

Josep Llach,
Andrea Bikfalvi,
Pilar Marques

Universitat de Girona
Department of Business Administration
and Product Design
Campus Montilivi
17071 Girona (Spain)
E-mail: josep.llach@udg.edu

What are the Success Factors for Spanish Textile Firms? An Exploratory Multiple-Case Study

Abstract

The objective of this article is to identify differential traits of successful SMEs in comparison to average SME firms in the textile and clothing sector. The method used is the multiple case-study of 12 firms based on qualitative and quantitative data obtained by means of in-depth interviews. Building on recent academic literature, we use four main dimensions that may explain success: i) knowledge generation (R&D) and acquisition; ii) innovation activity; iii) product and market characteristics and iv) strategic characteristics. Our results indicate that a higher R&D intensity and knowledge acquisition do not explain success. The main differential characteristic is that successful firms have a higher level of innovation activity, since innovation is their strategic priority, being a result of perceiving the key success factors of their markets differently. From the analysis it also follows that the prevalent strategy of successful firms is the niche strategy, with a demand pull focus, and a high proximity to the customer.

Key words: textile, innovation, textile/clothing sector, SME, Spain.

Introduction

The textile and clothing sector is of a heterogeneous nature, comprising firms producing a wide variety of products, such as high-tech synthetic yarns, wool fabrics, cotton bed linen, industrial filters, nappies, high fashion etc. Behind this diversity of final products there is a multitude of industrial processes, enterprises and market structures. Above all the textile and clothing industry has the enormous challenge of sustaining its weight in the European manufacturing industry. According to the latest findings regarding the EU-25 [1], the general trend can be summarised as follows: slow growth in global textile trade but fast increasing importance of China. The EU-25 exported textile products representing a value of 38 billion EUR in 2005. Meanwhile, imports amounted to roughly double, causing a trade deficit of almost 40 billion EUR. The weight of textile exports was 4% of the value of all EU exports and 7% of all imports; 30% of all EU textile imports in 2005 came from China, followed at a considerable distance by Turkey (14%), India (7%) and Romania (5%). Concerning exports, the USA remained the main EU partner for textile exports (13%), followed by Switzerland (10%) and Romania (8%).

The textile/clothing (T/C) sector made an investment of €5 billion and had a turnover of €198 billion from some 150,000 enterprises that employed more than 2.2 million people. Despite these relevant absolute figures, the industry faces a clear and widely publicised negative trend. For example, from 2004 to 2005 employment decreased by 6.9%, the number of firms

by 6.1%, the turnover by 4.8%, and investment by 3.3%. The textile and clothing industry in Europe is predominantly based on SMEs. Firms of less than 50 employees account for 60% of the workforce in the EU clothing sub-sector and produce almost 50% of the value added. In the EU-25, the T/C industry is concentrated in the 5 most populated countries, accounting for about three quarters of EU-25 production of textiles and clothing, i.e. Italy, the UK, France and Germany, followed by Spain [2].

Analysis of the situation: trends and strategies

According to the EU [3], there have been four main structural changes in the EU textile and clothing industry: i) radical transformations over the last years, due to a combination of technological changes, evolution of the different production costs and the emergence of important international competitors; ii) a lengthy process of restructuring, modernisation and technological progress during which companies have improved their competitiveness by substantially reducing or ceasing mass production and simple fashion products, to concentrate instead on a wider variety of products with higher value-added; iii) competitiveness retention by sub-contracting, or relocation of production facilities, for labour-intensive activities and iv) global clustering mainly in the Euro-Mediterranean Zone.

In the two most recent Euro-Mediterranean Conferences on the textile and Clothing industry [4, 5], the assumption was that the competitive advantage of the

textiles and clothing sector in the EU is its ability to focus on quality, design, innovation and technology to produce high value-added products. European products generally have a positive quality markup, and the EU industry has a leading role in the development of new products, such as technical textiles. Thus, quality, design, innovation and technology are considered core directions to remain competitive. The main recommendations arising from these conferences are the following: i) continuing to build a base for sustainable growth through investing in human capital and knowledge, based on research and innovation; ii) thinking globally; iii) maintaining a strong will to transform and improve the capacity to adapt quickly to market developments; iv) focusing on environmental aspects of activities and valorising output by greening production; and v) improving image in the eyes of public authorities, the press and banking sector. The transformation of these recommendations into strategies comprised several ways of active management restructuring, including business downsizing, repositioning of own brand, investment in R&D, and training for managers and designers. The implications also pointed to shifting to new production areas such as high-tech products, technical textiles or organic textiles, and the search for new business opportunities in emerging economies.

The aim of the Cairo 2007 Conference was to establish cooperation in R&D and innovation between the EU and the Mediterranean partner countries, especially between the research sector and the industry, for the exploitation of the latest research, industrial developments,

technology transfer and for co-operating in future innovative efforts.

The case of Spain

In Spain, a southern European cluster and member of the Euro-Med, the textile industry seems to comprise cases of business extremes. While some big corporations working at the end of the value chain such, as Inditex (Zara) and Mango, are concentrating domestic and international success around them, the rest of the sector is facing difficulties generated by the progressive liberalisation of the sector, starting in 1995 [6].

Determinants of success: R&D, innovation and strategy

However, general statistics exist, analysing R&D and innovation capabilities, as well as the strategic options of firms, they do not say how these constructs relate to success. This is precisely our aim: to study the possible common characteristics of high performing versus average performing firms. In particular, the contribution of this paper is the analysis of 12 real cases of SMEs to obtain detailed information about their knowledge generation through R&D, their knowledge acquisition, innovation activities as well as strategic and technological options by means of in-depth interviews. With this qualitative and quantitative data, we explore the association of success with their possible drivers, such as R&D and innovation, which academics and policy-makers generally assume to influence success positively. In contrast to what extant literature does, we examine the differences between successful SMEs and comparable average SMEs. Thus, we explore the common characteristics of high performers in comparison to average performers. Enlarging knowledge of the facts contributing to a firm's success and rapid growth is useful in order to understand the way in which organisations should exploit opportunities and face future challenges.

■ Research methodology

As argued in [7], in the case of a need for in-depth understanding, local contextualisation, a potential for causal inferences as well as a qualitative research design are appropriate. Moreover, since we aim to find possible differences between successful SMEs and average performing SMEs in the textile sector, the method recommended is that of comparative case study research [8 - 10].

Sample selection

The 12 SMEs analysed belong to the textile sector of the Catalan region in Spain, where SMEs are the prevalent business form in manufacturing, with firms of between 1 and 200 employees representing 98% of all manufacturing establishments. Catalonia comprises 15% of the population in Spain, generating a quarter of the national industrial GDP, almost one third of Spanish imports and up to 35% of its high-tech exports.

High-Performing SMEs

The sample of high-performing SMEs contains 6 firms belonging to the textile, clothing and leather industry, which were obtained from a wider sample (59 firms) of high-performing manufacturing firms belonging to all sectors, surveyed in a recent study [11], with in-depth interviews on R&D, knowledge, technology and innovation management, carried out in 2002. The definition of success was in terms of sales growth and sustained profitability, for three consecutive years.

Average-Performing SMEs

The sample of average-performing SMEs was obtained from a subsequent survey on the technological needs of 22 firms in the textile and clothing sector, in order to consider the creation of a technological centre for the textile industry. The survey was carried out in 2005 and identified different technological behaviours associated with the subsector the firms belonged to [6].

To carry out comparative multiple case-studies, we needed to choose 6 cases from the average-performing SMEs with the best comparable basic characteristics. These were the NACE code, which indicates the type of activity within the industry, and size, measured by the number of employees. Apart from this, both samples were of firms in the same region of Spain, which means that they faced a similar environment. We believe that the time difference between the two surveys that generated the data does not generate any systematic bias in the analysis, since the variables studied are relatively structural, strategic and, therefore, likely to be quite persistent in the medium term.

Data collection methods

The method of collecting data during these studies was face-to-face semi-structured interviews with general managers at their workplace. The interview covered the following five areas of interest: i) descriptive data of the firm; ii)

knowledge generation and acquisition; iii) innovation activity; iv) product and market characteristics, and v) strategic characteristics. At the end of the interview, respondents had to fill in a prepared quantitative questionnaire on the main aspects of the former three areas, in order to more objectively capture the perception and assessments of respondents regarding the areas covered. Quantitative data was collected in a data base, and the qualitative information obtained was codified by two researchers to produce a report on each of the cases.

Dimensions and measures

To gather the main general descriptives of the firms, the questionnaire included basic measures of size, such as employees and turnover, and also the age of the firm and export shares. The other dimensions used to study the patterns of success in these samples of firms, are based on two recent research publications: firstly, the characterisation of the technological intensity of firms offered by a recent study [12]. Scanning the literature produces a list of 19 defining characteristics for which firms may show three levels of technological intensity: low, medium and high. They include the characteristics of R&D effort, innovation activity, product-market characteristics and organisational variables. Since our sample is composed of SMEs, we can also build on another recent work [13], which elaborates a taxonomy of innovative small firms. Their findings indicate that these firms differ not only in their innovative activities, but also in their business practices and strategies – such as management attitude, planning and external orientation, used to achieve innovation. For this reason, we will include the dimensions of strategic characteristics in the analysis.

The first dimension we will consider is knowledge generation and acquisition. It includes R&D effort, which refers to the amount of resources devoted to research and development activities, considered as a proxy of the internal capability of the firms to generate new knowledge for innovation by themselves. The most commonly used indicators are an R&D budget, measured as the share of R&D expenditure over sales, and the human resources dedicated to these activities. The existence of a formal R&D department also reflects the degree of systematisation of R&D.

Although the above-described effort can generate knowledge internally in complex

circumstances and rapid environmental change, external knowledge sources may act as a complement to internal R&D. External knowledge and technology sources include different modalities such as: the acquisition of machinery, equipment, or technology of any form, the recruitment of personnel, or the knowledge obtained from clients, suppliers or other firms. Furthermore, outsourcing and cooperation in R&D can also produce knowledge gained from contracts with other firms, universities or other research centres.

The second dimension is innovation activity, which embraces the practical use of knowledge to produce new or improved products (product innovation) or uses new or improved production or organisational processes (process innovation), including technological and organisational innovations. We assess the innovation intensity of firms by assessing the degree of systematization in conducting innovation-related activities. We define the innovation intensity as being of a high level when it is carried out systematically, involving all units in the firm and shaping the strategy strongly. At the other extreme, a low level of innovation would correspond to firms that use innovation occasionally and non-systematically, localised in some functional unit only.

Innovation is expected to result in higher survival rates by means of producing a higher profitability, increasing revenues or reducing costs, and maybe by accessing new markets. In this sense, profits and sales growth may already be showing, at least partially, the effects of innovation. However, to gather more information on the effects of innovation, the sharing of new products is commonly used, which embodies a success component as well, since these innovations are launched onto the market and produce sales. New products are defined as those launched during the previous three years. This quantitative proxy of product innovation can be combined with former qualitative measures to produce a better, multidimensional description of the firm's innovation activities.

The third dimension is product and market characteristics. In this dimension the length of the product life-cycle is a common variable to consider. Following a revision of literature and political recommendations, we decided to include points in the questionnaire enquiring whether products are customer driven and what the importance of design is.

In the fourth and last dimension, we consider a set of strategic characteristics, starting with the key success factors, defined as the main drivers of success perceived by the firms, followed by the strategic strengths or capabilities that the firms consider necessary in order to be competitive and survive in their markets. Respondents could openly answer this question first, and afterwards they responded quantitatively to the importance of a set of standard drivers for success: innovation, quality, productivity, marketing, finance, human resources, internationalisation or strategic management. To gain a more in-depth knowledge on the rationale for innovation, we interviewed the firms about the reasons for innovation, with an open question and a quantitative question.

According to their key success factors, firms choose their strategic priority or direction, which is the dominant objective of their strategy, marketing and technological priorities, which we have named the technological strategy. The technological strategy of each of the firms was an overall assessment of the researchers, which allowed for several positions. The first type is the technological leader, when the firm is often a first-mover in launching new products or developing new technologies. The second type is the follower, when the firm prefers to wait for the movements of the leader and launch later, offering some improvements. There is also the strategy of licensing, when firms acquire technology and know-how from leaders. Another possibility is to be a niche seeker, when a firm looks for opportunities that arise for a limited part of the market (niche) that leaders and followers are not attending to properly. There are three other possibilities consid-

ered: the technological strategy is determined externally by customers or suppliers; the firm uses different strategies for different products and there is not a clear technological strategy.

The next section presents the results obtained from the analysis of these dimensions for each of the two groups of firms.

Results

The main descriptives of the 12 firms studied are presented in **Table 1** for each firm. Averages are not displayed since they are not informative in this case, due to the small size of the two samples and the important variance within each group for several variables. **Table 1** shows that the two groups, HP (high-performing) SMEs and AP (average-performing) SMEs, are similar in composition with respect to NACE's codes and subsectors. The two main observable patterns of differences between the two groups are that HP SMEs are younger in all cases except one, and that their turnover is more homogeneous and higher than most of the cases in the AP group. This latter feature may indicate two possible reasons, both of which are positive: either high-performing firms have a higher productivity, since they sell more with a similar number of employees, or they may be selling higher value-added products.

Another positive feature for HP firms is that they are able to obtain higher revenue with less age of experience. This fact indicates that the HP firms have enjoyed on average greater rates of sales growth over time compared to the AP firms, and not only during the three years that were used to select the sample. The advantage

Table 1. Descriptives for high-performing (HP) SMEs and average-performing (AP) SMEs in the T/C sector; *NACE: Nomenclature Generale des Activités Economiques dans l'Union Européenne.

	NACE* code	Subsector	Age, years	Employees, number	Turnover, millions €	Distribution of sales, %		
						Spain	EU	Non-EU
HP SME	17140	Fibre spinning	19	40	20,03	20	65	15
	17210	Cotton spinning	22	110	16,83	25	45	30
	17303	Finishing	33	154	12,02	100	0	0
	17400	Clothing	28	40	7,21	60	30	10
	17530	Fibre spinning	116	180	12	65	5	30
	17720	Clothing	14	40	6,61	30	63	7
AP SME	17150	Fibre spinning	33	190	25	20	75	5
	17210	Cotton spinning	156	106	6	30	70	0
	17301	Finishing	120	114	75	40	40	20
	17541	Fibre spinning	116	120	9	70	30	0
	17542	Finishing	20	35	6	10	45	45
	17720	Clothing	14	22	0,8	100	0	0

Table 2. R&D, Innovation, Product and Strategic profiles for the two samples of SMEs.

Activity		Kind of SMS	
		high-performing	average-performing
Knowledge generation and acquisition	Expenditure	Average <2%	Varying High (>3%) or inexistent
	Personnel	Less	More
	R&D department	Seldom formalised	Seldom formalised
	Knowledge and technology acquisition	Purchasing machinery, equipment and technology. Clients	Purchasing machinery, equipment and technology. Clients Personnel recruitment
	Importance of R&D cooperation or outsourcing	No	Yes
	R&D contracting level	Low	Low
Innovation activity	Innovation intensity	High	Low
	Product vs. process innovation	Product	Process
	Main source of ideas for innovation	Clients	Other firms
	Share of new products	Higher	Lower
Product and market characteristics	Life cycle	Longer	Shorter
	Customer-driven products	More	Less
	Importance of design	Maximum	Varying but average
Strategic characteristics	Key success factors	Innovation Quality Productivity	Quality Innovation Productivity
	Reasons for innovation	Increase market share Enter new markets	Enter new markets Increase market share
	Strategic priority	Innovation	Technology and quality
Technological strategy		Niche and demand pull	Leader

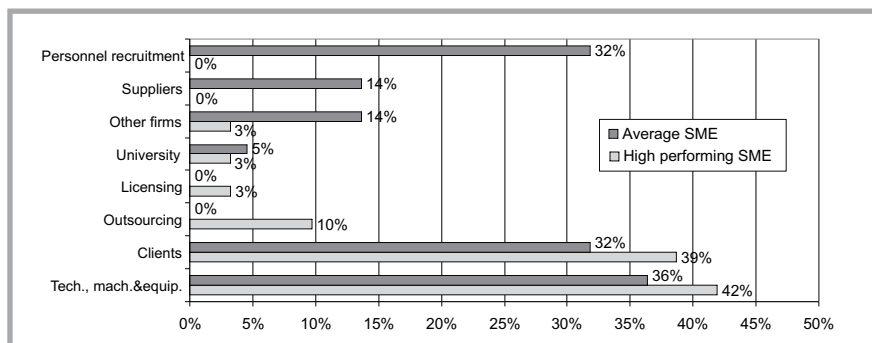


Figure 1. Knowledge and technology acquisition for HP and AP SMEs in the textile sector.

of HP firms in sales growth could be defined as higher success, and we contend that there must be some systematic behaviour or strategy that explains the differential success: possibly their R&D investment, their innovation commitment, their product development strategy, technological options, or partnering. The following analysis will explore these possibilities. **Table 2** presents comparative results for the two groups of firms regarding the four remaining dimensions under analysis, which will be analysed in turn.

Knowledge generation and acquisition

HP firms have lower R&D indicators in terms of personnel. Another feature is a lower level of education than the one characteristic of AP firms. This is slightly in contrast with the fact that the HP

firms obtained a higher volume of sales than the AP firms, with a similar number of personnel but less qualified. As regards R&D expenditure, some of the AP firms reveal higher rates than the HP firms. However, it is interesting to highlight that all the HP firms have an R&D budget, while only half of the AP textile companies possess one. Contrary to what the AP firms state, the HPs do not identify R&D cooperation or outsourcing as necessary for competitiveness: they do not rely on external cooperation for their success. But although the AP firms state that cooperation is important, they maintain a low level of cooperation, including contracting with universities, equivalent to that of the HP firms. Both groups also share a similar low use of fiscal incentives.

R&D indicators are proxies of internal resources and capabilities, which may be complemented with external sources of knowledge and technology. **Figure 1** represents the use of external sources of knowledge and technology acquisition. The two most ranked sources are technology and machinery acquisition, and clients, for both the HP and AP SMEs. The differences come from the higher importance that HP firms give to these factors, and the fact that the AP firms point to the recruitment of personnel as an outstanding source of knowledge acquisition, with the same importance as clients. Furthermore, suppliers and other firms have a considerable importance for AP firms, but not for HP firms.

Innovation activity

While R&D indicators do not explain the better performance of HP firms, innovation activity reveals a positive differential trait. As summarised in **Table 2**, the indicators of innovation activity reveal that HP firms have a higher, more systematic, innovation process with more product innovations being implemented and a higher proximity to customers as a source of knowledge and ideas for innovation. The result is that HP firms have a higher share of new products, defined as the ones launched within the last three years.

Product and market characteristics

As regards product and market characteristics, the product life-cycle is longer for HP firms; their products are more customer-driven and design becomes of maximum importance.

Strategic characteristics

To achieve success in their markets, firms pursue their perceived success factors. We illustrate the results of this question in **Figure 2**. Although the two groups share the two most important key success factors, they differ in importance considerably. While innovation is the most important key success factor for the HP firms, the AP firms indicate that quality is the most important. We interpret this finding as we contended before; successful SMEs have a more proactive attitude, pursuing innovation more over quality. The third key success factor is productivity, which is equivalent for both groups. It is also worth noting that human resources and finance are appreciably more important for successful firms, while strategic management was only indicated average firms.

The HP firms interviewed responded consistently that their strategic priority

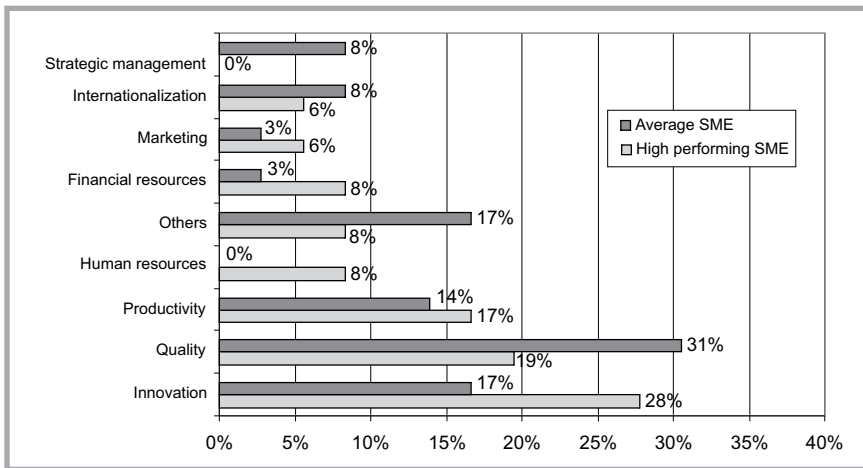


Figure 2. Key success factors for HP SMEs and AP SMEs in the textile sector.

was innovation, whilst technology and quality was the strategic priority of the AP firms. Their technological strategy is also different. HP firms tend to have a niche strategy and a demand pull orientation, while AP firms aim to achieve leadership in their markets, although they do not succeed in this.

Firms in both groups share the belief that innovation will help them to increase their market share and enter new markets. However, there is a slight difference between the two groups: the HP firms rank 'increase market share' more highly, while the AP firms rank 'enter new markets' more highly. We can relate these results to the possible different markets that the two groups face: younger markets for the HP firms, where there are still possibilities for growth, and more mature markets for the AP firms.

Conclusions

The HP firms are more homogeneous in size, revenue and strategy than the AP sample of firms. The HP firms do not excel in R&D indicators (investment or personnel), they have lower internal resources dedicated to R&D, but their position is more systematic than that of the AP sample. They do not consider external R&D collaboration important, nor do they establish formal collaborations with universities. They rarely use R&D support mechanisms or incentives. The main differential external knowledge acquired by the HP firms comes from customers, which inspire and suggest innovations, whereas the AP firms tend to exercise pressure on suppliers to innovate, or they acquire external knowledge from recruiting new personnel. Firms belonging to the same subsector did not show any observable common pattern, distinguishable

from any of the firms in other subsectors. The HP firms emphasise innovation as a strategic priority that translates into a niche strategy, of proximity to the customer, which is the main source of ideas. The focus on innovation translates into more production than process innovation and into a larger share of new products. They aim to increase market share in current markets, which we suppose to be less mature than those of the AP firms.

In our study, technological leadership strategy is not associated with success, while a niche strategy is. We think that the rationale behind this result is that success for SMEs is more likely to happen when they pursue a focus strategy than an all market strategy, in terms of generic strategies [14]. The limited dimension of those firms (SMEs) is more suited to a niche or focus strategy, which are for small markets. Following other works on strategic types, the niche strategy resembles the defender strategic type [15], which was also found to be the most common strategic type in a previous study on the textile sector in a province of Spain [6].

We have explored four possible dimensions to explain the differential traits of successful versus average SME firms in the textile and clothing sector. The most different dimension for successful firms was that of innovation. The foundation of this difference is found in the various perceptions of competition, in terms of the key success factors. This difference translates into a different strategic priority and technological strategy, which in turn implies different innovation activities and results. Ultimately, the market is judging the one of the two visions which is better than the other.

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