

The Hard Path To Competitiveness: The Organizational Fittedness of Spanish Textile Leaders

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In an ever-changing environment, firms must also constantly change the way they do things in order to compete successfully. The Spanish textile leaders of 1992 (in comparison to 1978) have altered their organizational boundaries, favoring more complex and flexible structures, outsourcing production and procurement activities—in order to decrease production costs—and integrating their sales force and distribution channels—in order to gain knowledge from their customers. Based on a study we conducted using data from semi-structured interviews with twenty CEOs and secondary sources within leading Spanish textile companies, we found that larger firms adapted through learning whereas medium-size enterprises were subjected to ecological selection.

CHANGING ENVIRONMENTS AND SHIFTING ORGANIZATIONAL STRUCTURES

Since Spain joined the European Community in 1986, the closed competitive environment of Spanish firms has disintegrated, leading to vital changes and creating a new competitive reality, a phenomenon that D'Aveni (1994) calls *hypercompetition*. The magnitude of this challenge stimulated our interest in knowing the direct response of the textile industry leaders—defined as those firms enjoying the top competitive positions—and in identifying the key factors for success in their businesses, and understanding how these factors affected their particular firm's competitiveness.

With hindsight, we can classify changes occurring in the textile industrial environment into four major groups: (1) deregulation of the legal framework, (2) global rivalry, (3) customer pressure, and (4) technological change.

Due to its recent membership in the European Union, Spain has found itself required to adopt the European legal framework which comprises the European Commission's guidelines on harmonization of domestic laws as well as European agreements for trading between domestic economies, the egalitarian customs tariffs for trading with European Union members, and the multifiber and GATT accords. The new com-

petitive environment is clearly defined by a global contest that comprises both developed and underdeveloped countries, hence creating a textile clothing market where supplies increasingly overflow demand. At the same time, firms find themselves encountering changes in consumer behavior. New offerings from other countries have increased the number of product varieties to which consumers have access, leading to an increase in the volatility of domestic firms' demand. Quality and variety, as the consumer perceives them, have become key issues when it comes to firms maintaining their market share. Lastly, technological changes have also played a substantial role. At present, the importance of manufacturing scale economies are limited and the necessity to increase labor productivity and acquire skills in the information technologies all-in-all facilitates industry's access to almost all key competitive resources.

To analyze the direct response of the Spanish textile leaders, we focused our attention on two broad questions: (1) the extent to which individual organizations' adapted by market selection or by organizational learning—the most relevant industrial policy issue—and (2) which organizational changes have been adopted by successful firms to ensure their ongoing existence—a very pertinent managerial question (Carroll, 1993).

In order to answer the first question, we must look at the different theoretical frameworks since they define precisely which data should be collected and analyzed. For instance, choosing a theory based on strategic choice (Child, 1972) and organizational learning (Argyris, 1985; Senge, 1994) as the way to adapt will lead the analyst to focus only on the best performers at one point in time. On the other hand, analysts who feel that controlling the future is heady stuff and that firms are able to manipulate some conditions or characteristics of their environment but cannot influence the broader environment (McKelvey and Aldrich, 1983; Barnett, Greve and Park, 1994) will focus on the process implemented by once-successful firms to regain their environmental fit or die and on the differences actually characterizing currently successful firms.

Organizational scientists, whether from the field of organization theory or organizational economics, are beginning to believe that organizations come in so many varieties of forms that it is of little value to search for *the* few essential attributes that define the firm (McKelvey and Aldrich, 1983; Alchian and Woodward, 1987). Here we are interested in examining the organizational differences between successful textile-clothing firms in 1978 and the best performers in 1992, specifically targeting differences between their organizational boundaries and their membership-coordinating contracts. Both characteristics define the organizational form and are included in organization definitions proposed by Hall (1982), McKelvey and Aldrich (1983), Alchian and Woodward (1987).

The literature review outlined below analyzes the propositions of several organizational theories as well as the transaction cost perspective of how company populations (in this case, successful Spanish textile-

clothing firms) adapt to changes in their environment during a period of time (1978-1992). In the next section, we also present the theoretical predictions of various hypotheses concerning changes in firms' organizational forms that aim to cope with changes in their competitive context. We then outline our research design: research questions, sample and variables, and how we analyze and classify organizational arrangements. We later present our research findings and discuss them in view of the theoretical predictions. Lastly, we summarize our main conclusions.

ORGANIZATIONAL FORM AND PERFORMANCE

ADAPTATION THROUGH SELECTION VERSUS ORGANIZATIONAL LEARNING

As a consequence of the temporary nature of the competitive advantage, firms must restlessly and continuously adapt their organizations to changes in the struggle to obtain the resources on which their competitive strategy rests. In the science of organization, however, there is no consensus about the process we can expect firms to follow when competing in a particular industrial sector.

From the point of view of the population ecology of organizations, adaptation takes place at the population level (industrial sector). According to Hannan and Freeman (1977), much of the variety in organizational structure is created by the birth of completely new organizations. This theoretical framework points out that the adaptation occurs through the selection of new organizations that replace outmoded forms with new ones that more closely fit in with the competition for resources.

On the other hand, the rational adaptation theory (Scott, 1987) proposes that changes in organizational forms are a reflection of rational variations in a firm's competitive strategy, which produce a good match between its organizational boundaries and its internal processes in response to changes in the competitive environment (Donaldson, 1982). To be precise, the structural-contingency theory proposes that a firm's competitiveness rests upon its ability to achieve a match between its strategy, structure and environment (Lawrence and Lorsch, 1967; Thompson, 1967; Donaldson, 1987). As a result, firms adapt their strategies and organizational boundaries through a process of internal learning (Argyris, 1985; Senge, 1994), *i.e.*, the selection process takes place through learning at the organizational level.

Both theoretical postures emphasize two practically opposing visions of the adaptation process. The first stresses an organization's inability to learn due primarily to the existence of *organizational inertia*, a phenomenon that hinders (if not impedes) firms from adapting their market strategies and organizational boundaries (Hannan and Freeman, 1984). The latter, on the other hand, assumes that organizational inertia can be managed with thoughtful strategies aimed at changing the

behavior of the organization's members (Argyris, 1985; Senge, 1994), and, consequently, that the firm's management can adapt its organization to compete for resources and survive in the long term.

After their initial work Hannan and Freeman (1984) presented a dynamic model that links structural inertia (*adaptation-through-selection*) to organizational change (*adaptation-through-learning*), trying to subsume both positions in an evolutionary, and hence dynamic model (Aldrich and Auster, 1986; Aldrich, forthcoming). In the ecological-evolutionary model, organizational routines play a key role, as they are the cause of organizational inertia as well as of its efficiency (Nelson and Winter, 1982). Hannan and Freeman (1984) propose that competition selects those organizations that can reliably produce a collective action and prove the rationality of their actions. Nevertheless, those firms selected will face increasing structural inertia as they reproduce their organizational routines. Eventually, their organizational inertia will increase as they age and increase in size, if this is the case, producing what we now know as «liabilities of aging and bigness» (Aldrich and Auster, 1986, p. 167).

As a result, SME's will differ from large firms in their structural inertia; they will try organizational change more often than the latter, but have a smaller probability of succeeding in their attempts (the «liabilities of newness and smallness» [Aldrich and Auster, 1986, p. 173]). In fact, firms that attempt to change their organizational structure become more exposed to unexpected environmental changes. As Hannan and Freeman (1984, p. 159) put it, «Large size presumably enhances the capacity to withstand such shocks. Small organizations have small margins for error because they cannot easily reduce the scope of their operations much in response to temporary setbacks.» As a consequence SME's will differ from larger ones not only in the frequency of their attempts to adapt to competitive changes, but also in their probability of being successful in their adaptation-through-learning process. In SME's the frequency affects the adaptation process positively whereas the probability of being successful is negatively affected. For larger firms, however, the effect reverses. Thus, the result is indeterminate and the question is merely empirical. We can anticipate that the mechanics of adaptation will operate through selection (population-level) or learning (organizational-level), depending upon the organizational inertia actually encountered by large firms.

ORGANIZATIONAL BOUNDARIES OF THE FIRM

STRUCTURAL CONTINGENCY PERSPECTIVE

The structural contingency perspective for analyzing organizations claims that (1) there is no one best way to organize (Lawrence and Lorsch, 1967) and (2) not all ways of organizing are equally effective (Galbraith, 1973). The first assertion (that could be termed the *relativity or fitter hypothesis*) means that the efficacy of different organizational forms is contingent on some critical parameters. Differences in

structural arrangements will be observed (Lawrence and Lorsch, 1967) under different contingencies such as variations in strategy (Chandler, 1962, Donaldson, 1987), size (Pugh, 1973), technological unpredictability (Galbraith, 1973), or environmental uncertainty (Thompson, 1967). The criterion that guides the process is uncertainty avoidance. The second statement, also known as the *consonance hypothesis* (Pfeffer, 1997), means that the equilibrium criterion is an environment-match for achieving performance. That is, those organizations having structures that more closely match or adapt to the context will be more effective than those that do not. This would be the classical statement of structural contingent theory. In response to critics stating that this theory cannot explain structural change but only differences in organizational form, Donaldson has proposed, and found support, that organizations adapt their structure by moving out of misfit in order to re-establish effectiveness and performance (Donaldson, 1987).

The structural contingency theory also proposes that the way in which organizations attempt to encircle external sources of uncertainty is by extending their organizational boundaries when they are subject to a sequential interdependence that performs a series of tasks in a set order, as in manufacturing (Thompson, 1967). That is, *to avoid uncertainty, the organization will tend to seek vertical integration*. As a result, if the uncertainty of the environment changes, the boundaries of the firm will also shift, and if the different activities of the firm are subject to dissimilar measures of uncertainty, the rate of integration will vary accordingly.

ORGANIZATIONAL ECOLOGY PERSPECTIVE

The basic ecological argument, or *equilibrium criterion*, is that organizational forms that are *comparatively more suited* to the environment or niche within which they are operating will fare better—that is, they will tend to exhibit a higher founding rate and a lower mortality rate. The equilibrium criterion of the ecological perspective for studying organizations is very similar (if not the same) to the structural contingency perspective: comparatively more fit (Hannan and Freeman, 1977). The *process criterion* is adaptation, whether by selection or evolution (Hannan and Freeman, 1984), while the structural contingency perspective is only concerned with evolution by changing the organizational form—the strategic choice proposed by Child (1972)—to regain fit (Donaldson, 1987).

Unlike economics, ecology makes no claim about optimality or even progress. If a better form is not present in the population, for whatever reason, it cannot triumph in the selection process, which means that there is no guarantee that the organizational form that appears to be winning is optimal. Moreover, because survival depends on the fit or match between the characteristics of organizations and their environment (constantly changing), the better or worse organizational form obviously also changes. In the population ecology of organizations, there is never a *best* way to organize.

The population ecology perspective becomes practical for policy purposes, since it has the potential to show whether the changes in the environment favor a particular way of doing business, that is some organizational form: There is no best form or organization, but many forms for many niches. Consequently, *under the organizational ecology perspective, we can expect new organizational forms to emerge in response to a change in the environment*, whether by adaptation of incumbents or venturing new organizations.

RESOURCE DEPENDENCE PERSPECTIVE

The resource dependence perspective (Pfeffer and Salancik, 1978) analyzes the ways in which organizations cope with environmental uncertainty. According to Pfeffer (1982), the *process criterion* is uncertainty reduction. Environmental uncertainty arises from firms' interdependence on others for the availability of resources and their demand. According to Pfeffer and Salancik (1978), three conditions define how dependent an organization is: (1) how important the resource is to it, (2) how much discretion those who control a resource have over its allocation and use, and (3) the extent to which those who control a resource have a monopoly. Williamson (1994) has pointed out that this is merely another way to express how specific the transaction is for the firm (see also Alchian and Woodward, 1987).

In cases where the ones on whom an organization depends may not be dependable (*i.e.*, their behavior is not predictable), a firm's effectiveness is determined more by how well it balances these dependencies than anything else (the *equilibrium process*). Pfeffer and Salancik (1978) propose four strategies a firm can follow to balance these dependencies: (1) adapt to or alter constraints, (2) *alter the interdependencies by merger, diversification, or growth*, (3) negotiate its environment by interlocking directorships or joint ventures with other organizations or by other associations, and (4) change the legality or legitimacy of its environment by political actions. Accordingly, the resource dependence perspective proposes that *firms will alter their organizational boundaries to cope with changes in their organizational environment that affect their interdependence on others for the availability of resources*, regardless of whether manufactured components, raw materials procurement, target group access or some other kind of resource is involved.

TRANSACTION COST ECONOMICS PERSPECTIVE

For the microeconomic perspective of transaction cost economics, the *process criterion* is the idea that economic organizations are designed to achieve efficiency and, over time, inefficient ones will vanish (Pfeffer, 1997). In the words of Williamson and Ouchi (1981, p. 363-364), «power considerations will usually give way to efficiency—at least in profit-making enterprises, if observations are taken at sufficiently long intervals, say a decade.» However, Williamson's confidence in efficiency is not as strong today as it was in those days. At present, Williamson (1994) contends with Simon (1983) that economizing ope-

rates through weak forms of selection, namely, what matters is that fitter organizational forms are selected, not necessarily only the fittest. In this sense, the process criterion of the transaction cost perspective is quite close to the one held years ago by the ecological perspective (Hannan and Freeman, 1977, 1984), although transaction cost economics does not specify whether the adaptive process unfolds by selection or learning.

According to Williamson (1975, 1985, 1994), the vertical integration problem (i.e., the boundaries of the firm) is the most important issue in transaction cost economics. This is first compiled and discussed in his 1975 book, *Markets and Hierarchies*. For this approach, when analyzing whether a firm should produce or buy a particular good or service, the transaction comes up as the ideal unit of analysis. Consequently, the decision on whether to perform the transaction outside or inside the firm depends on the characteristics surrounding the actual transaction. As a result, it predicts that the way firms organize transactions differ according to the transaction's characteristics; that different organizational forms fit distinct specific transactions (Williamson, 1991), with the fit or match accomplished by transaction cost economizing (Williamson, 1994). This is simply another way to express the *consonance hypothesis*. From the transaction costs perspective, therefore, the combined presence of large, complex, and small firms in the economy is a reflection of the relative effectiveness of hierarchies and markets in reducing the transaction costs involved in economic exchanges with buyers, sellers, suppliers, and distributors.

RESEARCH DESIGN

RESEARCH QUESTIONS

First question: Has the firm experienced any significant organizational changes? If we compare sales and staff size rankings in between 1978 and 1992 and find a weaker correlation than in 1992, we can infer that Spanish leaders have changed their organizational boundaries.

Second question: How have successful Spanish textile-clothing firms adapted to a changing environment? Are the same companies listed as the leaders for both years? Did they adapt by a process of adaptation-through-learning or by selection? Is there any advantage related to company size?

Third question: What organizational differences are there between successful textile-clothing firms in 1978 and the top performers in 1992? Did the leaders alter their boundaries equally in all their activities?

SAMPLE AND VARIABLES

Sources of data: Data for our project was obtained from the 30 Spanish textile-clothing leaders in 1978 and 1992. We chose 1978 because this was the first year of publication of *Fomento de la Producción's* ranking (in terms of sales) of the 25,000 largest Spanish firms. The publication has been released yearly ever since and recently, Duns and Bradstreet joined the effort with its DUN's 15,000, a ranking also issued yearly. We obtained data from twenty in-depth interviews with CEOs selected from our sample and from secondary sources, primarily annual company reports, business rankings such as *Fomento de la Producción* or DUN's 15,000, and business news from several business newspapers and trade magazines. In order to increase the validity of our research, we used theoretical, time and methodological triangulation, understood as a combination of research methods and data sources (Denzin, 1979).

Sample: We operationalized our population by developing a specific list or ranking as a sampling frame from *Fomento de la Producción*. We focused on the textile-clothing sector and developed a list containing the most important firms in terms of sales and employment. We selected these two variables as measures of a firm's size because they were the only ones available in both 1978 and 1992. We would have preferred using added value instead of sales; however, this data was not available. We found several mistakes such as missing firms in some years, and thus tried to improve *Fomento's* ranking by making the following adjustments: First, we checked the rankings for both periods comparing them with previous and following years, including firms that were missing from one of the two present lists; second, we included PRENATAL, SA, on our list after checking DUN's 15,000; and third, we homogenized company data on sales and staff size when we found a bias due to corporate structure (e.g., a holding group). After making these improvements, we constructed a non-probability sample of fifty-two firms, since eight of them appeared in both rankings (see **Appendices 1** and **2**), which represent the largest firms in terms of sales.

Interviews: Fifty-two CEOs were sent a letter from our university requesting their cooperation in the project. The letter provided information on the purpose of our study, the reason why they were selected and the main topics to be discussed in the interview. After several phone calls, twenty agreed to be interviewed (see figures A1 and A2 to identify their firms). We used an in-depth standardized open-ended format to facilitate data analysis and to minimize interviewer skewing by asking the same questions of each respondent. The checklist used was based on a survey of the literature and contained questions on production, procurement and commercial activities, markets and organizational structure. Interviewees were asked to characterize their firm's structure in 1992 and how it had changed since 1978. We checked their answers for 1978 by comparing them with business news published during the 1980s since the same CEOs were not in charge

at that time. This source of information also provided us with data about the organizational structure of the firms whose CEOs did not agree to be interviewed.

The questions were written out in advance exactly the way that they were to be asked during the interview. All interviews were conducted at the location and time preferred by the individuals. Almost all individuals chose to be interviewed at their firms, which allowed us to make observations and to take contextual notes; only one person preferred the AITPA's premises in Barcelona. All interviews were tape-recorded when permission was given. The interview process began in October 1992 and was completed nine months later in June 1993. The average duration of each interview was two hours.

ANALYSIS

Statistical Analysis: We calculated two statistics: (1) Goodman and Kruskal's gamma, γ , a measure of association based on the logic of proportionate reduction of error; and (2) Spearman's rho, ρ , a measure of correlation commonly used for ordinal variables (Sierra, 1983; Norusis, 1994). The gamma statistic can be understood as the probability of a pair of observations being concordant less their probability of being discordant; it can be between -1 and 1 (Norusis, 1984). Spearman's rho statistic measures the degree of association as well as its direction (positive or negative) and statistical significance (Mateo, 1987).

Qualitative analysis: In order to analyze organizational arrangements, we used Imai and Itami's framework (1984). The advantage of their taxonomy is that it provides us with a tool to characterize several hybrid organization models (Williamson, 1991) observed in firms and markets (see **Figure 1**). They classify organizational arrangements by using two variables related to transactions: (1) the decision-making principle of each participant in transactions, and (2) the membership of these participants and their mutual relationships. Each variable can have three values; nevertheless there are only seven categories because two of them are theoretically impossible: pure market ($M1$, $M2$), long term market interchanges (organization-like market, $M1$, $M2+O2$), free joint optimization in the market (organization-like market, $M1+O1$, $M2$), intermediate organization ($M1+O1$, $M2+O2$), long term hierarchy interchanges (market-like organization, $M1+O1$, $O2$), internal market in the organization (market-like organization, $O1$, $M2+O2$), and pure organization ($O1$, $O2$).

Decision-Making Principle	Membership and Mutual Relationship		
	M2: Free Entry	M2+O2: Limited	O2: Fixed
M1: Free Private Interest	Pure Market	Organization-like Market	
M1+O1: Free Private Interest with Authority Rules	Organization-like Market	Intermediate Organization	Market-like Organization
O1: Authority-Based Management		Market-like Organization	Pure Organization

Market Arena
 Organization Arena

Figure 1. 7-Cell framework of resource allocation mechanisms (Imai and Itami, 1984, p. 289)

We have classified transactions as being contracted in the *pure or spot market* when the interviewee was not concerned about the identity of its supplier, the case when yarn brokers were used for the buying and selling of yarns, or where the external labor market was used to recruit personnel; *organization-like market* when the firm cared about the identity of their partners (long term market interchanges) or how they made decisions (free joint optimization in the market). Examples of long term market interchanges are putting, subcontracting and sub-supplying systems, and cooperative agreements signed in distribution channels (see Mariotti and Cainarca [1986] for further details). Contractual relationships to ensure proper alignment of the behavior of retailers are examples of free joint optimization in the market. When the organization was concerned with both the identity of their partners and how they made decisions, we find an *intermediate organization*: franchise networks, conjoint ownership and the quasi-firm organizational form in the textile sector, the *impanatore* (the Italian word; see Piore and Sabel, 1984) or *transformista* role (the Spanish term). When the participants were engaged in fixed and continuous relationships with only some authority rules, a situation known as *market-like organization*, we find internal capital markets in large enterprises (Williamson, 1985). When the organization was concerned with the identity of their partners but the decisions were made based on hierarchical authority, also known as *market-like organization*, we found double procurement sources in textile mills and clothing enterprises, a long-term hierarchy interchange. Finally, if transactions were coordinated through a hierarchy having a fixed relationship, they were classified as forming part of a *pure organization*.

RESULTS

HAVE THERE BEEN ANY SIGNIFICANT ORGANIZATIONAL CHANGES?

First, we calculated the association shown by the 1978 ranking regarding in terms of sales and staff size. In order to estimate Goodman and Kruskal's gamma statistics, we must know the number of concordances, C, between the ranking done with both variables, and then count the number of discordances, D, between both orders:

$$\gamma = \frac{C - D}{C + D} = \frac{347 - 106}{347 + 106} = 0.53$$

According to the data, by making a conjecture about the position of a firm in the staff size ranking from its position on the sales ranking, we improve our forecast by 53% in comparison with the null hypothesis, which proposes that the best alternative consists of making random forecasts. Spearman's rho statistic is also based on the discordance between both classifications, although it takes into account the size of the sample, N = 30 firms:

$$\rho = 1 - \frac{6d^2}{N^3 - N} = 1 - \frac{6 \times 1278}{30^3 - 30} = 0.72$$

This result states that there is a positive association of 72% between both orders and that it is statistically significant, with a marginal level of 1%—its critical value being 0.432.

Secondly, we calculated the degrees of association of the 1992 rankings. After calculating concordances and discordances, Goodman and Kruskal's gamma statistic gave us a value of 0.37:

$$\gamma = \frac{C - D}{C + D} = \frac{297 - 138}{297 + 138} = 0.37$$

This shows that, when making a conjecture about the position of a firm in the staff size ranking based on its sales ranking, we only improve our forecast by 37% in comparison with the null hypothesis. Spearman's rho statistic gives a value of 0.54; a 54% association between both orders that is statistically significant, with a marginal level of 1% (**Table 1**):

$$\rho = 1 - \frac{6d^2}{N^3 - N} = 1 - \frac{6 \times 2076}{30^3 - 30} = 0.54$$

Table 1. Association between sales and staff size rankings

Statistics	Year	
	1978	1992
Goodman and Kruskal's gamma	0.53	0.37
Spearman's rho	0.72*	0.54*

* p < 0.01.

When comparing the results of both years' ranking, we see that a positive association still exists in 1992 between both classifications. The gamma statistic has decreased from 53 to 37%, such that in 1992 the probability of guessing the position of a firm in the staff size ranking from the sales ranking has decreased 16 percentage points. On the other hand, Spearman's rho statistic fell from 72% to 54%, putting it at ten percentage points from the critical value and allowing us to reject the hypothesis that there is no association between these two variables. By comparing the statistics of both years, we can expect important changes in the organizational configuration of firms, favoring less integrated configurations. We are unable, however, to determine which firms they are or how have altered their organizational boundaries.

ADAPTATION-THROUGH-LEARNING OR SELECTION, AND THE EFFECT OF FIRM SIZE

We must now ask how the adaptation process has been carried out. In order to analyze this question, we focused only on both years' sales rankings. If the firms listed on both classifications were the same, the data would support the evolutionary hypothesis which states that firms learn and improve their organizational skills in order to sustain a temporarily competitive advantage. On the contrary, if the data were completely different, they would support the hypothesis that population of firms adapts through selection, not learning, as the ecological perspective proposes.

Actually the data do not corroborate either of these two perspectives, but sustains an ecological-evolutionary one (Hannan and Freeman, 1984), as eight of the thirty firms appearing on the 1978 classification are still among the leaders in 1992. We will define the relative number of firms remaining among the leaders of 1992 as the adaptation-through-learning rate. We observe that the adaptation-through-learning rate of the Spanish textile-clothing leaders was 27%, $P_a=8/30=27\%$.

We expect to see that firms that succeed in changing their organizational routines and their position in the milieu of firms comprising the market will continue to enjoy a competitive advantage (expressed as a high probability of being among the most important firms in their sector). In order to prove this, we calculated two more statistics: the probability that these eight firms are among the first fifteen in the 1992 ranking and the probability that they are in the first eight positions. The calculations gave a result of 40%, $P_{15}=6/15=40\%$, in the first case, and 38%, $P_8=3/8$, in the second. We may infer that, although a high number of firms considered major companies in 1978 (based on sales figures) are not listed in the 1992 ranking, the remaining ones have a high chance of being at the top of the 1992 classification (**Table 2**).

Table 2. Rates of adaptation-through-learning and competitiveness

Statistics	Value
Rate of adaptation-through-learning, P_a	27%
Probability of being among the first fifteen positions, P_{15}	40%
Probability of being among the first eight positions, P_8	38%

Based on these findings, we are now interested in determining whether the adaptation-through-learning rate is higher for major textile and clothing firms than for medium-size firms. Are larger firms being penalized for their resistance to change their organizational routines?

To answer this question, we split the main sample of thirty firms into two groups: The first half became the subsample of larger firms and the remaining fifteen, the medium-size group. **Figure 2** shows the size distribution for the thirty main firms in both years relative to the size of the 30th firm, with the relative size of major firms decreasing as one moves towards the middle of the distribution, whereupon there are little differences among firms.

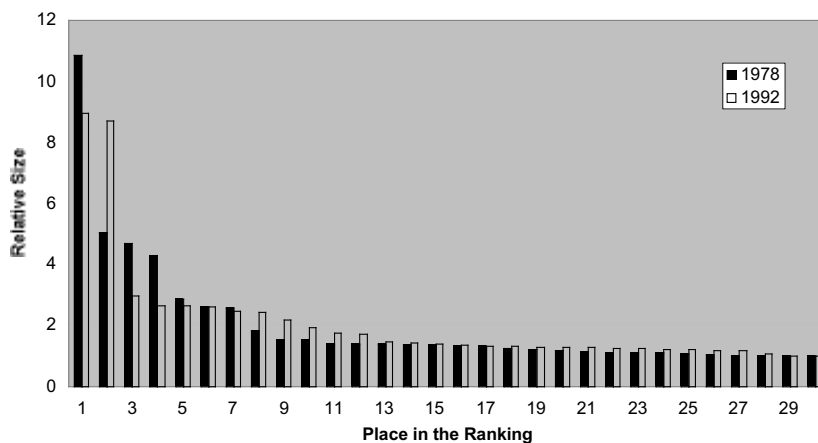
**Figure 2.** Relative size of leading Spanish textile companies

Table 3 shows the mean values of sales and staff size for both years, and the result of a test for differences in means that rejects the null hypothesis. The data supports the alternative hypothesis, which states that the mean values for larger firms are greater than those of the medium-size enterprises. In order to support the working hypothesis, the data must show that the adaptation-through-learning rate of medium-size enterprises, P_a , is higher than that of the larger firms. We found that seven of the fifteen larger firms were still in the 1992 sales ranking whereas only one of the medium-size firms was present in the

Table 3. Test of differences in means

Firms by size	Sales (current pesetas)		Staff size	
	1978	1992	1978	1992
Large firms	4,122.87	15,989.00	2,213	1,014
Medium-size firms	1,558.50	6,450.87	826	444
Value of Student's t	2.84	2.89	2.37	1.96
p-value for a one-tail test	0.0065	0.006	0.015	0.033

1992 ranking. Hence, the group of larger firms exhibited a 47% rate of adaptation-through-learning versus 7% for the medium-size group, a rate of almost seven-fold.

We calculated two more statistics in order to analyze if the relative position held by the firms remaining in the classification had changed. In order to do so, we arranged the list of eight firms included in the 1978 and 1992 rankings (see **Table 4**). The gamma statistic gave a value of 36%, showing that a conjecture about the position of one of the eight firms in the 1992 classification led to a 36% improvement in our prediction over random forecasts:

$$\gamma = \frac{C - D}{C + D} = \frac{19 - 9}{19 + 9} = 0.36$$

Spearman's rho statistic gave a value of 50%:

$$\rho = 1 - \frac{6d^2}{N^3 - N} = 1 - \frac{6 \times 42}{8^3 - 8} = 0.50$$

The result shows us that there is a 50% positive association between both orders, although it is not statistically significant, not even with a 5% marginal level (its critical value was 0.643). In other words, there have been so many changes in relative position for the eight firms that we are unable to make any forecasts based on past information.

Table 4. Association between the relative positions of the eight firms listed in both rankings

Statistics	Value
Goodman and Kruskal's gamma	0.36
Spearman's rho†	0.50*

* not statistically significant.

CHANGES IN THE ORGANIZATIONAL FORM OF SUCCESSFUL FIRMS

As the literature reviewed predicts and the ranking analysis sustains, there have been adjustments in the business activities managed within the domain of the firm and the domain of the market. **Appendices 3 and 4** compile the variety of organizational arrangements used by lea-

der firms to coordinate their access to resources. This does not mean that all firms in our sample used all of them, simply that the majority of firms did so in 1978 and were doing so in 1992. We observed no differences in how they accessed human and financial resources. We then focused our analysis on the way firms coordinated their access to procurement, manufacturing and distribution-selling resources. By comparing both figures, we can see the contractual evolution of the way that most leaders organize their access to resources. These trends are highlighted in **Figure 3**.

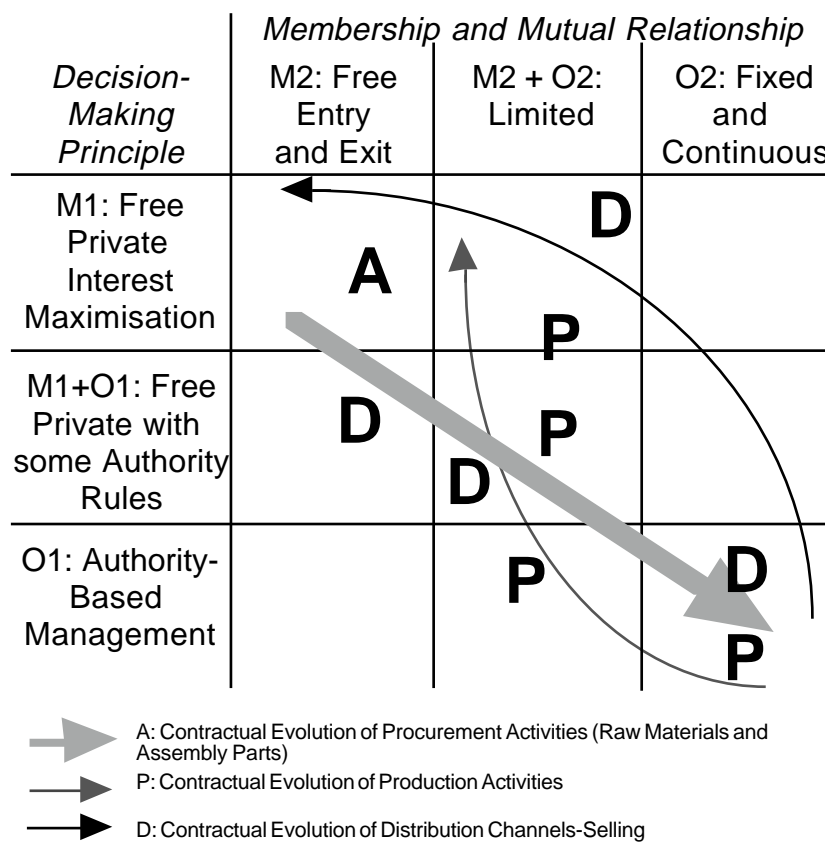


Figure 3. Contractual evolution of the way firms organize access to resources

If we follow the arrow indicating the contractual evolution of distribution channels and selling, we can observe that those sales activities also having the function of providing information essential to differentiating their products have shifted from the market to the boundaries of the firms (see letter *D* in *O1*, *O2*). This is the case of yarn and textile mills—the industrial firms in the sector— such as Hilaturas Llaudet SA and Algodonera San Antonio SA. Because these activities were transferred to the domain of the firm, any incentives to act in an opportunistic way

diminish. The weak incentives of the organization help to make decisions that maximize the total value of the firm (Williamson, 1991). The organizational principles have also been transferred to the market (follow the arrow indicating the contractual evolution). This is the case of contracts intended to maximize the combined value of production and distribution (e.g., consumer firms marketing socks and related products such as Industrias Valls SA; see *D* in *M1+O1*, *M2*), cooperative agreements for distribution (for instance, consumer firms marketing stockings and related products such as Manufacturas Antonio Gassol SA and Aznar SA; see *D* in *M1*, *M2+O2*) or franchising networks and similar intermediate organizational forms (most industrial and consumer textile firms such as Benetton SA and Sáez Merino SA; see *D* in *M1+O1*, *M2+O2*). When the resources and skills needed to develop a competitive strategy did not give the firm any advantage (the firm was not dependent on them), this activity was contracted in the marketplace through an allocation mechanism typical of the organizational domain. On the other hand, distribution activities have been introduced into the domain of the firm when they provide information that can be used to vertically coordinate the activities of the value chain and offer opportunities to develop distinctive resources. The high incentives of the market to act opportunistically make it difficult to make decisions that maximize the total value of production and distribution (the industry system).

When we look at production activities, we see that market assignment mechanisms have entered the domain of the firm and even some transactions have been transferred to the market arena (see arrow indicating its contractual evolution). Market mechanisms have entered the domain of the firm when a second external source of supply has been contracted (see the letter *P* in *O1*, *M2+O2*), as is the case in many textile leaders. The permanence of the internal activity depends on a certain economic result, with the market being the reference point; this shows the effect of stiff competition from developing countries.

Some forms of intermediate organization have been devised (see *P* in *M1+O1*, *M2+O2*). Firms have set up joint ventures for weaving and clothing (by way of illustration, Cortefiel SA, Induyco SA, Algodonera San Antonio SA) or have taken over dyeing facilities. Culminating this process towards the market, many of the above firms —as well as those now focusing primarily on the distribution activities of the industry system (for instance, Prenatal SA, Zara Group, Benetton SA, Cortefiel, SA, Induyco SA, an apparel subsidiary of El Corte Inglés SA, the biggest Spanish department store) — use many hybrid contracts in the market arena (see *P* in *M1*, *M2+O2*).

Lastly, the contractual evolution of procurement activities (raw materials and assembly parts) is quite clear (see letter *A* in *M1*, *O1*). In 1978 they were coordinated inside the boundaries of many, if not all, leaders; however, in 1992, they were contracted in the spot market, indicating that many firms have transferred one or two technologically separable activities to the market. This fact —together with the

contractual progress of the production function— shows that a disintegration process has evolved in upstream operations.

DISCUSSION

As predicted by the ecological, resource dependence and transaction cost economics perspectives, transaction costs are high in long-term economic relationships based on the buyer's specific needs and the seller's special knowledge of them. In other words, firms making the specific investment necessary to close the transaction become highly dependent since the value of their investment depends upon the other party continuing to do business with them. This is the case with Spanish industrial leaders that have internalized selling activities formerly contracted in the marketplace through middlemen. Even consumer firms have internalized their distribution outlets (e.g., Zara and Cortefiel) or have made long-term arrangements such as franchising their retail points of sale (Benetton).

As far as industrial businesses are concerned, textile mills must invest in acquiring knowledge about their buyer's specific needs (an intangible asset). This will enable them to differentiate their offer and maintain a competitive advantage over their rivals. Traditional sales representatives must invest in gaining specific knowledge about both the industrial firm's customers and the resources and capabilities of the textile mill where they work. This is a very dependent relationship if the buyer's needs and the textile mill's offerings are quite idiosyncratic, for example when the buyer and seller are trading high quality or fashionable products. As a result, industrial textile firms have been forced to internalize their sales force by converting it into an employment relationship. The CEO of one of the textile mills we interviewed stated it quite clearly:

«We propose the product. One of my brothers, who is a well-known professional in our sector, devises blends (cotton with other materials), then we produce the yarn and try to manufacture the textiles [through a subcontracting system] and attempt to convince finishers of the best way to finish that textile. Once we have the textiles, we look at which garments would make a good match; then we go to sell our yarns with garments in hand. In other words, we market our consumer product so as to convince our client that it must drop the standardized products it sells. Otherwise it will keep copying or making traditional garments; it must produce and sell new styles, based on our offers. As long as we are successful in convincing our clients, things are fine, otherwise ... that's the point... We sell these products by using our own sales force (60% of total sales) and other standard approaches (40%) such as cotton-yarn brokers (Cámara de Algodón e Hilados). The latter are independent professionals that gather all the products available in the market for a specific client; basically an ongoing auction. When a client demands a standard product then he/she places an order to a broker, who in turn gives the order to the textile mill offering the lowest price. This is a superfluous figure that is gradually fading out.»

In the case of textile-clothing firms marketing their products in consumer markets, coordination of access to customers has evolved in very similar way. The scarcest resources (i.e., those resources upon which the firm now depends the most) are their customers, and consequently access to the market is a key issue. The majority of consumer market leaders in 1992 have developed a way to access their clients through franchises (a phenomenon observed in both consumer and industrial companies) or their own outlets (Zara, Cortefiel, and El Corte Inglés are well known examples). When the firm was unable to justify a franchise network to offer the entire product line, as in the case of sock manufacturers, they devised a contractual arrangement between sellers and outlets that encourages the latter to reveal confidential information about possible demand. Likewise, some industrial textile firms have organized a quasi-firm arrangement (the *impanatore* system of some Italian industrial textile districts) to control the flow of their yarns to the consumer market, contracting textile production and garment construction in Portugal and selling them in Spain through a franchise network.

In 1978, the Spanish textile market was closed to foreign competition and had no problems accessing clients, whether industrial or consumers. In fact, most Spanish consumers have only started buying ready-made garments recently. In the past, textile mills were the firms closest to consumers (made-to-measure outlets and retailers) and found it easy to gather comprehensive data on their customers' needs. This made them dependent upon production and procurement resources and, in fact, was the reason why in 1978 most of the textile mills internalized two technological separable activities (spinning and weaving, or spinning and knitting), with many garment manufacturers being involved in as many as three activities (e.g., Sáez Merino SA, Géneros de Punto Ferrys SA). The CEO of one textile mill gave us a glimpse into the past:

«Trucks waited in the street for denim fabrics to exit the machine and be loaded; it didn't matter whether or not the textiles had defects.»

A failure to integrate the activities nearest to raw materials put firms in a hold-up situation, not because they had done any specific investment, but because they depended upon those resources to manufacture textiles and garments for their customers. In this situation, expanding the firm's boundaries to integrate activities on which the firm depended (there was uncertainty about whether the resources were available) is the theoretical prediction of all perspectives reviewed, even for the transaction cost economics one if we consider "idiosyncratic" and "dependent resources" to be synonymous as Williamson has done (1994).

When Spain joined the European Union, textile leaders found they no longer had to compete for enough yarn or textile fabrics, but did have to compete for prospects. However, once the firm's boundaries have been expanded to internalize some activities on which it depended before that change (though not now), the firm is caught in the trap of the fundamental transformation (Williamson, 1991). This suggests that

the actor's behavior changes once a transaction have been internalized and the selective intervention impossibility theorem predicts that all employees will be treated similarly (Williamson, 1991, 1994). This is not a problem when all transactions have similar values and productivity levels, otherwise the firm will have to pay an excess price for its resources. Precisely for this reason, most industrial and consumer firms have reduced their boundaries by outsourcing their spinning, textile fabrics and garment construction in order to cut labor costs. The income level and income distribution of Spaniards, together with the fact that technological economies of scale can be reached at low volume, make it possible to outsource these activities within the Iberian peninsula (examples of this approach are Zara, Cortefiel, El Corte Inglés). Other firms have created joint ventures in North Africa (Algodonera San Antonio, Cortefiel) or begun buying standard products from countries where wages are low (Zara, Cortefiel, El Corte Inglés).

In summary, as international borders have fallen, importing became possible, leading to increased price competition at all levels of the production system. Demand has become more sensitive to prices and the final consumer has a wider array to choose from, and even at lower real prices. Greater price competition has forced internal costs to decrease, leading textile firms to spin off activities that are more sensitive to price competition. We can observe a trend towards outsourcing production activities that are closer to the source of raw materials and retaining those that are closer to the final demand: the double margin that existed in successive activities has disappeared. At the same time, greater competition for the final demand compels firms to adopt organizational patterns that are more flexible. In economic terms, we could say that the marginal revenue of internal production has diminished while the marginal cost of managing it within the firm has increased, making the first lower than the second.

The data also lends support to the ecological-evolutionary thesis, which predicts that adaptation occurs through selection and organizational learning. On the average, only one of four firms has been able to adapt through learning and retain its position among the leaders in 1992. All others have filed for bankruptcy and disappeared or specialized their offer and restructured their activities to form something akin to a network organization. Large firms showed a higher rate of *adaptation-through-learning*; almost half the fifteen largest firms from 1978 had survived and were among the 1992 leaders, a rate seven-fold that of the medium-size enterprises (defined as the fifteen smallest firms of the thirty Spanish textile leaders in 1978). The data also support the *liability of smallness* hypothesis: medium-size, and probably small, firms are well adapted and fitted to their environment but have little, if any, slack to develop the organizational variations needed to accommodate a changed environment and regain fit (Donaldson, 1982, 1987). Most of them disappeared while trying to adapt their organizations; those that have been successful in their attempts have altered their boundaries considerably by reducing their size or becoming part

of large international distribution conglomerates (examples are SA Sans, recently bought by the U.S. company Sara Lee, and Aznar SA, acquired by an English distribution firm).

Major firms that have been able to reduce their organizational inertia and learn how to adapt to the new competitive structure exhibited different rates of learning. Hence, we cannot predict their relative position in the 1992 ranking from their 1978 position. This result shows the remarkable scale of discretionary strategic choice (Child, 1972). Although the environment affects competitive rules, a firm's strategic decisions lead to organizational learning through experimentation (D'Aveni, 1994). This is best exemplified by McKelvey and Aldrich's quote of a statement made by one top-level corporate strategy expert (1983: 122-123):

«What are the excellent companies—who talk less, but do more about strategy—really up to? I think the answer is this: First they are experimenting far more than the rest—they are not more prescient than any others; they simply have lots and lots of experiments, trials, and miniature ventures going on at any one time. Second, they are better learners. Because their top managers have first-hand knowledge of all the trials going on in their companies (and perhaps those of competitors), they have first-hand knowledge of what works and what does not work. Third, they do not experiment expensively; they seem to have systems for quickly cutting off the failures and stepping up resources to the apparent successes. That's it. I submit that the real strategists are simply better learners who are experimenting more».»

CONCLUSIONS

We found that, although the organizational configuration of the 1990s varies from that of the 1970s, there is still plenty of variety to be found among the new Spanish textile leaders in hybrid organizational forms. This suggests that there is no single answer to achieving competitive advantage. Leading companies have converted their organizational designs from pure models (whether spot market or hierarchical), into hybrid solutions that seek a better way to adapt to their new competitive environment. They have externalized their production and procurement activities -in order to decrease production costs- and have integrated their sales force and distribution channels -in order to gain knowledge from their customers. This road has been very bumpy for many of the 1978 leaders, although larger firms have generally had more success with adaptation-through-learning than medium-size enterprises.

Our findings suggest that different and complementary theoretical perspectives are necessary to study the assortment of organizational forms of this period. This study gives support to an ecological-evolutionary model of adaptation: large firms have followed a process of adaptation-through-learning whereas smaller enterprises have been kept down to market selection. Firms have altered their boundaries as

the theory suggests, becoming more adapted to the new competitive reality. On the one hand, the resource dependence and the structural contingency perspectives clarify how firms manage their dependence by reducing uncertainty through integration. On the other hand, the transaction cost point of view explains better outsourcing near upstream activities in 1990s, and the integration towards downstream if we consider resource dependence as synonymous of how specific a transaction is for the firm. To sum it up, the ecological-evolutionary perspective frames the study of organizations whereas the structural contingent, and the resource dependence approaches are better suited to deal with strategic problems, although the transaction costs position performs better with the economic ones.

To conclude, let us point out some lessons from the experience of the Spanish Textile leaders. First, firms in highly competitive markets focus on their core competencies, that is, concentrate on resources and competencies that provide more value to their customers and employ more outside resources through long-term relationships. Second, an emphasis on what the firm does best does not mean always doing it the same way; any temporary knowledge-based competitive advantage it is simply the first step toward exploring new possibilities and opportunities for improvement. Finally, firms must devise managerial policies that facilitate the learning and unlearning process; this means supporting not only the proper development of existing routines but also fostering organizational innovations that facilitates their adaptation.

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APPENDIX 1: SALES AND STAFF SIZE RANKINGS IN 1992

Firms	Ranking in terms of sales	Ranking in terms of staff size
INDITEX, SA†	1	1
CORTEFIEL, group†	2	3
INDUYCO, SA	3	2
MITASAT	4	10
HILADOS Y TEJIDOS PUIGNERO, SA†	5	4
PRENATAL, SA†	6	13
SA SANST	7	5
ALGODONERA SAN ANTONIO, SA†	8	8
LEVI STRAUSS DE ESPAÑA†	9	24
SAEZ MERINO	10	9
BENETTON ESPAÑA	11	30
BURBERRYS SPAIN	12	15
MANUFACTURAS ANTONIO GASSOL	13	7
GENEROS DE PUNTO FERRYST	14	6
DOGÍ	15	26
CONFECCIONES MAYORAL†	16	28
VIVES VIDAL VIVESA	17	16
TRETY, SA†	18	22
ANGLES TEXTIL	19	29
LIWE ESPAÑOLA, SA†	20	23
ITALCO (Ermenegildo Zegna)	21	18
TEXTIL SANTANDERINA	22	19
BASI, SA†	23	21
FABRICA ESPAÑOLA DE CONFEC. SA	24	27
CENTRAL CORSETERA	25	11
COATS Y FABRA	26	14
TYBOR, SA	27	20
CATALANA DE ENFELTRADOS, SA	28	25
TEJIDOS INDUSTRIALES, SA (SATI)†	29	17
AZNAR, SA†	30	12

† Firms which CEOs were interviewed.

APPENDIX 2: SALES AND STAFF SIZE RANKINGS IN 1978

Firms	Ranking in terms of sales	Ranking in terms of staff size
INTELHORCE, SA (GTE, SA)	1	2
INDUYCO, SA	2	1
TYCESA, SA	3	5
SAEZ MERINO, SA	4	8
HIL FABRA & COATS, SA	5	4
IND. BURES, SA	6	9
CORTEFIEL, SA†	7	3
HIL. PROUVOST-ESTBAMB	8	17
TEX. BERTRAN SERRA, SA	9	10
MAN. ANTONIO GASSOL, SA	10	13
ROCA UMBERT, SA	11	18
IND. CASA CUBERTA, SA	12	15
ISIDRO JOVER, SA	13	16
TEJ. REBES (MITASA)†	14	14
TYBOR, SA	15	27
IND. GUADALQUIVIR, SA	16	29
CATEX, SA	17	12
GEN. DE PUNTO FERRYS, SA†	18	6
WRANGLER, SA	19	26
HYTASA	20	7
VDA. DE J. TOLRA, SA†	21	11
FABRIL MALLA, SA†	22	21
J. ESPONA, SA†	23	23
PADUANA, SA	24	28
MANTAS MORA, SA	25	30
HILATURAS LLAUDET, SA†	26	25
IND. VALLS, SA†	27	19
HIL. BUIXO, SA	28	24
VILADOMIU, SA	29	22
ALF. SANCHEZ PINILLA, SA	30	20

† Firms which CEOs were interviewed.

APPENDIX 3: RESOURCE ALLOCATION PRINCIPLES IN SEVERAL ORGANIZATIONAL CONTEXTS IN 1992

<i>Decision-Making Principle</i>	<i>Membership of participants and mutual relationships</i>		
	Free entry and exit	Limited	Fixed and continuous
Free private interest maximization	Labor market: – Allocation of people to higher hierarchy positions and sales – Entry ports in the production line Capital market: – Enlargement of share capital – Bank discount – Financial bonds Market procurement: – Purchase of textile fibers – Purchase of assembly parts (textile materials, yarns) Distribution – Yarn brokers	Market procurement: – putting out system – Subcontract system – Sub supply system Distribution: – Agents with mercantile contract – Co-operation agreements in the distribution channels	
Private interest with some authority rules	Distribution: – Contractual relationships assumed in order to align the behaviors	Distribution: – Franchised networks Production: – Joint Ventures – Joint ownership in the dyeing industry – <i>Transformista</i>	Internal capital market: – Only in large enterprises
Authority-based Management		Production: – Double procurement font in textile mills and clothing enterprises	Internal labor market: – For allocation and monitoring tasks in the hierarchy line Internal capital market: – Self-financing Production: – Activities with scale economies Distribution: – Sellers having labor contracts – Ownership distribution channel network

APPENDIX 4: RESOURCE ALLOCATION PRINCIPLES IN SEVERAL ORGANIZATIONAL CONTEXTS IN 1978

<i>Decision-Making Principle</i>	<i>Membership of participants and mutual relationships</i>		
	Free entry and exit	Limited	Fixed and continuous
Free private interest maximization	Labor market: – Allocation of people to higher hierarchy positions and sales – Entry ports in the production line Capital market: – Enlargement of share capital – Bank discount – Financial bonds Market procurement: – Purchase of textile fibers – Purchase of assembly parts (textile materials, yarns) Distribution – Yarn brokers	Market procurement: – Purchase of textile fibers Distribution: – Agents with mercantile contract	
Private interest with some authority rules		Production: – Quasi-firm (<i>Transformista or impanatore</i>)	
Authority-based Management			Internal labor market: – For allocation and monitoring tasks in the hierarchy line Internal capital market: – Self-financing Production: – Internalize all manufacturing activities. It is common to internalize two or three technologically separable levels (yarn, textiles and garments or knitting) Distribution: – Some firms own their own outlet networks, but this is not a typical pattern