

# INDUSTRIAL CLUSTERS AND DISTRICTS IN COLOMBIA? EVIDENCE FROM THE TEXTILE AND GARMENTS INDUSTRY\*

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This study is dedicated to the memory of  
Julio Samper Vargas, a friend and economist  
who believed in international collaboration  
beyond frontiers and divisions.

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\* A preliminary version of this paper was presented at the 9th General Congress of the European Association of Development and Training Institutes —EADI—, Paris, September, 1999. El artículo se recibió el 03/04/02 y se aprobó el 26/07/02.

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We thank the participants, Roberta Capello, Philip Cooke and three anonymous referees for their useful comments.

## ABSTRACT

This article makes a comparison between the concepts of industrial clusters and districts and the evidence provided by two enterprise agglomerations in the Colombian garment industry. A survey conducted in 1998 among production groups located in Bucaramanga and Medellín, confirmed the relevance of Industrial Districts in the recent development of Colombian textile and garment industry. In addition, the study evidenced the presence of some cluster elements in both Medellín and Bucaramanga, even though there are some differences between the two. However, both clusters are characterized by low firm specialization levels and poorly developed enterprise networks. This situation could prevent both external and internal economies, and collective efficiency. Backward linkages are poor in both clusters. Forward linkages are stronger and retailers play a crucial role in the commercial phases. The prevailing strategy in most enterprises has been to internationalize many of the phases involved in the production process. However, Bucaramanga's firms have entered global production and marketing networks whereas those in Medellín are mainly oriented towards the national market. Moreover, the two clusters have been developed under different policy regimes which have affected their structure and performance.

**Key Words:** Cluster, clusters, agglomeration economy, industrial districts, industrial economy, industrial organization, industry, agglomerations, garments, textiles.

## RESUMEN

Este artículo contrasta las nociones de cluster y distritos industriales con la evidencia empírica de dos aglomeraciones empresariales del sector de las confecciones en Colombia. A partir de una encuesta aplicada en 1998 en los grupos de productores situados en Bucaramanga y Medellín, los resultados del estudio confirman la relevancia del concepto de Distritos Industriales en el desarrollo reciente de la industria textil y de confecciones en Colombia, y evidencia la presencia de algunos aspectos de cluster de empresas en ambas ciudades, Medellín y Bucaramanga, a pesar de que cada una tiene características diferentes. Sin embargo, ambos cluster se caracterizan por un bajo nivel de especialización de las firmas y un pobre desarrollo de redes de empresas. Esta situación puede impedir tanto las economías externas como internas y la eficiencia colectiva. Los vínculos anteriores son débiles en ambos clusters. Los vínculos posteriores son más fuertes y las empresas satélites juegan un papel crucial en las fases comerciales. La estrategia prevalente en la mayoría de las empresas ha sido internacionalizar muchas etapas de los procesos productivos. Pero solo las firmas de Bucaramanga han entrado en redes de producción global y comercialización, mientras que las firmas de Medellín están orientadas hacia el mercado nacional. Además, los dos clusters se han desarrollado bajo diferentes regímenes de política económica y esto ha afectado su estructura y su desempeño.

**Palabras clave:** Cluster, clusters, economía de aglomeración, distritos industriales, economía industrial, organización industrial, industria, aglomerados, confecciones, textiles.

## Introduction

The debate over industrialization strategy in developing countries has recently focused upon the possible lessons to be learned from the success obtained by Small and Medium-sized Enterprises (SMEs) in the developed countries. The experience of agglomeration and clustering of SMEs, and the *collective efficiency* resulting from this form of organization, have contributed to the successful performance of many SMEs in recent decades (Schmitz, 1995a).

In developing countries, small enterprises have traditionally been seen as socially desirable as a strategy for job creation and better income distribution, but their economic viability has often been questioned. Small enterprises have rarely been able to achieve international competitiveness and their productive life is generally short. However, Industrial Districts (IDs) have proved that SMEs can be profitable and strongly contribute to a country's industrial growth (Rabellotti, 1994). The evidence presented by several studies in developing countries demonstrates that the district model of industrial organization may be a useful starting point for efficient production and competitiveness. However, the diversity of experiences and the heterogeneous socioeconomic realities of these countries, as well as the different processes by which firms and sectors are restructured and transformed, always need to be taken into account.<sup>1</sup>

<sup>1</sup> See, among the others, the special issue of *World Development* (Vol.27 No.9, 1999), Bagella (ed.), 1996, van Dijk and Rabellotti, 1997, Di Tommaso and Rabellotti, 1999, Nadvi and Schmitz, 1994, and UNCTAD and Deutsches Zentrum für Entwicklungstechnologien, 1994.

This paper analyzes the development of the textile and garment sector in two Colombian regions, using the ID model as an instrument of interpretation. The Italian variant of ID is the benchmark for the present analysis (Becattini, 1987, Markusen, 1996). This paper is not meant to be a feasibility study for this model in Colombia, and does not ask the obvious question of whether 'Colombia is Italy', or if this country has the same historical and socioeconomic features that made several Italian IDs so successful. Instead it aims to test the relevance of the ID concept in understanding recent developments in Colombia's textile and garment (i.e. fashion) industry. This is attempted in two Colombian cities, Medellín and Bucaramanga, which are traditionally known for their fashion production.

The theoretical hypotheses are presented and discussed in section 2. The empirical analysis has been carried out through a survey questionnaire administered to 50 enterprises of the sector in both cities.<sup>2</sup> The results of the survey are presented in the third section, and are compared with those elements that the literature has defined as being typical of the Marshallian industrial districts (Markusen, 1996). The study concludes with a short summary of the main results and their implications.

<sup>2</sup> The survey employed the same methodology used to study enterprise clustering in Italy, Europe and Asia in a different project (TSER -European Union project "SME in Europe and East Asia: Competition, Collaboration and Lessons for Policy support", see Guerrieri *et al.*, 2001).

## 1. Networks, Clusters, and Industrial Districts. Theoretical Hypotheses of the Analysis

A network may be defined as a group of persons sharing a common cultural, economic, social, or political objective.<sup>3</sup> Initially, it can exist independently of its members' physical proximity because it is based on their exchanges of communications; nevertheless, the frequency of exchanges reveals the different levels of bonding between the participants. Thus, the range of relationships is shaped by the affinity of the objective that binds them, and by their spatial proximity. In the industrial districts, the network is frequently based on the mutual *trust* among the participants, with ensuing reductions in transaction, coordination and control costs for the productive activity (Schmitz, 1999b).

Although in principle geographical proximity is not essential to a network existence, in a strict sense, a cluster is defined as a group of enterprises spatially close, and specialized in the development of a similar or the same product (van Dijk and Rabellotti, 1997).<sup>4</sup> This form of organization generates additional benefits not only for the enterprises but for the cluster as a whole. Thus, product specialization stimulates the division of labour, enhances product differentiation in order to obtain competitive advantages, and increases the flexibility of the productive process, a consequence of its decen-

tralization into smaller production units, and that of the product, in order to respond to variable market conditions.

Formally, clustering fosters three types of economies: the *economies of scale* that are generally the result of work division and intra-cluster specialisation, the *economies of scope* gained by producing different products and using the same productive factors, and the *external economies*. In principle, an externality of production is a situation in which the production function of a firm is affected by activities carried out outside the market.

The concept of external economy, introduced by Marshall (1890) is related to the increase in the knowledge about markets and technologies that localized industrial production brings about. This may also occur through the creation of a market for qualified jobs, specialized services or support industries, the possibility of dividing the productive process into specialized phases that can be easily decentralized, and finally, the improvement of physical infrastructures.

The *agglomeration economy* is a particular type of external economy. This concept is derived from the theory of neoclassical static equilibrium, in which individual enterprises interact within anonymous markets. A distinction is frequently made between two types of agglomeration economies: the localization and the urban economy. The former derives from the spatial concentration of enterprises belonging to the same industry, the latter from localization in an urban area, endowed with infrastructure, information and labor markets.

<sup>3</sup> For example, an enterprise, ethnic, or professional association.

<sup>4</sup> Studies on clusters also followed the path-breaking analysis of Porter (1990).

Agglomeration economies are usually characterized by an industrial organization of the cluster type. Schmitz (1995a) uses the term *collective efficiency* to portray the benefits accruing to firms working in a cluster. This concept has two aspects:

- a) External economies increase with spatial agglomeration. These economies include the local supply of skilled labor, and easier access to suppliers of raw materials, components, new machinery and special equipment.
- b) The cohesion, or ‘glue’, achieved by working together through business associations and production consortia. This aspect can be divided into two elements: (i) cooperation between individual firms, of a vertical or horizontal nature; (ii) collective action on the part of groups of firms in a cluster and of local institutions, thus improving business conditions for the cluster firms. This may imply government lobbying, information and service provision, set-up and implementation of technical institutions.

Schmitz, however, (1995a) rightly notes that a cluster by itself does not necessarily produce these effects. While type (a) effects may originate without any effort on the part of the participants, type (b) effects need to be constructed by the participants, with the eventual help of local institutions and organizations.<sup>5</sup> The ID may be seen like a type of cluster in which type (ii) effects are present.

<sup>5</sup> He differentiates between ‘earned’ and ‘ascribed’ trust to emphasise the active attitude required for the former (Schmitz, 1999).

Since Marshall’s time (1890), a huge variety of definitions of ID have been proposed in the literature. Marshall himself defined the industrial district as a cluster characterized by at least some degree of division of labor as well as by an ‘*industrial atmosphere*’, a consequence of the dynamic effects of industrial growth, which fosters the creation and diffusion of knowledge and technical skills.<sup>6</sup>

The concept of industrial district has evolved over time with the increasing complexity of industrial activities.<sup>7</sup> In a sense, the “model of ID” is often considered to be a list of stabilized phenomena used in order to organize empirical investigations and make comparisons possible (Rabellotti, 1994). It represents a naturally generated form of industrial and social organization, with its own specific characteristics that are the result of social and historical events that have contributed to its creation and growth.

Within such a context, characterized by a multiplicity of agents of complementary and competitive enterprises, and without a hierarchical decision-making process, the key element is *specialization*. The blend of cooperation and competition promotes the rapid circulation of ideas and improves firms’ performance. Collective capabilities are developed, and the entire community of small

<sup>6</sup> See Pietrobelli (1998) for an empirical test of the concept of ‘industrial atmosphere’.

<sup>7</sup> See for example Pyke and Sengenberger (1992) who focus on the idea of a *productive system*, with a network of participants sharing trust and interdependence, or Holmstrom (1993), who defines the industrial district as a *moral community*.

enterprises obtains some economies of scale that had previously been reserved for large enterprises. A high degree of *adaptability*, *flexibility* and *propensity to innovate* are additional characteristic elements of an ID that the literature has frequently stressed, and which are often obtained as a result of collective processes of decentralized cooperation in decision-making and strengthened by the culture and know-how accumulated by local agents.<sup>8</sup>

In this paper, we utilize the operational definition of ID proposed by Markusen (1996), who describes a model of a Marshallian ID focusing on the presence of the following main elements:<sup>9-10</sup>

- Predominance of SMEs in the local industrial structure.
- Geographical and industrial concentration of SMEs.
- Decision-making on the part of independent firms.
- High level of decentralization of the productive process, often through subcontracting.
- Important trade and exchanges among the agents within the district.
- Economies of scale relatively small at the enterprise-level, but high at the district-level.
- Substantial economies of scope, a consequence of product differentiation.
- Flexible and efficient local labor markets.
- Important local cultural identity.
- Important role of local institutions.
- Dynamic entrepreneurial commitment to compete as to quality, flexibility, and innovation.

The present study on the two Colombian cases of the cities of Medellín and Bucaramanga seeks to examine whether these ID are present.

<sup>8</sup> In turn, the locally available collective capabilities often augment the supply of technical skills, and of support services for production, sparking a virtuous and cumulative circle (Bagella and Pietrobelli, 1995).

<sup>9</sup> Following her analysis, other types of enterprise clusters are: hub-and-spoke, satellite platforms, and state-anchored industrial districts (Markusen, 1996).

<sup>10</sup> The only operational, and legally recognized, definition of an ID was introduced with the Italian Law N.317/1991 on the "Promotion of small and medium-sized enterprises". This law foresaw the possibility of financial support for the district itself and not for its individual enterprises. In a later Law (No.21/4/1993) the Ministry of Industry gave the precise statistical criteria that each region should use in the individualization of a district, which are as follows (for each geographical area):

- Strong presence of manufacturing activity in the area (more than 30 per cent of the national average)

- High enterprise density (a presence of enterprises in relation to the population that is larger than the national average).
- High productive specialisation (greater than 30 per cent of the national average in terms of employment). Monosectorial districts are therefore favoured.
- Substantial employment in the specialisation sector of the area (more than 30 per cent of the total manufacturing activity in the area).
- Strong presence of SMEs in the area (more than 50% of the enterprises in the sector must have less than 200 employees).

In reality the law has not operated as expected (Achilli, 1999), and traditional areas unanimously recognized as IDs (e.g. Carpi and Sassuolo in Emilia Romagna), would not qualify as ID according to this statistical definition. Moreover, this would exclude areas where large enterprises play an important role together with SMEs (as in some areas of Italy's *Mezzogiorno*), or where many productive specializations coexist, as in the case of urban districts.

## 2. Studies on SME Clusters in Latin America

The SME sector accounts for much of the labour force and production in most Latin American countries. Some of the SMEs are organised in clusters, which are often very diverse, but tend to consist mainly of micro and small firms involved in low-technology activities, such as garments and shoes, with low barriers to entry and low industrial rents.<sup>11</sup> Generally speaking, it seems that SMEs in Latin America have used clustering as a strategy for self-defence rather than as a means to build up dynamic competitiveness through inter-firm learning and technological upgrading (Albaladejo 1999).

While there has been in-depth research into some of these clusters in Argentina, Brazil, Mexico and Peru, the authors have found no evidence of such efforts on Colombia. Let us briefly review some of the studies on SME clusters in the region, to enable useful comparisons to be made with the present cases.

In the Sinos Valley cluster of shoe-makers in Brazil, there are around 1.800 firms —most of them SMEs— of which 500 are shoe producers, supported by 700 service companies and 200 component firms (Schmitz 1995b, 1999). The spatial concentration of the cluster has attracted the attention of export agents

from all over the world. In 1990, the cluster accounted for close to 10 percent of world exports of leather shoes, having started from zero in 1970 (Schmitz, 1995b). Competitive pressures have been felt by local producers due to the opening of the Chinese economy to international markets.

Mexico's footwear industry is mainly located in two clusters: Leon, which specialises in men's and children's shoes; and Guadalajara, specialising in women's shoes (Rabellotti 1997, 1999). Both clusters together account for two-thirds —over 4.000 firms— of all Mexican shoe producers. Most firms are small or very small in size, and family-owned. The Mexican shoe-producers have also suffered because of cheap shoe imports from China.

Lima's 'Complejo Gamarra' is the most important garment cluster in Peru (Villaran 1993, Visser 1997). It has over 3.000 businesses that include final producers, subcontractors, trading firms and input suppliers, all of them engaged either directly or indirectly in the production and marketing of garments. The 'El Porvenir' cluster in the city of Trujillo, Peru, consists of 1.000 small and micro firms that account for 35 percent of the Peruvian domestic shoe market (Tavara 1993).

The cluster of Cachoeiro de Itapemirim in Brazil is a very interesting example of a spatial concentration of SMEs in a resource-based industry, granite (Sabadini 1998). The cluster hosts 500 firms —of which 300 are stage firms— accounting for almost 80 percent of Brazilian exports of solid ornaments in marble and granite.

<sup>11</sup> Of course, there are exceptions to the rule. For instance, Altenburg and Meyer-Stamer (1999) distinguish between survival clusters, mass production clusters, and clusters of trans-national corporations in Latin America. The emergence of an SME cluster revolving around Intel in Costa Rica is a good example of more advanced clusters.

In Sao Bento do Sul, Santa Catarina, Brazil, there is a furniture cluster with 120 plants employing about 6.000 workers, almost one half of the urban population (Bercovich, 1995, Bagella and Pietrobelli, 1997). This cluster has for the most part been developed since the early 1970s: in 1992 it exported US\$ 60 million, amounting to about 50 percent of Brazilian furniture exports. A marked productive specialisation has been observed in this cluster, and medium-sized vertically integrated enterprises (i.e. with about 200 workers) co-exist with many SMEs. The increase in exports from the Sao Bento do Sul cluster is still mainly due to the exports of the larger firms.

Rafaela (Santa Fe, Argentina) is an interesting multi-sector cluster with a variety of manufacturing activities (agro-industry, chemical, industrial machinery, auto components, agricultural machines), around a metalworking ID (Quintar *et al.*, 1995, Bagella and Pietrobelli, 1997). Its high social homogeneity, based on the common Italian heritage of a large part of the population, which emigrated from the Piedmont in the 1870s, is especially noteworthy. This area has recorded a much higher dynamism and export propensity than the national average, with a 300 percent increase from 1988 to 1992. The metalworking district (there were 110 establishments in 1990) includes producers of machinery and vehicle and car components, and has generated elements of a favourable 'industrial atmosphere'.

These clusters show signs of both success and failure, and have recently felt increased international competitive pressures. Although generalisations cannot be made from these few examples, they provide interesting in-

sights into the sort of factors that affect the competitiveness of similar clusters throughout the region (Albaladejo, 2001).

What does research suggest about the main determinants of competitiveness in these Latin American clusters? Decentralisation of production and flexible specialisation are essential for some of these clusters. Thus, in the Sinos Valley a great range of inputs, components, and intermediate goods for shoe manufacturing are provided locally. In the other Brazilian case, 73 percent of the firms interviewed concentration is on only one phase of the production process (Sabadini, 1998). Gamarra's economic dynamism is also mainly due to the firms' specialisation in particular stages of the value chain (Visser, 1997).

This pattern is less obvious in Trujillo where 'individual firms ensure that the initial and final activities of the production process are performed in-house' (Tavara 1993:102). A shortage of trustworthy subcontractors may be the reason, as in the case of Mexico (Rabellotti 1997:44). Although the situation has changed slightly with the opening of the Mexican economy to global markets, the larger and most competitive firms still seem to be highly centralised. Similarly, in Rafaela, Argentina, the minimal size of the local industrial network hinders further productive specialisation and a deepening of labour specialisation, while conserving idiosyncratic modes of inter-firm relationships that have been traditional in Argentina.<sup>12</sup>

<sup>12</sup> Sub-contracting is seldom used, and the tendency to increase vertical integration, whenever observed, has for the most part been due to the prevailing macroeconomic conditions of uncertainty (Quintar *et al.*, 1995).



Strong collaborative links among firms is another crucial element of competitiveness. Schmitz (1995a) coined the term ‘collective efficiency’ when studying how local shoe producers in the Sinos Valley strengthened their co-operative links in order to face global competition. In particular, forward ties with export agents played a major role, fostering entry into international markets and the provision of technical assistance so as to ensure a product of good quality. Similarly, increased co-operation has positively contributed to the growth of Guadalajara’s cluster (Rabellotti 1999).

However, other clusters such as Cachoeiro de Itapemirim and Trujillo show lower levels of co-operation among firms. Whenever co-operative activities occur, these arrangements tend to be informal, unstructured, and to have little impact on the firms’ performance.

A shared set of values and common goals is the result of concrete economic, social, cultural and historical conditions. Socio-cultural embeddedness (and the common roots of several local entrepreneurs) implies mutual knowledge and trust among firms, which ‘helps to promote the generation and diffusion of innovations within the cluster’ (Villaran 1992: 144). This seems to apply to the cases of Trujillo, Cachoeiro de Itapemirim, Rafaela and Sao Bento do Sul. In contrast, although at the beginning there were strong socio-cultural ties in the Sinos Valley due to the German origin of most of its population, the increase in co-operation in recent years has instead resulted from the economic costs of not co-operating (Schmitz, 1999 and 1995b).

The scarce evidence with respect to the firm-level determinants of competitiveness of cluster firms often reveals a low level of

competence among the workforce and local entrepreneurs. Only a few firms care about the training and skills of the labour force in the Peruvian and Brazilian clusters (Villaran, 1992, Sabadini, 1992, Schmitz, 1995a). In their comparative study of industrial districts in developing countries, Nadvi and Schmitz (1994) also showed the relatively weak technology standards of Trujillo, Gamarra, Guadalajara and Leon as compared to the Italian ideal model. In Cachoeiro de Itapemirim, the machinery used to be ‘old, obsolete and in precarious condition, being the cause of the high number of work related accidents in this particular sector.’ (Sabadini 1998:15). Above all, price competitiveness remains the driving factor in these clusters, as well as in those which are relatively more oriented towards quality production, such as in the Sinos Valley, Guadalajara and Leon.

### 3.The Colombian Case

#### 3.1 Methodology

The methodology used in the empirical analysis is based upon interviews with SME managers following a detailed survey questionnaire, which summarizes the key characteristics of the industrial district model. This survey questionnaire was also used in the analysis of European and Asian clusters by a network of research institutes financed by the European Union.<sup>13</sup> Some questions regarding the inter-industrial pattern of collaboration-competition as well as others referring to socioeconomic relations were added.

<sup>13</sup> EU-TSER project. “SMEs in Europe and East Asia: Competition, Collaboration and Lessons for Policy Support”. See Guerrieri *et al.* 2001.

Fifty enterprises were randomly selected from the databank of the Chambers of Commerce and other local associations of the fashion sector in the urban areas of Bucaramanga and Medellín. These are all SMEs having less than 100 employees. It is important to stress that the sample has been randomly selected, but does not statistically represent each region, nor do the enterprises necessarily have relationships among themselves.

### 3.2 Background on the Fashion Sector in Colombia

The fashion (textile and garments) industry in Colombia represents the second largest manufacturing sector, after the food industry and followed by the oil industry. It was already present in the country in the XVII century, but took off only in the first decades of the XX century, fostered by the capital surplus generated by the coffee boom in a tightly protected economy. As a consequence of the long civil war during the first years of the century, an aggressive economic reconstruction program was implemented. Since 1903, the Colombian government adopted protectionist policies to promote local industry. The increase in customs tariffs for most manufacturing products, with the important exceptions of imports of machinery and raw materials, and the introduction of subsidies and guarantees, especially relevant in the textile sector, stimulated the fast growth of the succeeding years. The coffee boom financed the development of industry. Coffee producing cities such as Medellín, Pereira and Manizales experienced fast growth in textiles and clothing production, and quickly became the biggest national production centers.

Following the 1930s recession, the three largest textile firms in Medellín acquired many of the medium-sized enterprises of the textile sector, and increased the concentration of production in this city. In the early 1960s the cotton boom increased the local supply of textiles. At the same time, the clothing industry started to develop on the basis of cheap labor and local availability of raw material. In the late 1960s, a garment industry based on SMEs and specializing in girl's clothing rapidly developed in Bucaramanga, a city that had traditionally been a center for oil-production. Design creativity, good raw materials and good quality final products earned them international recognition.

Table 1 shows the geographical distribution of manufacturing in Colombia in 1998 as being very clustered in a few urban centers.<sup>14</sup> Textile and garments represent an important sector in Colombia's manufacturing (Table 2).

Table 1  
Geographical Distribution  
of Manufacturing in Colombia, 1998

Cities	Gross Manufacturing Production (%)	Establishments (%)
Bogotá	27	32,4
Medellín (and its metropolitan area)	16	19,4
Cali	11	18,5
Bucaramanga	2	5,8

Source: Annual Manufacturing Survey, 1998.DANE

<sup>14</sup> The figures are drawn from the 1998 annual manufacturing survey, carried out by DANE using a sample of 8.282 randomly selected establishments in the country, each having more than 10 employees.

Table 2  
Share of Textiles and Garments in Colombia's Manufacturing Sector

Sector	Gross Manufacturing Production (%)	Establishments (%)	Employment (%)	Value Added (%)
Textiles	5,4	11,3	10,2	6,0
Garments	3	5,9	10	3,3

Source: Annual Manufacturing Survey, 1998.DANE

The textile sector is characterized by an oligopolistic structure, with the largest Colombian enterprises (*Fabricato*, *Coltejer*, and *Tejicóndor*) operating in Medellín. The government has always intervened in this sector to finance these activities during crises and to protect the market against foreign competition, with the aim of supporting this important source of employment.

In contrast, the garment sector shows a fragmented industrial structure based on SMEs. Notwithstanding the difficulty in determining their exact number, according to the 1990 DANE Industrial Census more than 19.500 clothing producers operate in Colombia, and SMEs account for 95 per cent of them. These are clearly geographically clustered around a few centers (DNP, 1997, Table 3). In 1990, employment in the clothing industry was at 240.000, amounting to more than 13 percent of the country's total labor force. It has been estimated that informal enterprises employ around 40.000. The industrial concentration is a lot lower in the clothing sector than in textiles, consistent with the international evidence. Thus, in 1993 the thirteen largest enterprises represented 27 percent of national production (DNP, 1997).

Table 3  
SMEs in the Garment Sector, Colombia 1997

Cities	Percentage of SMEs (%)
Bogotá	36,3
Medellín	28,4
Cali	9,5
Bucaramanga	8,1
Total Colombia	100,0

Source: DNP, 1997

*Maquila* operations, which are the service of manufacturing clothing for large enterprises seeking to pay lower wages,<sup>15</sup> constitute a very important feature of the Colombian fashion sector. Cut pieces arrive in large containers, and small enterprises sew them together and then return them to their country of origin. Even though the value added for local industry is low, an important *maquila* activity is emerging in Medellín and in Bucaramanga.

<sup>15</sup> According to DNP, the price/minute that is received by external subcontracting or "*maquila*" is close to US\$ 0.08 for wholesale goods, US\$0.10 for jeans, and US\$0.12-0.15 for more sophisticated garments.

To summarize, in spite of the differences in industrial concentration, the clothing industry in Colombia appears to have traditionally developed along lines similar to those of the textile industry with regard to localization and internal organization.<sup>16</sup> Thus, clothing and textile enterprises tend to be vertically integrated within strong economic groups, a process further intensified as a result of the crisis brought about by the opening of Colombia's markets in the early 1990s. Within this framework, both Medellín and Bucaramanga represent clear cases of urban clusters, with a strong geographical concentration of firms, specializing in both textiles and garments. In the following sections we will examine the specific features of the two clusters.

### 3.3 The Case of Medellín

Medellín, along with its metropolitan area, named the Valle de Aburra,<sup>17</sup> is considered the second city of Colombia with respect to GDP and population, having almost 2,8 million inhabitants. It has traditionally been

an industrial city where many productive sectors coexist, but it is also acknowledged as the capital of the fashion sector. This industry represents almost 25 percent of the city's total employment, with 3.800 registered enterprises, of which 3.000 specialize in clothing. Almost 80 percent are independent SMEs. Large enterprises exist, but no subsidiaries of multinational companies operate here. Eight of the thirteen largest garment producers in the country are located in Medellín.

Table 4 shows that in 1995 clothing and textile firms respectively employed an average of 87 and 147 workers. In general, the propensity of small garment enterprises towards exports is recent and still incipient. The medium-sized enterprises export some underwear through a number of larger distribution firms. On the contrary, both SMEs and larger enterprises from Medellín enjoy protection in the domestic market in both textiles and clothing. Recently, the sector has experienced serious difficulties, due to

Table 4  
Main Manufacturing Sectors  
Medellín 1995

Branch	Gross Production in %	No. Establishments in %	Employment in %	Avg. Employment
321 Textiles	15,6	12	19	147
322 Clothing	8,2	17	16	87
381 Metalworking	4,5	9	7,4	77

Source: Done, Annual Manufacturing Survey, 1995.

<sup>16</sup> In addition to the obvious inter-industry linkages, this consideration further justifies the analysis of the fashion industry as an 'aggregate'.

<sup>17</sup> Including Itagui, and Bello

the opening-up of the economy, the lifting of trade barriers, rising import penetration mainly from Asia, the growing presence of

enterprises from Bogotá and Cali, and the difficult crisis of the textile sector in providing many raw materials. However, the clothing sector in Medellín has been growing at a rate of around 3 per cent per year over the past decade (DANE, 1998).

The organization of industrial activities in Medellín is far more complex than in Bucaramanga due to its multisectorial activities. Until the late 1980s, the core of manufacturing and export activity in Medellín was represented by the textile sector. The more recent dynamic evolution of the clothing sector has somehow paralleled developments in the textile sector. The existence of strong intersectorial linkages and the externality that originated in the textile industry have been determinants in the development of the clothing sector. The product specialization in the garment industry supports this hypothesis, insofar as two of the city's main products, exterior clothing (pants, T-shirts, pajamas, girl's and women's dresses) and underwear reflect what the textile sector produces.<sup>18</sup>

The structure of horizontal and vertical linkages in the industry also appears rather complex. As far as *forward linkages* are concerned, a substantial dependence upon large distributors has been detected. With the exception of a few large enterprises, the majority of SMEs encounter serious problems with respect to the distribution and commercialization of their products.

<sup>18</sup> There is evidence suggesting that underwear production has been growing faster, followed by jeans and T-shirts, for which raw material is produced in Medellín.

The presence of two huge chains of department stores, *Cadenalco* and *Éxito*, which have their own national distribution networks, has a noticeable influence on the performance of the sector. To some extent, at least in the case of SMEs, the cluster seems to be *buyer-driven*. Fifty percent of the enterprises surveyed work with an average of 50 clients, but 11 of them sell as much as 50 per cent of their production to their three principal clients. The strategy of SMEs is necessarily affected by the decisions made by retailers; a very tight match exists between what is produced and what retailers demand. When an enterprise has its own brand and design, it delivers its collection to these large department store chains, which then evaluate design, quality and prices according to their particular parameters. If the product is accepted, the orders resulting are typically so large as to require all of the enterprise's production capacity, producing exclusively for this chain, during the whole year. In the event orders exceed production capacity, SMEs use other networks of smaller, often family-based enterprises located in the same city, thus ensuring greater flexibility in production in order to face variable demand. Conceptually, this structure seems to reproduce what Gereffi coined a 'global-chain' (Gereffi, 1999), but at the national level, with two large national retailers playing the role of the foreign buyers and retailers in his model. Major problems arise when SMEs cannot enter the 'chain'. In this case, they are forced to target small local, or regional markets through smaller distributors or chains of local stores or, as a last resort, may turn into 'informal' suppliers for medium or large firms.

This heavy dependence on the part of the distribution and commercial stages has a decided effect upon the poor export performance of the clothing sector. In fact, less than 20% of the production of the enterprises surveyed reaches the international market. Most of these firms explained this by pointing out their the lack of knowledge with regard to the external market, fear of currency instability, and the strongly local market-oriented attitude. The national 'chains' have not yet managed to extend their reach to the international market. A possible reason for this is that for many years they may not have needed to. The history of the clothing industry in Medellín and the analysis of the policy régime suggest a useful explanation. For several decades the sector was operating behind solid trade barriers decided upon by the central government. Enterprises from Medellín could operate within a tightly protected national market, and the situation was made even more favorable by the sustained growth of demand over a period of many years. Once the economy opened, however, at the end of 1991, the situation began to change dramatically. At first, favorable effects prevailed, due to the newly opened export markets and to the gradual modernization of technology made possible by the importation of capital goods. This process was much slower, however, than the rapid increase in imports of cheaper products. It became clear that market protectionism, and the payment of subsidies, had stimulated inefficiencies and low quality, and had not required national chains to target and reach export markets (Tendler and Amorin, 1995).

The region lost substantial shares of the national market and demonstrated insufficient competitiveness in an increasingly competi-

tive market. The 'invasion' of Asian products, the introduction of new fabrics and innovative accessories and the rising competition from other Colombian regions were all factors threatening the leadership of the Medellín textile industry. The sector suffered from a notable technological gap as well as rigid products and processes. The almost complete substitution of the main raw material, national or locally produced fabric, with imported material was a severe blow to a sector that had been protected for so many years.

At the same time however, due to the sector's history of industrial dynamism in the area, an important process of accumulation of technical capability had taken place. The creation of specialized training centers and the surge of local machinery providers, along with intense interactions with the local providers of raw materials, fostered new and substantial involvement on the part of the local community in the success of the textile and clothing industry. An example of this process was the creation of university faculties and training centers specializing in these sectors.<sup>19</sup> The proliferation of enterprises supplying financial and other services, and the upgrading of local human technical skills, were results of this process. The evidence from our sample reveals that in 11 of the enterprises surveyed the founder appears to have had a university education, and 15 of them acknowledged the importance of previous experience in the industry obtained by either working in a family business or for other firms in the same sector.

<sup>19</sup> Faculties of Textile Engineering, Fashion and Design were founded at several Medellín universities.

After the end of the period of industrialization within the framework of import substitution, and years after the opening-up of the economy, a traditional Fordist sector such as the fashion industry in Colombia is still experiencing profound transformations. At the time of the carrying out of this survey (late 1998) local responses were detected in Medellín on behalf of the introduction of profound structural reorganizations, with possibly two different clusters emerging within the same traditional agglomeration, each with a particular structure of actors, business models and transaction patterns. As elsewhere in Latin America, similarly noteworthy reactions were observed such as: the emergence of many new SMEs, these often being start-ups on the part of former employees of large enterprises; an increase in production specialization; and efforts to introduce quality controls in order to improve competitiveness. The industrial structure also appeared to be in transition. On the one hand vertical integration between sectors was growing, along with the strengthening of groups of enterprises, each deepening its specialization; on the other hand, subcontracting practices were occurring more frequently, with a corresponding strengthening of the network of services. Let us look at some features of these two strategies in greater detail:

- *Vertically integrate and strengthen enterprise groups.* The increasing ties and competition between firms in the fashion sector reveal this tendency. Two of the larger textile firms recently entered the clothing market, and in addition to textiles, they also produce and distribute finished garments. This increases vertical integration, contradicting the international trend of outsourcing and specialization. At the same time decentralization occurs in clothing production, as the productive process is totally subcontracted to local networks. This trend is shared not only by large and medium-sized firms that strengthen their linkages, but also by SMEs, and some of them are part of *enterprise groups*. This is to say that SMEs produce the fabrics on the basis of specifications required by other clothing SMEs. The evidence gathered in our survey confirms that these inter-industry linkages are growing tighter. In fact, 12 of the 21 clothing firms surveyed purchase 100 per cent of their raw materials from the local market, and 4 of them purchase almost 70 per cent. Much qualitative evidence reinforces this conclusion.
- *Increase and strengthen subcontracting networks and deepen specialization.* A clear trend towards a change from being independent enterprises to providing services for other enterprises has been widely observed. Several explanations of this trend are suggested. On the one hand most enterprises, of whatever size, benefit from externalizing part of their production, and in so doing decreasing labor costs in an industry where these account for almost 70 per cent of total production costs. The relatively bigger SMEs surveyed, those that work with an average of 7 small sewing workshops, emphasized the relevance of cost reductions and the increase in flexibility achieved through externalizing part of production. On the other hand, given that most of

the small enterprises encounter serious obstacles in the commercialization phase, their reliance on other firms spares them the costs and difficulties of searching for new markets. Eighty-five per cent of the enterprises visited reported that they had introduced innovations in work organization, thereby stimulating division and specialization of labor, in addition to increasing quality and productivity while implementing time-saving methods and processes.

Operations under *maquila* arrangements, while still a small proportion of total activity, constitute an important and growing feature of Medellín's clothing sector. For example, four of the city's enterprises were set up only for exports, and produce popular Levi's jeans. These businesses together produce around 500.000 pairs of jeans per month. Several other enterprises work under foreign brands' licensing agreements, and sell to the Colombian and Latin-American market, such as *Estudio Moda*, which employs more than 400 workers.

### **3.3.1 Institutions and Firms' Linkages in Medellín**

Medellín has long been characterized as one of the areas in Colombia where joint initiatives involving the business community, local government, and the civil society have often been successful. A strong sense of belonging to the region exists, together with a remarkable industry-oriented culture. Several financial and training centers have been created through private initiatives in order to help consolidate a strong local productive network.

Actuar, the Foundation for the Recovery of Antioquia<sup>20</sup> was created in 1980 and is a private institution that came about in response to the credit crunch experienced by SMEs at that time. Its main emphasis is on family businesses and SMEs. In association with SENA —*Servicio Nacional de Aprendizaje*, the National Learning Service— it trains workers in all branches of industry. SENA is a governmental institution, and is financed by private enterprise as well as through government economic support. This institution was created in 1957 and is presently providing training services, certification of technical skills and quality control insurance.

Medellín's long-standing tradition and reputation in the fashion industry made possible an early consolidation of infrastructures in support of the productive sector. Several institutions operate in order to facilitate the transfer of information as well as to provide real service to the sector. Thus, for example, Inexmoda, the Institute for Colombia's Fashion Exports, helps local enterprises to follow world trends and to organize exhibitions as well as in finding sources of innovative machinery. This entity, which is also private, began its activities in 1988, and fosters interaction between the textile and clothing sectors. Among other things, it organizes the most important Latin American fashion event known as *Colombia moda* and *Americamoda*, attended by international and national designers.

<sup>20</sup> Medellín is the capital city of the '*Departamento*' (i.e. the region) of Antioquia.



The urban nature of the Medellín cluster, with the great variety of industrial activities taking place in the city, produces a limited level of intra-industry relationships among enterprises. Nevertheless a potential opportunity to increase the degree of agents' interaction exists in the form of trade clubs and other associations. The low intensity of relationships among enterprises limits the strengthening of bonds that would permit consolidation of the network of relationships.

As in other clusters in Latin America, vertical ties tend to be more important than horizontal ties. The enterprises surveyed acknowledge having more frequent relationships with their clients and with local providers of machinery who periodically visit the plants. Interaction with training institutions in the sector is rather limited, while linkages with local competitors tend to be disregarded. Similarly, no direct relation with international agents has been detected. While there is no specialized association in the clothing sector; ACOPI (the association of SMEs), and other institutions such as Ascoltex, Inexmoda, Actuar, the Medellín Chamber of Commerce and Proexport fos-

ter inter-firm linkages through the services they render to their members, and they also enhance the diffusion of business and technology information. A possible obstacle to inter-agent collaboration is often the size polarization of the industrial structure. On the one hand large enterprises and distributors exploit the local networks of small suppliers, without necessarily transferring knowledge and technology. On the other hand the growing medium-sized enterprises entertain distant contacts with local firms, and tend to prefer a higher degree of integration in their productive process and appear to oppose the trend towards externalization. Some very small or family enterprises stubbornly stick with their own brand names while waiting for an opportunity to market them through the large stores.

To summarize, a fair degree of informal association and cooperation has been detected only among micro and small enterprises: as enterprises grow, their willingness and enthusiasm for cooperating and associating with each other appear to diminish. Table 5 summarizes some of the essential characteristics of the Medellín cluster.

Table 5  
Essential Features of the Medellín and Bucaramanga Clusters

	<b>Medellín</b>	<b>Bucaramanga</b>
<i>Main Sector of activity</i>	Textiles and clothing	Almost exclusively clothing
<i>Industry structure</i>	3 large textile firms (oligopoly) and many SMEs dominate the garments sector.	Only SMEs – atomistic market
<i>Market-orientation</i>	Home market-oriented	Export-oriented (through US buyers)
<i>Historical background</i>	Long tradition (take off in XVII century) Good local technical skills	Relatively new to the area.

(Cont. Table 5)

	<b>Medellín</b>	<b>Bucaramanga</b>
<i>Government policies</i>	Developed under protection and ISI. Government support. Oligopoly soon established.	Developed much later. No protection. Soon forced to export and specialize.
<i>Local Institutions</i>	Strong local institutions and pressure groups created during decades of industrialization	Few and young local institutions (whenever they exist)
<i>Cluster's structure and attitude</i>	Hybrid/mixed cluster: Few large firms, many SMEs, older, two sectors. Different reactions are emerging: vertical integration and enterprise groups vs. subcontracting networks	More dynamic, changing, open to international market, participate in global commodity chains.
<i>Labour market</i>		Large labour turnover – seasonality
<i>Size and dynamism</i>	Large due to its past, but difficult reaction to the new competitive environment. Generally little success and uncertain future perspectives	Smaller but more dynamic. Higher (recent) growth rates and better growth perspectives.

Source: Survey questionnaire and Colombian field-work August-December 1998.

### 3.4 The Case of Bucaramanga

The region (*Departamento*) of Santander is characterized by its rich natural resources, and its economy is based on agriculture and cattle. Two main industrial activities have rapidly developed in the region: the oil industry in Barrancabermeja, and the clothing

industry, in Bucaramanga and San Gil. According to the last industrial census, 1.600 clothing enterprises operate in Bucaramanga, mainly of small and medium size. Overall, the fashion industry accounts for more than 20 percent of all manufacturing establishments, and 21 per cent of manufacturing employment. (Table 6).

Table 6  
Main Manufacturing Sectors, Bucaramanga

<b>BRANCH</b>	<b>Gross Production (%)</b>	<b>No. of Establishments (%)</b>	<b>Employment (%)</b>	<b>Average Employment</b>
321 Textiles	1,8	1,7	1,8	37
322 Clothing	6	18	19	37
381 Metalworking	3	6	5	29

Source: DANE, Annual manufacturing survey, 1995.

Bucaramanga has a remarkable tradition in the clothing industry, especially in the area of childrens' and girls' dresses, tracing back to the mid 1970s. Although it is only the third source of employment after the oil and food industry, the greater part of its production reaches the international market. This region also benefited from the surplus profits from coffee production, but to a smaller extent than the Antioquia region. During the mid 1970s the industry was able to begin competing in international markets by taking advantage of the originality of the materials and designs as well as of the tradition of embroidery and hand sewing in several neighboring villages. This development was based on SMEs. The textile sector was not very active in this region, with the exception of some specialized embroiderers as well as due to the combination of particular materials like *clay and fique*.

The industrial structure is very different from that prevailing in Medellín. No large firm operates in Bucaramanga, and no medium-sized enterprise is a recognized leader. Moreover, there are no enterprise groups or consortia. Even though SMEs dominate the industrial structure, and they are all active in the same sector, thereby leading us to expect a marked division of labor and firm-level specialization, the production process of garments is rarely vertically integrated. More than 80 per cent of the enterprises visited declared that they carry out the entire production process internally (design, cutting, clothing, refinement, packing).<sup>21</sup>

<sup>21</sup> The refinement phase includes pre-washing and ironing. In most cases, and due to the special machinery required, the pre-washing phase is carried

The remaining 20 per cent outsource the clothing phase to small units that are outside the plant, but nonetheless located in the same city. This typically occurs when they cannot fill a large order. Services are also contracted out in the event that garments require special details, such as embroideries or *recamado*, which are carried out in small neighboring towns having long traditions in this type of work which is hand done by small families.

A high labor turnover is permitted by the labor legislation, in order to be responsive to the remarkable seasonality of the business. Thus, during the first half of the year, when orders decrease, the enterprises reduce their personnel by up to 40 per cent. If in the second half orders grow substantially, new employees are hired. They may be contracted for six or even three months, as they are easily available, but often not very skilled. This high labor turnover in the local labor market fosters a continuous flow of information within the cluster. This feature is frequently observed in the Italian IDs, and represents a real external economy, as skilled workers are available in the sector thanks to the presence of other enterprises in the area. However, the process of technical skill accumulation is somewhat limited by the high labor turnover, as was admitted by the entrepreneurs interviewed. On the other hand, the economies of scale at the enterprise-level must be negligible if employment must be increased in or-

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out outside the plant. A large number of firms execute the ironing phase manually and internally. This decision depends on the size of the orders, and, when there are very large volumes, this is one of the first phases to be outsourced.

der to increase production in (roughly) the same proportion.

Although there is neither vertical specialization, nor an articulate process of specialization in small units, the Bucaramanga cluster enjoys active horizontal specialization. The main tool for competition among the enterprises is product diversification, especially in girls' garments. Additional tools for competition are found in the diversification of production inputs, quick processing and manufacturing of orders (*'pronto moda'*, 'ready-to-order fashion'), and the broad range of products, with a wide range of costs and quality.

Export performance is important in explaining the cluster's development. The strong and established presence in the national market of the Medellín firms prompted the SMEs from Bucaramanga to search for new markets from the very start. These new outlets could only be found outside the country, mainly in the US and in Latin America. Eighteen of the 25 enterprises surveyed export more than 60 per cent of their production. The largest foreign orders come in the second semester, and the labor market is thus forced to adjust to the markedly seasonal nature of the business.

Nevertheless, this does not imply dependence on only one or a few clients. On the contrary, the enterprises surveyed have an average of 120 clients, with the largest absorbing less than 15 per cent of their output. Interestingly, the same client often has contacts with more than one enterprise in the cluster. A group of enterprises work for the same client in the same category of prod-

ucts but offer different quality and designs. In Bucaramanga, some large enterprises, and even transnational companies, work under *maquila* arrangements. Considering that the profits accruing to local firms from *maquila* operations are minimal, Bucaramanga entrepreneurs ironically referred to *maquila* as "...the last stage before closing the enterprise if things go wrong".

The sector's dependence on fabric importers is remarkably high. As a consequence of the crisis in the country's textile sector, more than 80 per cent of the fabrics used are imported, mainly from the US, and must be purchased through intermediaries who are attentive to changes in the market and price their goods according to peak periods of demand. Being an SME implies that each firm purchases a smaller volume of fabric than larger enterprises, thus making it impossible to buy directly from foreign producers.

The enterprises in the cluster for the most part obtain their technology from machinery providers, and also benefit from participating in trade fairs, and, to a small extent, from consulting and receiving advice from institutions such as SENA and ACOPI. These machinery providers are generally subsidiaries of large foreign companies, located in the city. The enterprises interviewed also often acknowledged the innovations introduced by small local workshops specializing in clothing machinery production, where the machines are partially or completely modified in accordance with the enterprise's needs. These changes are of an incremental nature in that existing machines are adapted in order to increase the varieties produced,

by processing new fabrics, utilizing new accessories, modifying the sewing pattern, or by introducing new designs. However, in most cases the modifications are essentially imitations and adjustments made to old machines, because small and medium-sized producers cannot afford to purchase new ones.

Innovation follows a peculiar pattern in this sector. From the point of view of the product, garments require constant innovation in the differentiation and modification of product design. 'Radical' innovations are usually minimal, and innovation often derives from employing new textiles, a new combination of accessories, or from any special embroidery or original pattern. From the point of view of the production process, innovation is mainly embodied in the machinery. In 85 per cent of the cluster firms surveyed in our sample, innovations are basically related to new designs, the introduction of quality and labor productivity control methods, and time and process control methods. The considerable increase in subcontracting practices represents a prominent organizational innovation.

### ***3.4.1 Institutions and Firms' Linkages in Bucaramanga***

Bucaramanga is a much smaller city than Medellín, and has a more defined productive specialization. This allows more frequent interactions between agents belonging to the city's business community. While all firms acknowledge the existence of fierce competition between them, some attempts to set up business association have been successful. This collaboration is

clearly spurred by mutual interest. A good example is provided by COTEXCON, a textile and clothing producers' cooperative. It was started in 1995 with the aim of remedying poor access to innovative and good quality raw materials, which had been compounded by the fact of being small. The common objective was the stabilization of raw material orders and reduction of the intermediaries' power. This was achieved by grouping all the SMEs' fabric orders together and buying directly from the overseas textile producers. This resulted in the price stabilization of the main production input, and raised the SMEs' competitiveness.

However, apart from this limited example of institutional development fostered by inter-firm cooperation, the institutional context reflects the industry's youth, with fewer and less effective sectorial institutions than there are in Medellín. The presence of local branches of some of the national institutions is also a new phenomenon, thus the offices of SENA, the Chamber of Commerce, ACOPI, Proexport and Bancoldex provide some assistance for exporters. All of these institutions facilitate a constant flow of information to the industry, but up until now, the creation of a sectorial association has been hindered by the individual problems faced by each enterprise as well as due to marked individualism. Some degree of cooperation exists among complementary enterprises in the sector, as in the case of the producers of accessories. However, there is less collaboration among enterprises producing the same product category and working for the same client, and this forces them to maintain a dynamic attitude in the search for new

markets. Nonetheless, cohesion between enterprises vis à vis external competitors increases when they need to confront common problems such as gaining access to innovative raw materials or strengthening their competitiveness.<sup>22</sup>

To summarize, in Bucaramanga, unlike Medellín, a strong inter-firm associative attitude has not developed. Rather, a competitive attitude prevails, with an ingredient of regionalism that occasionally spurs cooperation. The existing entrepreneurial spirit tends to be limited by a shy and individualistic attitude on the part of the founders, but at the same time it has made for dynamic industrial activity. The crucial difference, compared to the case of Medellín, is that from the very beginning local clothing enterprises were forced to target the international market. This impelled them to constantly upgrade their competitiveness and quality, rather than simply relying on cheaper prices. Marked specialization in one product along with strong investments made in the commercialization phases has earned them competitiveness in the international market. Trade fairs organized jointly with Proexport, the Chamber of Commerce and ACOP, are helping to reach markets as remote as Saudi Arabia and Hong Kong.

### Summary of the Results and Conclusions

The issue of the 'transferability' of the ID model has often been discussed in the lit-

<sup>22</sup> Rabellotti found that cooperation among Guadalajara cluster's enterprises increased in years of the crisis (Rabellotti, 1999).

erature, due to the economic success it has enjoyed, in addition to the fact of its being embedded in local cultures and traditions, conditions that make it especially attractive for developing countries. Recent research has singled out some crucial elements of a Marshallian industrial district (Markusen, 1996). Among these are the predominance of independent and clustered SMEs in the local industrial structure, a strong division of labour and specialisation, often through subcontracting, flexible and efficient local labor markets, an important local cultural identity along with the role of local institutions, and the variety of exchanges among agents within the district, enabling economies of scale that are relatively small at the enterprise-level but high at the district-level.

This paper attempts to evaluate to what extent these elements are present in the textile and clothing clusters of Medellín and Bucaramanga in Colombia. The main results of this study are summarized below, and often compared with other experiences in the Latin American region (see also Annex 1 for further details).

1. Both Colombian clusters are characterized by a *low degree of firm-level specialization* and *poorly developed enterprise networks*. This is similar to what has been observed in most enterprise clusters in Latin America, and may clearly hinder the local external economies and collective efficiency. A production based on a strong division of labor, as in the Italian case, would necessarily require a better-developed network of suppliers. This causes these clusters to markedly differ from other clusters in Latin

America, for example those of the Sinos Valley, Gamarra and Cachoeiro de Itapemirim.

2. *Backward linkages are poor or lacking in both clusters.* The strategy prevailing in most enterprises has been the internalization of many stages of the productive process, possibly due to idiosyncrasies, instability, and low quality on the part of suppliers. According to the present survey, an idiosyncratic cultural attitude that sees it as preferable to maintain control of the whole productive process appears to prevail and is believed to improve the enterprise's performance. The idea of establishing ties of dependence with other enterprises is not perceived as attractive by firms insofar as it reduces control and authority. Additionally, the instability in demand and the lack of a large suppliers' network capable of raising quality through competition, limit the incentive to outsource some phases of the productive process. However, new pressures to outsource and specialize are emerging, due to the sustained increase in fiscal and labor costs as well as to the difficulty in marketing the enterprise's own products in an increasingly competitive and global market.
3. *Forward linkages are much stronger,* and retailers play a crucial role in the commercial phases in which most SME are weak. Yet Medellín's cluster firms are still taking part only in national retail chains, whereas Bucaramanga's have succeeded in entering international commodity chains and networking with large foreign buyers and retailers, thereby successfully entering export markets. In the Sinos Valley a similarly crucial role for foreign export agents has been detected (Schmitz, 1999a).
4. The cases analyzed represent examples of *urban* clusters, implying costs and benefits for the local enterprises. On the one hand, the urban economy generates important advantages, mainly in the form of a larger supply of real services, and of more spillovers and externalities. However, the case of Medellín shows that a huge urban and multisectorial reality may limit the creation of those inter-firm and inter-institution linkages that would strengthen the network and increase the efficiency of its operations, and can also hinder the timely process of repeated interaction and collaboration that may generate mutual trust. To this effect, the smaller size of the Bucaramanga cluster appears to be an advantage.
5. Some of the typical features of an industrial district are, however, present in both Colombian cities. Thus, the enterprise culture is progressive and dynamic, with emerging examples of start-ups. Moreover, there is a satisfactorily developed and specialized local labor market, although it sometimes lacks sufficiently advanced technical capabilities. The local institutions have played a very important role in this respect, notably in Medellín, in enhancing the enterprises' ability to devise multiple reactions and strategies. The immaturity of Bucaramanga's cluster continues to hinder development of its local institutions.

6. The Medellín cluster may be classified as a “*hybrid or mixed cluster*” (Schimtz, 1995a), a product of the combination of agents present in the local industrial structure. The presence of large enterprises—with a Fordist style and which were protected by the government for many years prior to the opening of the economy (1991)—combined with the presence of powerful national retailers, along with the existence of a network of SMEs in order to guarantee flexible specialization, produces a very complex productive structure having some elements remarkably different from the model of an industrial district. This resembles other experiences in Latin America, such as those of Sao Bento do Sul and Rafaela, the latter being host to a variety of industries.
7. While Bucaramanga is mainly a clothing cluster, the textile industry in Medellín is also large and highly developed. Thus, in principle, *inter-industry* relations in Medellín are expected to offer a competitive tool by providing exclusivity, originality and creativity to the clothing process. In any case, the present backwardness and lack of international competitiveness of the Colombian textile sector may intensively spread to the garment sector and hinder its performance. The entry of large textile enterprises into the garment industry appears to contradict the prevailing worldwide trend towards specialization while following a short-term strategy that is neither promising nor dynamic.
8. Some elements of the Bucaramanga experience suggest that it may be developing along the lines of the ID model, and closer to the Marshallian definition. The growing forward linkages with large foreign retailers, and the incipient participation in global commodity networks, may offer promising dynamic opportunities for the cluster’s future growth. A possible limitation may arise from the entrepreneurs’ ‘individualistic’ culture and their haste to grow. The cultural model of Fordist mass-production has often represented an ideal for these enterprises. As soon as the firms enjoy good performance, their strategy is inevitably to increase employment and production, and to internalize most productive phases in order to maintain control over the whole production process.
9. The two clusters have developed *under very different economic policy régimes*, and this has had its effects on the clusters’ performance and structure. The textile and clothing industry in Medellín took off several decades ago, and much earlier than that of Bucaramanga. During these years, the economy was heavily protected from foreign competition, large firms were often subsidized by the State, and local industry acquired an oligopolistic power over the national market. This ensured success and profits for a long time, and made possible the creation, evolution and development of local public as well as private institutions. However, enterprises found themselves unequipped to face the market liberalization that occurred starting in 1991, as well as to operate in the new environment of open markets and glo-



balization. The trend towards the strengthening of vertical integration may also have been induced by the entrenched habit of competing within a protected market. In contrast, Bucaramanga's garment industry developed much later, and was forced from its infancy to search for new markets, essentially for exports, given the strong hold of Medellín's firms on the national market. The incentives to compete in open markets have been much stronger and continuous. Simultaneously, this process has been given impulse by foreign buyers and retailers who have aided enterprises in the upgrading of their products and technologies. As a result, Bucaramanga's cluster appears better equipped to face the international market as well as the nature of today's prevailing global competition.

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Appendix 1  
Summary of the Clusters' Characteristics: Medellín and Bucaramanga, Colombia

Characteristics of Marshallian Id	Proxy and source of Information	Medellín	Bucaramanga
Predominance of SMEs in the Local Industrial Structure	No. of establishments	Oligopolistic structure in the textile sector. A mixed structure in the garment sector. Huge enterprises (>500 employees) floated on the Stock Exchange coexist with SMEs (<70 employees)	Clear predominance of SMEs with an average employment of 37. The market share for each enterprise is relatively low. More than 50% of the enterprises in the city have less than 200 employees.
Nature of the Firms (ownership relations)	Survey and secondary sources	Independent owners. In any case, the main economic groups own the biggest enterprises of the textile sector as well as some important firms in the clothing sector.	Independent
Decision making	From the enterprise's point of view	Internal to the enterprise. In any case, evidence of a high degree of dependence upon the two largest department store chains in the country which distribute the region's clothing products. Strong growth in <i>maquila</i> processing.	Internal to the enterprise. Strong sensitivity to the macroeconomic environment, especially to the exchange rate. High seasonality. In the months of lower demand strong tendency to <i>maquila</i> processing.
Vertical disintegration	Division of labor into independent units. Chaining of the productive phases	<b>High</b> Several enterprises are exclusively dedicated to service provision. A strong tendency on the part of the smaller firms to turn to subcontracting in the sewing phase. In textiles the productive process is more integrated.	<b>Low</b> The majority of the enterprises show high vertical integration. Increase in subcontracting only for large orders or specific jobs.

Characteristics of Marshallian Id	Proxy and source of Information	Medellín	Bucaramanga
Specialized production in the area <ul style="list-style-type: none"> <li>▪ Number of firms</li> <li>▪ Production</li> <li>▪ Employment</li> </ul>	Number of registered enterprises in the sector	There are 5.000 registered enterprises in the fashion sector, 48% of them in clothing. Many of them are spread around the Medellín metropolitan area, Itagui and Bello.	More than 200 enterprises are registered in the clothing sector only, spread around Bucaramanga's urban area, essentially Floridablanca, Piedecuesta and Giron.
	Production value, according to legal indicators	The fashion sector represents almost 25% of total manufacturing. The textile sector accounts for 17% while clothing 8%.	The clothing sector represents almost 6% of manufacturing in the region. Textile activity is minimal, with less than 2%.
	Employment in the sector/total local employment	The fashion sector employs almost one third ofl Medellín's total population (textile = 19% and clothing = 16%)	The clothing industry is the third most important employment generator (19% of population), after oil and food. Minimal employment in textiles.
Export Performance	Export Propensity	In the clothing sector the SMEs' export propensity is low (25% of production) due to high internal demand as welll as to ignorance of international markets. Exports mainly to Latin America and US.	Especially in the clothing sector, SMEs have a high export propensity. More than 60% of production is exported. Mainly to the US, Latin America, and to a smaller extent the EU.
Exchanges within the district	Survey	Relatively High Close relationship between textile and clothing firms (user-producer linkages). In many cases, this enhances product innovation.	Medium Especially with producers of accessories.

<b>Characteristics of Marshallian Id</b>	<b>Proxy and source of Information</b>	<b>Medellín</b>	<b>Bucaramanga</b>
Scale economies of the district as a whole	Consequence of the firm-level specialization and division of labor	Medium Fairly high vertical disintegration of the process that allows firms to increase efficiency and productivity.	Low Product of a highly integrated production process that hinders the individual agents' productivity
Possible economies of scope	Consequence of the differentiation	Medium Imitation and mass production, stimulated by the large retail stores. Differentiation is a tool for competition, especially for garments.	High This city presents a marked specialization in a specific product –girls' dresses-. Product differentiation is a crucial tool for competition.
Labor Market	Intradistrict flexibility and mobility	Medium More rigid labor contracts through longer terms. Labor turnover less than 10%	High Very short term contracts (6 months or less). Labor turnover exceeding 30% from one semester to another
	Ability and technical capability in the sector	High Due to the sector's long tradition and to past experience in large firms or family activities. In some cases personnel have studied at a university.	Medium-Low Characterized by a slow evolutionary adaptive process of accumulation of experience in the SMEs. Little past experience in the sector.
	Human skills availability	High rate of skilled unemployment, mainly due to the crisis experienced by large enterprises in the cluster	Due to the contracts' high seasonality, low skilled unemployment in the second semester. This hinders the continuity of the learning process.

Characteristics of Marshallian Id	Proxy and source of Information	Medellín	Bucaramanga
Links outside the district	Survey	Essential in distribution and commercialization. Links with two large national distribution chains, but not with <i>global</i> producers/retailers. Weak in production, but with a growing tendency to <i>maquila</i> processing.	Moderately important backward linkages, very important forward linkages especially with international retailers.
Role of the local institutions	Survey	Important for information flows and innovation. Remarkable capabilities and experience in the textile sector due to a longstanding tradition of experience in the area. A great variety of local institutions supporting enterprises, such as INEXMODA, ACTUAR and training centers.	Less important. Mainly in the organization of fairs and information flow. Only SENA is highly regarded for training labor and providing real services.
Business Associations	Survey	Very important. Ascoltex in textiles The Medellín branch of ACOPI has an important effect upon the development of the sector through its influence on policy-making (policy advocacy and lobbying).	No sectorial business association exists; ACOPI is valued for its management training activities and for information diffusion.
Local Government	Survey	Active representation at the national level through the Chambers of Commerce and organizations such as SENA. Direct interventions of the government supported larger enterprises in crisis years.	Weak. Due to the infancy stage of the industry, there are still no consolidated institutions that may design and implement policies, provide support services, and call for subsidies for the sector.

Source: Survey questionnaire and Colombian fieldwork August-December 1998.

