ON THE EFFECTS OF SUPPLY STRATEGY ON BUSINESS PERFORMANCE: DO THE RELATIONSHIPS AMONG GENERIC COMPETITIVE OBJECTIVES MATTER?

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Javier González-Benito*

Abstract

The aim of this work is to analyze the effect of purchasing and supply strategies on business performance. Our approach introduces two innovative elements. First, strategy is conceived of as a profile of generic competitive objectives, not as a set of practices deployed by the purchasing function. Second, this study introduces the concept of the *relative* importance of a competitive objective, rather than the *absolute* importance of that objective, which enables an analysis of the effect of the interrelationships among the different competitive objectives. An empirical analysis based on 180 Spanish industrial firms, show that an organization's commercial and financial performance increases when it increases the relative importance of flexibility and decreases the relative importance of reductions in stock levels and purchasing prices in its supply strategy. The best performing firms are those that combine quality, dependability, and flexibility as priority objectives and relegate cost reductions to secondary importance.

Key words: Purchasing strategy, purchasing function, generic competitive objectives, supply flexibility

JEL classification: M10, M11.

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1. Introduction

The concept of a purchasing and supply strategy appears in various ways and different perspectives, though most literature focuses on characterizing and classifying purchasing strategies according to the practices and initiatives implemented by the purchasing function. Krause et al. (2001) demonstrate that a purchasing function's strategy also could be articulated in terms of Hayes and Wheelwright's (1984) generic competitive objectives (i.e., quality, cost, dependability, and flexibility), but no empirical research applies this framework to analyze the relationship between the purchasing and supply strategy and business performance.

This study attempts to analyze the effect of the purchasing strategy on business performance by conceptualizing the strategy as a profile of generic competitive objectives. Specifically, we assess the power of the relative importance given by the purchasing function to each of the four generic objectives cited by Hayes and Wheelwright (1984) to explain business performance. In this setting, relative importance refers to the extent to which the objective receives greater or lesser attention from the purchasing function than do the other objectives.

We focus on this concept of relative importance in an attempt to take the interrelationships among generic competitive objectives into account. That is, we are interested in not only whether the quality objective, for example, is important to the purchasing function but also in how important it is with respect to the other objectives that the function might prioritize. As we explain subsequently, this approach helps us reduce the risk of bias in our empirical testing.

This study contributes to existing research by outlining another way to identify the purchasing strategies associated with better business performance. In particular, we identify the profile of generic competitive objectives that appears most frequently in successful enterprises. These conclusions in turn suggest the strategic role that the purchasing and supply function plays, while also implying an appropriate means to generate a strong competitive advantage.

The remainder of this article consists of five sections. In the next section, we review different approaches for studying purchasing and supply strategy, identify some limitations of prior research, and establish our research framework. We then discuss the exploratory hypothesis that guides our research. After we explain the methodology we use to test the hypothesis, we present and discuss the results. Finally, we conclude with the main implications of our findings.

2. Literature review and research framework

2.1. Purchasing and supply strategy

A purchasing and supply strategy can reflect various conceptualizations. The degree of cooperation or integration with suppliers has served as a primary dimension to characterize the purchasing strategy of a company. Many studies analyze the determinants and consequences of collaborative strategies (e.g., Heide and John, 1990; Cousins, 2005; Ahola et al., 2008), using now-popular terms such as partnership sourcing (McIvor and McHugh, 2000), strategic sourcing (Talluri and Narasimhan, 2004), co-makership (Bevan, 1987), or reverse marketing (Leenders and Blenkhorn, 1988). In general, substantial consensus among academics and practitioners indicates that organizations rely more and more on collaborative alliances with suppliers, which will continue to be a dominant strategy in the future (Ogden et al., 2005; Zheng et al., 2007).

Yet the degree of collaboration or integration with suppliers is not the only means to discriminate among purchasing and supply strategies. Other dimensions provide the input for different strategic typologies and taxonomies, such as that of Narasimhan et al. (2008), McKone-Sweet and Lee (2009) or Svahn and Westerlund (2009). Each of these studies categorize different possible strategic behaviors by the purchasing function.

Other research focuses on specific strategic decisions or the implementation of certain practices. For example, Wei and Chen (2008) consider the selection of single- or multiple-source supply relationships as a defining element of a purchasing strategy. Practices such as supplier evaluation and development (e.g., Humphreys et al., 2004; Sanchez-Rodriguez et al., 2005), supplier involvement (e.g., Carr and Pearson, 2002; Petersen et al., 2005; Jayaram, 2008), and logistics integration (e.g., Daugherty et al., 1996; Stank et al., 2002) provide different ways to articulate a collaborative strategy.

Another means to understand a purchasing strategy is by establishing bridges between it and the manufacturing function, adapting the theoretical schemes traditionally applied to the latter. The main responsibility of the purchasing function is to ensure that the manufacturing function has available the resources it needs to perform its work; as contiguous elements in the value chain, these two functions should follow comparable and compatible strategic schemes. On the basis of these premises, some studies establish parallels between purchasing and manufacturing when investigating the purchasing strategy (Watts et al., 1992; Krause et al., 2001; González-Benito, 2007).

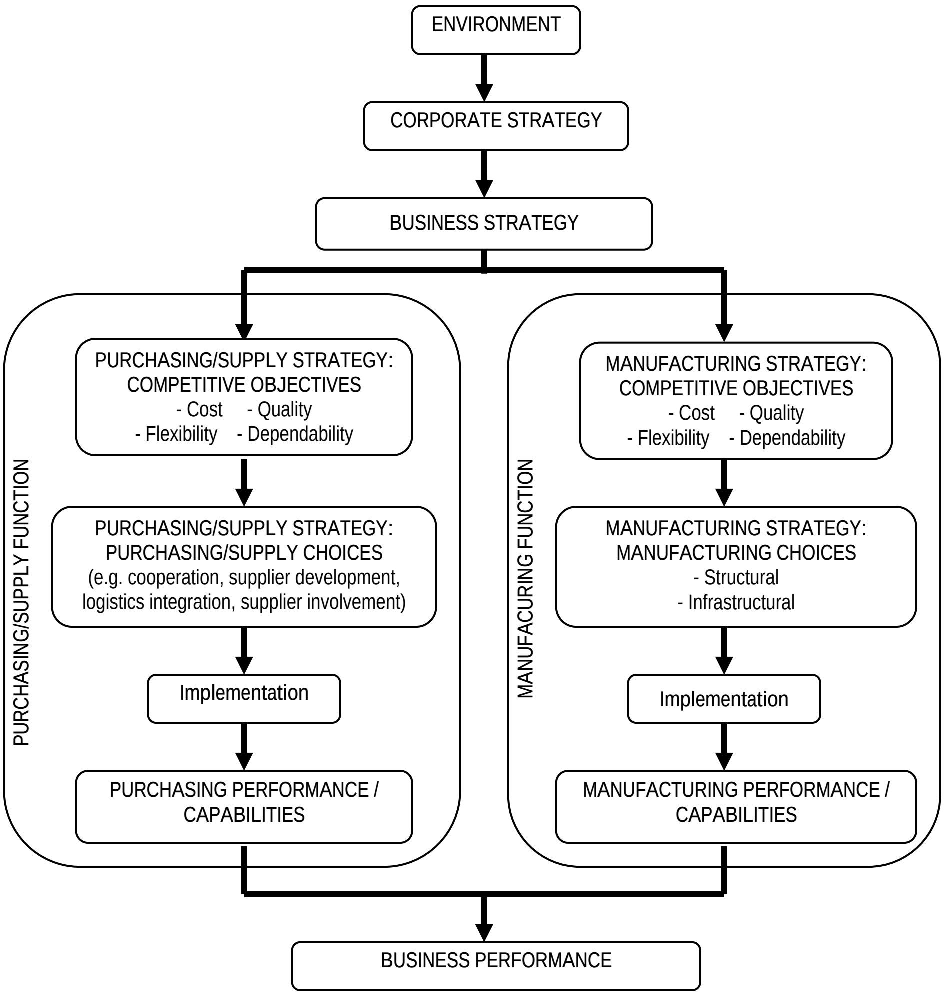
The right-hand side of Figure 1 depicts the predominant model of the strategic planning process used by the manufacturing function (Leong et al., 1990). The manufacturing strategy, which must adjust to develop and support the business strategy, consists of two levels: competitive priorities or objectives and strategic decisions. On the first level, Hayes and Wheelwright (1984) highlight four generic competitive objectives: quality, cost, dependability, and flexibility. On the second level, Hayes and Wheelwright (1984) distinguish between structural and infrastructural decisions, which determine the practices to be applied in the design of the manufacturing system and in its operations, respectively. These two levels—competitive objectives and strategic decisions—thus represent the "what" and the "how" of the manufacturing function.

The two levels also may apply in the purchasing function. Defining the purchasing strategy first involves choosing certain competitive objectives that must be consistent with those of the manufacturing function (Watts et al., 1992). In this sense, Krause et al. (2001) show that the four generic objectives identified by Hayes and Wheelwright (1984) also have relevance in a purchasing context. The definition also requires some strategic decisions to realize the objectives. In this case, the two strategy levels again represent the what and the how, though here, of the purchasing function.

Despite support for these two levels, most literature focuses solely on the second level, characterizing and classifying purchasing and supply strategies according to the strategic choices that the organization makes (e.g., cooperating or not, sharing information with suppliers or not, involving suppliers or not, adopting technologies to support supply processes or not). With the exception of Krause et al. (2001), the first level, and especially the outline of competitive objectives provided by Hayes and Wheelwright (1984), has not been effectively developed for the purchasing function.

Figure 1: Strategic planning process in the purchasing and manufacturing functions

Source: Adapted from Leong et al. (1990), Watts et al. (1992), and González-Benito (2007)



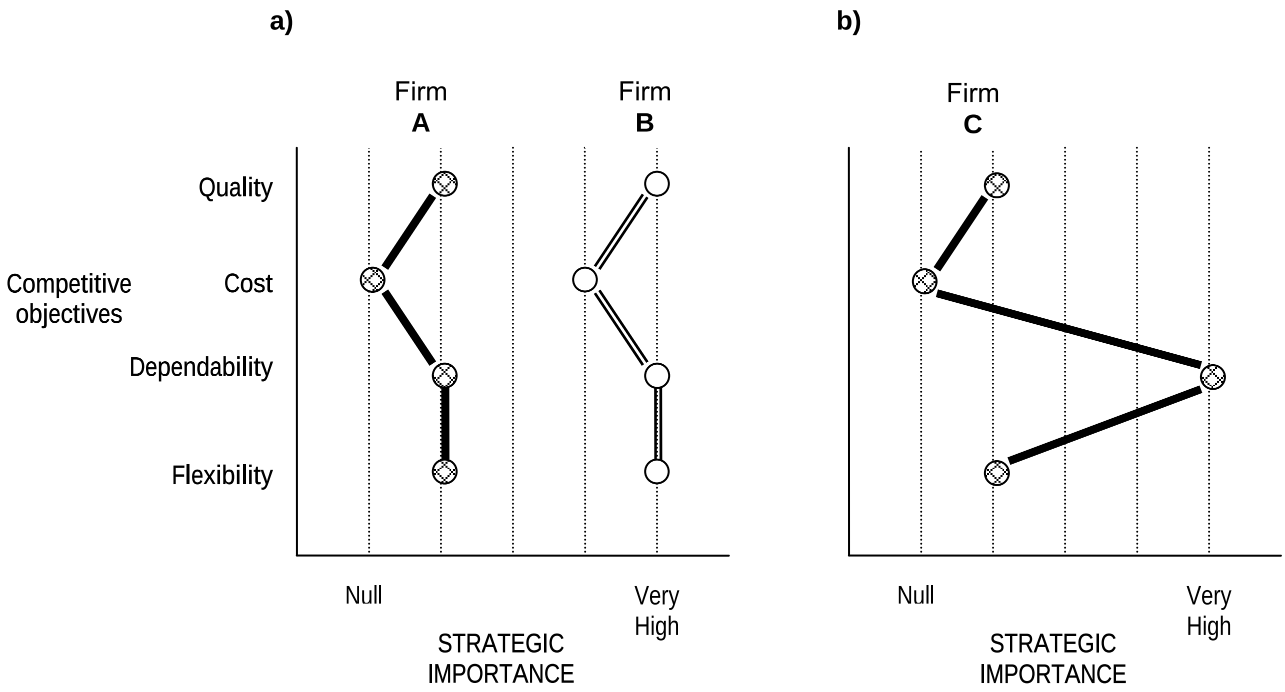
2.2. Purchasing and supply strategy as a profile of generic competitive objectives

Although existing literature largely ignores the possibility, the four generic competitive objectives that explain manufacturing strategy (Hayes and Wheelwright, 1984) can also explain purchasing and supply strategy (Krause et al., 2001). Quality as a strategic objective in the purchasing function represents the firm's interest in reaching and upholding high levels of functionality, reliability, fit to specifications, and durability in the products purchased, as well as the capability of the suppliers to attend to any complaints in these areas. Cost as an objective refers to the firm's interest in reducing the costs associated with acquiring a product, such as price, transport, or storage, and improving the efficiency and use of the resources devoted to purchasing. Dependability in the purchasing function refers to the importance the firm attributes to the quickness and reliability with which the supplier fulfills its purchasing orders. Finally, the objective of flexibility represents the firm's interest in having suppliers capable of adapting to new circumstances and supply needs, in terms of not only the amount but also the variety and design of the products.

The generic competitive objectives selected by the purchasing function represent the "purchasing task"—that is, those capabilities that the purchasing function requires to develop and support the business strategy. If we transfer statements by Miller and Roth (1994) pertaining to the manufacturing function to the purchasing function, the purchasing choices must be congruent with the purchasing task, such that the "how" follows the "what," and generic competitive objectives represent a valid instrument for capturing purchasing strategy.

This point of view articulates the purchasing strategy in terms of the importance granted to each competitive objective. Thus, the purchasing strategy can be represented graphically according to competitive profiles, such as those in Figure 2(a) for firms A and B. Firm B is characterized by the greater importance, compared with firm A, it grants to all the objectives; in both firms, the importance assigned to cost is somewhat less than that assigned to the rest of the objectives.

Figure 2: Different competitive profiles in the purchasing function



2.3. Relative versus absolute importance of generic competitive objectives

To investigate a particular generic competitive objective, we might consider its absolute or its relative importance. In Figure 2, we use absolute importance to determine the profiles; it refers to the extent to which the organization considers working on an objective as positive and necessary. As Figure 2(a) reveals, the absolute importance of any generic competitive objective is always higher in firm B than in firm A.

In contrast, relative importance refers to the importance designated to an objective compared with the importance devoted to the other objectives. It thus can be modeled as the difference between the importance of one objective and the mean of the importance of all other objectives. The relative importance of an objective i ($rimp_i$) in a particular firm can thus be computed according to the following expression:

$$\mathrm{rimp}_i = \mathrm{imp}_i - (1/n) \sum_{j=1}^{n} \mathrm{imp}_j \quad , \qquad [1]$$

where imp_i is the absolute importance assigned to the competitive objective i, and n is the number of competitive objectives considered.

Although companies B (Figure 2(a)) and C (Figure 2(b)) devote the same absolute importance level to dependability, this generic objective is not an exclusive priority for firm B. Thus, the relative importance of a generic competitive objective provides information about the extent to which the company focuses on or pursues that objective, rather than the others. In other words, relative importance provides information about the strategic relationships among the generic objectives that a firm considers.

3. Relative importance of generic competitive objectives and business performance: Research hypothesis

According to the strategic purchasing process depicted in Figure 1, the selection of generic competitive objectives by the purchasing function of a firm influences the capabilities it finally realizes and thus the performance achieved by the whole business. Thus, it makes sense to anticipate that the generic competitive objectives of the purchasing function will help predict business performance.

However, this logic is not meant to imply that the selection of generic competitive objectives by the purchasing function is the only determinant of business performance. The purchasing function's strategic choices, as Figure 1 indicates and as demonstrated in many studies (e.g., Tan et al., 1999; Carr and Pearson, 2002; Chen et al., 2004; Li et al., 2005), also help explain performance. Moreover, the extent to which competitive objectives are actually realized, as well as the extent to which they align with business strategy or other functional strategies, can influence the contribution of the purchasing function to business performance (Carr and Pearson, 1999; Narasimhan and Das, 2001; Chen et al., 2004; González-Benito, 2007). By focusing on the level of competitive objectives in the purchasing strategic process in Figure 1, we develop an alternative view to complement previous research. This perspective provides several new insights that could not be obtained in studies focused on purchasing strategic choices, because the same purchasing choice could contribute to different generic competitive objectives.

At the first level of the purchasing strategy, several arguments suggest that the relative importance of generic competitive objectives may help explain business performance. On the one hand, purchasing functions that pursue only the quality objective, for example, make different decisions and face different challenges than those functions that intend to compete on quality but also on flexibility, dependability, and/or cost. In turn, there is no reason their business performance should be the same either.

On the other hand, ongoing debates in related disciplines suggest the potential relevance of interrelationships among different strategic objectives. In the manufacturing function, debate centers on the existence of trade-offs or incompatibilities among different competitive objectives, pitting the theory of the focused factory (Skinner, 1969; Hayes and Wheelwright, 1984; Schroeder and Pesch, 1994; Bozarth and Edwards, 1997) against cumulative theory (Ferdows and De Meyer, 1990; Noble, 1995; Corbett and Wassenhove, 1993). The former maintains that the firm will be more successful if it focuses on a small number of competitive objectives. The latter suggests it is possible to reach high levels of performance on different objectives simultaneously, so firms that allot the same importance to different objectives can succeed.

Moving from the functional level to the business level, we find another unresolved debate regarding the compatibility of the cost leadership and differentiation of generic strategies (Campbell-Hunt, 2000). Porter (1980, 1985) argues that the firm should stick to a single generic strategy as a condition for success; otherwise, it will end up “stuck in the middle.” Despite some support for this proposition (e.g., Parnell, 1997), many other studies defend the compatibility of different generic strategies (e.g., Murray, 1988; Wright et al., 1991).

Regardless of their resolution, these debates indicate that the importance of one competitive objective compared with another objective, on both the functional and the business level, can explain a significant portion of business performance. Thus, in the context of the purchasing function, we propose the following exploratory hypothesis:

Hypothesis 1: *Business performance is affected by the relative importance that the purchasing function assigns to the different generic competitive objectives (i.e., quality, cost, dependability, and flexibility)*

4. Methodology

4.1. Data

We test our hypothesis with a sample of Spanish firms that employ 100 or more employees and compete in three industrial sectors: manufacturers of industrial machinery and equipment (SIC 35), electronic and other electrical equipment (SIC 36), and transportation equipment (SIC 37). An initial list of firms was extracted from the Dun & Bradstreet 2004 database of the 50,000 largest Spanish firms; contacts with the firms in the data collection stage reduced this list by eliminating any that were no longer active, did not carry out manufacturing, had no direct responsibility over purchasing management, or assigned the same person responsibility for both purchasing and manufacturing. As a result of this process, we derived a target population of 417 firms (134, 140, and 143 in each sector, respectively), whose purchasing managers we first contacted by phone and then sent a questionnaire by mail, with a cover letter and a postage-paid return envelope. The questionnaire, which addressed aspects of the purchasing function outside the scope of this study as well, reflects an exhaustive review of the literature, as well as feedback provided by colleagues. The pretest procedure involved administering the questionnaire experimentally to three firms in each sector to eliminate any ambiguities or confusing aspects. After several rounds of phone calls, e-mails, and resent questionnaires, all of which took place in the third trimester of 2005, 180 firms returned completed questionnaires. Overall, our sample sizes are 67, 63, and 50 firms in the industrial machinery, electronic equipment, and transportation equipment sectors, respectively.

4.2. Measures

4.2.1. Relative importance of generic competitive objectives. The persons in charge of purchasing assess, on a five-point Likert scale (1 = not at all to 5 = extremely) how important each of the aspects listed in Table 1 is for their firm. The first five aspects refer to quality as a competitive objective, the next five refer to low cost, the three after that center on dependability, and the final four relate to flexibility. The results of the exploratory factor analysis (see Table 1) reveal that the items used to measure quality, dependability, and flexibility as competitive priorities group into three independent factors. However, the items used to measure the purchasing function’s interest in low cost consist of two new factors. The first pertains to the use and productivity of the human and physical resources involved in the purchasing function, that is, the internal efficiency of the purchasing department. The second comprises the two items related to the low cost of purchases and low inventory levels, which could be interpreted as the efficiency of the supply logistics system. We therefore distinguish two competitive objectives related to low costs and label them organizational efficiency and logistics efficiency. The mean of the items loading on each factor provides the measure of each of the five competitive objectives that we finally identify empirically. The confirmatory factor analysis helps ensure the validity and unidimensionality of the constructs; Cronbach's α verifies their reliability. Satisfactory results emerge for both tests (see Table 1). The corresponding measures of relative importance derive from these five constructs, based on Equation [1] (with n = 5).

4.2.2. Business performance. The surveyed managers choose, on a seven-point Likert scale (1 = worse, 4 = same, 7 = better) the situation of their firm compared with that of their competitors on each of the aspects in Table 2. The first five measures refer to the commercial success of the business; their mean provides a measure of commercial performance. The other three items refer to accounting ratios related to the firm's profitability, profit margin, and productivity, so their mean offers a measure of financial performance. The confirmatory factor analysis (Table 2) confirms the validity and unidimensionality of the constructs. The Cronbach's α for each group of items also satisfactorily verifies the reliability of the scales.

Table 1: Measurement of generic competitive objectives in the purchasing function

		EXPLORATORY FACTOR ANALYSIS					CONFIRMATORY FACTOR ANALYSIS[1] F1	F2	F3	F4	F5
QUALITY	Features and functionality of purchased products	**.750**	.143	.120	.162	-.051	.68				
	Durability of purchased products	**.810**	.173	-.068	-.023	-.078	.61				
	Reliability of purchased products	**.755**	.137	.194	.077	.146	.73				
	Fit to purchasing specifications of purchasing products	**.612**	.063	.112	.374	.208	.68				
	Efficacy of suppliers in attending to our complaints	**.615**	.115	.367	.292	.059	.74				
COST	Labor productivity in the purchasing department	.238	.144	.101	**.824**	.041		.84			
	Productivity of purchasing resources	.201	.261	.044	**.814**	-.071		.86			
	High utilization of purchasing resources	.042	.133	.058	**.774**	.087		.61			
	Low cost of purchases (purchasing price. transportation. …)	-.008	.065	.077	.058	**.895**			.65		
	Low inventory levels	.112	.133	.163	.014	**.875**			1.04		
DEPENDABILITY	Quick delivery time by suppliers	.099	.132	**.752**	.031	.260				.69	
	Fulfillment of agreed schedules by suppliers	.131	.154	**.892**	.002	.134				.96	
	Fulfillment of agreed delivery terms by suppliers (quantity, quality, format. …)	.158	.164	**.819**	.180	-.081				.73	
FLEXIBILITY	Supplier flexibility to adapt capacity to the needs of our company	.165	**.671**	.224	.167	.155					.71
	Wide range of product versions, options and features offered by suppliers	.107	**.790**	.036	.194	-.082					.67
	Supplier capability to introduce (customized) changes in products	.214	**.847**	.158	.138	.039					.90
	Supplier rate of introduction of new products (updated and leading products)	.090	**.778**	.125	.095	.188					.70
	F1: Quality **F2**: Cost (organizational efficiency) **F3**: Cost (logistics efficiency) **F4**: Dependability **F5**: Flexibility	Varimax Rotation Explained variance 70.58%					χ^2 / g.l.= 1.932; GFI = 0.880; AGFI = 0.832; TLI = 0.904; CFI = 0.923				
		Cronbach's α					.814	.814	.801	.820	.831

[1] Se han considerado los siguientes índices de ajuste habitualmente utilizados paa valorar la validez de modelos de ecuaciones estructurales: Goodness of fit index (GFI); Adjusted goodnesss of fit index (AGFI); Tucker-Lewis index (TLI); Comparative fit index (CFI)

Table 2: Confirmatory factor analysis of performance measures

		Coefficient	Correlation	Cronbach's α
Commercial performance	Sales growth	.64	.69	.828
	Reputation and image	.82		
	Customer satisfaction	.73		
	Market share (of the main product)	.70		
	Success of new product launches	.65		
Financial performance	Return on investment	.95		.885
	Profits as percent of sales	.86		
	Labor productivity (sales / employees)	.74		
χ^2 / g.l. = 1.909; GFI = .949; AGFI = .903; TLI = .964; CFI = .976				

4.2.3. Control variables. Three control variables appear in the models: (1) firm size, measured in hundreds of employees; (2) industrial sector, according to two binary variables that distinguish the electrical and electronic equipment sector versus the transportation equipment sector, respectively; and (3) the importance of purchasing in the organizational hierarchy, which uses a binary variable that distinguishes firms whose purchasing function occupies a level similar to or higher than that of the production function in the organization. With these variables we can control for the effect of economies of scale, the different competitive circumstances that affect each industrial sector, and the influence of the organizational structure.

4.3. Analysis

Our hypothesis requires that we consider the explanatory power of the relative importance that the firm assigns to five competitive objectives identified according to the two dimensions of business performance. Multiple regression analysis, with the performance measures as the dependent variables and relative importance as an independent variable, provides an appropriate technique for testing this kind of hypothesis. To distinguish the effects of the variables from other effects produced by contextual circumstances, we include the control variables as independent variables.

Table 3 shows the correlations across all independent variables. The negative correlations of the different measures of relative importance are to be expected, based on their construction. There is also a linear relationship among the five variables of relative importance, again because of their construction. Thus, it is not possible to incorporate the five measures as independent variables in the same regression model; we must study them separately. Six different models use each dimension of business performance as the dependent variable. Specifically, the first model incorporates only the control variables as independent variables, whereas the other five models incorporate each of the measures of the relative importance of a particular competitive objective.

Our analytical approach—in particular, our consideration of the relative rather than the absolute importance of competitive objectives—leads to a significant reduction in the risk of common method bias and increases the reliability and validity of results. That is, a drawback of the use of questionnaires as the main source of information, despite the frequency of their use in studies of business strategy, is that many respondents systematically overvalue or undervalue all items. Similarly, some respondents tend to answer each question with higher scores, while others give lower scores, even on the same Likert scale. This tendency can generate artifactual correlations among the different questionnaire items and constitutes a notable source of common method bias (Podsakoff and Organ, 1986; Podsakoff et al., 2003). Therefore, we acknowledge the risk that the differences between firms A and B in Figure 2(a) may be due to the personality or perceptions of the managers surveyed, even if they made similar decisions to conduct their strategies. Furthermore, these differences could affect the measures of business performance and generate artifactual correlations between the independent and the dependent variables. However, because the relative importance is an algebraic index of the different measures of absolute importance, which reflects differences in the allocation of importance, it is not affected by any informant's tendency to exaggerate/underestimate or overvalue/undervalue, which largely eliminates the risk of artifactual correlations.

Table 3: Correlations between the independent variables[1]

	1	2	3	4	5	6	7	8
1. Size	1							
2. Electronic & Electrical Equipment Sector	.164*	1						
3. Transportation Equipment Sector	.001	-.455**	1					
4. Importance of purchasing in organizational chart	.142	.035	.093	1				
5. Relative Importance of Quality	-.005	-.061	-.020	-.176*	1			
6. Relative Importance of Cost (organizational efficiency)	-.025	.157*	-.047	-.028	-.042	1		
7. Relative Importance of Cost (logistics efficiency)	.039	.125	.017	.194**	-.302**	-.350**	1	
8. Relative importance of Dependability	-.037	-.138	.158*	.138	-.130	-.381**	-.062	1
9. Relative Importance of Flexibility	-.057	-.090	-.160*	-.163*	-.239**	-.146	-.369**	-.275**

[1] Spearman correlation coefficients
** $p < 0.01$ * $p < 0.05$ (2-taiiled)

5. Results and discussion

Table 4 shows the results obtained from the estimation of the models. Among the control variables, only firm size relates positively and significantly to commercial performance. This finding suggests a possible effect of economies of scale on the commercial performance of the firm, though it does not translate into financial performance. For the main variables, we detect that greater relative importance placed on flexibility and lesser relative importance for logistics cost reductions both relate to better performance, commercial and financial. The results thus support the hypothesis, in that they demonstrate performance depends on the relative importance assigned to specific competitive objectives.

Table 4: Regression of performance measures on the measures of the relative importance of the generic competitive objectives

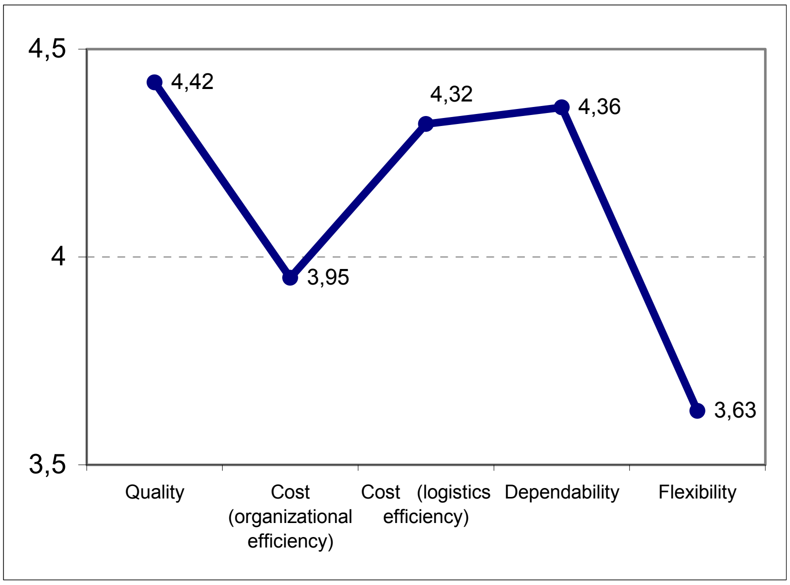
	DEPENDENT VARIABLE											
	Commercial performance						**Financial Performance**					
Constant	5.150**	5.169**	5.192**	5.126**	5.174**	5.262**	4.867**	4.867**	4.909**	4.847**	4.874**	4.971**
Size	.043**	.043**	.043**	.044**	.042**	.043**	-.009	-.008	-.008	-.008	-.009	-.008
Electronic & Electrical Equipment Sector	.079	.076	.051	.165	.065	.181	.037	.018	.009	.108	.033	.131
Transportation Equipment Sector	-.011	-.014	-.021	.036	.010	.101	-.129	-.144	-.138	-.090	-.123	-.025
Importance of purchasing in organizational chart	-.133	-.140	-.127	-.068	-.112	-.072	-.164	-.206	-.158	-.110	-.158	-.107
Relative Importance of Quality		.049						-.298				
Relative Importance of Cost (organizational efficiency)			.194						.192			
Relative Importance of Cost (logistics efficiency)				**-.359****						**-.298***		
Relative importance of Dependability					-.167						-.048	
Relative Importance of Flexibility						**.441****						**.408***
R^2	.048	.048	.058	.094	.055	.103	.011	.022	.019	.035	0.012	.046
F	2.196	1.762	2.145	3.606**	2.018	4.006**	.502	.789	.662	1.250	.415	1.683
ΔF		.072	1.898	8.852**	1.291	10.759**		1.927	1.298	4.203*	.075	6.344*

** $p < 0.01$ * $p < 0.05$

At first sight, the results may seem to imply that firms with purchasing functions that focus on flexibility rather than the other objectives will perform better. Similarly, firms that devote less importance to the logistics cost than to the other objectives appear to benefit. However, these results must be interpreted in light of a deeper analysis designed to identify which purchasing strategic profile is associated with better performance.

Figure 3 provides a graphic representation of the average absolute importance assigned to each competitive objective in our study sample. The average absolute importance assigned to quality, logistics costs, and dependability is higher than that devoted to organizational efficiency, as well as higher than that given to flexibility. The results of a Friedman test ($\chi^2(4) = 195{,}07$; $p = .000$) indicate that these differences are statistically significant and that at least two objectives consistently have different importance for the companies. To specify these differences more exactly, we apply a Wilcoxon test to each pair of objectives and find, on the basis of this non-parametric test, three levels: (1) quality, logistics cost, and dependability; (2) the organizational cost of purchasing; and (3) flexibility. That is, statistically significant differences mark flexibility compared with any other objective and organizational efficiency versus any other objective. Therefore, the profile in Figure 3 emerges as the dominant one. The order of absolute importance of the objectives tends to be similar across all firms, such that quality, logistics costs, and dependability are the preferred competitive objectives.

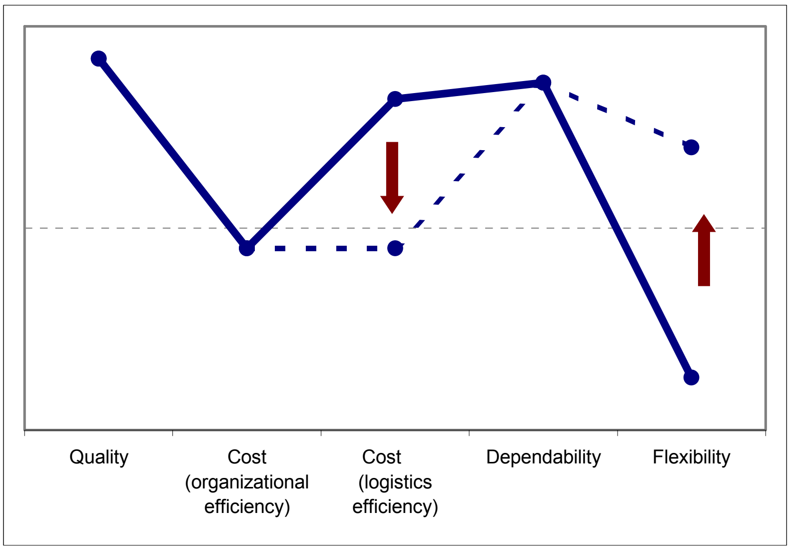
Figure 3: Mean importance assigned to each competitive objective



These observations in turn indicate that relative importance tends to be greater for objectives such as quality, logistics cost, and dependability but lesser for internal organizational costs and flexibility. The relative importance of quality has a positive value in 148 of the 180 firms in the sample, which indicates that in these firms, the importance of this objective is greater than the mean of all the objectives. The same finding occurs with the relative importance of logistics cost and dependability, which are positive in 129 and 164 firms, respectively. In contrast, the relative importance of organizational efficiency and flexibility is negative in 129 and 164 firms, respectively, which indicates that these objectives, and especially flexibility, tend to be valued below the others.

If we interpret the results of the regression analyses in light of the dominant pattern in Figure 3, we realize that the firms with the best performance are those that devote greater importance to flexibility and less to logistics costs. As observed from Table 4, an increment of the relative importance of flexibility, as well as a decrement of the relative importance of logistics costs, have positive effects on performance. Figure 4 shows the changes in the dominant profile that seem more beneficial. This step of the analysis confirms that it is not a matter of prioritizing flexibility at the cost of the rest of the objectives or focusing the purchasing function solely in this direction; quality and dependability still play fundamental roles. Likewise, it is not a matter of ignoring logistics cost completely. Rather, the point is to rebalance the importance assigned to the various objectives to arrive at a priority combination of quality, dependability, and flexibility, with the objectives related to cost relegated to secondary status.

Figure 4: Alterations in the usual profile associated with the best performance



Other empirical results add to the robustness of this conclusion. The measure of commercial performance correlates negatively with the absolute value of the difference between the importance assigned to quality and that assigned to flexibility (Pearson's correlation = -.167; p = .025), as well as with the absolute value of the difference between the importance assigned to dependability and that assigned to flexibility (Pearson's correlation = -.207; p = .005). In other words, the smaller the difference in importance between flexibility and quality and between flexibility and dependability, the greater the commercial performance should be. The same finding occurs in the case of financial performance (Pearson's correlation = -.208 and -.151; p = .005 and .043). It thus seems advantageous to combine these three objectives as priorities.

With regard to the confrontation, in manufacturing research, between the theory of the focused factory (Skinner, 1969) and cumulative theory (Ferdows and De Meyer, 1990), our results tend to support the latter theory in a purchasing function context. We find no apparent conflicts or trade-offs among quality, dependability, and flexibility but rather infer that it is beneficial to pursue these three objectives jointly. The decisions to develop each of these objectives are not necessarily inconsistent and allow for the pursuit of competitive advantages. However, our analysis does not permit us to offer conclusions about the order in which these objectives should be added to the purchasing strategy, which represents an issue on which some of the arguments used to support cumulative theory are based.

Regarding the debate about the compatibility between cost leadership and differentiation strategies at the business level, our results support Porter's (1985) hypothesis. In the most successful firms, cost objectives in the purchasing strategy (i.e., organizational efficiency and logistics efficiency) appear cut off from the objectives that would promote a differentiation strategy (i.e., quality, dependability, and flexibility). That is, the results indicate it is preferable not to emphasize both strategies in the purchasing function. Furthermore, assuming a correct alignment between the business strategy and the functional strategies, the results suggest that the greatest contribution of the purchasing function to business performance occurs with a differentiation strategy. When the purchasing function uses a cost strategy and emphasizes cost-related objectives, it does not seem to generate competitive advantages that boost overall performance.

Finally, the results have significant implications for purchasing managers. On the one hand, they must not neglect or underestimate the importance of flexibility in relation to the other objectives; it should appear on level with quality and dependability in terms of its importance. On the other hand, they should not place as much relative emphasis on the reduction of stock levels or obtaining the best prices, two tasks traditionally considered fundamental to supply management. Perhaps for this very reason, these efforts tend not to constitute a source of competitive advantage over other organizations.

6. Conclusions

Our empirical research leads us to conclude that the optimum profile in the purchasing function is one that prioritizes quality, dependability, and flexibility as opposed to cost reductions.

In addition to identifying an optimum strategic profile, this study offers other two important conclusions. First, it contributes evidence in support of the strategic importance of the purchasing function in organizations and shows that the objectives pursued, not just the practices chosen to reach these objectives, can explain a statistically significant portion of business performance. In line with Krause et al. (2001), this research confirms the need to identify and measure generic competitive objectives when considering purchasing function strategies and their competitive effects.

Second, we reveal that not only is the degree of absolute importance assigned to a specific competitive objective important, but so is the importance relative to that assigned to other competitive objectives. The concept of the relative importance of a competitive objective has explanatory power for firm performance and shows that the interrelationships among the different objectives must be taken into account. Moreover, this approach is more appropriate in empirical studies based on a single informant, because it eliminates the risks associated with artifactual correlations and therefore provides more reliable results.

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