



INTER-AMERICAN DEVELOPMENT BANK
BANCO INTERAMERICANO DE DESARROLLO
LATIN AMERICAN RESEARCH NETWORK
RED DE CENTROS DE INVESTIGACIÓN
RESEARCH NETWORK WORKING PAPER #R-557
RG-K1113

**THE ROLE OF FLAGSHIP FIRMS, EXTERNAL ACTORS
AND SUPPORT INSTITUTIONS IN THE EMERGENCE
OF SUCCESSFUL EXPORT ACTIVITIES IN BRAZIL:
TWO INDUSTRIAL CLUSTER STUDIES**

BY

ANGELA DA ROCHA*
BEATRIZ KURY*
JOANA MONTEIRO**

*COPPEAD GRADUATE SCHOOL OF BUSINESS

** DEVELOPMENT ALTERNATIVES, INC. (DAI) BRAZIL

SEPTEMBER 2009

**Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library**

Rocha, Angela da.

The role of flagship firms, external actors and support institutions in the emergence of successful export activities in Brazil: two industrial cluster studies / by Angela da Rocha, Beatriz Kury, Joana Monteiro.

p. cm. (Research Network Working Paper ; R-557)

Includes bibliographical references.

1. Exports—Brazil—Case studies. 2. Industrial clusters—Brazil—Case studies. 3. Manufacturing industries—Brazil—Case studies. I. Kury, Beatriz. II. Monteiro, Joana. III. Latin American Research Network. IV. Series.

HF1414.55.B7 R63 2009

382.6 R672----dc22

©2009

Inter-American Development Bank
1300 New York Avenue, N.W.
Washington, DC 20577

The views and interpretations in this document are those of the authors and should not be attributed to the Inter-American Development Bank, or to any individual acting on its behalf.

This paper may be freely reproduced provided credit is given to the Research Department, Inter-American Development Bank.

The Research Department (RES) produces a quarterly newsletter, IDEA (Ideas for Development in the Americas), as well as working papers and books on diverse economic issues. To obtain a complete list of RES publications, and read or download them please visit our web site at: <http://www.iadb.org/res>.

Abstract*

This paper examines the process by which firms in a cluster start to export based on systemic interactions and the process of diffusion of exporting as a business strategy within the cluster. Two Brazilian manufacturing industries are studied, and within each one a geographic cluster was identified as the origin of dynamic export growth. Players in each industrial cluster, as well as other significant players, were interviewed or identified using secondary sources, and extensive secondary data research was undertaken to study clusters' historical development. Detailed analysis and a comparison of the two experiences made it possible to draw some general conclusions concerning the similarities and differences between the two clusters in terms of the adoption and diffusion of exporting.

JEL Classifications: L11, L67, L68, O33

Keywords: Cluster, Exports, Innovation, Brazil

* This paper was undertaken as part of the Latin American and Caribbean Research Network project "The Emergence of New Successful Export Activities in Latin America."

1. Introduction

Despite its size and importance as one of the leading emerging economies in the world, Brazil's presence in foreign trade is still quite limited: the country accounts for less than 1 percent of the world's international trade, a situation that has not changed in recent decades. The reasons for this low export performance have been raised (Iglesias and Motta Veiga, 2005), including macroeconomic factors (such as macroeconomic turbulence, exchange-rate policies, high-interest rates, etc.), market factors (size of the domestic market), or firm-related factors (firm size, family ownership, managers' risk aversion, or local mindset). In fact, the country has lagged behind other emerging economies in developing its export activities. In the last decade, only 40.9 percent of total Brazilian exports grew at a rate equal to or higher than global exports (Miranda, 2001), raising the question of which factors stimulated export growth in some sectors more than others. This paper reports partial results of a larger investigation concerning the emergence of successful export activities in Brazil in certain industries and geographic areas. Specifically, the paper looks at the process of adoption and diffusion of exporting as an innovative business strategy in industrial clusters.

2. Literature Review

2.1 Internationalization as an Innovation

The issue of exporting as an innovative behavior has received little attention in the international marketing and international business literature, although the first studies date back to the 1960s and 1970s. The first study identified was undertaken by Simmonds and Smith (1968). Using case studies to identify the stimuli behind the adoption of exporting as a business strategy, the authors found external agents to be the most important factor in export initiation. Subsequently, Lee and Brasch (1978) used diffusion theory to explain the "rediscovery" of exporting by U.S. manufacturers. They found empirical support for Simmonds and Smith's contention that external agents played a significant role in the adoption process of exporting as an innovative business strategy. Samiee, Walters, and DuBois (1993) addressed the issue from the perspective of the single firm, defining an export innovator or initiator as a firm that showed a "self-induced desire to engage in exporting" (p. 11). The study determined the existence of significant differences between export innovators and non-innovators in a number of characteristics. In general, the authors concluded that export innovators were more prone towards exhibiting "desirable"

patterns of export behavior. Despite the pioneering characteristics of these studies, the use of diffusion theory to explain export behavior received subsequently almost no attention. The lack of interest in the topic might be explained by the fact that the process of adoption and diffusion of an innovation must be seen in the context of a group of actors, and not as an individual phenomenon.

Developments in the area of firm internationalization in the last two decades emphasized the role of social and industrial networks (Johansson and Mattson, 1988, 1992; Hakansson and Snehota, 1995; Welch et al, 1998). Firms are not stand-alone actors, but instead enter exporting as part of a network of other firms (Bonaccorsi, 1992). Despite these conceptual advances, even network studies tended to look at internationalization from the perspective of a single actor, and firm membership in networks as part of the entrepreneur's social capital (e.g., Coviello and Munro, 1997; Blomstermo et al., 2004; Jones and Coviello, 2005). Other research on networks of innovators, although not concerned with the phenomenon of internationalization, looked at how inter-firm networks are associated to the success of an innovation, but even the original management studies on this subject "have focused on decisions and prescriptions for individual actors" (DeBresson and Amesse, 1991, p. 367).

Recent contributions in the economics literature (Hausmann and Rodrik, 2003; Hausmann, Protchett, and Rodrik, 2004) have shed some light on the importance of structural change and the "discovery" of new export activities by firms, resulting in high-growth episodes. This stream of literature raises a new set of intriguing questions concerning how firms in an emerging market start exporting new varieties of products and the policy implications of this process.

2.2 Industrial Clusters and Internationalization

It is well known that there is a tendency for the agglomeration of industrial activity in certain locations, which may in turn stimulate the creation of environmental conditions favorable to further expansion of the economic activity in these areas. Porter (1998) defined clusters as the occurrence of critical masses in a certain location which achieve high competitive performance in a given field, and claimed that this form of organization of the economic activity presently dominates the global market. Scott (1996, p. 399) went as far as to predict the development of

“super-clusters of producers.... forming large metropolitan areas or world cities...”, seen as the regional motors of the global economy.

The reasons for the success of clusters can rely on traditional factors, such as favorable environmental conditions (availability of raw materials, access to transportation by rivers or ports, labor supply, etc.), or in competitive advantages rising from interactions, knowledge generation and diffusion, and attractiveness to outside investors and innovators (Iammavarino, Sanna-Randaccio, and Savona, 2006). Typically, clusters do not attract only manufacturers of similar products, but also encompass a whole range of other firms in the value chain, including suppliers of various products or services and firms in related industries. They also tend to include industry and trade organizations, government organizations, universities and research centers, and various other service-related activities. Competitive advantages associated with cluster membership include higher productivity, strengthening of innovative capabilities, and the ability to promote the establishment of new firms in the cluster. Although clusters foster firm cooperation, competition is also an essential element of a cluster’s success. Porter (1998) claimed that competition and cooperation may occur in different dimensions of a cluster.

Five sets of factors are examined by Hendry, Brown and Defillippi (2000) in order to understand the relationships among firms in a cluster and the mutual influences that seem to shape their growth and performance: networks and ties between firms, available resources, supporting institutions, end-markets served, and firm-related factors. Networks in particular have received a large amount of attention in the literature, because they seem to be crucial to the understanding of industrial clusters. Networks can be internal or external to the cluster, and some have even argued that the competitiveness of a cluster is associated with its ability to connect to larger or global networks that have access to leading-edge technologies (Harrison, 1994).

Geographic proximity has a major role in stimulating the development of interactions among players in a cluster, and to invite new players to enter. These “systemic interactions”—interactions among firms, or between firms and government agencies, universities, research centers, and other institutions—are often the motor of innovation, facilitating the adoption and diffusion process (Iammavarino, Sanna-Randaccio, and Savona, 2006).

A related concept drawn from the literature on industrial clusters is that of flagship firms. Elaborating on the concept first proposed by Rugman and D’Cruz (2000) in the context of

multinational enterprises, Ferreira, Tavares, and Hesterly (2006, p. 92) defined flagship firms as “the company that leads the cluster,” typically a “mother firm” with a large number of spin-offs. Entrepreneurial spin-offs in industrial clusters are seen as an important factor in cluster development, although they are sometimes described in the literature as a sort of parasite or as a “brain drain” from parent firms (Ferreira, Tavares, and Hesterly, 2006). The flagship firm, in this concept, can easily be identified in the genesis of the cluster, and it can be a domestic or a foreign-owned firm. Hendry, Brown, and Defillippi (2000, p. 141) suggest that one important issue to be considered are the “relationships involving knowledge flows and favours emanating specially from historically significant local firms.”

This paper addresses the issue of the adoption and diffusion of exporting as an innovative business strategy in industrial clusters. Export-led growth in industrial clusters has not received much attention from the literature, although there are studies on the role of internationalization in promoting structural changes in a cluster (Bertolini and Giovannetti, 2006), on the impact of internationalization on social relationships of local firms (De Martino, Reid, and Zyglidopoulos, 2006), and on the impact of social externalities on the internationalization of firms within a cluster (Reid, DeMartino and Zyglidopoulos, 2005). Also, several authors have shown the advantages to a cluster of international or global connections (Harrison, 1994; Cawthorne, 1995; Hendry, Brown and Defillippi, 2000; Guerrieri and Pietrobelli, 2004), while others have emphasized the importance in cluster development of a strong domestic demand for its products (Albors, 2002).

The role of leading firms, foreign buyers, and government agencies has also been examined in a few studies. For example, Schmitz (1995, 1999a) studied the Sinos Valley footwear cluster in Brazil in two moments in time; he notes that while cooperative actions within the cluster were initially based on a common cultural identity, economic rationales later became dominant. The role of leading firms and export agents in the development of the cluster and the failure of the state to support the cluster in a period of crisis were also examined. Schmitz (1999b, p. 480) suggests that market failures faced by industrial clusters are often better resolved by means of “joint private action” than by government intervention. Finally, there is also anecdotal evidence of the role of flagship firms in starting the internationalization process of a cluster (Ferreira, Tavares, and Hesterly, 2006). This paper attempts to understand the process by

which firms in a cluster start to export based on systemic interactions, and the process of diffusion of exporting as a business strategy within the cluster.

3. Methodology

The research method used was industry case studies, and the unit of analysis selected was the cluster. Bertollini and Giovanetti (2006) and Schmitz (1999b) advocate the use of the cluster as a unit of analysis, instead of the individual firm, as a more promising research strategy. In this study, two manufacturing industries were chosen for study, and within each one a geographic cluster was identified as the origin of dynamic export growth in the industry. Players in the industrial cluster, as well as other significant players, were interviewed or identified using secondary sources.

Relevant industries were selected based on a detailed analysis of export data made available to the public by the Brazilian Foreign Trade Office (SECEX). Since these records were only digitalized beginning in 1989, the data available covered the period between 1989 and 2005. A six-digit code was initially used. Two filters were adopted: the average growth rate for each product and the value of total exports (products with total export sales of less than US\$ 100 million in 2005 were excluded), resulting in a selection of 113 products. The new list obtained was then submitted to specialists, who assisted the research team in the identification of “interesting” industry cases. Four industries were finally selected: two in the agricultural sector, and two in the manufacturing sector. This paper refers to the two manufacturing industries selected: the furniture industry and the beachwear industry.

Since the SECEX data do not provide export sales information on specific firms, the next steps had to be based again on interviews with industry observers and specialists, in order to identify specific firms and clusters where the export-led growth had originated. Two industrial clusters were identified in which the recent export-led growth seemed to have originated: the São Bento do Sul wood furniture cluster and the Rio de Janeiro beachwear cluster.

Interviews were conducted with various players in each industry and cluster from June to December, 2005. A total of 11 interviews in the furniture industry and 12 interviews in the beachwear industry were conducted, covering the most important manufacturers, traders, industry organizations, and consultants to the industry. All interviews were recorded and transcripts were made. Secondary sources were also used. In the case of the São Bento do Sul

furniture cluster, extensive records were available since the furniture industry represents the main economic activity of the region. In contrast, very few industry records were available for the Rio de Janeiro swimwear cluster. The fashion world has its own records of product launches, which were to some extent available to the researchers, but those were of limited value for this study.

The analysis proceeded in two steps: descriptive and analytical. The first (descriptive) step included: (i) the preparation of industry and cluster reports, covering available sales, export and import data, spatial organization of the industry, cluster information and historical background; (ii) a detailed description of the process of adoption and diffusion of exporting as an innovation in the cluster, including historical information on the role of flagship firms, immediate followers, and late adopters; and (iii) a descriptive account of the role of support institutions, private and public, in the process. The second (analytical) step consisted of: (i) industry case study analysis, including summary tables with the time line of major events shaping the cluster and the industry, and diagrams to illustrate the connections between various players in the industry, and (ii) comparison of the two case studies to understand the diffusion process and extract general conclusions.

4. The Furniture Industry

4.1 Industry Background

The Brazilian furniture industry comprises around 16,000 firms, of which 10,000 are micro-businesses, 3,500 are small-sized, 1,000 are medium-sized, and 750 are large firms. The vast majority are domestic family-owned firms. Exports grew from almost nothing in the early 1990s, to nearly US\$1 billion dollars in 2005. Brazil is now the world's twelfth-largest furniture exporter; China, number one in the ranking, recorded furniture exports of approximately US\$9 billion. The industry export/sales ratio increased from 10.1 percent in 2000 to 22 percent in 2004, but was believed to have fallen in 2005 to 18 percent. About half of Brazilian exports originate in one state, Santa Catarina, with another 30 percent coming from the state of Rio Grande do Sul. The furniture industry's main competitive advantages are country-specific, such as local availability of raw materials, skilled labor (typically of European origin), and cost advantages (e.g., a forest takes 12 to 15 years to grow in Brazil, compared to 30 to 50 years in Europe).

Furniture manufacturers are concentrated in production clusters. A typical furniture cluster in Brazil has between 100 to 300 manufacturing firms. The São Bento do Sul cluster, the third in size in Brazil, has unique characteristics. Although it holds the third place in the Brazilian ranking of furniture clusters in terms of number of people employed, it is the number one exporter of furniture in the country, with 43 percent of Brazilian furniture exports in 2005. Many firms in the cluster export 80 to 100 percent of their production, and one firm in the cluster is the largest individual exporter of home furniture in Brazil. The cluster consists mostly of small and medium-sized Brazilian family-owned and family-operated firms, and approximately 400 firms (including those near the cluster proper) employ around 10,000 employees. The original European settlers were immigrants from Germany, Austria, Czechoslovakia, and Poland, who brought with them furniture-making and woodworking skills in the early 1800s, and the dominant cultural influence in the area is Germanic.

4.2 The Flagship Firms

Flagship firms are easily identified in the development of the São Bento do Sul furniture cluster. Zipperer Industries was the pioneer. Founded in 1923, this company claims to be the oldest firm in the Brazilian home furniture industry. The role played by Zipperer in the development of the cluster is broadly recognized by other cluster members, industry representatives, and government officials interviewed. Artefama was the immediate follower, became the leading firm in the industry, and also had a major influence in the development of the cluster. Artefama started exporting almost at the same time of Zipperer.

4.2.1 Zipperer, the First Mover

Zipperer was founded by a descendant of Austrian immigrants, who became a legendary figure in the region. He initiated the production of handicrafts made of small pieces of pinewood that were wasted by the timber industry. Limited by the technological and human resources available in the region, at that time quite insulated from the rest of the country, he imported books from Germany, developed his own equipment, and trained his employees. He was also a proactive businessman, who traveled frequently to make contacts and sell his products. The company was a pioneer in selling wood products outside the state of Santa Catarina, stimulating other firms from São Bento do Sul to pursue the same path. Even at this early period in Zipperer's development a number of firms followed the example, many of them spin-offs.

The first firm in the cluster to export, Zipperer began exporting to the United States, Germany, and England in 1959, and in the early 1960s it also exported to Japan. As competition grew in the 1960s, it increased production, introducing colonial-style furniture designs made of imbuia, a native wood, which were later copied by other firms in the cluster. The first attempts by the firm to export furniture in the 1970s were not very successful. In the mid-1970s, the growing shortage of imbuia increased the attractiveness of using pine from reforestation. To overcome the lack of technology and know-how, local businessmen and the city government created FETEP, a research institute with the mission of developing technical know-how and training workers for the furniture industry. The final step was made by Zipperer in 1979, when the founder's was sent to Canada to learn the most advanced techniques of using pine wood from reforestation to produce furniture.

Zipperer carefully planned the export of pine wood furniture. A modern plant using the latest equipment—and with a high level of operational flexibility was considered the main competitive advantage of Zipperer. Also, the company had its own pine forests to harvest, producing high quality wood. During the 1980s, the company was quite successful in selling to the European market and developed a reputation as a reliable supplier of quality products at a competitive price. As Zipperer produced and successfully exported this new product line, other firms in time followed its example. Zipperer also led other São Bento do Sul firms in exporting to the U.S. market. The company benefited from the export boom of the early 2000s. Growing exports, combined with high-quality products, allowed Zipperer to establish solid relationships with its foreign buyers, and the company presently exports 90 percent of its output. Succession problems have jeopardized Zipperer's role as a flagship firm in the São Bento do Sul cluster, however, and halted its growth.

4.2.2 Artefama, the Immediate Follower

Founded in 1945 by four entrepreneurs, Artefama was also initially dedicated to the production of pine wood handicraft. The present CEO is one of the owners of Artefama, and a descendant of Austrian immigrants. As the company grew, a new plant was built. Product lines became more diversified, and new handicraft items were launched and sold to stores outside the state, in a similar manner to Zipperer. The first export order came in 1965. In the early 1970s the company entered the furniture business and acquired a local plant in the downtown area. Exports grew

substantially over the next several years, and by the end of the 1970s Artefama was exporting around 10 percent of its output, a share that increased to 30 percent in the next several years.

Repeat orders were an evidence of the acceptance of Artefama's products in foreign markets, based on country-specific advantages, such as quality and cost of raw materials and labor, and firm-specific advantages, such as delivery and technical assistance. By 1990 the firm was exporting around 50 percent of its total output. Although export initiation resulted from unsolicited orders, export development was a strategic choice consciously made by Artefama's management.

A major change was implemented during the late 1980s, as the company started to manufacture and export products made of pine. The company prided itself of combining high technology and artisan work in its manufacturing processes. By 1999, Artefama was ready to conquer new foreign markets. The firm had invested in new facilities and equipment, improved productivity, and defined its growth strategy. In addition, in the preceding years Artefama had come to see exports as the best path for the company's future. Artefama very quickly came to export almost 100 percent of its total output, and by 2006, the firm was Brazil's largest exporter of wood furniture, becoming a role model and a trend-setter in the cluster.

4.3 The Diffusion Process

Zipperer, the first mover, and Artefama, the immediate follower, were very important in shaping the nature and pace of the furniture cluster of São Bento do Sul. These two companies inspired other firms to follow their path at different points in the cluster's history. They created two generations of entrepreneurial spin-offs and trained skilled workers in pinewood furniture production. Their CEOs additionally performed an important role in the development of the region. A respected businessman, the founder of Zipperer was elected mayor and pioneered a number of initiatives to develop the cluster. Artefama's CEO also had a leading role in the cluster. A supporter of a number of initiatives, he was a vice-president of Abimóvel, the Brazilian Association of Furniture Manufacturers, and an advocate of industry interests with the federal government.

There is no question that Zipperer made the four critical steps that permitted the growth of the São Bento do Sul cluster: the use of wood scraps to manufacture handicrafts, the exporting of these products, the initiation of colonial-style furniture production, and the production and

exporting of pine wood furniture. Also, Zipperer provided the initial pool of trained workmen to new firms in the region. Artefama in turn played a similar role, taking the position of flagship firm and leading the cluster in its recent export drive. Though not an innovator, the company eventually became a more successful exporter than the pioneer firm.

Environmental factors played a further role in the cluster's development. The collapse of Soviet Union and the subsequent civil wars in the Balkans helped Brazilian exports of furniture, as East European countries had been the traditional exporters of this type of furniture to many countries in Western Europe. With the rupture of the established political order, these suppliers were unable to accept orders and meet deadlines. Buyers from Germany and the Netherlands came to South America in search of alternative suppliers, and contacts in Brazil with the São Bento do Sul firms were extremely successful because of cultural similarities and the use of German as a business language.

International and domestic export intermediaries also played an important role in the cluster development. Export agents started to visit the cluster in the early 1990s, and these export agents were responsible for the identification of distributors and retailers in foreign markets. To better serve the new export markets, though, it became necessary to improve the quality of the pine wood furniture. Importers played a major role during this stage, bringing new technical standards. New accessories and parts had to be specially designed and developed to meet buyers' requirements. Domestic wood panel suppliers also improved the quality of their products. A number of firms in the cluster started to export in the early 1990s, and by 1994 the cluster had attained international product quality standards. Between 1994 and 1997, 93 percent of the firms in the cluster made investments in equipment, and plant automation of larger firms was completed during this period. As the exchange rate became favorable to exporting after the 1999 devaluation, additional firms in the cluster began to export, and the reinvestment of export profits made it possible for local industry to complete the modernization process.

Diffusion was further aided by institutions in industry, government and academia. Abimóvel, the manufacturers' association, was especially active after 1998, with the Promóvel Program. Its main role in the diffusion process was to accelerate the adoption of exporting in the industry by providing funds and technical and marketing support. Joint efforts between government agencies and the industry association permitted the creation in 2004 of a national program for the development of furniture exports, the Brazilian Furniture Program, an expansion

of the original Promóvel Program. Yet it seems that Abimóvel was more important in fostering the expansion of exports in other furniture clusters than in São Bento do Sul, where its impact was subsidiary. Other support institutions were SENAI, the Brazilian industry agency for education and development, and UDESC, the State University of Santa Catarina, that established a campus in São Bento do Sul and presently provides well-trained managers and specialized engineers and technicians to the cluster. These efforts supported and expanded the scope of the diffusion process, which was already underway.

An interesting complementary aspect has to do with the diffusion process among clusters. Data available suggest that the clusters of São Bento do Sul (43 percent of total Brazilian exports of furniture in 2005), Bento Gonçalves (27 percent), Paraná (9 percent), and São Paulo (8.8 percent) were earlier movers in the adoption of exports, although this process was most intense in São Bento do Sul, followed by Bento Gonçalves. Other clusters are nonetheless displaying substantial growth. The Bahia cluster had the largest increase in exports in 2005, 50.6 percent, followed by Minas Gerais with 44 percent, and Ceará with 43 percent, suggesting that the diffusion process of exporting is spreading to other clusters.

5. The Swimwear Industry

5.1 Industry Background

The Brazilian swimwear industry grew exponentially in the last two decades. Between 2000 and 2005, the sector achieved average export growth rates of 32 percent a year, with total exports reaching US\$24.9 million in 2005. The Brazilian swimwear industry constitutes a small segment of the domestic apparel industry, but one that achieved international recognition. Its origins date back to the 1950s, when Catalina, a brand owned by the American clothing company Pacific Mills, established a subsidiary in Brazil to manufacture swimsuits. The industry consists of approximately 700 firms, mostly small-sized and entrepreneurial, with the largest exporting firms concentrated in the cities of São Paulo and Rio de Janeiro.

5.2 The Flagship Firms

Identifying a first mover within the Brazilian swimwear industry is a very complex task, since most companies are small and there are almost no records of industry evolution. The information comes from various sources but ultimately from the firms themselves; one has to rely on

interviewees' memories collected from personal interviews. Unfortunately, the information given is not very precise, as firms are reluctant to supply information because of intense competition in the domestic market and the fear of providing critical information to others. Also, jealousies and rivalry among designers make it difficult to evaluate reciprocal influences. This industry study suggests that the understanding of the adoption and diffusion process can be quite complex, especially in an industry where firms are small and entrepreneurial, decision-making processes are typically unstructured, little planning is made, and strategies emerge from opportunities and threats faced by each firm.

Founded in the early 1970s, Blue Man was apparently the first domestic company to launch a bikini under a brand name in the Brazilian market. This company also triggered the industry's internationalization process during the 1970s and was the first Brazilian company to export and attract attention from international media. Its initial exports paved the way for other Brazilian swimwear manufacturers in foreign markets. Nevertheless, Blue Man chose to reduce its internationalization commitment in the mid-1990s after several drawbacks. A second company, Bumbum, was the immediate follower. Although it had a considerable influence over other firms in the domestic market, mainly because it was the first to open a store under its own brand name, Bumbum failed in early attempts to sell abroad and discontinued international activities.

Several other firms followed Blue Man's initial footsteps. While Blue Man's founder, David Azulay, remained a well-known name in the industry, recognized by many as a pioneer and an exceptional fashion designer, he does not inspire new followers, as he did in the earlier days. New entrants in the industry have adopted different export strategies, mainly private label contracts. Even new firms exporting under their own brand name seem to be following the overall industry trend and are not necessarily inspired by the pioneer. There is not one flagship firm leading the Rio de Janeiro or São Paulo clusters at this point, but several firms seem to have an influence in trend-setting, including in export activities.

5.2.1 Blue Man, the First Mover

The fashion designer David Azulay founded Blue Man in 1972 after the successful launch in the Brazilian market of jeans bikinis he had designed and produced. Export activities started in 1974 as a result of unsolicited orders. Shortly thereafter, the company had unexpected but extremely

favorable exposure in the international media. This was followed by a trip to London, Paris, and New York, to make business contacts and sell the company's products. These trips were not carefully planned and did not bring positive results. Overall, Azulay's first internationalization attempts were not very successful. Although initial exports were sporadic, export development in the next two years gave Blue Man a national award in 1976 as the main swimwear exporter from Brazil, and Azulay was invited by the Brazilian Foreign Ministry to participate in an international trade show in Germany. Once again, Azulay did not sell many bikinis but was able to contact distributors, and some of these contacts turned into business partnerships.

During the 1980s, Blue Man made substantial efforts to adapt its product line to foreign standards in order to satisfy different demands on size and style, and in 1990 it opened a store in Miami. But with a limited staff dedicated to both product development and administration, since the company remained a typical entrepreneurial firm, and with scarce financial resources, the result was a lower priority to the domestic market. In addition, the multiplicity of models and patterns offered to foreign buyers reduced economies of scale. With lower returns and loss of brand equity, Azulay realized that the firm had neglected the Brazilian market, thus losing the original positioning that had led to its success. Blue Man therefore returned to the brand's original positioning, reduced its international focus, closed the Miami store in 1996 and decided to work directly with a limited number of customers abroad rather than using intermediaries. In 2006 Blue Man exported less than 10 percent of its total production.

5.3 The Diffusion Process

As noted above, the first mover was Blue Man, the entrepreneurial firm founded by David Azulay. How much of an innovator was he? Azulay was the first to produce bikinis under a brand name, and he was also undoubtedly the first to actively search for export opportunities. Azulay additionally was, and still is, one of the leading designers in the Brazilian swimwear industry, responsible for creative collections and fashion shows.

The immediate follower was Bumbum. Although there is no evidence of Bumbum's role in the diffusion of exporting within the industry, this company contributed significantly to industry growth. It was the first one to open a swimwear specialty store in Brazil, establishing a business model that was followed by Blue Man four years later, and by other brand-name firms in the industry up to the present.

It is believed that there were reciprocal influences between these two firms. Both Blue Man and Bumbum claim to have been role models for the rest of the industry, and there are good reasons to believe they are both to some extent correct. Yet both firms may overestimate their influence. Although Blue Man is recognized as a pioneer, its export volume has remained limited, and it decided to prioritize the domestic market in the 1990s and well before the export boom of the present decade. Bumbum was even less successful than Blue Man in exporting and ceased to export in 1994. Its growth in the domestic market and its influence on other designers appear to have been much more limited.

Other firms appeared during the 1980s, and their initial export experience was similar to Blue Man's initial sporadic sales abroad. This part of the export adoption process cannot be attributed to Blue Man or Bumbum and should instead be seen as a result of random events. In fact, while David Azulay claims that Blue Man influenced these new firms, managers and entrepreneurs in these firms do not recognize such influence. The only sound evidence of the influence of Blue Man comes from Salinas. This company, presently one of the most admired in the industry, was influenced by the first mover and can be considered a spin-off. In this particular case, a former Blue Man's export specialist was hired by Salinas, and the company adopted an export strategy similar to Blue Man's. Also, the company owner worked as a fashion model for Blue Man for many years. Yet Salinas' managers did not recognize any influence of Blue Man in their firm's development and strategy. Nevertheless, Blue Man's influence on Salinas is undeniable. Willingly or not, aware or not, these two people brought with them experiential learning acquired at the pioneer firm.

The diffusion process continued during the early 1990s as foreign buyers working for established retailers came to Brazil to visit local manufacturers. These buyers—already aware of the cut, fit, and style of the Brazilian product thanks to Blue Man's and Bumbum's pioneering export activities—were important actors in the diffusion process.

The industry was forced to change during the early 1990s due to Brazil's trade liberalization process. Trade liberalization had two main effects. On one side, it permitted cost reductions, particularly of machinery; on the other, it opened the domestic market to international competition, forcing local manufacturers to cut their prices. The modernization process allowed large productivity gains in the textile industry as firms acquired new

technologies and invested in advanced training. Also characteristic of the 1990s was the increased international exposure of the industry.

Several factors may explain this phenomenon. One is the fact that a number of brand-name firms, particularly Salinas, planned their export development, hiring professional representatives, and contacting distributors abroad. They participated in international trade shows in order to increase their products exposure and to have access to international markets. These companies were successful in selling under their own brand names, even though export volumes were not particularly large. Nevertheless, their products were featured in several international fashion magazines, and served as an inspiration for other swimwear producers. Brazilian firms started to influence fashion trends in swimwear, with bikinis with a small cut being referred to as “The Brazilian Cut.”

Approximately fifteen firms exported under their own brand name consistently over the last two decades. Many started their export activities following Blue Man’s initial internationalization strategy, yet they surpassed the first mover’s export volume and overall performance. The export growth of these companies has been somewhat limited due to low capital availability. Among them, Salinas, Rosa Chá, and Lenny are at this point the most important trend-setters. An early adopter of exporting, Salinas seems to have also been a role model for other firms in the industry. Lenny was slightly later in exporting, and it is possible that it was somewhat influenced by Salinas, as well as Blue Man. A later entrant in the industry, Rosa Chá started its operations in São Paulo. This suggests a new step in the diffusion process, moving from Rio de Janeiro, the capital of swimwear fashion, to São Paulo, which was successfully competing with Rio de Janeiro to become the number one fashion center in the country.

At this point, diffusion became generalized and it is extremely difficult to separate reciprocal influences, if they existed. Export initiation spread from the Rio de Janeiro cluster to São Paulo, in the late 1980s and early 1990s, and from both to other regions of the country. The creation of an annual calendar of fashion shows in 1996 also contributed to the diffusion process, attracting foreign buyers and putting them in contact with domestic firms. The rise of Brazilian top models in the international fashion world also attracted attention to Brazilian swimwear products.

Exports began to gain momentum with the Brazilian currency devaluation in 1999, making it attractive for large international retailers to outsource production from Brazil.

Therefore, the early 2000s saw the emergence of a new type of exporter, selling to foreign buyers under private label contracts. They exported approximately US\$ 20 million in 2005, or 80% of total exports. There were two large-scale manufacturers in this strategic group, and a few medium-sized private label producers that benefited from Brazilian beachwear international recognition. Some companies actively sought export opportunities, while other companies were referred to foreign buyers by larger companies not interested in smaller orders.

Thus, at present the two relevant strategic groups in the Brazilian swimwear industry are, on one side, leading designer firms that define fashion trends in Brazil and have a growing influence on international styles, contributing to the international exposure of the made-in-Brazil beachwear; on the other, larger-scale producers, who are responsible for the expansion of Brazilian exports in recent years. These two groups have followed different trajectories, and it cannot be said that one had much influence on the other. We hypothesize that private-label exporters were influenced by the effects of the generalized diffusion process, at the same time that they were contacted by foreign buyers who already worked with designer firms and searched for larger volumes at similar quality and lower prices.

A third strategic group, smaller firms without export experience, entered the market in the 1990s. They were influenced by the general diffusion process and benefited from the recent export boom. Government actions had a strong influence in moving these firms to international markets, by promoting and subsidizing their international marketing activities. Other agents influenced the decision process, such as the media specialized in fashion and government export promotion campaigns. The government did not play a crucial role in developing Brazilian swimwear exports, although it did offer support mechanisms to the industry export development, including the participation in international trade shows, fashion shows, and showrooms.

6. Discussion

The following analysis tries to link together the evidence collected from interviews and secondary data. It is to some extent speculative, because we were only able to obtain indirect clues of links between certain firms. In both cases, there is evidence of the continuity of the diffusion process to other clusters, but our research has focused on how the “discovery” of exporting spread within the cluster itself. Figure 1 depicts a tentative representation of the diffusion process of exporting as a business strategy in the São Bento do Sul furniture cluster,

and Figure 2 tries to do the same for the Rio de Janeiro swimwear cluster. In both cases, there is evidence of the continuity of the diffusion process to other clusters, but our research has focused on how the idea of exporting spread within the cluster itself.

The arrows link the various players in the diffusion process of exporting. Solid lines link connections that are based on solid evidence, broken lines indicate links based on only limited evidence, and dotted lines indicate links that are only hypothesized links based on indirect clues obtained in the research process. The first date in parentheses under the firm's name is the year of establishment, and the second is the year when the firm started exporting.

Several observations can be made concerning the diffusion process in the two clusters examined. First, the nature of the industry and the historical development of these two clusters must be taken into consideration. Both the furniture industry and the swimwear industry are fragmented, and both are formed mainly by small and medium-sized firms. But similarities end here. While firms in the furniture industry tend to pass from one generation to another, firms in the swimwear industry are entrepreneurial, based on the founder-designer talents. Because the latter is a young industry in Brazil, with the first generation of entrepreneurs still in command, it is hard to predict whether these firms will disappear, be passed on to a next generation, or be acquired by new owners.

As to industry organization, the furniture industry tends to be organized in production clusters, while the swimwear industry tends to be organized in marketing clusters, typically in a large city. The spatial organization of the swimwear industry does not show the same type of dense agglomeration as the furniture industry, mainly because supply chain requirements are not very important. The logic of clustering in the swimwear industry is rather based on the proximity of fashion centers, where designers can be close to other designers and to the market. This is why the birth of the swimwear industry is associated with the city of Rio de Janeiro, specifically with the vicinity of Ipanema Beach in the 1970s, expanding to São Paulo in the 1980s, as the latter became a leading fashion center.

Figure 1. A Schematic Representation of the Diffusion Process in the São Bento do Sul Furniture Cluster

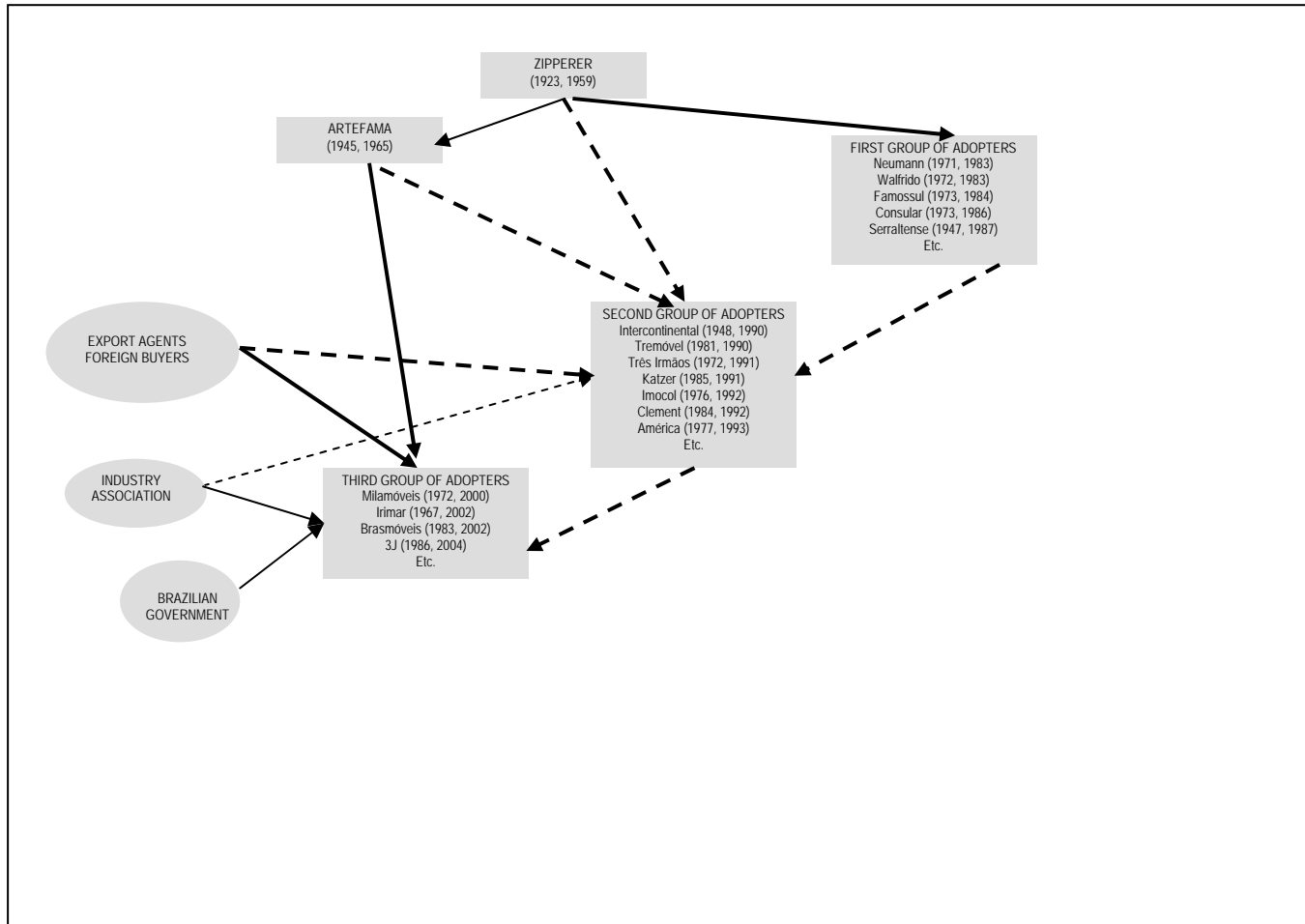
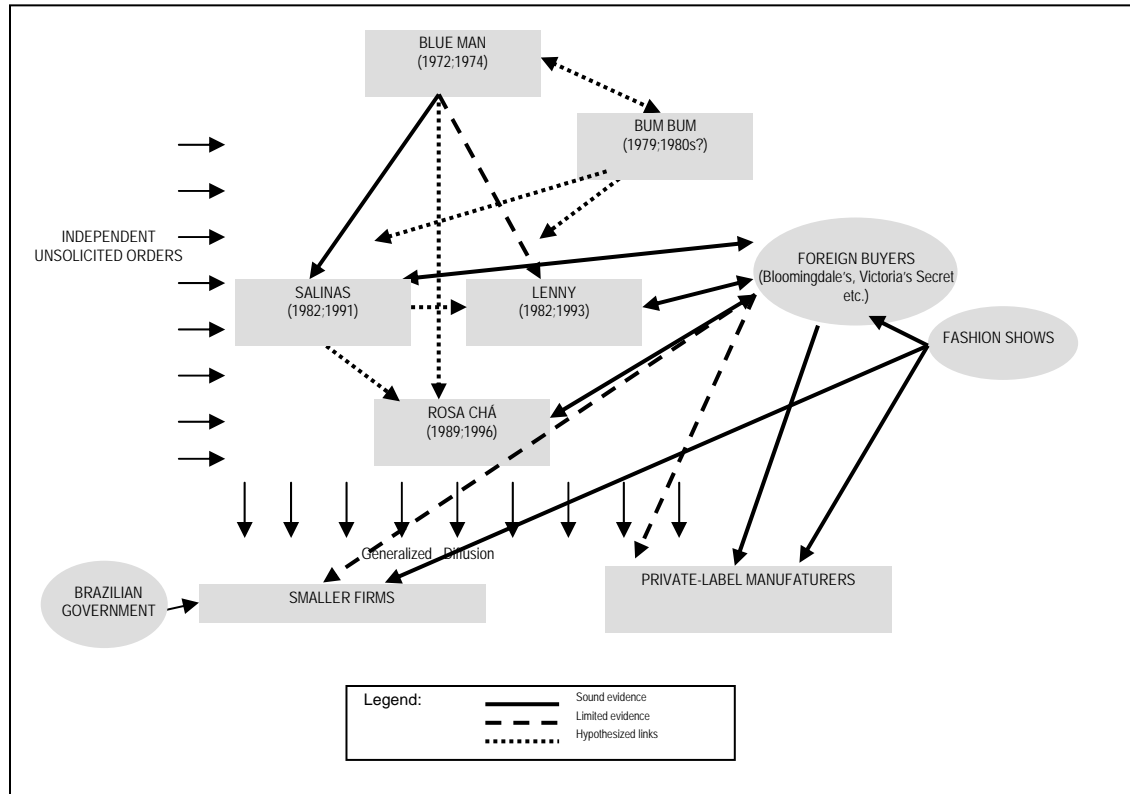


Figure 2. A Schematic Representation of the Diffusion Process in the Rio de Janeiro Swimwear Cluster



The historical development of the two clusters examined also differs substantially. The furniture cluster had its origin in a combination of natural resources (forests) and local skills (woodworking ability). As the original community lived in almost complete isolation from other areas of the country for more than a century, most of the original commerce was in the region. In fact, one of the “innovations” by the first flagship firm in the cluster was selling to other regions in the country in the middle of the twentieth century. Common Germanic origin and culture, century-long isolation and intermarriage among the local populations combined to generate a very homogeneous and cooperative cluster.

The swimwear cluster, on the other hand, provides a nearly perfect counterexample. Competitive advantages in this cluster are associated with design, and the expansion of the cluster comes mainly from new entrants, which may not have had any previous contact with established firms. Interactions between firms competing in the cluster were quite unusual, at least until a channel of communication was established by means of a calendar of fashion shows, where designers were forced to interact. Firms in the swimwear cluster are also more geographically dispersed within the city limits, the city, although the larger brand-name manufacturers tend to have stores in the same commercial areas, often in the same area of a shopping center and side by side. The most important element to shape the nature of the cluster is the entrepreneurial character of the incumbent firms with their founder-designers, characterized by a strong individualistic orientation. Competition, rather than cooperation, drives the cluster.

The diffusion of exporting as a business strategy in both clusters also shows remarkable differences. In the furniture cluster, the process was carried out by respected business and community leaders who accepted this responsibility, and social institutions were in charge of promoting diffusion. In the swimwear cluster, exporting was initiated by independent “stars” who did not become involved in diffusion, which was left mainly to external actors, including foreign buyers and government. While the diffusion process can be reasonably tracked in the furniture cluster, the paths cannot be clearly identified in the swimwear industry, because of its random nature. Table 1 compares the two experiences and summarizes the discussion above.

Table 1. A Comparison of the Two Export Diffusion Experiences

The Furniture Industry (and the São Bento do Sul cluster)	The Swimwear Industry (and the Rio de Janeiro cluster)
<u>Industry Organization</u> Organized in production clusters Integrated supply chain Fragmented industry	<u>Industry Organization</u> Organized in marketing clusters Independence of supply chains Fragmented industry
<u>Cultural Aspects</u> Shared history; geographic insulation Cooperation within the cluster; relationships More collectivist More production-oriented Long-lasting family businesses	<u>Cultural Aspects</u> Independent origin; spread geographically Rivalry/jealousy among firms/designers Strongly individualistic More marketing-oriented Dependence on a founder-designer
<u>Diffusion Process</u> Led by respected leaders Pioneers took responsibility for diffusion Social institutions promoted diffusion Diffusion process can be tracked	<u>Diffusion Process</u> Started by independent “stars” Pioneer did not become involved in diffusion Government promoted diffusion Diffusion process cannot be clearly tracked

6.1 The Role of Flagship Firms

The role of flagship firms in the development of the cluster’s exports was also extremely different in the two clusters: while they played an important role in the furniture cluster, setting examples, generating spin-offs, and actively influencing other firms to export, flagship firms in the swimwear cluster remained benchmarks, or abstract symbols of international market opportunities. In the furniture industry, the pioneers took responsibility for the diffusion of business innovations, particularly exporting; in the swimwear industry, the pioneers not only did not become involved in the diffusion process, but were rather antagonistic to it.

Flagship firms were of paramount importance to the development of the furniture cluster. The two flagship firms had greater influence in different periods of time: while one is certainly behind the first and the second wave of adopters of exporting in the cluster, the other influenced the second and the third wave. Also, both CEOs were respected business leaders in the cluster, and they made substantial efforts to engage other firms in exporting, believing this was the path to the cluster’s success.

The growth of the furniture cluster was based on spin-offs, which tended to mimic their mother companies’ products and business strategy. The relationship between the original

“mothers” and the spin-offs tended to be friendly. Flagship firms were nurturing towards their spin-offs, although not willing to stimulate them. In fact, managers’ attitudes towards spin-offs in both firms were a combination of acceptance and pride. These factors contributed to building trust and foster cooperation within the cluster. On the negative side, isomorphic behavior may threaten the ability of the cluster to adapt to changes in the environment. The danger of mimicking behavior when a cluster generates a large amount of endogenous spin-offs, rather than attracting external entrepreneurs (Ferreira, Tavares, and Hesterly, 2006), clearly appears in the case of the furniture cluster, with new firms imitating successful business strategies adopted by flagship firms.

The positive attitude towards spin-offs and the desire to help other firms in the cluster to engage in exporting may be associated with specific characteristics of the furniture cluster, its Germanic culture, its insularity, and the fact that the same families have lived in the area for generations, creating various types of social links between individuals, such as kinship, friendship, and church connections, among others. This contention is supported by the finding that, while there seems to be a high level of informal cooperation and cohesion within the cluster, formal mechanisms of cooperation, such as associations, were said not to be very effective. It should be noted, however, that one of the CEOs had a major role in the diffusion of exporting to other clusters.

Again, the picture extracted from the swimwear cluster is the opposite. It is difficult to identify flagship firms, and the two firms identified as pioneers in the swimwear cluster had only limited influence on other firms. Spin-offs were quite unusual in the swimwear cluster, and when they appeared, the relationship between the original firm and the spin-off was antagonistic, and rivalry and jealousies among designers and their firms resulted from a highly individualistic environment. Nevertheless, certain aspects suggest substantial dynamism. First, there is much more diversity in the swimwear cluster than in the furniture cluster. Exporting firms adopt a variety of business strategies and search for product differentiation, although very small firms tend to copy styles and designs. Second, new entrants tend to come from outside the industry, bringing new experiences and ideas.

But although there is very little cooperation among firms in the swimwear cluster, fashion shows played a role in defining the boundaries of each regional cluster and permitting the necessary interactions for cluster development. They created a climate that encouraged the

exchange of experiences, creativity, cross-fertilization, and entrepreneurship, which in turn stimulated the development of internationally competitive products. At the same time, they increased rivalry in an industry characterized by strong individualism.

6.2 The Role of External Actors

Research results confirmed the importance of external actors in both clusters in transferring know-how and facilitating export initiation and diffusion. In the furniture cluster, external actors were foreign buyers working for large international distributors and retailers, and export agents who established themselves in the region. Buying agents working for international distributors and retailers brought new technologies, materials, production requirements, designs, and accessories. Export agents, domestic or foreign-owned, were responsible for broadening market opportunities available to the firms in the cluster by identifying new markets and distributors. Their impact on the cluster was even more important because firms are production-oriented and tend to delegate marketing functions to intermediaries.

In the swimwear industry, foreign buyers carried innovations from one firm to another in the cluster, promoting export product standardization and the transfer of know-how. Aware of the opportunities for outsourcing in Brazil, they were responsible for the initiation of many firms into exporting, particularly those manufacturing under a private-label contract.

6.3 The Role of Support Institutions

Support institutions played a subsidiary role in the diffusion process of exporting as a business strategy in both clusters. In the furniture cluster, support institutions only became involved in the later stages of the adoption process, once the cluster was already intensely involved with exporting, with a large number of firms exporting 80 to 100 percent of their output. In fact, the cluster itself generated the resources and skills necessary to develop its export activities. The Brazilian Furniture Association helped the diffusion effort in the 1990s, mainly by supporting market studies to increase exports to the U.S. market. Government actions were directed more towards transferring the cluster's experience to other clusters and firms than to supporting the original exporters.

In the swimwear cluster the role of support institutions was similar. Government actions attempted to stimulate exports by smaller firms by offering incentives for the formation of export

consortia and by supporting their participation in international fairs and exhibitions. These actions, though, had little impact on the export initiation and development of larger firms in the industry, as they government actions were directed towards the transfer of experiences from larger established firms to new entrants. In addition, specialized media permitted the diffusion of these ideas and experiences, inspiring new firms and small entrepreneurs.

7. Final Considerations

This research examined the process of diffusion of exporting as a business strategy in two industrial clusters in Brazil: the São Bento do Sul furniture cluster and the Rio de Janeiro swimwear cluster. These two clusters offer an interesting opportunity for the understanding of the research problem since they are almost opposite in their formation, development, and characteristics. Our conclusions are limited to the two clusters studied, but we believe they can bring new perspectives into the export initiation and development.

The following are the main conclusions reached by the study:

- Evidence available from other studies suggests that social ties are an important element in the cohesion and development of a cluster (Sedaitis, 1998; Henry, Brown and Defillippi, 2000). Social ties played a major role in facilitating the diffusion process of exporting in the furniture cluster: personal ties between employers and old employees who left to start a new venture, between kin working for different companies, between family owners whose families intermarried for generations, and based on vicinity ties and church connections. Yet such ties seemed irrelevant in the swimwear cluster. This seems to be associated to the process of formation of each cluster and its culture. A cluster's culture (e.g., individualistic or collectivist) seems to influence the diffusion process by facilitating or impeding systemic interactions among cluster members.
- The study partially supports the importance of flagship firms in the diffusion of exports within the cluster and from the cluster to the whole industry (Ferreira, Tavares, and Hesterly, 2006). While leading firms played a significant role in the adoption of exports by other firms in the furniture cluster, their role in promoting the diffusion of exports in the swimwear

cluster was very limited. Again, cultural feature may play an important role in determining to what extent leading firms will accept responsibility in the diffusion of exporting, or, for that matter, of any type of innovation within the cluster.

- The role of external actors in export initiation and development was fully supported in this research. Export agents and foreign buyers played a crucial role in diffusion, although not in the early steps of exporting in the cluster. This is very much in line with previous research (Simmonds and Smith, 1968; Lee and Brasch, 1978; Schmitz, 1995, 1999a, 1999b; Varum, 2006).
- Support institutions, such as research centers, technical schools and industry associations, were the result of cooperative actions among firms in the furniture cluster or in the whole furniture industry. Once more, cooperative actions to create their own support institutions were absent in the swimwear industry. The most important joint initiative, the creation of an annual calendar of fashion shows, occurred under the auspices of the whole fashion/textile industry and was mostly external to the swimwear segment of the textile industry.
- Finally, the role of government was limited to the later phases of the diffusion process. In some regards, government actions may have even been detrimental to industry exports, as they stimulated smaller companies that were unprepared to compete by offering them incentives under various forms. These firms competed with established Brazilian exporters, copying their products at lower prices, but often with inferior quality, possibly damaging the “made-in” image.

Certain issues uncovered by this research deserve further investigation. One concerns the existence of a cluster’s “culture.” If we consider a cluster as a complex economic entity unto itself, the idea of the development and crystallization of a culture within the cluster is logical. Whether this culture will favor cooperation or rivalry, imitation or diversification, and to what extent cultural characteristics may impact on the cluster’s formation and development, particularly its internationalization, are matters to be further studied.

In addition, more attention should be given to marketing clusters. In these clusters the logic of spatial concentration is the market. They seem to present very different characteristics than production clusters, and they have been clearly overlooked by the industrial clusters literature. One reason for the lack of interest in marketing clusters may derive from the literature bias towards the diffusion of technological innovations in industrial clusters. This paper provides several insights into the nature of marketing clusters, particularly in the fashion industry.

The relationship between parent firms and spin-offs in the cluster also deserves further investigation. To what extent spin-offs carry experiential knowledge of exporting, or do they only mimic their parent's behavior? We suggest that the issue of isomorphic behavior in the cluster should receive more attention. As firms in a cluster develop very similar product lines, adopt the same processes and raw materials, buy the same type of machinery from the same suppliers, serve the same export markets using the same pool of export agents, or sell to the same foreign buyers, do they increase the cluster's vulnerability to market failures? In this case, what public policy mechanisms should be activated? These and other questions remain open for further study.

References

- Albors, J.G. 2002. "Networking and Technology Transfer in the Spanish Ceramic Tiles Cluster: Its Role in Sector Competitiveness. *Journal of Technology Transfer*. 27: 263-273.
- Bertolini, P., and E. Giovanetti. 2006. "Industrial Districts and Internationalization: The Case of the Agri-Food Industry in Modena, Italy." *Entrepreneurship and Regional Development* 18(4): 279-93.
- Blomstermo, A. et al. 2004. "The Perceived Usefulness of Network Experiential Knowledge in the Internationalizing Firm. *Journal of International Management* 10: 355-373.
- Bonaccorsi, A. 1992. "On the Relationship between Firm Size and Export Intensity." *Journal of International Business Studies* 23(4): 605-635.
- Cawthorne, P.M. 1995. "Of Networks and Markets: The Rise of a South Indian Town: The Example of Tiruppur's Cotton Knitwear Industry. *World Development* 21(1): 43-57.
- Chetty, S., and D.B. Holm. 2000. "Internationalisation of Small to Medium-Sized Manufacturing Firms: A Network Approach." *International Business Review* 9: 77-95.
- Coviello, N., and H. Munro. 1997. "Network Relationships and the Internationalisation Process of Small Software Firms." *International Business Review* 6(4): 361-386.
- DeBresson, C., and F. Amesse. 1991. "Networks of Innovators: A Review and Introduction to the Issue." *Research Policy* 20: 363-379.
- DeMartino, R., D.M. Reid and S.C. Zyglidopoulos. 2006. "Balancing Localization and Globalization: Exploring the Impact of Firm Internationalization on a Regional Cluster. *Entrepreneurship and Regional Development* 18(1): 1-13.
- Ferreira, M.P., A.T. Tavares and W. Hesterly. 2006. "Evolution of Industry Clusters through Spin-Offs and the Role of Flagship Firms." In: A.T. Tavares and A. Teixeira, editors. *Multinationals, Clusters and Innovation: Does Public Policy Matter?* New York, United States: Palgrave.
- Guerrieri, P., and C. Pietrobelli. 2004. "Industrial Districts' Evolution and Technological Regimes: Italy and Taiwan." *Technovation* 24(11): 899-927.
- Hakansson, H., and I. Snehota. 1995. *Developing Relationships in Business Networks*. London, United Kingdom: Routledge, 1995.
- Harrison, B. 1994. *Lean and Mean: The Hanging Landscape of Corporate Power in the Age of Flexibility*. New York, United States: Basic Books.

- Hausmann, R., and D. Rodrik. 2003. "Economic Development as Self-Discovery." *Journal of Development Economics* 72(2): 603-633, 2003.
- Hausmann, R., L. Protchett and D. Rodrik. 2004. *Growth Accelerations*. Cambridge, United States: Harvard University, Kennedy School of Government.
- Hendry, C., J. Brown, and R. Defilippi. 2000. Regional Clustering of High Technology-Based Firms: Opto-Electronics in Three Countries." *Regional Studies* 34(2): 129-144.
- Iammavarino, S., F. Sanna-Randacio and M. Savona. 2006. "Obstacles to Innovation and Multinational Firms in the Italian Regions: Firm-Level Evidence from the Third Community Innovation Survey." In: A.T. Tavares and A. Teixeira, editors. *Multinationals, Clusters and Innovation: Does Public Policy Matter?* New York, United States: Palgrave.
- Iglesias, R., and P. Motta Veiga. 2005. "Investimento das firmas brasileiras no exterior: Algumas hipóteses e resultados de uma pesquisa entre exportadores." In: C.A. Hemais, editor. *O desafio dos mercados externos: Teoria e prática na internacionalização da firma*. Volume 2. Rio de Janeiro, Brazil: Mauad.
- Johansson, J., and L.G. Mattson. 1988. "Internationalization in Industrial Systems: A Network Approach." In: P.J. Buckley and P.N. Gahuri, editors. *The Internationalization of the Firm: A Reader*. London, United Kingdom: Academic Press.
- Johansson, J., and L.G. Mattson. 1992. "Network Positions and Strategic Action: An Analytical Framework." In: B. Axelsson and G. Easton, editors. *Industrial Networks: A New View of Reality*. London, United Kingdom: Routledge.
- Jones, M.V., and N.E. Coviello. 2005. "Internationalisation: Conceptualising an Entrepreneurial Process of Behaviour in Time." *Journal of International Business Studies* 36: 284-303.
- Lee, W.T., and J.L. Brasch. 1978. "The Adoption of Export as an Innovative Strategy." *Journal of International Business Studies* 9(1): 85-93.
- Miranda, J.C. 2001. "Abertura comercial, reestruturação industrial e exportações brasileiras na década de 1990." IPEA Discussion Paper 829. Rio de Janeiro, Brazil: Instituto de Pesquisa Econômica Aplicada.
- Porter, M. 1998. "Clusters and the New Economics of Competition." *Harvard Business Review* 76(6): 77-89.

- Reid, D.M., R. DeMartino and S.C. Zyglidopoulos. 2005. "The Internationalization Journey of a High-Tech Cluster." *Thunderbird International Business Review* 47(5): 529-243.
- Rugman, A, and J.R. D'Cruz. 2000. *Multinationals as Flagship Firms: Regional Business Networks*. Oxford, United Kingdom: Oxford University Press.
- Samiee, S., P.G.P. Walters and F.L. DuBois. 1993. "Exporting as an Innovative Behaviour: An Empirical Investigation." *International Marketing Review* 10(3): 5-25.
- Schmitz, H. 1995. "Small Shoemakers and Fordish Giants: Tale of a Supercluster." *World Development* 23(1): 9-28.
- . 1999a. "Global Competition and Local Cooperation: Success and Failure in the Sinos Valley, Brazil." *World Development* 27(9): 1627-1646.
- . 1999b. "Collective Efficiency and Increasing Returns." *Cambridge Journal of Economics* 23: 465-483.
- Scott, A.J. 1996. "Regional Motors of the Global Economy." *Futures* 28(5): 391-411.
- Sedaitis, J. 1998. "The Alliances of Spin-Offs versus Start-Ups: Social Ties in the Genesis of Post-Soviet Alliances." *Organization Science* 9(3): 368-381.
- Simmonds, K., and H. Smith. 1968. "The First Export Order: A Marketing Innovation." *British Journal of Marketing* 2(2): 93-100.
- Varum, C.A. 2006. "International Buyer-Supplier Relationships, Transfer of Knowledge and Local Suppliers' Capabilities." In: A.T. Tavares and A. Teixeira, editors. *Multinationals, Clusters and Innovation: Does Public Policy Matter?* New York, United States: Palgrave.
- Welch, D.E et al. 1998. "The Importance of Networks in Export Promotion: Policy Issues." *Journal of International Marketing* 6(4): 66-82.