control and negotiations. When the fruit specifications are clear, both sides of the international fruit trade have better chances to minimise the consequences of technical and order errors.

*Quality control during the production processes* – Specialized Fruit Growers, Export Agents, Integrated Exporters, Integrated Multinationals, Independent Importers, Import Agents and Supermarket Chains are the types of organisations that showed that they adopt quality control strategies to regulate their technical and commercial activities.

In most cases, quality control processes are used as a routine activity that is capable of detecting and avoiding inefficient production processes and low quality fruit. In more advanced stages, quality management control is used as a tool capable of helping in the selection of commercial partners. In this case, only those organisations capable of making use of advanced quality control techniques will be considered to be suitable partners.

*Production environment monitoring* – The organisations that deal with fruit production or fresh produce processing issues were those who reported monitoring the production environment regularly. These organisations are: Specialised Fruit Growers, Export Agents, Integrated Exporters, Integrated Multinationals, Import Agents and Supermarket Chains.

Monitoring practices are employed primarily to maintain under satisfactory conditions resources such as: fruit production fields, packinghouses, fruit processing machinery and quality control laboratories. However, the most sophisticated use of the monitoring practices is related to the work supervision of human resources, in which case the final aim is to guarantee that the production routines (fruit production, post-harvest processing and distribution activities) are executed thoroughly.

*Integrated logistics* – Since transport and storage are very sensitive aspects of the international fruit trade, most of the different types of organisations assessed during this study reported adopting strategies for dealing with logistics. Only Fruit Growers, Independent Importers and Regional Wholesalers were revealed to be conducting a limited number of logistics operations.

Efficient logistics is intrinsically linked to successful fruit commerce operations. It is capable of reducing costs considerably, of extending the shelf-life of fresh products and of gaining access to distant markets. It should also be emphasised that logistics management is connected not only to the physical movement of fresh products but also to the process of information exchange about shipments of products.

*Strategic alliances* – All the categories of fruit trade organisations investigated in this research, with the exception of Regional Wholesalers, reported that strategic alliances are crucial for their commercial operations. It is a guarantee that quality standards will be respected throughout the whole fruit chain.

Spot transactions (regulated by Arm's Length Contractual Relations) were found not to be commonly used in the fruit trade. In a spot commercial transaction buyers and sellers want to maintain independence from each other. It is common for buyers to use open bidding for their orders. The suppliers, on the other hand, will sell their produce to the best offer. Another important characteristic of spot transactions is related to the fact that buyers and sellers are likely to exchange very little information about their business, communication tending to be focused on each commercial transaction only. The interviews conducted in Brazil and the UK revealed that spot transactions are not common.

Long-term relationships (regulated by Obligation Contractual Relations) were shown to be the most commonly employed relationships in the international fruit trade. In this case, buyers and sellers are committed to each other in a relation of mutual dependence. Orders are placed in advance and bidding is unlikely to take place. It is common for commercial partners to exchange information about production technologies, managerial procedures and market tendencies. In order to do so, both sides maintain frequent and regular communication. In some cases, it is even possible to find the situation where fruit exporters and importers have willingness for risk sharing.

Apart from the above cited quality management strategies, other aspects of the international fruit trade were mentioned as important. Among these aspects we can find: price negotiation, regularity of supply, fruit trade volume and period of supply.

It was suggested in the interviews conducted in Brazil and the UK that quality management is a regular practice among the more prominent players in the British-Brazilian fruit trade. The interview results support the idea that those organisations that have a limited capacity for adopting quality management strategies have limited space in the international fruit trade. On the other hand those fruit traders that adopt advanced quality management strategies have conquered a more extensive market share.

The majority of British fruit importers indicate that they do not perceive the management of quality standards as an impediment to their commercial operations. This result confirms the previous research by White (2000) and also Wilson (1996). These authors observed that British fruit importers have adopted long-term strategies to improve standards in the fruit trade, with part of their strategy being the creation of clear standards that serve as a guide to control products and production processes.

Wilson (1996, p. 35) studied the banana import business specifically. According to him, in the UK,

[...] effective supply chain management places its emphasis on the consumer and what will bring most benefit to the end-user. This involves sending information on customer requirements back along the line – the most transparent chains will give the most feedback to the producers.

The British fruit importers also revealed that they do not recognise fruit quality management as an obstacle to their commerce. This result of the survey is in line with the findings of Fearne and Hughes (1999). These authors mentioned that fresh produce buyers in the UK have adopted in the last decade a policy for selecting their suppliers. Only those companies capable of delivering quality produce have stayed in the business with a considerable trade volume. It was relatively easy to implement this policy since competition among suppliers is considered to be high.

Malins and Woodhead (1996, p. 280) observed that traders in horticultural products tend to use quality management systems to guide their actions and then to obtain more efficiency in their commercial operations. The authors go on to say that

[...] quality management of produce will continue to be of ascending importance in continued development of the horticulture. Developing countries require maximum support to assist them in overcoming the many constraints to the implementation of quality management systems if they are to succeed in development of their export trade (Malins & Woodhead, 1996, p. 280).

Gray and Kleih (1997) pointed out that a considerable number of importers operating in the UK are capable of using advanced quality management techniques; therefore, they require from their trade partners the same commitment to quality. Regarding Brazilian exporters, a very similar figure came out: fruit quality

management is not perceived as an impediment or as a restriction for the fruit trade. This conclusion is also in line with the results of Campos and Lima (2011).

The choice of interviews proved to be an appropriate method to answer the research questions formulated for the present investigation. However, it is important to remember that it was possible to obtain only 19 valid interviews in Brazil and 15 valid interviews in the UK. This modest number of respondents is a limitation in terms of the analysis that can be performed.

## 9 CONCLUSION

The management of quality is a strategic aspect of the fruit international trade business. Fruit traders have higher chances to commercialise a shipment of fruit satisfactorily if the merchandise embodies all the attributes desired by the end consumer. If an importer purchases a cargo of fruit that does not have all the desirable qualities, the negative consequences can be considerable for both fruit importers and exporters. The importers will lose the chance to profit with the commercial intermediation and will have their credibility negatively affected.

The losses however tend to be higher for the fruit exporters. It is important to remember that when a fruit shipment arrives at its destination market a substantial investment has already taken place (fruit production, post-harvest processing, storage and transport). If a shipment proves to be of no use, there will be some additional costs to dispose of the fruit. Importers have the chance to guide the actions of fruit producers and exporters and, by doing it thoroughly, they are able to avoid unnecessary efforts and fruit loss.

The results of the survey support the idea that quality consciousness is fundamental in the fruit trade. The majority of companies approached in the research were shown not to perceive the several parameters that affect the quality of the final product as a problem. In other words, the results suggest that firms that are incapable of handling quality issues satisfactorily find little place in the fruit trade. Due to the adopted methods, it is important to emphasize that this article mainly points the direction for future research. Surveys in the fruit sector and also in different sectors can bring more conclusive results about the capacity of quality management to reduce transaction costs.

The analysed data also indicate that only the transaction configurations capable of adopting sound quality management in order to reduce transaction costs are entitled to develop trade volumes that will bring economical sustainability.

## GESTÃO DA QUALIDADE COMO RECURSO PARA REDUZIR OS CUSTOS DE TRANSAÇÃO: EVIDÊNCIAS EMPÍRICAS NO COMÉRCIO INTERNACIONAL DE FRUTAS

### RESUMO

A fruta é um produto altamente perecível, suscetível a riscos biológicos, físicos e químicos. Tais riscos são agravados quando os frutos são transacionados no mercado internacional. Neste caso, os fornecedores e compradores de frutas estão expostos a elevados custos de transação, uma vez que ambos os lados precisam lidar com questões como as especificações do produto, o processamento pós-colheita e logística. A gestão da qualidade pode ser empregada a fim de organizar toda a produção, processamento e operações de logística. O presente trabalho tem o objetivo de verificar se os produtores, exportadores e importadores de frutas estão fazendo uso de conceitos de gestão da qualidade a fim de reduzir riscos e custos de transação. Como método de investigação, foi realizada uma pesquisa no Brasil e no Reino Unido utilizando entrevistas semiestruturadas. O conteúdo das perguntas da entrevista semiestruturada foi determinado com base na revisão da literatura sobre ECT, sobre comércio internacional de frutas e sobre gestão da qualidade. Os temas investigados foram: as atividades técnicas realizadas pelas organizações que operam no comércio de frutas, os principais tipos de clientes comerciais (parceiros) da empresa, a natureza das relações do tipo mercado mantidas pela empresa, o nível de problemas de qualidade percebido pelas empresas, e as estratégias de gestão de qualidade adotadas pelas empresas envolvidas. Esses temas serviram como referência para a elaboração das questões principais e das questões secundárias decorrentes. Eles também deram a direção para possíveis perguntas exploratórias. Os resultados da pesquisa dão suporte à ideia de que a gestão da qualidade é fundamental no comércio de frutas. A maioria das empresas abordadas não indicaram perceber como problemáticos os vários parâmetros que afetam a qualidade do produto final. Os resultados sugerem que as empresas que são incapazes de lidar com questões de qualidade de maneira satisfatória encontram pouco espaço no comércio de frutas. Conceitos de gestão da qualidade são muito utilizados para garantir as especificidades do produto e a racionalidade nos processos de operação e, por fazê-lo, contribuem para reduzir custos de transação nesse tipo de comércio.

## **PALAVRAS-CHAVE**

Economia dos custos de transação. Gestão da qualidade. Comércio entre Brasil e Inglaterra. Operações internacionais de comércio. Especificações de produtos.

## **GESTIÓN DE LA CALIDAD COMO RECURSO PARA REDUCIR EL COSTO DE TRANSACCIÓN: EVIDENCIA EMPÍRICA EN EL COMERCIO INTERNACIONAL DE FRUTAS**

### **RESUMEN**

La fruta es un producto altamente perecedero, propenso para los riesgos biológicos, físicos y químicos. Todos estos riesgos son mayores cuando la fruta es distribuida en el comercio internacional. En este caso tanto los proveedores de frutas y compradores de frutas están expuestos a elevados costos de transacción, ya que ambas partes deben hacerle frente a cuestiones como las especificaciones del producto, prácticas de post-cosecha y la logística. Gestión de la calidad puede ser utilizada con el fin de organizar todas las operaciones de producción, y logística. El presente trabajo tiene como objetivo verificar si los productores, exportadores e importadores de fruta están haciendo uso de los conceptos de gestión de calidad con el fin de reducir los riesgos y costos de transacción. Como método de investigación, entrevistas semiestructuradas se realizaron en Brasil y en Reino Unido. El contenido de las preguntas de la entrevista semiestructurada se determinó con base en la revisión de la literatura del TCE, el comercio internacional de frutas y gestión de calidad. Los temas investigados fueron: Las actividades técnicas realizadas por las organizaciones que operan en el comercio de frutas, los principales tipos de clientes comerciales (socios) de la empresa, la naturaleza de las relaciones de tipo de mercado seguida por la empresa, el nivel de los problemas de calidad percibida por los la empresa, y las estrategias de gestión de calidad adoptados por la empresa. Los resultados de las entrevistas apoyan la idea de que la conciencia de calidad es fundamental en el comercio de frutas. La investigación demostró que la mayoría de las empresas no perciben como un problema, los diversos parámetros que afectan a la calidad del producto final. Los resultados sugieren que las empresas que no son capaces de manejar los problemas de calidad satisfactoriamente encuentran poco lugar en el comercio de frutas. Conceptos de gestión de calidad son empleadas comúnmente para garantizar las especificaciones del producto y de la racionalidad en los procesos de operación

contribuyendo con la reducción de los costos de las transacciones entre las partes de la transacción.

## **PALABRAS CLAVE**

Economía de los costos de transacción. Gestión de calidad. Comercio entre Brasil e Inglaterra. Operaciones comerciales internacionales. Productos especificaciones.

## **REFERENCES**

- Abell, P., Felin, T., & Foss, N. (2008). Building micro-foundations for the routines, capabilities, and performance links. *Managerial and Decision Economics*, 29, 489-502.
- Akerlof, G. A. (1970). The market for lemons: quality, uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488-500.
- Barzel, Y. (1982). Measurement costs and the organization of markets. *Journal of Law and Economics*, 25, 27-48.
- Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls and flexibility on export channel performance. *Journal of Marketing*, 61, 22-38.
- Bessant, J., Levy, P., & Sang, B. (1994). Managing successful total quality relationships in the supply chain. *European Journal of Purchasing and Supply Management*, 1(1), 7-17.
- Campos, T. M., & Lima, E. de O. (2011). Aprendizagem e adequação das operações para realizar estratégias de exportação em micro e pequenas empresas. *Revista Ibero-Americana de Estratégia*, 10(2), 159-180.
- Carvalho, J. M. (2003). *Transaction arrangements and quality management strategies in British-Brazilian fruit trade*. Doctoral dissertation, University of Reading, Reading, Inglaterra.
- Carvalho, J. M. (2006). Graphical representation of transaction arrangements. *Organizações Rurais e Agroindustriais*, 7(2), 188-198.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4, 386-405.
- Coase, R. H. (1978). Economics and contiguous disciplines. *Journal of Legal Studies*, 7, 201-211.
- Coase, R. H. (1984). The new institutional economics. *Journal of Institutional and Theoretical Economics*, 140, 229-231.
- Dolan, C., Humphrey, J., & Harris-Pascal, C. (1999). *Horticulture commodity chains: the impact of the UK market on the African fresh vegetable industry*. Brighton: Institute of Development Studies.
- Drever, E. (1997). *Using semi-structured interviews in small-scale research*. Edinburgh: Scottish Council for Research in Education.
- Fernandez-Olmos, M., Rosowell-Martinez, J., & Espitia-Escuer, M. A. The Relationship between product quality and transaction costs with vertical coordination in DOC Rioja Winegrape Industry. *Spanish Journal of Agricultural Research*, 7(2), 281-293.
- Fornazier, A., & Waquil, P. D. (2012). A Importância das organizações de interesse privado no agronegócio: o caso da cadeia produtiva da maçã no Brasil. *Organizações Rurais e Agroindustriais*, 14(1), 46-59.



- Garcia, I. P., Marques, M. C., Silva, V. T. de A., & Ferreira, G. (1999). Fruticultura: promessas e vantagens a aproveitar. In: FNP. *Agriannual 99*. São Paulo: FNP.
- Gray, A., & Kleih, U. (1997). *The potential for selected indian horticultural products on the European Market*. Londres: Natural Resources Institute, University of Greenwich.
- Hobbs, J. E. (1996). A Transaction cost analysis of quality, traceability and animal welfare issues in UK beef retailing. *British Food Journal*, 6(98), 16-26.
- Hodgson, G. M. (1988). *Economics and institutions: a manifesto for a modern institutional economics*. Cambridge: Polity Press.
- Holleran, E., Bredahl, M. E., & Zaibet L. (1999). Private incentives for adopting food safety and quality assurance. *Food Policy*, 24, 669-683.
- Jacobides, M. G. (2008). How capability differences, transaction costs, and learning curves interact to shape vertical scope. *Organization Science*, 19(2), 306-326.
- Loader, R. (1997). Assessing transaction costs to describe supply chain relationships in agri-food systems. *Supply Chain Management*, 2(1), 23-35.
- Malins, A., & Woodhead, S. (1996). Total quality management for horticultural products. *Fruits*, 51(5), 275-281.
- Menard, C. (1996). On clusters, hybrids, and other strange forms: the case of the french poultry industry. *Journal of Institutional and Theoretical Economics*, 152, 154-183.
- Menard, C. (1998). Maladaptation of regulation to hybrid organizational forms. *International Review of Law and Economics*, 18, 403-417.
- Meneses, G. D., & Rodríguez, J. N. (2009). El consumidor de frutas y verduras ecológicas: homo est temperatus. *Organizações Rurais e Agroindustriais*, 11(1), 57-70.
- Nachmias, C. F., & Nachmias, D. (1997). *Research methods in the social sciences*. London: Arnold.
- North, D. (1978). Structure and performance: the task of economic history. *Journal of Economic Literature*, 16, 963-978.
- North, D. (1981). *Structure and change in economic history*. New York: W.W. Norton & Company.
- North, D. (1989). Institutions and economic growth: an historical introduction. *World Development*, 17(9), 1319-1332.
- North, D. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.
- North, D. (1994). Economic performance through time. *The American Economic Review*, 84(3), 359-386.
- Phillips, C., Doole, I., & Lowe, R. (1994). *International marketing strategy: analysis, development and implementation*. London: Routledge.
- Pinazza, L. A., & Alimandro, R. (1999). Agropolos de desenvolvimento: emergência da cadeia de hortifruticultura irrigada. In L. A. Pinazza, & R. Alimandro, (Ed.). *Reestruturação no agribusines brasileiro* (pp. 227-234). Rio de Janeiro: Abag.
- Sako, M. (1992). *Prices, quality and trust*. Cambridge: Cambridge University Press.
- Silva, M. L. M., & Transquilini, A. (1999). Fruticultura: a Califórnia brasileira ainda não está madura. In FNP. *Agriannual 99*. São Paulo: FNP.
- Stigler, G. J. (1961). The economics of information. *Journal of Political Economy*, 69(3), 213-225.
- Vieira, L. M., Aguiar, L. K., & Barcellos, M. D. (2010). Understanding the coordination mechanisms in a fair trade fruit supply chain. *Journal of Operations and Supply Chain Management*, 3(2), 13-25.

- White, H. M. F. (2000). Buyer-supplier relationships in the UK fresh produce industry. *British Food Journal*, 102(1), 6-17.
- Williamson, O. E. (1975). *Markets and hierarchies: analysis and antitrust implications*. New York: Free Press.
- Williamson, O. E. (1981). The economics of organization: the transaction cost approach. *American Journal of Sociology*, 87(3), 548-577.
- Williamson, O. E. (1985). *The economic institutions capitalism*. New York: Free Press.
- Williamson, O. E. (1994). The economics of governance: framework and implications. *Journal of Institutional and Theoretical Economics*, 140, 195-223.
- Williamson, O. E. (1996). *The mechanisms of governance*. Oxford: Oxford University Press.
- Williamson, O. E. (1999). Strategy research: governance and competence perspectives. *Strategic management Journal*, 20, 1087-1108.
- Wilson, N. (1996). Supply chain management: a case study of a dedicated supply chain for bananas in the UK grocery market. *Supply Chain Management*, 1(2), 28-35.