Market orientation, innovation and competitive strategies in industrial firms

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Market orientation promotes the satisfaction of market needs with a higher degree of excellence than competitors. However, its potential effects on the companies’ innovation strategy are discussed. The question is whether or not market orientation, due to an excessive customer focus, leads mainly to the development of incremental innovations and, consequently, to reactive innovation strategies. To obtain further insight into this topic, a market orientation measurement scale is first developed, taking into account the instrument proposed in the last decade. Then, the scale psychometric properties are evaluated. Once it proves to be a solid instrument of measurement, the relationship between market orientation and the following variables is analysed: firms’ commitment to the innovation activities, effective innovation rates, degree of innovativeness of the new products developed, firms’ competitive strategy and companies’ performance. The study supports the beneficial effects of market orientation on the innovation strategy, providing empirical evidence in a research field where contributions of this nature are very scarce. In addition, the convenience of incorporating market orientation into industrial firms’ management is reinforced.

KEYWORDS: Market orientation; innovation activities; competitive strategies; industrial markets

INTRODUCTION

Study of the market orientation concept is currently recognized as being of utmost interest within the marketing discipline, both from an academic and entrepreneurial point of view (Marketing Science Institute, 1990). Accordingly, a great number of investigations of this topic have been developed in the last decade which have approached market orientation from a fundamentally dual perspective: either as a cultural aspect or as a constituent part of organizations’ culture (Slater and Narver, 1995) or as a series of specific conducts in accordance with this orientation (Kohli and Jaworski, 1990). Though these conceptual approaches are not mutually exclusive and may even be considered to be complementary (Jaworski and Kohli, 1996), the market orientation measurement instruments proposed in the literature do not coincide and a large number of both cultural and operative scales may be identified (Gray et al., 1998).

Therefore, this field of investigation offers substantial potential for further development. The researcher needs first to adopt a perspective for defining the market orientation concept – including the justification of the dimensions underlying this concept from the chosen conceptual framework. This paper proposes a measurement scale for market orientation, which is later evaluated for its psychometric properties and its association with other variables of interest. It is hoped that these research findings can contribute to the clarification of the market orientation concept.
viewpoint selected – and then employ a valid, reliable measurement scale of the proposed market orientation concept. The aforementioned potential is even greater if the relationship between firms’ degree of market orientation and their innovation activities is taken into account.

Thus, an innovation strategy poses a permanent challenge for any company. Standardized markets with known, stable demand and little possibility of improved alternative technologies are becoming continually more scarce. Even these markets are subject to innovation demands, though it may only be in terms of more productive or less costly manufacturing processes. Hence, innovation currently plays a key role in business performance (Edgett et al., 1992; Brown and Eisenhardt, 1995).

However, one of the most controversial recent debates in the literature concerns whether market orientation fosters innovation or leads to incremental developments in product portfolios derived from modifications in customer preferences. The question raised is whether the most market-oriented firms tend to develop products with a higher degree of incorporated novelty or whether, if an excess of customer orientation and short-term vision, they mainly focus on applying slight modifications to their product portfolio, in order to adapt it slowly to the changes detected in the market (Atuahene-Gima, 1996). Although incremental innovation may prove to be profitable in the short term, it does not sustain corporate development or competitiveness in the long term, which require the development or incorporation of new technological platforms (Davidow, 1986). Similarly, explicit acknowledgement of the positive effects that innovation has on entrepreneurial results (Han et al., 1998) makes it desirable for market orientation to produce an effect on the firm’s innovation activity, in terms of both the quantity and novelty of the new products developed.

Evidence on this topic is mixed (Diamantopolus and Hart, 1993; Slater and Narver, 1994; Greenley, 1995; Fritz, 1996; Avlonitis and Gounaris, 1997; Langerak and Commandeur, 1998) and difficult to compare due to the diversity of measurement instruments employed, research methodologies, sample frames and indicators of performance (Gray et al., 1998). Consequently, further evidence about the nature of the relationship between market orientation, innovation activities and business performance needs to be obtained, paying special attention to the measurement variables employed in order to guarantee the general applicability of the results.

Another approach to analysing the influence of market orientation on firms’ innovation-related behaviour is the study of the competitive strategies developed by market-oriented firms. We wish to study whether the type of competitive strategy implemented by the most market-oriented firms implies granting priority to technology and its management with a long-term focus. In this respect, Slater and Narver (1996) and Morgan and Strong (1998) have recently examined the market orientation–competitive strategy relationship. The underlying premise of this stream of research is the recognition of marketing’s contribution to a firm’s strategic management and strategy selection (Day and Wensley, 1988; Day, 1994; Ruekert, 1992; Hunt and Morgan, 1995). Accordingly, if a market-oriented firm’s selected strategy involves a long-term focus on technology management, that will reinforce the potential benefits of market orientation on innovation.

Based on this general approach, the research work has been structured into three sections. First, we examine the literature dealing with the market orientation concept as well as its relationship with a firm’s innovation strategy. Next, a series of hypotheses pertaining to this ‘interplay’ are proposed and empirically tested. Finally, the outcomes obtained are discussed and future research implications are identified.
THEORETICAL BACKGROUND AND HYPOTHESES

The market orientation concept

As stated previously, approaches to the market orientation concept are basically made from two perspectives: the behavioural or process perspective (Kohli and Jaworski, 1990; Deng and Dart, 1994; Doyle and Wong, 1998; Jaworski et al., 2000), versus the cultural (Slater and Narver, 1995; Turner and Spencer, 1997; Harris, 1998; Narver et al., 1998).

From the cultural viewpoint, market orientation is understood as an organizational culture in which the market, customers and competitors constitute the central axis of the firm’s *modus operandi*. Thus, such an orientation implies the existence of a set of shared values and attitudes throughout the organization which, like an invisible hand guiding individuals behaviour (Lichtenthal and Wilson, 1992), try to stimulate the creation of higher value for customers (Pearce and David, 1987; Webster, 1988; Greenley, 1995) in such a way that the customers themselves become the focal point of strategy and organizational actions (Deshpandé and Webster, 1989). The behavioural or operative perspective implies the definition of the market orientation concept pointing out the tasks that must be accomplished within the organization in order to put culture into practice effectively (Kohli and Jaworski, 1990).

In order to develop an investigation in this research field, it is necessary to adopt first a perspective to define the market orientation concept – including the justification of the dimensions underlying this concept from the chosen conceptual viewpoint selected. Next, it is necessary to identify – or, alternatively, develop – a valid, reliable measurement scale of the proposed market orientation concept. At this stage it is necessary to take care, due to the fact that, in the literature, a wide variety of scales, both cultural and operative, have been proposed. Their items do not always correspond to the cultural or operative nature of the scale to which they belong (Jaworski and Kohli, 1996). This brings to the appropriateness of using these scales into question. Moreover, as will be discussed later on, the psychometric properties of some of the most widely used measurement instruments have recently been placed in doubt. However, an in-depth validation of the scale employed is essential for the study of market orientation’s relationship with other variables, such as companies’ performance and innovation outcomes and to guarantee that the results obtained are not specific to the measurement instrument employed.

In this study, the behavioural conceptualization of market orientation is adopted as a group of activities which put theory into practice in order to provide greater value to the firm’s customers. The logic of this decision is, as Jaworski and Kohli (1996) indicated that ‘an organisation may believe something is important, but fail to act on its beliefs for a variety of reasons . . . thus, from a manager’s perspective, it may be more important to focus on what an organisation actually does than what it feels it is important’ (p. 121). Therefore, as we wish to relate market orientation to the innovation activities developed in practice and the strategy type that has been pursued, our interest lies mainly in the organization’s actual conduct rather than its expressed ideology, which may represent market orientation’s cultural measure. Thus, we believe that operative market orientation cannot be present in a firm without an existing culture supporting such behaviour, whereas appreciation for delivering superior value does not guarantee the implementation of the related activities.

Once a working perspective of market orientation has been established, it is necessary to identify the underlying dimensions of this concept. On this line, Kohli and Jaworski (1990) suggested the implementation of three sets of activities (1) organization-wide generation of market intelligence pertaining to current and future customer needs, (2) dissemination of intelligence across departments and (3) organization-wide responsiveness to it. Based on this seminal work, other relevant
contributions have been produced in order to identify the pertinent operative dimensions of market orientation, such as Ruekert (1992), Deng and Dart (1994), Deshpandé and Farley (1996) and Gray et al. (1998).

We have adopted the proposal of the dimensions developed by Kohli and Jaworski (1990) due to its influence on later works, as well as the explicit recognition of its conceptual validity (Cadogan and Diamantopoulos, 1995; Siguaw et al., 1998). However, the appropriateness of using the MARKOR measurement scale which was developed by Kohli et al. (1993) may be questionable, as we shall see further on.

The activities of collecting information, disseminating it to all levels within the organization and designing a coordinated response should not only be relative to customers but also to competitors and environmental forces, without overlooking the likely evolution of the characteristics of each of these variables. In the literature, however, it seems that more emphasis has always been dedicated to customer orientation (Narver and Slater, 1990; Kotler and Andreasen, 1996) than to competitor analysis. In spite of this, an analysis of competitors’ rationale is supported by the fact that, to satisfy the customer’s needs, providing greater satisfaction or added value, it is essential to have competitors’ commercial offers as a reference, given that customers evaluate products in relative terms (Day and Wensley, 1988). In relation to the environment, it should be remembered that the goal of generating marketing intelligence is to be aware of the future or latent needs of a firm’s customers. To this end, it is necessary to determine the environmental forces that affect customers’ systems of preferences and expectations or those that may do so in the future. This is why the study of the environment has been justified as an object of analysis from the operative field (Kohli and Jaworski, 1990; Greenley and Foxall, 1998).

**Market orientation and innovation**

Together with an increasing interest in the literature concerning the significance and implications of market orientation strategy, the debate has been revived as to its influence on a firm’s innovative activity. The question has been raised as to whether the most market-oriented firms are less receptive to the idea of innovation or whether they limit themselves to developing modifications in well-known products in order to adapt them to customer needs appropriately, rather than assuming more radical projects. Therefore, it may be considered that firms which are centred on listening to their customers and responding to their needs in the majority of cases do not manage to foresee the future or anticipate many of the innovations which are later successfully commercialized. Thus, they are surpassed by more perceptive competitors who obtain competitive advantages by taking customers where they wish to go, even without yet knowing it – in short, by continually surprising them (Hamel and Prahalad, 1991, 1995).

If this reasoning should prove to be true, then market orientation would inhibit innovation. In this case, it would not be advisable in domains whether this type of capacity is an indispensable source of competitive advantage, as in industrial firms (Slater, 1996), apart from the fact that new product development and innovation capacity are basic competitive instruments for an industrial firm’s long-term success and survival (Deshpandé et al., 1993). Thus, by means of new product development, the organization adapts and diversifies itself and even renews or ‘reinvents’ itself in order to adjust to the changing technology and market conditions (Vázquez et al., 1998).

In this respect, Hayes and Abernathy (1980) and Bennett and Cooper (1981) also argued that market orientation strategy leads to the development of merely incremental innovations and to inferior products in the long term, given that innovation risks tend to be avoided. Thus, customer emphasis promoted by market orientation is seen to lead solely to the creation of possible or feasible
products within the customers’ own reference system. Therefore, radical innovations would never be generated as customers would not suggest them and evaluation of their potential acceptance by the target market would be even less feasible (Workman, 1993; Cahill et al., 1994). This idea has prevailed in the management of many industrial firms, particularly in those in which technology plays a predominant role (Santos and Vázquez, 1997, 1998). Nonetheless, there are diverse theoretical arguments are well as some empirical evidence which contradict this posture.

First of all, this approach may be rejected by considering the fact that the intelligence generation dimension of market orientation involves obtaining information not only on current customer needs, but on their future ones as well, while taking into account all the environmental forces which could potentially model these expectations. Consequently, a present and future vision of the market allows for new product development with a high degree of incorporated novelty (Jaworski and Kohli, 1996).

That is, authentic market orientation requires a continual innovative effort that need not be limited to incremental innovations, provided that latent radical necessities are detected. To this effect, Slater and Narver (1996) empirically demonstrated that there is a positive relationship between the magnitude of market orientation and an organization’s relative emphasis on developing more innovative products.

On the other hand, Hurley and Hult (1998) put forward the idea that market orientation, together with other characteristics and organizational culture, is an antecedent of a firm’s receptivity or willingness towards new idea development. This receptivity or willingness is what these authors called ‘firm’s innovativeness’, a cultural aspect that positively influences the capacity to adopt or implement new ideas, processes or products. Consequently, Hurley and Hult (1998) considered that market orientation influences the quantity of innovations that the firm is able to absorb or develop through the moderating effect of firm’s innovativeness. An improved capacity to innovate – which is understood as the number of new ideas adopted or implemented by the organization – is also proposed to enable firms to be more successful in responding to their environment and developing new capabilities that lead to competitive advantage and superior performance. The empirical research confirms the influence of several cultural characteristics – market orientation not included – on innovativeness and its positive effect on the firm’s capacity to innovate. However, no evidence is provided on the consequences of the latter results.

However, Han et al. (1998) empirically established that market orientation facilitates organizational innovation, as measured in terms of the absolute number of both technical and administrative innovations implemented. That is to say that the authors proved that market orientation exercises a direct influence on the quantity of innovations implemented by the firm – both technical and administrative – eluding the moderator effect of the firm’s innovativeness. Innovation, in turn positively influences business performance, confirming its mediating role in the market orientation–corporate performance link. The study also shows that market orientation does not have a direct effect on performance, which raises another controversial debate in the literature.

It should be noted, nevertheless, that, although in this investigation it is the operative implementation of market orientation that is measured, both Hurley and Hult (1998) as well as Han et al. (1998) considered market orientation as part of the organization’s culture. Thus, Hurley and Hult (1998) suggested that ‘the deepest manifestations of market and learning orientations are at the cultural level’ (p. 43), whereas Han et al. (1998) concluded that ‘market orientation scholars designate a market-oriented culture as a significant factor in achieving a superior corporate performance’ (p. 31). While Hurley and Hult (1998) did not measure market orientation, Han et al. (1998) used the scale developed by Narver and Slater (1990) – MKTOR – to measure market orientation from a cultural viewpoint. However, MKTOR has been criticized because its
primary focus is on behaviour despite its cultural design (Deshpandé and Farley, 1996; Jaworski and Kohli, 1996).

Based on the conclusions arrived at in these previous works, in this investigation we intend to go a step further by analysing the relationship between a firm’s market orientation level and the number of innovations that are effectively developed and commercialized rather than adopted within the organization. In this respect, we believe that market-oriented firms are not only more willing to adopt innovations but also to develop and commercialize them. Market orientation through intelligence generation is a source of ideas for new products and services; this fact together with the focus on providing superior value to the customers by means of fulfilling their needs and the evolution of their preferences should positively affect the degree of innovation in companies. In order to test this reasoning, the role of a firm’s innovativeness will be also taken into account as an element of a firm’s culture that predisposes companies favourably to innovation.

Innovation, for its part, has been proven to enable the firm to achieve better outcomes and improve its competitive position. However, the fact should not be overlooked that some studies have demonstrated that market orientation also exercises a direct positive influence on entrepreneurial results (Slater and Narver, 1994; Langerak and Commandeur, 1998). Therefore, it is necessary to compare the direct influence of market orientation on organizational outcomes with the influence exercised through variables related to innovations.

By taking the aforementioned investigations into account, the hypotheses proposed in this investigation aim to confirm the empirical evidence that has been collected to date, as well as contrast the postulated relationships. Therefore, the idea is put forward that market innovation is related to companies’ willingness to innovate. In turn, this variable generates a higher rate of innovation. However, the possibility of a direct effect of market orientation on the quantity of innovations to be developed is also accepted. Therefore, we believe that a greater disposition to innovate is coherent with companies which commercialize products offering a higher degree of innovation, apart from the direct effect of the firm’s market orientation level on the latter variable, as demonstrated by Slater and Narver (1996). Both variables – the innovation rate and product innovativeness – should lead to the achievement of superior performance. Thus, more innovative products involve more potential risks associated with their market success (Urban and Hauser, 1993), as well as more potential benefits for the firm (Kleinschmidt and Cooper, 1991). However, due to their primary focus on providing superior customer value, market-oriented firms are well positioned for adapting innovations to customers’ actual and emerging needs. Therefore, a positive relationship between new product novelty and companies’ performance is expected. Accordingly we propose the following.

H₁: Market orientation is positively associated with a firm’s innovativeness or its cultural predisposition to innovate.

H₂: A firm’s innovativeness is positively associated with the firm’s innovation rate and new product innovativeness.

H₃: A firm’s innovation rate and new product innovativeness lead to superior company performance.

H₄: Market orientation has a direct, positive impact on a firm’s innovation rate, new product innovativeness and company performance.

Figure 1 depicts the hypothesized relationships.

Another aim pursued in this investigation is the study of the type of competitive strategy pursued by industrial firms in relation to their degree of market orientation. Market orientation, as an organizational resource, should contribute to competitive strategy formulation (Hunt and Morgan,
1995). In fact, an understanding of market orientation's contribution to companies' competitive strategy formulation is a key step in appropriate comprehension of this orientation's long-term benefits for the organization (Slater and Narver, 1996). If market orientation promotes innovation rather than limiting it, as defended in this paper, then it is to be expected that market-oriented firms should focus on competitive strategies that involve a higher degree of innovation activity. To this end, the typologies suggested by Porter (1980) and Miles and Snow (1978) are considered given that, in both classifications, a firm's emphasis on technology is explicitly recognized. In short, it is put forward that the most market-oriented firms will show a higher degree of implementation of the strategies most directly involved with innovation.

However, the study of the strategic choices of market-oriented firms can be approached using an alternative methodology, such as the one described by Morgan and Strong (1998). These authors avoided the employment of strategic typologies, such as those proposed by Miles and Snow (1978) and Porter (1980), because, among other considerations, crude categorizations ‘do not acknowledge the importance of dimensions that are excluded from the typology’ (Speed, 1993, p. 172). Thus, Morgan and Strong (1998) considered six comprehensive dimensions of strategic orientation in order to achieve an exhaustive vision of a firm’s competitive behaviour. Nevertheless, in this investigation, the study of the market orientation–competitive strategy relationship is aimed at the analysis of the preponderance given to innovation strategy by market-oriented industrial firms. This dimension – emphasis on technology – is explicitly recognized in the typologies of competitive strategies employed in the research, i.e. Porter (1980) and Miles and Snow (1978) and, therefore, we believe that made them suitable for our purposes.

Next, the contents of each of the strategies defined by Porter (1980) and Miles and Snow (1978) will be explained, as well as the level of innovative effort that is implied. We shall endeavour to demonstrate that it is predictable that the most market-oriented firms carry out the competitive strategies which are most connected with innovation development.

Porter (1980) classified the competitive advantage sources into two principal categories: cost leadership and differentiation. Differentiation strategy means product development with ‘added’ advantages or those which are perceived to be unique or different in the industry and offer a greater benefit to consumers. This can be accomplished through various means, such as a brand name image, technology, services or product properties. The effects of differentiation are basically external, that is they attempt to realign the firm’s demand curve. The cost leadership strategy, without compromising quality, service or other aspects, attempt to achieve lower costs than the competition. In other words, this strategy intends to render internal efficiency into lower costs or more reduced
prices for the purchasers. It is based on economies of scale, value and scope. This brings about reductions in product costs, research and development, services, sales personnel or communication.

On the basis of these considerations, it seems reasonable to suggest that a market-orientated firm which adopts a clear external focus in determining its customers’ current latent needs and wishes to satisfy them better than the competition should practise a differentiation strategy to a greater extent than the leadership in costs alternative. In reality, we are not asserting that the two strategies are incompatible, given that Porter himself (1985) stated that ‘many firms’ have discovered the way to reduce costs, not only without damaging their level of differentiation, but actually increasing it. Both strategies can coexist but, in this case, a differentiation strategy is presupposed to be more coherent with market orientation behaviour. Accordingly, the degree of correlation with this variable should be greater. Furthermore, it is this the case, we may once again support the assertion that the most market-oriented firms need not have an inferior innovation rate. This is due to the fact that innovation activity is one of the fundamental distinguishing features of the differentiation strategy.

On the other hand, the typology proposed by Miles and Snow (1978) identified four basic types of competitive organization: prospector, analyser, defender and reactor. The key underlying criterion employed in establishing this typology is the type of organizational response to changing environmental conditions, that is the rate of modifications experimented on in commercialized product types and in the selected markets in order to adapt to variations in the competitive environment.

Practically, defender firms do not develop products or markets, but focus all their effort on attempting to defend a competitive position, which is generally restricted to a very reduced niche. They compete on the basis of prices, distribution, quality or service. Prospector businesses continually seek new opportunities in the market and are often pioneers in launching new products. They constantly modify their offer and often bring about changes in the industry with their activity. Analyser organizations represent an intermediate position between the two previous ones. They carry out fewer and less frequent changes in their products and markets than prospector businesses, yet concede less importance to stability and efficiency than defender firms in order to bolster their competitiveness. Reactor firms lack any specific strategy and simply respond to environmental changes as best they can. In fact, the majority of empirical studies that were consulted considered this group to be marginal, as if it could not really be considered an exponent of any type of business strategy and, consequently, excluded it from their investigations (McDaniel and Kolari, 1987; Shortell and Zajac, 1990; Slater and Narver, 1996).

Just as various authors have established the strategic groups identified by Miles and Snow (1978) present very disparate characteristics with regard to the type of marketing strategy employed (Snow and Hrebiniaik, 1980; Hambrick, 1983; Mcke et al., 1989; Conant et al., 1990; Doyle and Hooley, 1992) and their degree of market orientation (McDaniel and Kolari, 1987). In general, the results show that prospector or analyser firms reveal a higher degree of market orientation and marketing strategy elaboration in which a special interest in new product development is placed. For these reasons, in an effort to demonstrate market-oriented firms’ innovative development is placed. For these reasons, in an effort to demonstrate market-oriented firms’ innovative character and capacity, we propose that these firms will tend to show the application of a pro-active competitive strategic orientation. In accordance with these assertions, we pose the following hypothesis.

\[ H_3: \] Market-oriented firms develop competitive strategies which involve a higher degree of commitment to innovation. Those strategies can be fundamentally considered as pro-active and based on differentiation activities.
METHODOLOGY AND MEASURES EMPLOYED IN THE INVESTIGATION

The industrial firms from which information was obtained were selected from the Directory of Industrial Companies and Industrial Support Services in the Principality of Asturias (Instituto de Fomento Regional del Principado de Asturias, 1998). The sample was designed to include a broad range of Spanish companies which varied by size and industry type. This fact involves a higher risk of data variability and dispersion but, on the other hand, contributes to their applicability across a broad range of situations. The selection of the industry sectors finally considered was made bearing in mind the number of certified firms (certification ISO9000), which were included for future investigation purposes. Thus, the fields of activity finally chosen were food manufacturing, chemicals, metals and precision machinery, including a total of 264 companies.

The data collection was performed in January 1999 by means of personal interviews conducted with the directors of each firm, following a structured questionnaire. When a measurement instrument is developed, the subjects employed to obtain information should be those for whom the designed instrument is intended (Nunnally, 1978). For this reason, due to the necessity that the interviewees should have a profound general knowledge of the firms’ operations and strategies, the firm’s general managers were chosen as the source of information. This type of approach, using only one surveyed individual per company, has been previously employed in studies on market orientation (Narver and Slater, 1990), demonstrating the reliability of the data obtained in this way (Avlonitis and Gounaris, 1997). The final sample of companies which agreed to participate consisted of 174 firms.

Market orientation measurement

As mentioned above, different measurement instruments for market orientation have been developed in the last decade. One noteworthy aspect of the scales finally proposed in the literature is that the majority of the items employed are of a behavioural nature, in spite of the fact that the authors may defend the cultural dimension of the concept. Thus, for example, the scale of Narver and Slater (1990), despite being developed for the purpose of estimating market orientation as a cultural aspect, contains nine items out of 15 of a clearly operative nature.

Apart from these considerations, we intended to develop a new measurement instrument for market orientation that integrates the more relevant previous works and which also accounts for the multiplicity of aspects that have been alluded to in order to measure this reality. The empirical studies which are of the most importance in this process are Narver and Slater (1990), Ruekert (1992), Kohli et al. (1993), Diamantopoulos and Hart (1993), Deshpandé et al. (1993), Deng and Dart (1994), Deshpandé and Farley (1996) and Pelham and Wilson (1996).

Theoretically, however, the first alternative would have been employment of the measurement instrument developed by Kohli et al. (1993), as we accept the market orientation dimensions proposed by these authors as valid. Nevertheless, there are several reasons that led us to discard this possibility.

(1) First of all, the scale developed by these authors – MARKOR – has recently been questioned with regard to its psychometric properties (Caruana et al. 1996; Bhuian, 1997; Farrell and Oczkowski, 1997; Siguaw et al., 1998).

(2) Similarly, the items employed in measuring information generation, its internal dissemination and the development of an organizational response fundamentally refer to the customer (13 of the 20 items considered had this orientation); no item was included, for example, relating to intelligence generation on the competitor.
For these reasons, the market orientation scales of the last decade have been taken into account, identifying the following questions: (1) the behavioural or cultural nature of the variables employed, (2) the interest focus of these variables, i.e. customers, competitors or environment and (3) the components of the behavioural concept of market orientation to which they refer, that is market intelligence generation, dissemination or response. The employment of items from other scales, as they have previously ‘survived’ a refinement process in most cases, was intended to improve the final scale’s content validity. The next step was to eliminate redundant items and complete aspects where the measurement of which was taken insufficiently.

However, the steps taken to this point in order to develop the scale employed in this study, that is a review of the specialized literature, specification of the dimensions or critical components of the market orientation concept and selection of the representative variables for each identified critical component, aim to guarantee the scale’s content validity. That is, the scale illustrates the different aspects or dimensions which are considered to be essential with regard to the object of study. This process has been completed in accordance with the recommendations of the literature (Deng and Dart, 1994) by means of two additional steps: submitting the scale to expert opinion and elaboration and pre-test of the questionnaire applied to a small sample of companies. This enabled the drafting of the items to be modified and adapted in order to facilitate their interpretation and guarantee that all relevant aspects of market orientation were being measured. The scale originally employed in the investigation was thus obtained, as shown in the Appendix.

Once the measurement scale was developed, one of the investigation’s primary aims was to check its reliability, validity and unidimensional nature in order to confirm its viability as a measurement instrument for different industrial sectors. The final approval of the scale would be granted upon proving its performance in the evaluation processes of each one of these aspects, in agreement with the methodology proposed by Churchill (1979), Gerbing and Anderson (1988), Deng and Dart (1994) and Dawes et al. (1998). The results of the described analyses are discussed in the following section.

**Additional measures**

The testing of the hypotheses put forward in this study required the measurement of three additional sets of variables: (1) variables referring to the firm’s innovation activity, (2) variables indicative of the company’s performance and (3) variables for measuring the competitive strategy developed by the respondents’ firms.

**Innovation rate**

In order to evaluate this variable, the sample companies were requested to indicate their average number of commercialized innovations in the previous 5 years in proportion to their main competitors’ new product average: a value of 1 is an innovation rate that is far below average, a value of 2 is below average, a value of 3 is average, a value of 4 is above average, and a value of 5 is far above average.

**Degree of novelty in commercialized innovations**

We returned to the measurement instrument elaborated by Slater and Narver (1996). It combines an organization’s relative emphasis on new product development, analysis of the competitor’s offer to produce imitative products and defence of the current portfolio against competitive attacks,
with the degree of innovative effort that each of these activities represents. In this way, a weighted indicator is obtained for the novelty level of the innovations developed by the firm (Gupta and Govindarajan, 1984).

Measurement of the predisposition to innovate

To this effect, we refer to the scale suggested by Hurley and Hult (1998). Its psychometric properties are also analysed by the authors. Respondents are requested to indicate to what extent, on a seven-point scale, assertions of the following type are descriptive of their organization: (1) technical innovation, based on research results, is readily accepted, (2) management actively seeks innovative ideas, (3) innovation is readily accepted in programme/project management, (4) people are penalized for new ideas that do not work and (5) innovation in our company is perceived as too risky and is resisted.

Company performance

In order to evaluate the company performance of the respondents’ firms we employed some of subjective measures more frequently used in other investigations such as return on investment (Pelham and Wilson, 1996; Langerak and Commandeur, 1998), profits (Pelham and Wilson, 1996; Avlonitis and Gounaris, 1997; Langerak and Commandeur, 1998), sales (Salter and Narver, 1994; Pelham and Wilson, 1996; Langerak and Commandeur, 1998) and new product success (Slater and Narver, 1994; Langerak and Commandeur, 1998). Respondents were asked to indicate the evolution, in the last period, of the variables mentioned relative to companies’ objectives (Avlonitis and Gounaris, 1997). For this purpose, a seven-point scale was used, where 1 represents ‘outcomes much worse than expected’ and 7 represents ‘outcomes much better than expected’. The employment of subjective measures of company performance rather than objective ones is justified by the reluctance of interviewees to provide real data. In this sense, several studies have tested the existence of strong correlations between both types of assessment (Covin et al., 1994; Hart and Banbury, 1994; Dawes, 1999), though it is also recognized that the optimal approach would be their joint consideration.

Type of competitive strategy or strategic orientation

A very popular instrument for measuring companies’ strategic orientation, according to the typology of Miles and Snow (1978), is the denominated ‘self-typing approach’. It consists of each respondent reading paragraphs without a heading and indicating the one which best describes their company. This type of measure is very simple to put into practice and, in theory, should be effective. This is due to the fact that company directors, who were the subjects interviewed in the majority of cases, are mainly the ones who define the organization’s strategy (James and Hatten, 1995). However, among its limitations is the fact that the interviewees may respond to what would be an ideal description of their firms rather than the authentic one (Snow and Hambrick, 1980). Furthermore, there is a strong tendency not to mark the paragraph describing reactor firms (Conant et al., 1990).

In order to avoid these drawbacks, alternatives to this methodology have been suggested, such as the researcher’s direct valuation, recurring to independent experts or an objective data study. Accordingly, an academic debate has been opened as to the appropriateness of one methodological alternative over the others (Conant et al., 1990). Nevertheless, the most recent studies in this respect
(Shortell and Zajac, 1990; James and Hatten, 1995) have demonstrated the first alternative’s validity by proving that companies classify themselves in a similar way even though different methods be used. This method is thus shown to be reliable and receives discriminating and convergent appraisal. Additionally, the classification outcomes obtained in this way behave well a dependent variables in a regression analysis where independent variables are objective measures of each strategy. For these reasons, the self-description method has been used in the current study, in agreement with the assertions set forward and with the same wording as in all the aforementioned investigations.

Regarding the cost leadership and differentiation strategies, an in-depth study of the work of Porter (1980) has enabled the most characteristic variables for defining each one of these competitive strategies to be identified. Such was the case for the empirical investigations carried out by Dess and Davis (1984) and Miller (1988). Based on these studies, Narver and Slater (1990), Govindarajan and Fisher (1990) and Slater and Narver (1996) developed a six-item scale for measuring in a differentiation strategy and a five-item one for evaluating leadership in costs. These scales have proved to be reliable and to offer convergent validity, hence their use in the current study.

## ANALYSIS AND RESULTS

In relation to the measurement scale for market orientation, Table 1 shows the analysis results for psychometric properties. Owing to the successive refining processes, various items in the subconstructs of which market orientation is made up had to be eliminated. These are highlighted in the Appendix. Therefore, two measurement variables for intelligence generation were discarded, the dissemination subscale was preserved and the initial proposal’s most significant modification took place in the form of response measurement.

### TABLE 1. Reliability and scale validation test results

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Intelligence generation:</th>
<th>Dissemination:</th>
<th>Response:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unidimensionality</td>
<td>(1) $\chi^2 = 240.37$, d.f. = 77 and $p = 0.00$, (2) BBNFI = 0.848, (3) BBNNFI = 0.870 and (4) CFI = 0.890</td>
<td>(1) $\chi^2 = 173.91$, d.f. = 27 and $p = 0.00$, (2) BBNFI = 0.836, (3) BBNNFI = 0.809 and (4) CFI = 0.856</td>
<td>(1) $\chi^2 = 58.00$, d.f. = 14 and $p = 0.00$, (2) BBNFI = 0.894, (3) BBNNFI = 0.874 and (4) CFI = 0.916</td>
</tr>
</tbody>
</table>

Convergent validity (1) Positive and statistically significant correlation coefficients for a $p$-value $= 0.000$ among the three components of the construct (the coefficients oscillate between 0.6801 and 0.7161) and (2) Cronbach’s $\alpha$ coefficient for the set of 30 items (0.9595)
In fact, the items that were ultimately considered in subdimension responses refer exclusively to actions taken by the firms in order to attend to or satisfy their customers, eliminating the actions pertaining to environment and competition. In the theoretical approach, it is defended that activities which are coherent with the market orientation concept have three types of public: customers, competitors and environment. Consequently, they should be taken into account in intelligence generation, dissemination and response. However, the validity and reliability of the results require that the response is environment and competition should not be considered.

This leads us to believe that, in market orientation measurement, it is necessary to control the gathering and dissemination of information concerning all of the factors which could, in effect, condition a firm’s offer. Such is the case of customers, competitors and environment. Nonetheless, when conveying this orientation into specific actions pertaining to the market, the central focus of attention should be the client.

This evidence may be explained by the fact that another type of variable outside of the market orientation domain, such as company size or the quantity of available resources, condition the response capacity to the environment and competition. Therefore, in order to measure the construct under study accurately, it would not be possible to integrate items that do not depend on operative interest in supplying superior value to the firm’s customers, but rather the organization’s capacity for responding to its environment and competitors.

Based on the 30-item scale that was finally obtained, the results of all the measures taken into consideration were found to be excellent. The sole exception was in model unidimensionality, in which the values obtained approached the advisable 0.9 limit. However, taking into account the unidimensionality of the proposed subdimensions, the scale has been added to by giving the same weight to each dimension. That is, assessments were first obtained for the subscales, then the three scores were averaged (Hooley et al., 1998).

Market orientation and innovation strategy

With the aim of simplifying discussion of the results, an aggregated measure of companies’ performance was obtained as the mean value of the individual performance variables considered. Prior to doing so, several analyses were conducted in order to guarantee the appropriateness of such aggregation. Thus, Cronbach’s \( \alpha \) coefficient for the performance scale was 0.83 — with item—total scale correlation coefficients in all cases over 0.5 — and the factor loadings obtained in an exploratory factor analysis performed for the scale were above 0.7 in all cases — percentage of variance explained of 68.5%. It is also worth mentioning that the scale relating to the organizations’ predisposition to innovate proved to be reliable (Cronbach’s \( \alpha = 0.8282 \)), just as was demonstrated in the study of Hurley and Hult (1998).

The variable correlation outcomes put forward in hypotheses 1–4 are shown in Table 2. As may be observed, significant positive correlations exist among the sample companies’ market orientation degree and the quantity of commercialized innovations, their degree of novelty, the companies’ predisposition to innovate and the firms’ outcomes as measured with respect to their objectives. While correlation analysis provided an indication of an association between the variables, the existence of positive and significant correlation values does not imply the conformation of the causality relationships posed.

In order to undertake a more complete examination of the proposed relationships and evaluate the directness of the associations, a path analysis was conducted following the scheme shown in Fig. 1. The results of this analysis (see Fig. 2) indicate that market orientation has a direct and positive effect on a firm’s innovativeness as proposed in hypothesis 1. Additionally, a firm’s
innovativeness is positively associated with a firm’s innovation rate and new product innovativeness and both variables exert a positive influence on companies’ performance relative to their pre-established objectives, which leads us to the acceptance of hypotheses 2 and 3. However, hypotheses 4 is only partially supported, given that the direct effect of market orientation on the companies’ innovation rate and performance is not significant. Market orientation has an indirect effect on companies’ innovation rates and performance as mediated by firms’ innovativeness, innovation rates and new product innovativeness. Indirect effects can be calculated as a simple multiplicative measure of the magnitude of sequential \( \beta \) weights. For example, the indirect effect of market orientation on companies’ performance can be calculated as follows:

\[
(0.52 \times 0.26 \times 0.25) + (0.52 \times 0.36 \times 0.25) + (0.27 \times 0.25) = 0.1481.
\]

Finally, the investigation’s fifth hypothesis was intended to confirm, by means of studying organisations’ competitive strategy, the proposition that the most market-oriented companies take an active interest in developing pro-active behaviour primarily concerned with the differentiation of their products. Based on the fact that the sample companies identified themselves in any of the four categories identified by Miles and Snow (1978), one-factor ANOVA analysis was employed to contrast the existence of significant differences in market orientation mean values between groups. In the same way, correlations between the companies’ market orientation and the mean

![FIGURE 2. Path analysis of market orientation effects on innovation and performance. An asterisk represents significance at the 0.01 level. EQS summary statistics: \( \chi^2 = 1.56, \) d.f. = 2, \( p \)-value = 0.4586; BBNFI = 0.9888; BBNNFI = 1.018 and CFI = 1.00.](image-url)
scores obtained in the cost leadership and differentiation scales were calculated. The results obtained are shown in Table 3 and enable hypothesis 5 to be accepted. As may be observed, there are significant differences – at a 5% confidence level – in the mean values for market orientation shown by prospector, analyser, defender and reactor firms, with the first two categories containing the most market-oriented firms. Additionally, although the researched companies’ degree of market orientation was significantly related to the application of both differentiation and leadership in costs strategies, the association was much stronger in the former, as hypothesized.

CONCLUSIONS AND MANAGERIAL IMPLICATIONS

One of the principal objectives of this survey was the design of a valid instrument for measuring market orientation from a behavioural perspective, based on the most relevant scales proposed in the last decade. This new scale was intended to be comprehensive of the different sets of activities that market orientation is conceptually considered to involve and to include the firms’ long-term focus on clients, competitors and environment. The results uphold the reliability and validity of the market orientation construct developed, so that market orientation appears to consist of three dimensions, as suggested by Kohli and Jaworski (1990). However, contrary to our expectations, the response dimension of market orientation concentrates exclusively on the companies’ clients.

The items referring to reactions to competition and environment movements were excluded from the response scale, due to the fact that they did not link the phenomena under study. Nonetheless, attention to these forces remains in the subcontracts of intelligence generation and dissemination. Thus, the companies obtained and shared information on the main variables for designing their offer – customers, environment and competitors – in order subsequently to develop an offer centred on supplying quality and superior value to their customers – in keeping with their necessities and desires – as well as on fulfilling promises and attending to complaints.

The capacity for response to the environment and competition are aspects which are clearly linked with an organization’s size and resources. Consequently, we do not believe that the absence of these variables should prove negative for an authentic measurement of the companies’ market orientation given that, moreover, firms take environmental characteristics and competitors’ performance into consideration in their offer designs. Furthermore, authors such as Deshpandé et al. (1993) and Deshpandé and Farley (1996) have pointed out that this last aspect – and offer design directed towards providing better customer satisfaction – is by definition the essence of

<table>
<thead>
<tr>
<th>TABLE 3. Market orientations and competitive strategies</th>
<th>Market orientation level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospects</td>
<td>5.6877*</td>
</tr>
<tr>
<td>Analysers</td>
<td>5.1318*</td>
</tr>
<tr>
<td>Defenders</td>
<td>4.7747*</td>
</tr>
<tr>
<td>Reactors</td>
<td>4.4995*</td>
</tr>
<tr>
<td>Differentiation strategy</td>
<td>0.5016*</td>
</tr>
<tr>
<td>Low-cost strategy</td>
<td>0.2616*</td>
</tr>
</tbody>
</table>

* Significant at the 0.001 level. The values for the first four rows are mean values and those for the fifth and sixth row are correlation coefficients.
market orientation. For our part, however, we insist on the necessity of explicitly following the competitors and environment evolution, in order to act most appropriately.

Just as we expected, this study provides empirical evidence that the most market-oriented firms, in addition to having a greater willingness to innovate, commercialize a higher number of innovations than their competitors. These innovations in turn incorporate a higher degree of novelty. There is also a positive correlation between the firms’ market orientation level and the results obtained. However, the association among variables that indicate correlation coefficients does not imply the existence of causal effects which must be made explicit by the use of path analysis. This analysis enables us to test whether market orientation directly affects the variables considered or whether, on the contrary, it exercises an indirect influence.

The path analysis results show that market orientation significantly favours firms’ innovativeness which, in turn, affects the companies’ innovation rates and new product innovativeness, whereas both variables exert a direct, positive influence on companies’ performance. Thus, as defended by Hurley and Hult (1998), market orientation favours a firm’s capacity to adopt or implement new ideas, processes or products; this cultural aspect in turn promotes the development of a higher number of innovations relative to competitors, as well as a higher degree of incorporated novelty in new products. This last variable is also directly influenced by market orientation. This empirical evidence refutes the criticism that market orientation limits innovation to incremental developments. Their results differ from our expectations in the case of market orientation’s direct effects, given that this variable does not have a direct influence on either firms’ innovation rates or performance.

The non-existence of a direct effect of market orientation on managerial results adds to the controversy in the literature on this topic. As previously mentioned, it is very difficult to systematize the diverse results obtained. In any case, the really important point concerning both managerial results and the companies’ innovation rates is that market orientation does influence these variables, though it may be through the effect of other forces.

However, previous evidence is consistent with the fact that pro-active firms, as characterised by being clearly innovative and taking the initiative in commercial performance with the desire of identifying and exploring new business opportunities, are those which are shown to have a higher level of market orientation. In the same way, it has been demonstrated that the most market-oriented firms develop differentiation strategies to a greater extent. Consequently, we may affirm that the strategic choices of the most market-oriented firms imply the intention to not only enact a pro-active role in innovation development, but also to innovate regularly.

According to the results of this study, the implementation of market orientation in industrial firms does not limit innovation strategy, but rather acts as a stimulus for it. The endeavour of developing an offer that generates superior value for customers implies being aware of and anticipating their needs in order to develop innovations which can be most accurately adapted to their present and future expectations.

These conclusions are particularly relevant in the industrial firm domain, where technology plays a predominant role. Thus, industrial products are normally more complex than consumer products. This accentuates interest in the technical quality of products, technology and engineering. However, there is an implicit danger that such companies become more oriented to the product than the market (Vázquez et al., 1998). In this sense, the market orientation construct developed in this study can be used in assessing a firm’s current practices and identifying strengths and weaknesses in the market orientation domain.

In any case, an adequate balance should exist between an organization’s technological and market orientation. This propitiates a long-term vision of technology management, without
overlooking specific market needs, nor the technological level which it is in a position to assimilate. It becomes a question of attaining the optimal balance between both orientations (Johnsrud, 1994; Samli et al., 1994) in such away that the objective is neither an excessive interest in technology nor the customer. The focus should rather be on profit, seeking technology that provides the most possible benefits to the market and to the firm so as to invest in it and dominate it (Hamel and Prahalad, 1995).

However, this study involved several limitations that need to be addressed. Thus, its cross-sectional and multi-industry nature limits the analysis of any lags that may occur between the development of a market-oriented behaviour and the achievement of corporate benefits as well as any industry-specific influences that may exist. The investigation also depends on single respondents from each company and returns to the use of subjective measures of company performance. In like manner, the environmental conditions in which the firm operates were not taken into account in this study. These conditions, such as competitive hostility, market dynamism or technical turbulence, doubtless affect the value of market orientation or as a resource capable of providing competitive advantages and allowing business results to be improved. Similarly, industrial firms’ innovation rates may be affected by these same environmental conditions, independently of their degree of interest in supplying added value to their customers.

Consequently, future research should consider issues such as the potential moderator effects of environmental conditions in the relationships posed. Moreover, it would be of interest to measure the degree of cultural market orientation of the firms analysed simultaneously in order to evaluate its precedent role in operative market orientation and its effects on firms’ innovativeness. With regard to the effects of the variables which figured in the result, we consider that it would be worthwhile competing their analysis by differentiating the product innovation results from the corporate ones, as well as the influence of the former on the latter. Finally, in future studies we will endeavour to establish the relative influence of the market orientation dimensions identified in the different study outcomes, as well as their dependence on the environmental conditions in which companies operate.

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APPENDIX: MARKET ORIENTATION SCALE

Generation of market intelligence

We constantly analyse our commitment level and orientation to serve our customers’ needs
We measure customer satisfaction frequently and systematically*
We know our competitors well
All functional area directors visit our current and potential customers regularly
We obtain ideas from our customers in order to improve our products
We carry out frequent studies on our customers in order to know what products and services they will need in the future
Investigation and market study results are used as a source of information for taking decisions
We contact our customers periodically in order to learn their perceptions as to the quality of our products and services
We regularly gather market data to be used directly in our new product development plans
Systems for detecting significant changes in the industry are developed by our firm
We are able to detect changes in our customers’ preferences rapidly
The sales force informs us about our customers and competitors*
We encourage our customers to make comments and even complaints as to the firm’s offer, as that will help us to accomplish our work better
We regularly analyse the marketing plans of our competitors
We frequently evaluate the possible effects of environmental change on our customers
We measure the service level supplied to our customers routinely and regularly

Dissemination

Interdepartmental meetings are held for discussion of market tendencies and future evolution
When something important happens to a customer or group of customers, the whole company is aware of this information in a short time
We manage to supply the different departments or members of the firm with reports regularly
Top management regularly discusses the strengths, weaknesses and strategies of the competitors
Sales personnel regularly share information with the firm regarding the competitors’ strategy
There is a fluent exchange of opinions between the functional areas in order to decide how to respond to competitor strategies
Customer satisfaction data is made known at all levels of the firm in a regular way

Response

We use the feedback supplied by customers to improve quality
If a competitor launches a campaign directed at our customers, the firm develops a response to counteract it rapidly*
We use the data obtained from market research or studies for production management and technological development*
The firm reacts to changes in the environment rapidly*
We define our product quality in relation to customer satisfaction*
In the planning and development of new products, we start from what is valuable for the customers
We keep the promises made to our customers
Among the market opportunities we select those which allow us to obtain advantages over our competitors.*

The modifications effected in products or services are often motivated by customer suggestions.*

The firm often takes advantage of the competitors’ weaknesses by converting them into opportunities.*

The various departments of the firm meet periodically to plan an appropriate response to changes that occur in the firm’s environment.*

Product development effort is often reviewed in order to assure its conformity with the customers’ desires.

Customer complaints are attended to rapidly.

We are sensitive to how our customers evaluate our products and services, so that when faced with negative perceptions, any necessary modifications are initiated immediately.

We use the information acquired through market studies to identify customer groups or segments with different needs or preferences.*

We respond to competitor actions that pose a threat to the firm rapidly.*

We endeavour to attain competitive advantages based on the understanding of our customers’ needs.

Items marked with an asterisk are those which had to be eliminated owing to successive refining processes.