Volume 7• Number 2 • July - December 2014 DOI: http://dx.doi.org/10.12660/joscmv7n2p140-153

Supply chain governance in the production systems of business clusters: The case of the footwear industry in Jaú

Eliane Pereira Zamith Brito
eliane.brito@fgv.br
FGV-EAESP

Lilian Soares Pereira Carvalho
lilianpereiracarvalho@gmail.com
FGV-EAESP

ABSTRACT: This paper's objective was to analyze the role of transaction costs in the longevity of Jaú footwear supply chain. Firms are configured in a cluster, and their level of coordination was investigated. The study data was collected via conducting interviews with the cluster's agents, making direct observations during the field visits, and consulting secondary data emerging both from document analysis and from sources such as newspapers, sectoral studies, and previous academic studies. The data point to the intense frequency of transactions among firms and the low uncertainty of internal transactions within the cluster due to the extensive exchange of information among agents. The bonds of competition and coordination that are established among the firms both reduce transaction costs and make them more competitive. Both human asset specificity and site specificity are important factors in the longevity of Jaú's footwear cluster.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

1. INTRODUCTION

Transaction cost economics is based on two behavioral assumptions: bounded rationality and opportunism. In transaction cost economics, economic agents are limitedly rational, so decisions are satisfactory but not optimal. This reasoning's use of cognition is bounded. Opportunism refers to the fact that human beings are not entirely reliable, and therefore, contractual safeguards are necessary when establishing transactions between economic agents. These behavioral assumptions are the generators of transaction costs (Farina, Azevedo & Saes, 1997, Williamson, 1985, 1996).

Transactions are described through three dimensions: frequency, uncertainty, and asset specificity (Williamson, 1985). Transaction cost economics proposes that the variety of contractual relationships among businesses can be explained by differences in the dimensions of transactions. For Williamson (1985,1996), contractual variety follows a continuum from the perfectly competitive market to the vertically integrated firm, which that author calls hierarchy, passing through intermediary forms of business coordination, including business networks, franchises, and *joint ventures*. This work investigated a specific form of contractual relations among firms in the footwear supply chain of the Jaú cluster.

Cassiolato and Lastres (2003) understand clusters as a concentration of firms both in the same supply chain and in the same location. According to other researchers, a cluster is not only a concentration of businesses in the same location but also a network of linked firms (Becattini, 1999, Perry, 1999, Robertson & Langlois, 1995). Thus, clusters can be analyzed using transaction cost economics: more specifically, it is possible to investigate both participants businesses' level of coordination and how the dimensions of transactions are established among supply chain members.

The concept of a business cluster was brought to the attention of economists very early in the history of economy, by Alfred Marshall (1891) and experienced an academic "rebirth" with studies on the Third Italy, i.e., the Italian clusters that according to Becattini (1999) were almost entirely responsible for the positive results of Italian exports after the Second World War. Notwithstanding, what are the reasons that small businesses have the ability to both compete individually with large global firms and achieve good results such as those achieved by the abovementioned Italian exports? For Becattini (1999), competition and cooperation bonds between firms both reduce transaction costs and make them more competitive. Additionally, Becattini (1999) and Suzigan et al. (2003) assert that transaction costs impact the longevity and the competitiveness of clusters' supply chains, however, those authors did not empirically investigate these relationships. Therefore, this article describes not only transactions in the cluster's supply chain but also the influence of those transactions on the cluster's longevity.

The latest data from the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística—IBGE) on industrial activity (PIA, 2011) indicate that footwear production employs slightly more than 4% of Brazil's industrial workforce and represented 2% of the Brazilian footwear sales in 2001 (Côrrea, 2001). In 2013 and 2014, the State of São Paulo created more jobs in the footwear industry than all but two of Brazil's states (ABICALÇADOS, 2014). The Jaú, Franca, and Birigui regions produce the most footwear of any regions in the State of São Paulo, but Jaú is the only region to specialize in women's footwear. Applying Puga's (2003) cluster identification methodology, the Jaú region has systematically been identified as a cluster (post-1996 employment data from MTE/RAIS-CAGED were used). Moreover, the Federation of Industry of the State of São Paulo (Federação da Indústria do Estado de São Paulo) decided to promote the competitiveness of the Jaú region by support it as a footwear cluster. The activity of the footwear industry is one of the most important to the city of Jaú and the latest available estimates it represented 40% of the city of Jaú's gross domestic product (GDP), along with approximately 16,000 direct and indirect jobs (APL de Calçados de Jaú, 2007).

The study data were collected via interviews with the cluster's agents, direct observation during field visits, and secondary data emerging from document analysis and from sources such as newspapers, sectoral studies conducted by the National Bank for Economic and Social Development (Banco Nacional de Desenvolvimento Econômico e Social—BNDES), and previous academic studies.

In addition to this introduction, this article presents the theoretical framework for the concepts essential to developing the research, the research procedures, and the study results. The final section contains an analysis of this work's theoretical contributions.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

2. LITERATURE REVIEW

In his pioneering article *"The nature of the firm,"* Coase (1937) seeks to break with the neoclassical economic paradigm in which firms are seen either as "black boxes" or in terms of their production functions. According to this economic perspective, the market is composed of several buyers and suppliers with irrelevant identities, and price is sufficient to communicate all of the necessary information about a product or a service. Thus, Coase aimed to understand what the firm is and why it exists, describing its scope, extent, and limits. He sought to identify the reasons that some resources can be acquired in the market by price mechanisms, whereas other resources are produced by an entrepreneur's coordination mechanism, i.e., within the limits of firms.

Zylbersztajn (1995) states that Coase recognized that markets do not operate with zero transaction costs. That is, for Coase, market transactions create costs and a firm formation overseen by an authority—i.e., the entrepreneur, who manages the use of resources, brings the benefit of saving the costs associated with market transactions.

The primary explanation of why it is lucrative to establish a firm is the existence of costs through the use of the price mechanism, i.e., acquiring market resources. The most obvious market cost of resource acquisition is associated with discovering the best price. Other costs that should be considered are those of negotiating and of preparing a contract (Coase, 1937).

Coase (1937) also asks the following question: if costs of the use of the price mechanism exist, why do market transactions exist? The response lies in firms' growth limits. First, as firms grow, there may be diminishing returns for the entrepreneur's use of coordination. Coase explains that there is a point at which the cost of organizing an additional transition within a firm is equal to the cost of the market transaction. Second, with the firm's growth and the increase in the number of functions and internalized transactions, the entrepreneur cannot make the best use of production factors. Analogously, there is a point at which the resource-waste cost equals the market transaction cost. These two reasons correspond to the "diminishing returns to management," a phrase used by economists (Coase, 1937, p. 12).

Williamson (1985, 1996) is an exponent of transaction cost economics, and his primary contribution has been to expand Coase's (1937) thinking and transform it into a coherent theoretical corpus. Thus, that author considers the transaction as a unit of analysis, assigning dimensions to transactions, so that the difficulties of transaction-cost observation and measurement can be overcome. To explain the existence of transaction costs, Williamson (1985) bases his theory on two behavioral assumptions which are bounded rationality and opportunity. The existence of transaction costs limits the efficiency of the structures that govern (i.e., coordinate) these transactions. In view of these transactions' dimensions—defined by Williamson (1985) as frequency, uncertainty, and asset specificity—the structures of governance will have different levels of efficiency. The author defines three structures of governance: the market, hierarchy, and the hybrid structure.

For Williamson (1985), the three structures of governance are institutions of the capitalist system whose primary object is to minimize transaction costs. These costs are managed more efficiently by assigning structures of governance to the transactions, those structures differ in their capacities for adaptation and the costs associated with them.

The theory of transaction costs considers the problem of economic organization as a contractual problem. In this context, the firm is viewed as a complex (*nexus*) of contracts. These contracts can be either explicit (i.e., formal) or implicit (i.e., informal). Each type of contract is associated with a different support apparatus, but both are subject to transaction costs, which can be *ex-ante* or *ex-post* (Williamson, 1985). *Ex-ante* transaction costs are those that occur prior to the transaction (Kreps, 1990), and they can be the costs of preparing, safeguarding, and negotiating a contract. The contract may be drafted relatively comprehensively, anticipating a number of contingencies, but it will never be fully prepared because of bounded rationality, and the parties must resolve contingencies as they occur. Contractual safeguards can have innumerable forms, the most typical is common ownership. To avoid transactions with various agents, a firm can choose to internalize an activity, substituting the market by an internal organization, or it can even establish a long-term contract with an agent. Negotiating a contract refers to the costs that occur when agents define and safeguard their interests, so that there is a dispute among the parties concerning planned or unplanned contingencies.

In turn, *ex-post* transaction costs are tied to the execution and continuity of the transaction (Kreps,

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

1990). These costs are divided into the following categories: costs associated with poor adjustment when transactions or their specifications change at any given time, costs associated with adjustments to correct contractual specifications, costs associated with the structures of government (or the use of the legal system) to resolve contractual disputes, and costs associated with monitoring to ensure the parties' commitment (Williamson, 1985, p. 21). Thus, a contract may stipulate x, but after some event, the parties decide that y should be done. Changing from x to y may not be an easy task. This change will initiate a process of renegotiating the contract, which gives rise to the emergence of opportunistic behavior. If the dispute is not amicably resolved, the legal system (courts, courts of arbitration, etc.) should be used, which entails greater transaction costs (Williamson, 1985).

Given that the use of the legal system is onerous, it can be inferred that the economic system's efficiency is limited by the set of institutions that regulate this system (Farina et al., 1997). According to North (1990), the institutions are the rules of the game, whether it is economic, political, or social. An example of the "rules of the game" can be a country's laws and its legal system, which is the institution that applies those laws.

In that notion lies the complementary nature of the analytical levels of transaction cost economics. North's (1990) "game rules" include the analytical level of the institutional environment. The structures of governance (market, hybrid, and hierarchy), which is another of the analytical levels proposed by Williamson (1985), are subject to the rules of the institutional environment, but can act strategically (as in an industry *lobby*) to change them. The final analytical level is composed of the individuals, whose behavioral attributes of bounded rationality and of opportunism act essentially on the choices and the preferences that influence the structures of governance and in the world of contacts among economic agents.

Despite the existence of three analytical levels for the study of transaction costs, this work will focus on the structures of governance, which is the same focus as the works of Williamson (1985, 1996).

3. RESEARCH METHODS

The case study method was employed here. The object of the study was Jaú's footwear cluster, which is composed of various agents such as footwear firms, stitching centers, and support organizations such as colleges, technical schools, trade unions, and Sebrae (Brazilian Service for Support to Micro and Small Businesses of the State of São Paulo). Therefore, both various local actors that participate in the region's footwear supply chain and local agents familiar with the production systems were consulted. Much of the data collected, primarily during interviews, revealed informal aspects of the relationships among agents, enriching the description of those relationships, as Godoy (2006) suggests as a possibility in the case study approach.

For this study, three data sources were used: interviews with the cluster's agents, direct observations during field visits, and secondary data derived from documentary analysis and from sources such as newspapers, sectoral studies performed by BNDES, and previous academic studies.

According to Merriam (2002), the quality of research is related to the production of valid and ethically reliable knowledge and the author proposes to use triangulation to ensure validity and reliability. Four types of triangulation can be used to confirm a study's conclusions: multiple researchers, multiple theories, multiple data sources, or multiple methods of analysis. In this study, triangulation was achieved using multiple data sources.

With respect to secondary data, sources such as regional newspapers and previous studies were used. For the latter, we used academic journals such as Revista de Administração de Empresas (RAE), the proceedings of national conferences, and theses in the libraries of the State University of Campinas (Universidade Estadual de Campinas—Unicamp) and the University of São Paulo (Universidade de São Paulo—USP). We identified one dissertation with focus on the Jaú cluster, it was authored by Oiko (2007), of the USP's São Carlos School of Engineering. We also used another study on this cluster, which was sponsored by representatives of the industry association and of Sebrae and was performed by Oliveira and Garcia (2001), of the School of Geography of São Paulo State University (Universidade Estadual Paulista—UNESP).

We also analyzed documents discovered in the archives of Jaú's footwear industry association. They contained some editions of the informational journal distributed to industry association members, folders and pamphlets about the industry association's ac-

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

tion plans, and documents with information about industry association members. These data provided data about the relationships that the firms established in the clusters, including but not limited to information about whether businesses act together to participate in (national or international) trade shows, whether businesspeople meet frequently to exchange information, and whether there is skilled manpower in the sectoral associations.

Field notes from observations performed during three visits to the cluster were used as a primary data source. We made observations during the interviews with firms and other agents, in addition to visits to the Jaú Footwear Industry association (Sindicalçados Jaú), the local office of the National Service for Industrial Training (Senai, 2014), the city-donated industrial districts, and the city's three footwear malls. The observations were performed informally. The data from these observations were compiled in field notes.

We conducted in-depth interviews and we used them as a primary data source. This approach was used to assess the perceptions of the cluster's agents concerning the dimensions of transactions and their influence on both transaction costs and the cluster's longevity. We used an interview script to guide during the interviews. The following subjects were interviewed: two businessmen in the footwear industry, two stitching-center proprietors, a representative of the employers association, a representative of the local Sebrae office, a local professor, a Senai consultant to the stitching centers, a representative of Senai's design center, and a Senai teacher.

We analyzed the data obtained using content analysis technique. We sought to identify analytical categories related to the theoretical framework. Four primary categories were established: the three dimensions of transactions as defined by Williamson (1985, 1996)—i.e., frequency, uncertainty, and asset specificity, and a fourth analyzed category of the cluster's longevity. These categories were divided into subcategories for better data clustering.

The frequency category was divided into three subcategories: joint action, reputation established between the agents, and the existence of credible commitments. For the purpose of analyzing the frequency dimension, joint action was established as a subcategory because it can be treated as a *proxy* of transaction frequency. These transactions are not necessarily buying and selling relationships exclusively, but also interorganizational and interpersonal relationships that may, over time, affect transaction costs. For instance, the interviewees were asked whether they traveled with people from other raw materials or finished-goods firms. This question was asked to determine whether there are any long-term relationships among the studied agents. This choice of joint action as a subcategory of the frequency dimension is justified in that transactions between firms or between members of the same community can reoccur in such a way that constructing a complex mechanism of governing these transactions can become economically feasible.

In a cluster, which this study treats as a structure of complex governance analogous to networks, frequent transactions can also occur between community members, to the extent that they establish relationships with other agents at the same level in the supply chain for purposes other than buying and selling in the vertical direction of the supply chain. These recurrent relationships can both influence the construction of reputation and reduce transaction costs. Following this reasoning, the second subcategory we analyzed was the establishment of reputation among agents. As economic agents transact with each other, they establish a reputation as the result of more-frequent transactions (Farina et al., 1997, Williamson, 1985). Finally, according to Williamson (1985), credible commitments can safeguard a relationship from opportunist behavior. According to that author, credible commitments arise when a transaction presents the prospect of continuity. Thus, when transaction continuity is expected, opportunistic behavior today can undermine tomorrow's gains.

The uncertainty category has three subcategories: the exchange of information between agents, social sanctions, and access to market information without a complex collection apparatus. The exchange of information among agents is defined as a subcategory in accordance with Dyer (1997), who argues that a greater level of information exchange among agents reduces uncertainty. Moreover, agents can exchange information about the reputation of suppliers or customers, thus establishing social sanctions. An agent can convey information about a customer or supplier's opportunistic behavior, and thus, the cluster's agents know ahead of time about that opportunistic behavior and choose not to transact with the opportunist. Dyer (1997) also notes the existence of social sanctions, which decreased the incidence of

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

opportunistic behavior. For Dyer (1997), these sanctions occurred such that suppliers would lose future contracts. If an agent in the chain behaves opportunistically, it is not contractual safeguards that are invoked, but social sanctions, in the form of either reduced orders or the termination of the relationship. Finally, access to market information without a complex collection apparatus reflects the fact that the businesses in a cluster do not always need to establish marketing, design, and other departments to obtain market information. That is, they do not necessarily need to internalize these functions because they obtain the information from support agencies or from other firms. According to Williamson (1985, 1996), strong administrative controls are necessary for those functions essential to the firm. In a cluster, if there is an intense exchange of information, these functions are "in the air," as stated by Marshall (1891). Therefore, firms do not need to internalize the search for market information if it can be obtained from other agents. That is, firms can use support institutions to access consumer market research about trends in footwear design, etc. Thus, uncertainty can be lessened without the costs associated with a more hierarchical structure.

The asset specificity category was subdivided according to the six types of asset specificity defined by Williamson (1985, 1996): site specificity, physical asset specificity, human asset specificity, brand names, temporal specificity, and dedicated assets.

The final category analyzed was the longevity of the cluster. Jaú's footwear cluster was classified as a cluster by the methodology of Puga (2003) for every year analyzed (since 1996). This study sought to determine whether the interviewed agents perceive advantages in establishing themselves as a cluster and the difficulties of leaving their current location, seeking to identify the reasons that the cluster is maintained.

Despite the relevance of the demand of national market to increase the competitiveness of local industries (Porter, 1991), this analysis focused on the offer-side of the footwear industry.

Due to space limitations, it was not possible to include interview excerpts, observations, or other evidence in this article.

4. RESULTS

The footwear supply chain is presented in the Figure 1.

Figure 1 - Footwear supply chain

Source: Research data

The first category analyzed was frequency. This category was divided into subcategories, the first being joint action between businesses. The interviewed professor explains that firms began to act in a coordinated manner when a project that emerged from the need of disposing industrial waste was implemented. This project occurred because local firms had to comply to the waste legislation and together they could do it cheaper than by itself. The leather and fur industry, which includes the footwear industry, is among the highest polluter economic activities, according to a survey performed with data from 1996 (CETESB, 2014). Thus, according to the interviewee, the contacts among businesspeople became more cohesive, and a greater understanding emerged regarding the advantages for all if the businesses were to interact more and to think more about a regional strategy. Even so, according to those interviewed businesspeople, this work is largely due to the connections established by local institutions.

One of the businesspeople interviewed states that the firms' joint activity is primarily performed through the coordination of local institutions, such as the Brazilian Service for Support to Micro and Small Businesses of the State of São Paulo (Serviço de apoio às micro e pequenas empresas do Estado de São Paulo—Sebrae) and the local industry association, to develop exports, to strengthen the cluster's

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

sales, and to provide access to public resources, such as city-donated land and lower taxes. Another interviewed businesswoman asserts that the most cohesive work is recent, as indicated in this passage: *"I think that such work already exists, of working together, but I think this work is asserting itself now, during the last year or so. The trend of working together, of the clustered firms is increasing."*

For the representative of the local Sebrae office, the joint action of the firms does not occur in a systematic manner, despite institutional efforts, but it did create both cohesion and practical benefits for solutions to regional businesses' common problems.

In addition to the perception that joint action can bring benefits for everyone, another of the region's businessmen highlights more practical results of institutions' activities, primarily those of the industry association.

Fairs are opportunities to promote Jaú's firms to potential customers; the industry association, the local government, and Sebrae all play central roles in organizing and encouraging business people's joint participation. Every July, with support from Sebrae, local footwear manufacturers participate in the joint Jaú stand at Francal (Sindicalçados, 2014), the largest trade and fashion fair in Latin America's footwear and accessories sector, which attracts both national and international buyers. Footwear manufacturers from Jaú also participate in the Couromoda at a joint stand subsidized by Sebrae and the local government. Couromoda is also an important trade and fashion fair to the sector. In 2014 Couromoda had more than 35 thousand visitors, 1500 exhibitors and buyers from 66 countries (Couromoda, 2014).

The Jaú footwear industry association is another important local agent that promotes the collaboration between its associated firms.

Finally, it can be emphasized that there is political activity on behalf of the region, including an elected federal deputy who works not only for the interests of Jaú but also for other footwear clusters. The industry association works side-by-side with that legislator.

The second category to be analyzed is the establishment of agents' reputations. This subcategory is directly influenced the exchange of information category, because it is unnecessary for an agent transact directly with another agent to know his or her reputation—it is enough that a cluster agent transfers information about how the supplier or customer behaves so that a positive or negative reputation is transmitted. In the event of prior opportunistic behavior, a social sanction is established: other agents of the cluster will no longer do business with an agent who has behaved opportunistically.

The interviewed businesspeople's choice of suppliers is influenced by the reputation of the region's agents. One of the interviewed businesspeople states that he has a long-term relationship with some of the cluster's suppliers and that through that relationship he has established a reputation based both on his experience as businessman and on repeated transactions over time.

For the Sebrae representative, the establishment of reputation is so important that in that representative's perception, there is a search for higher-quality suppliers outside the cluster as the region's businesspeople are becoming increasingly professional.

Stitching centers are an important link in the Jaú footwear chain. Reputation establishment is also a reality among these service providers: firms recognize the centers' reputations and centers recognize the firms' reputations. For the stitching-center proprietors interviewed, company recognition is significant and influences the decision of whether is worthwhile to work with a particular company. The owner of one of the stitching centers, which is established on a commercial property, states that he always works with the same company unless there is something that prevents him from doing so, such as opportunistic behavior or noncompliance with an agreement.

For the interviewee from another stitching center (located in his place of residence), the long-term relationship and establishment of reputation were enabled by the fact that the frequency of transactions was constant even in times of low demand, and the knowledge of the business partner for which he worked for two years (of the four years that his stitching center was established in the city).

The businesspeople interviewed stated that their firms maintain long-term relationships both with local suppliers and with customers, the latter of which are primarily located outside the region. For the professor, switching suppliers only occurs if there is a large advantage in price or the timeliness of delivery, but for him, the greatest influence would be fashion (i.e., the design of the footwear). If a suppli-

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

er is not current with the current collection's design, then switching suppliers will be more frequent. So, suppliers have to develop new capabilities to meet market demands.

According to the consultant to the stitching centers, 90% of the Jaú centers maintain long-term relations with firms. The owner of the stitching center at the commercial property states as follows: *"I know people that work 12 years with the same firm, 13 years. Me, the longest I stayed with a firm was five years."* Another stitching-center owner interviewed makes the same point, stating that the firm with which he has worked for two years treats all of the stitching centers equally and keeps its word in the sense that it continues to provide the center with work, even if only to create inventory. This observation shows the importance of one's "word" in the business relationship with the company.

In summary, the frequency category analyzed through the subcategories of joint action, the reputation established among agents, and the existence of credible commitments demonstrates that the following:

- With respect to joint action, the agents initially established relationships because the need to dispose solid waste from the production process and since then, the connections of support organizations (such as the trade industry association and Sebrae) has enabled the expansion of export sales and sales to the national market, such as, for example, with the fairs and the collective stands, in addition both to access to public resources and workface training in conjunction with Senai (National Industrial Training Service),
- Reputation is important to and influences the choice of suppliers, and
- Credible commitments appear to be of great importance for the local cluster's agents, given the long-term relationships established among agents.

The second category analyzed was that of uncertainty, as explained above. This category was divided into three subcategories: the exchange of information between agents, social sanctions, and access to market information.

Through the discourses of the interviewees, one can perceive that the exchange of information among agents is intense. All of the interviewees confirmed the existence of the exchange of information among agents, but always in an informal way, via "chit-chat."

Another interviewed businessman states that the exchange of information with other cluster agents is primarily related to suppliers. Regarding the search for new suppliers, the Sebrae representative says that when agents seek another supplier, they first seek to learn about the supplier's behavior, as indicated by the following statement: "*(...) For a new relationship he will do this, he will seek another type of information to determine whether it is meritorious, whether the supplier has a pedigree, something along those lines"* (Sebrae representative).

Thus, one perceives the influence of the exchange of information on the dissemination of an agent's reputation. Reputation is established for agents with which one transacts and through the exchange of information; an agent's propensity to engage in opportunistic behavior can be discovered in advance. In the interviewee's words, it is important to discover whether a supplier has a "pedigree", i.e., if the supplier has a positive reputation that enables an agent to consider whether it will transact with him or her. Stitching-center proprietors likewise affirm that they exchange information among themselves and demonstrate the second analyzed subcategory, the existence of social sanctions.

The interviewees demonstrate the informal exchange of information and report that this exchange exists on all levels, namely, the levels of suppliers, customers, and company employees. The aforementioned statement from the Sebrae representative stresses that by exchanging information about employees, businesspeople seek references about a prospective employee and if he or she has a negative reputation, then he or she will not be hired, which indicates that social sanctions exist even for employees, thus greatly reducing uncertainty in labor relations.

The final analyzed subcategory is access to market information. The businesspeople interviewed emphasize the actions of institutions, primarily Sebrae and the industry association, related to gaining access to market information. The interviewees state that footwear design and fashion trends are based on customer – the retailers - requests. Accordingly, one of the interviewees emphasizes that clients dictate also the sale of footwear, specially because they build the brands.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

In the document analysis, the actions promoted by the industry association and Senai partnership to provide Jaú businesspeople with access to design information also became evident. Senai organize workshops to provide guidelines for creating footwear for new collections, which are important to the individual firm and also to the cluster. Finally, institutions showed a clear interest in inserting Jaú firms into the Brazilian fashion circuit by promoting, through a partnership among Sebrae, the industry association, the Brazilian Association of Fashion Designers (ABEST), and the Brazilian Association of Firms of Components for Leather, Footwear and Manufactured Goods (Assintecal).

In sum, uncertainty in the Jaú footwear cluster's transactions appears to decrease to the extent that

- Agents informally exchange information among themselves about suppliers, customers, and employees,
- Social sanctions are established for agents with a poor reputation, to the extent that the exchange of information about these actions circulates among cluster agents,
- Agents have access to market information without establishing research departments for this purpose and they not only use customers (retailers) to understand fashions and design but also use support institutions both to understand fashion trends and to obtain information about the consumer market.

The third category analyzed was asset specificity. It aimed to identify the types of asset specificities that are both present and relevant to the cluster's longevity. The asset specificity was divided into six subcategories: site; human assets; physical assets; dedicated assets; brand; and temporal.

The site asset specificity refers to the potential cost reductions that the proximity of the same supply chain firms can obtain. The proximity of the footwear production chain firms in Jaú promoted a division of labor in order to improve productivity. The list of firm members of the industry association shows that - footwear manufacturers, components manufacturers (soles, clapping, buckles, heels, and others), cartons and packaging producers, and tanneries. Probably not all firms in the region are listed, but this information provides an estimate of how productive chain processes are present in the cluster, benefiting individual firms by geographical proximity.

The interviewees perceive no joint action among firms of the cluster but it was possible to identify collaboration among small groups of firms. Furthermore, there are three malls composed exclusively with footwear stores. These malls have 175 footwear stores and to establish them, regional footwear manufacturers worked together to maximize their earnings.

The second subcategory analyzed was human asset specificity. There are two fundamental activities to the efficiency of women footwear industry – cutting and stitching. A relationship between site specificity and human asset specificity can be established in the case of stitching centers. One of the stitching-center proprietors was not originally from Jaú or even from the footwear industry. In other words, Jaú is a footwear hub in which the outsourcing of labor is so intense, the interviewee can establish himself in the city and learn the stitching technique, something that would not be possible in another location.

Evidence was found of the need for strong administrative control of specific human assets, represented here by the figure of the cutter. The cutting phase is very important to have a good quality footwear and also to have lower raw material costs. An experienced cutter can improve final product quality and also minimize leather waste. An interviewee compares the amount of labor required during the footwear stitching and cutting phases to justify why cutting is primarily internal to firms, whereas stitching is external. Few leather cutters are necessary to have a large daily production. Thus, a cutter's labor is less expensive to the company than a stitcher's labor, not in terms of individual wage but in terms of the total final cost of the footwear. Other reasons identified by the interviewee for outsourcing the stitching phase involve logistical facilities, now that the stitching centers are all located within the cluster, in addition to the actual fixed costs related to the increased physical space required by the company in the event of the stitching phase being internalized. The interviewee also emphasizes the importance of avoiding labor costs by hiring outsourced stitching services.

It can be perceived that one very important factor in the longevity of Jaú's footwear cluster is the availability of specific human assets. Secondary data from a study conducted in 2001 support this statement and confirm the interviewees' discourse. According to Oliveira and Garcia (2001), in a quantitative study performed on the Jaú cluster between

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

1997 and 1998, 62 of the region's footwear firms were interviewed and one of the questions referred to the primary advantages of the Jaú location. Twenty-two of the interviewees responded that the Jaú location's primary advantage is the availability of a specialized workforce. That is, for approximately 35.5% of the firms interviewed, the primary advantage of being located in the cluster is the availability of a specialized workforce. It is worth noting that of all of the studied advantages, this was the one that was noted with the greatest frequency, especially by respondents from small firms (i.e., those with less than 51 employees).

According to Sengenberger and Pike (1999), economic analysis usually either ignores the workforce factor or cites it as an afterthought. Thus, specific human assets are treated as not being an integral part of economic success. The authors assert that the presence of a specialized labor *pool* is a basic requirement for a cluster's success. They also claim that the skill of the workforce is channeled through the community, passing from parent to child, from colleague to colleague. Another possibility, according to the authors, is the workforce training provided by technical schools.

None of the interviewees attributed importance to dedicated assets, physical assets, or temporal specificity subcategories.

Brand's specificity is defined as non-physical and non-human capital embodied in a firm's name. This concept of "brand" can be extended to a location and its identification with a certain industrial activity. In this case, we can ask whether the Jaú cluster has a brand that represents a location that produces women's footwear. On its website, the city of Jaú presents the city as the "capital of women's footwear" (Nosso São Paulo, 2014). Regardless of the classification of the city as the women's footwear capital by both the local government and its own businesspeople, the interviewees confirm that there is an identification of the cluster with the product, i.e., women's footwear. For example, the interviewed local college professor explains that footwear in Jaú is not sold; it is bought. By this, he means that retailers or footwear sales representatives usually seek out footwear factories and either purchase their production or suggest a design.

The interviewees were also asked whether the region's businesspeople are working jointly to build a cluster brand, including identifying their products as produced in Jaú, similar to Birigui-São Paulo. The interviewees claimed that the responsibility for building this brand belongs to the Jaú industry association, but that there is awareness of the issue among the region's businesspeople. In the industry association's plan of action, the following goal was established: "The Jaú hub will be known as a fashion reference point in innovative and desirable women's footwear and accessories."

In sum, the analyzed asset specificity category showed the following:

- Regarding the subcategories of physical asset specificity, dedicated assets, and temporal specificity, the interviewees did not attribute importance to these categories. For them, physical assets are easily re-employable, there is no investment in assets performed specifically for an agent with which they transact, and there is no decrease in the transaction's value over time,
- Site specificity is shown through the presence of various agents of the cluster's supply chain and through the footwear factory stores, highlighting the importance of the footwear industry to the regional economy,
- Human asset specificity is important for the interviewees and is an important factor for the presence of the firms in the cluster. A specific workforce is available that in the opinion of the interviewees, has a handmade character and lacks professionalization.
- The location is associated with the production of women's footwear, but the identification of local products with an established brand for either the retailer or end consumer has not yet been achieved. According to the interviewees, building this brand is the responsibility of the support institutions.

The final category analyzed was the cluster's longevity. The question to determine longevity was the following: what are the primary difficulties of establishing and maintain a firm outside the cluster. For the businesspeople interviewed, the proximity of suppliers and qualified labor would be the primary difficulties associated with the distance from the cluster. Or in the words of an interviewed businessman, *"The current advantage is the workforce, proximity to the industry that adds to and generates activity for the association."* The local college professor cites the importance to the city of industrial footwear ac-

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

tivity in a statement reminiscent of Marshall (1891), explaining that the secrets of the (local) profession are "in the air" and the interviewee claims that the local population "breathes footwear."

When the interviewee cites the importance of firms' professionalization, he wants to emphasize the handmade feature of women's footwear manufacturing, especially those made in Jaú. With respect to professionalization, he emphasizes both the difficult of having someone skilled to the job and the difficulty of working with various outsourced stitching centers. The interviewee means that this type of product requires a skilled workforce that would be very difficult to find elsewhere. The stitching center emerged through the time as a way to cope with rising indirect labor costs stitching center emerged through the time as a way to cope with rising indirect labor costs; which lead to collective use of outsourcing.

For the Sebrae and industry association representatives interviewed, the main difficulties for the firms in establishing themselves outside the cluster would be access to suppliers and a specialized workforce. The Senai teacher interviewed emphasizes the importance of the proximity of firms as a factor of the cluster's longevity. The stitching-center owners interviewed agree that it would be very difficult to establish themselves in a different location because of the need for firms in proximity. One owner interviewed says that for his center to leave the cluster, he would require a good offer with guarantees of continuity in the relationship.

In sum, with regard to the cluster's longevity category, the interviewees demonstrate the region's vocation for footwear production and emphasize the proximity of suppliers, a specialized workforce, and supply-chain agents as factors that would be difficult to find in another place, which in their opinion justifies the existence of the cluster. Considering the influence of transaction costs in the longevity of Jaú's footwear cluster, it can be perceived by the interviewees' statements that

- The primary reasons for the company to be located in Jaú are human asset specificity (specialized workforce) and site specificity (proximity to suppliers),
- Through the analysis of the above categories, access to information also decreases the uncertainty about relationships experienced by the cluster's agents and can influence those relationships' continuity,
- With respect to the frequency category, credible commitments are also an important factor for the cluster's longevity because most of the firms establish informal agreements with both suppliers and customers.

5. CONCLUSIONS

Analysis of the collected data shows an intense frequency of transactions and low uncertainty for intermediaries of the supply chain because of the exchange of information among agents.

With regard to joint action, agents established inter-organizational relationships, in the first place, due to the need to dispose solid waste from the production process. Since then, joint actions of supporting organizations, such as industry association and Sebrae, have helped collective development in many fronts such as export trade, sales to the domestic market, collective stands in trade fairs, access to public resources but also in relation to the training of the workforce. The high frequency of inter-organizational and interpersonal interaction seems to indicate a reduction of transaction costs in the supply chain.

Reputation is important in the choice of suppliers, and those agents with good reputation are more likely to establish long-term relationships (Williamson, 1985, Farina et al, 1997). This may be the only way to differentiate vendors in this market of poorly differentiated suppliers of parts and services.

Respondents informed that supply chain members value the continuity of the transaction and they avoid breaking established relationships. The prospect of continuing the relationship leads to credible commitments (Williamson, 1985), so, opportunistic behavior has to be avoided, in order to increase the expectation of continuity of the relationship.

Supply chain members informally exchange information on suppliers, customers and even employees. We can see here that agents pass on information about the reputation of others. This exchange of information between agents decreases the uncertainty (Dyer, 1997) and therefore may reduce transaction costs. It is also used to establish social sanctions (Dyer, 1997), especially for agents with a bad reputation, to the extent that the exchange of information on these actions circulates among cluster agents.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

The interaction among supply chain members and also with supporting institutions allows many suppliers to access market information without establishing research departments. Thus, the agents acting in the cluster have access to information about fashion, design, technical knowledge, and so on. In a cluster, if there is intense exchange of information, firms do not need to internalize the information search (Asheim, 2000).

The spatial proximity of firms in the same supply chain means lower costs for the chain (Williamson, 1985; Farina et al., 1997; Dyer, 1997). This locational specificity is well established in the cluster both in the production side and in the sales side.

The human asset specificity is probably a main explanation for the presence of companies in the region. But the specific skilled workforce available in the cluster lacks professionalism.

Firms in the cluster usually do not invest in assets that can lock them in with other firm, so they can easily reallocate their assets without losing value.

The city presents itself as a producer of women's footwear and is recognized by regional and national market as a major producer of this type of product. However, the identification of local products with an established brand to be used at retail level, i.e., to create consumers' preference, is not yet clear. Supply chain members interviewed understand local supporting institutions and government as responsible for building the local brand for footwear manufactured locally. Despite that, manufacturers whose products have clear differentiation invest in the development of their brand.

In sum, cluster's longevity is due to the existence of raw material suppliers, skilled labor, other members of the supply chain located in the region, and also because these factors are difficult to find together elsewhere. The agglomeration also promotes innovation, that is another important factor to cluster's longevity. Transaction costs among members of local supply chain are reduced as explained above, helping the competitiveness of local supply chain and its survival.

The secondary data show that the number of people employed locally in the production of footwear increased over the years (MTE/RAIS-CAGED). Brito, Brito, Porto & Szilagyi (2010) found that the local agglomeration of members of a supply chain can promote employment growth in the long term as it happens in Jaú.

6. REFERENCES

Asheim, B. T. (2000). Industrial Districts: the contributions of Marshall and beyond. In: Clark, G., Feldman, M., & Gertler, M. S. (Eds.) *The Oxford Handbook of economic geography*. New York: Oxford University Press.

Becattini, G. (1999). Os distritos industriais na Itália. In: Urani, A., Cocco, G., Galvão, A. P. (Eds.) *Empresários e empregos nos novos territórios produtivos*: O caso da terceira Itália. Rio de Janeiro: DP&A Editora.

Brito, E. P., Brito, L. A. L., Porto, E. C., & Szilagyi, M. E. (2010). A relação entre aglomeração produtiva e crescimento: a aplicação de um modelo multinível ao setor industrial paulista. Revista de Administração Contemporânea, 14(4), 615-632.

Cassiolato, J. E., & LASTRES, H. M. (2003). O Foco em Arranjos Produtivos e Inovativos Locais de Micro e Pequenas Empresas. In: Lastres, M. H., Cassiolato, J. E., & Maciel, M. L. (Eds.). *Pequena empresa*: Cooperação e desenvolvimento local. Rio de Janeiro: Relume Dumará.

CETESB. (2014). *Companhia de Tecnologia de Saneamento Ambiental*. Contexto econômico, social e ambiental da Indústria de couros, peles, assemelhados e calçados no Estado de São Paulo. Retrieved from: http://www.cetesb.sp.gov.br/tecnologia-ambiental/cas-em-atividade/44-camara-ambiental-da-industria-de-couros--peles--assemelhados-e-calcados/.

Couromoda (2014). Retrieved from: http://www.couromoda.com/feira/pg/informacoes-gerais/.

Coase, R.H. (1937). The Nature of the Firm. In: Williamson, O. E., & Masten, S. E. (Eds.) *The Economics of Transaction Costs*. Massachusetts: Edward Elgar Publishing, Inc. 1999. pp. 3-22.

Côrrea, A. R. (2001). O complexo coureiro-calçadista brasileiro. *BNDES Setorial*. Retrieved from: http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bnset/set1404.pdf.

Dyer, J. H. (1997). Effective Interfirm Collaboration: How Firms Minimize Transaction Costs and Maximize Transaction Value. *Strategic Management Journal*, 18(7), 535-556.

Farina, E. M. M. Q., Saes, M. S. M., & de Azevedo, P. F. (1997). *Competitividade: mercado, estado e organizações*. Editora Singular.

Godoy, A. S. (2006). Estudo de caso qualitativo. In: Godoi, C. K., Bandeira-de-Mello, R., & Silva, A. B. da. (Eds.). *Pesquisa qualitativa em estudos organizacionais*: Paradigmas, estratégias e métodos. 1 ed. São Paulo: Saraiva.

Guidolin, S. M., Costa, A. C. R. da & Rocha, E. R. P. da (2010). Indústria calçadista e estratégias de fortalecimento da competitividade. *BNDES Setorial*. Retrieved from

http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bnset/set3104.pdf

Kreps, D. M. (1990). A Course in Microeconomic Theory. New York: Harvester Whatsheaf.

Marshall, A. Princípios de Economia (1891). In: Coleção - *Os Economistas*. São Paulo: Nova Cultural, 1985.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

Merriam, S. B. (2002). *Qualitative research in practice*: Examples for discussion and analysis. San Francisco: Jossey Bass.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Nova York: Cambridge University Press.

Nosso São Paulo. (2014). Cidade de Jaú. Retrieved from: http://www.nossosaopaulo.com.br/Reg_05/Reg05_Jau.htm

Oiko, O. T. (2007). *Desenvolvimento de um sistema de informação para benchmarking e sua aplicação em arranjos produtivos locais*. Dissertação (Mestrado em Engenharia da Produção). Escola de Engenharia de São Carlos. São Carlos.

Oliveira, A. M. R., & Garcia, L.B.R. (2001). O pólo calçadista de Jaú: Suas implicações socioeconômicas e espaciais. In: Gerardi, L. H. de O., & Mendes, I. A. (Eds.). *Teoria, Técnicas, Espaços e Atividades*: Temas de Geografia Contemporânea. Rio Claro: Programa de Pós-Graduação em Geografia UNESP/Associação de Geografia Teorética AGETEO.

Perry, M. (1999). *Small firms and Network Economies*. New York: Routldege.

Porter, M. E. (1991). Towards a dynamic theory of strategy. Strategic Management Journal, 12(S2), 95-117.

Prefeitura Municipal de Jaú. Retrieved from: http://www.jau.sp.gov.br/. Acesso em: Novembro de 2014.

APL de Calçados de Jaú. (2007). *Plano de Desenvolvimento do Arranjo Produtivo Local*. Retrieved from: http://www.desenvolvimento.gov.br/arquivos/dwnl_1248288185.pdf.

Puga, F. P. (2003). *Alternativas de apoio a MPMEs localizadas em arranjos produtivos locais*. Texto para discussão No. 99. Rio de Janeiro: BNDES. Retrieved from: www.bndes.gov.br/.

Robertson, P. L., & Langlois, R. N. (1995). Innovation, networks, and vertical integration. *Research policy*, *24*(4), 543-562.

SEBRAE (Serviço de apoio às micro e pequenas empresas de São Paulo). Subsídios para a identificação de clusters no Brasil: atividades da indústria - Relatório de Pesquisa. São Paulo: Sebrae, 2002.

SENAI JAÚ. (2014). Serviço Nacional de Aprendizagem Industrial – Jaú. Retrieved from: http://www.sp.senai.br/home/Telas/enderecos/lista_enderecos.asp?ids=790.

Sengenbreger, W., & Pike, F. (1999). Distritos industriais e recuperação econômica local: questões de pesquisa e de política. In: Urani, A., Cocco, G., & Galvão, A. P. (Eds.) *Empresários e empregos nos novos territórios produtivos*: O caso da terceira Itália. Rio de Janeiro: DP&A Editora.

Suzigan, W., Furtado, J., Garcia, R., & Sampaio, S. (2003). Sistemas locais de produção: mapeamento, tipologia e sugestões de políticas. In: *XXXI Encontro Nacional de Economia* – ANPEC 2003, Porto Seguro. Anais... Porto Seguro, 2003.

Williamson, O. E. (1985). *The Economic Institutions of Capitalism*: Firms, Markets, Relational Contracting. Nova York: The Free Press.

Williamson, O. E. (1996). *The Mechanisms of Governance*. Nova York: Oxford University Press.

Zylbersztajn, D. (1995). *Estruturas de governança e coordenação do agribusiness*: Uma aplicação da Nova Economia das Instituições. 1995. 238p. Tese (Livre-Docência) – Departamento de Administração, Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo, São Paulo, 1995.

ISSN: 1984-3046 • Journal of Operations and Supply Chain Management Volume 7 Number 2 p 140 – 153

Author's Biography:

Eliane Pereira Zamith Brito: Has more than 15 years of management experience in consumer goods companies. She holds a PhD from Manchester Business School, England, and is a professor at EAESP – Fundação Getulio Vargas, Brazil. Her main research interests are cooperation, trust and reputation in relationships.

Lilian Soares Pereira Carvalho: Visiting researcher at JMSB - Concordia University under Dr. Gad Saad´s supervision. Bachelor's at Administração de Empresas from Universidade Presbiteriana Mackenzie (2001) and master at Business Administration from Universidade Presbiteriana Mackenzie (2007). PhD candidate at Fundação Getulio Vargas (FGV-EAESP) since 2012. Research interests: evolutionary psychology, conspicuous consumption.