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How organizational learning affects a firm's flexibility, competitive strategy, and performance ☆

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ABSTRACT

An organization's ability to learn is a key strategic capability to compete in modern markets. This research seeks to achieve an in-depth understanding of learning's contribution to a firm's competitiveness by analyzing how organizational learning (OL), understood as a dynamic capability, shapes firms' strategic flexibility and competitive strategy implementation to ultimately improve customer, financial, and market-related performance. This article proposes that OL acts as a forerunner of a firm's ability to adapt to evolving market conditions (strategic flexibility), and that OL and flexibility simultaneously foster the implementation of differentiation and cost-leadership strategies. This strategic behavior allows firms to reduce costs without damaging differentiation levels, and to improve customer and business performance. The study employs structural equation modeling (SEM) to evaluate the causal links that the research model depicts. Data analysis follows from a sample of 181 medium-sized Spanish manufacturing firms. The results confirm the expected relationships and reveal OL to be an important instrument in modern markets to provide customer value and to improve organizational performance by means of efficient competitive strategy design and flexible adaptation to rapid market evolution.

1. Introduction

In today's turbulent and unpredictable environments the achievement of competitive advantage (CA) depends increasingly on firms' ability to provide greater long-term customer value. The resource-based view (RBV) states that a company's unique assortment of valuable, rare, inimitable, and non-substitutable resources and capabilities constitutes the basis of difficult to duplicate value-creating strategies which can provide a firm with CA or above-average returns (Barney, 1991; Grant, 1991; Mahoney & Pandian, 1992; Wu, 2010).

The RBV has gradually evolved, acknowledging that under fast changing and unpredictable competitive environments CA may rapidly shift, and that the existence at a particular moment of time of an appropriate set of resources and capabilities may not be sufficient to sustain a firm's above-average performance in the long-term (Helfat & Peteraf, 2003).

Thus, firms need to permanently renew their skills and resources to maintain CA (Wu, 2010). Consequently, Teece, Pisano, and Shuen (1997, p. 516) define a dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments". Dynamic capabilities represent a complex set of abilities through which organizations systematically modify their operating routines and reconfigure their resources and skills to achieve an adequate adaptation to changing market requirements (Zollo & Winter, 2002). The concept of dynamic capability introduces a dynamic aspect into RBV, and is a reminder that maintaining a CA requires constant improvement and adaptation, especially under environmental volatility.

Since the publication of Cyert and March's (1963) seminal work, the relevant literature regards organizational learning (OL) as a key strategic capability for explaining why successful firms surpass competitors (Bapuji & Crossan, 2004; Kao & Lee, 1996). Kandemir and Hult (2005) state that OL may be the only organizational ability capable of generating superior customer value in the long-term, since learning allows a continuous adaptation to rapidly changing market requirements as a true dynamic capability.

Recent research addresses the benefits of OL, for example, in organizational performance (Azadegan & Dooley, 2010; Bell, Mengüç, & Widing, 2010), market orientation and relationship marketing (Santos, Sanzo, Álvarez, & Vázquez, 2005; Stein & Smith, 2009), the strategic supply process (Hult, Ketchen, & Slater, 2002), service quality (Tucker, Nembhard, & Edmonson, 2007), innovation (Akgün, Lynn, & Yilmaz, 2006; Weerawardena, O'Cass, & Julian, 2006),

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alliance outcomes (Liu, Ghauri, & Sinkovics, 2010), and human resource performance (Bhatnagar, 2007).

However, the interrelationships between OL and firms' strategy implementation have attracted remarkably little attention (Paisittanand, Digman, & Lee, 2007). The present study considers OL to contribute not only to strategy design, as a key organizational capability, but also to the effective implementation of competitive strategies (Dawson, 2000), since the ability to provide a rapid and effective response to a highly competitive and constantly changing business environment in itself involves strategy implementation (Beer, Voelpel, Leibold, & Tekie, 2005). Thus, this research proposes that OL, as a dynamic capability, constitutes one of the key bases firms have to consistently implement strategies leading to their taking advantage of environmental opportunities and avoiding threats (Barney, 1991).

Accordingly, the first objective of this research is to provide evidence for the potential of a firm's learning capability to improve its competitiveness through strategy implementation. The study contributes to the sparse extant literature on OL-strategy interface (Fang & Wang, 2006; Kaleka & Berthon, 2006; McGuinness & Morgan, 2005) by analyzing the competitive strategies supported by OL: specifically, whether OL simultaneously fosters Porter's (1980) competitive strategies, and the suitability of the latter for achieving superior customer-related and organizational performance. A basic premise in this research is that key positional advantages of superior customer value and lower costs relative to competitors can both help compete in modern markets and provide greater performance to firms than single strategies of cost leadership or differentiation (Acquaah & Yasai-Ardekani, 2008; Li & Li, 2008).

Turbulent business environments also require increasing organizational flexibility, i.e., the firms' ability to keep pace with market evolution as well as to respond rapidly to unpredictable and unexpected market conditions. Some researchers argue that OL can strengthen a firm's ability to recognize opportunities, to pursue new ventures effectively, and to achieve continuous alignment with its environment (Beer et al., 2005; Lumpkin & Lichtenstein, 2005). This reasoning reinforces the consideration of OL as a dynamic capability which can, in rapidly changing environments, "enable the firm to modify itself so as to continue to produce, efficiently and/or effectively, market offerings for some market segment(s)" (Madhavaram & Hunt, 2008, p. 69). However, empirical evidence on the OL-strategic flexibility interface is again sparse. Thus, the second objective of the present study is to extend this line of research by analyzing OL's impact on firms' actual flexibility, together with the partial mediatory role of the latter on the OL–competitive strategy relationship.

The article has the following structure. Section 2 presents the theoretical background of a model that connects OL, flexibility, competitive strategy, and performance, as shown in Fig. 1. The definition of the dimensions of OL seeks to incorporate the most recent literature on this issue. The contribution of OL to competitive strategy includes the evaluation of its properties as a valuable, rare, inimitable, and non-substitutable (VRIN) resource, and reinforces the notion of OL as a dynamic capability. The performance analysis uses market and financial indicators (sales, market share, and profits) and customer-related outcomes (customer satisfaction, loyalty, and value added perceptions). The customer-related outcomes construct acts as a partial mediatory variable between competitive strategy and business performance in order to study the mechanisms whereby competitive strategies help to achieve CA. Section 3 outlines the study's methodological approach based on a sample of 181 Spanish manufacturing firms. Section 4 discusses the empirical results. Finally, Section 5 presents some conclusions and managerial implications.

2. Conceptual model and hypotheses

2.1. Organizational learning

OL is achievable when the transfer of individual knowledge occurs through social interactions to different groups of individuals as a result of a shared interpretation. In turn, the accumulated knowledge allows individuals to learn from the organization, thus generating an on-going, two-way process of knowledge transfer among individuals, groups, and the organization. Recent research defines OL as a process that comprises four main stages: information acquisition, knowledge dissemination, shared interpretation, and organizational memory (Huber, 1991; Hult & Ferrell, 1997; Kandemir & Hult, 2005; Sinkula, 1994; Slater & Narver, 1995; Tippins & Sohi, 2003).

In the information acquisition stage, information may originate from both internal and external sources. The sources of internally developed information are congenital learning that comes from the company's founder/s (Lawrence, 1984), previous experience, and indirect learning which is the implicit analysis of the actions of competitors in the marketplace (Hershey, 1980). On other occasions, firms actively search for external information (Dickson, Farris, & Verbeke, 2001) to identify key tendencies (Milliken, 1990), to solve specific problems (Katila & Ahuja, 2002), and to compare their performance with that of competitors. Looking for information outside the firm also includes grafting, that is, acquiring other organizations, creating joint ventures, or incorporating new organizational members from other entities (Simon, 1991).

The second stage of OL is the distribution or dissemination of knowledge throughout the organization. This process takes place through formal (e.g., departmental meetings, discussion of future needs, and cross-training) and informal interactions among individuals (Koffman & Senge, 1993). The creation of formal networks and databases encourages communication by guaranteeing both the accuracy and the rapid spread of information. These initiatives need more informal exchange mechanisms to complement them so that any tacit knowledge which individuals gather is transformable into explicit knowledge.

The third stage, shared interpretation, aims to analyze the information from a global viewpoint. For this reason, achieving consensus regarding the meaning of the information and its implications for the firm is a priority (Day, 1994). In this regard, firms develop shared

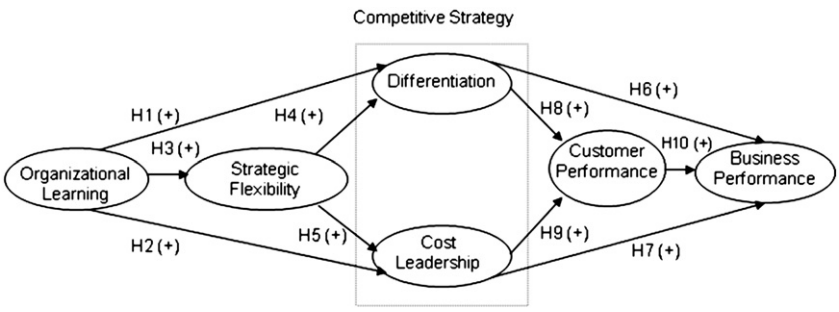

Fig. 1. Hypothesized model.

mental models and conduct their operations by mutual adjustment. The richness of the communication tools fosters shared interpretation. However, in order to interpret information correctly, companies sometimes have to undertake unlearning processes. They must question the prevailing mental models and stored knowledge, and reject obsolete and misleading beliefs or data that can lead to errors or to inefficient decision-taking (De Holan, Phillips, & Lawrence, 2004).

This idea of collective learning has led to another dimension of the OL concept, namely, organizational memory. This construct represents all the knowledge that a firm gathers. This knowledge requires proper storage and availability to all the individuals to facilitate its retrieval as necessary. In this way, staff rotation does not lead to loss of knowledge (Cross & Baird, 2000). The focus of the present study is active memory, the memory that exists in individuals and social networks, rather than passive memory, which is dependent on computerized information technologies (Olivera, 2000). The reason is that the active memory is the one that ultimately establishes how the firm should attain its organizational objectives (Cross, Parker, Prusak, & Borgatti, 2001).

2.2. Organizational learning and competitive strategy

According to the RBV, organizational resources and capabilities constitute the basis for the design of competitive strategies (Hunt & Morgan, 1995). Competitive strategies establish the steps required to achieve a perfect alignment with market conditions considering the organizational resources and capabilities available (Grant, 1991).

Constantin and Lusch (1994) categorize resources as *operand* and *operant*. Operand resources are those "*on which an operation or an act is performed to produce an effect*", whereas operant resources "*are employed to act on operand resources and/or other operant resources*" (Madhavaram & Hunt, 2008, p. 69). Following Hunt (2004), operand resources are typically physical or tangible, and operant resources comprise intangible types such as financial, legal, human, organizational, informational, or relational resources. Organizational capabilities indicate the ability of an organization to fit together, coherently and synergistically, different tangible and intangible basic resources to perform a coordinated set of tasks for the purpose of achieving a particular result (Barney, 1991; Grant, 1995; Helfat & Peteraf, 2003; Schulze, 1994). Hunt (2004) suggests that one can view capabilities as operant resources because they are bundles of basic resources.

In order to achieve CA, organizational resources and capabilities need to be valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1997). The literature supports the notion of OL as a VRIN capability. Thus, OL is *valuable* because this capability can help to take advantage of opportunities and neutralize threats, resulting in an advantageous market situation (Hult, Ketchen, & Nichols, 2003). More specifically, OL is a valuable capability in helping to achieve a greater knowledge and deeper understanding of the environment and the firm as a whole, so that the firm can satisfy more efficiently its clients' latent and actual needs through its products and services (Day, 1994; Sinkula, 1994). In this sense, OL also helps to reduce the feeling of environmental complexity, and prevents the possibility of a deadlock in strategic decisions due to uncertainty (Slater & Narver, 1995). OL is also *complex* and *difficult to develop* since the process the concept represents requires skills in both generating new knowledge and adapting the acquired knowledge (Huber, 1991). As few organizations are capable of facing these challenges simultaneously, OL is a rare capability (Slater & Narver, 1995). Furthermore, *imitation* and *transfer* are also difficult. OL depends on the stock of knowledge available to the organization and, although competitors may observe the generated behavior, the underlying logic behind such behavior is not apparent (Hult et al., 2003). Nor is OL easily transferrable, as this resource is intangible and firmly grounded in organizational processes (Barney, 1991; Huber, 1991). Similarly, OL does not have strategic equivalents and is difficult to replace in current markets (Hult, Nichols, Giunipero, & Hurley, 2000). These arguments suggest that, as a VRIN capability, OL has a relevant role in the formulation of strategies leading to CA (Kenny, 2006).

Additionally, OL can result in the organization changing the market rather than just adapting to market changes, since generative learning is a key element in the development of radical innovations (Senge, 1990) which ultimately allow firms to create new markets and redefine the playing rules of the current ones (Darroch, 2005). The flexibility inherent in learning-oriented organizations also allows them rapid resource re-allocation when detecting new market opportunities (Beer et al., 2005; Lumpkin & Lichtenstein, 2005; Slater & Narver, 1995). Therefore, a greater learning capacity is nowadays essential to compete due to the pace of change in markets and technologies, the great diversity of information available, and the importance of acting in advance (Santos et al., 2005). In this sense, OL is deemed to have a relevant role in strategy implementation, as a dynamic capability that allows a rapid adaptation to changing environments enabling the firm to continuously produce market offerings for different market segments (Madhavaram & Hunt, 2008) and effectively respond to evolving market requirements (Beer et al., 2005).

Barney (2001) notes that how to bring the analysis of strategy implementation into resource-based logic remains an open question, one possibility being "that the ability to implement strategies is, itself, a resource that can be a source of sustained strategic advantage" (Barney, 2001, p. 54). Considering that the organizational capability to learn determines effectiveness in implementing strategy can resolve this limitation. This issue deserves further investigation since the literature has paid remarkably little attention to the interrelationships between OL and strategy implementation (Paisittanand et al., 2007). In this context, the present study contributes to the extant literature by analyzing OL's role as an antecedent of firms' competitive strategy implementations and whether this effect is translated to superior customer-related and overall organizational performance.

The research analyzes competitive strategy using Porter's (1980) typology. For Porter, strategy represents a consistent array of activities aimed at creating a specific form of competitive advantage (CA): low cost or differentiation. Although typologies may not acknowledge the importance of various strategic dimensions (Speed, 1993), by analyzing the effect of OL on Porter's strategies the study explores whether OL simultaneously fosters key positional advantages of superior customer value and lower costs relative to competitors.

According to Day and Wensley's (1988) model of CA, these positional advantages should result in above-average performance outcomes such as customer loyalty, profitability, and market share. Although Porter (1980) did not originally allow for the simultaneous implementation of the two strategies, this author later acknowledges that many firms have discovered the way to reduce costs not only without damaging their level of differentiation, but also actually increasing their differentiation (Porter, 1985), thus implicitly recognizing that the two strategies can coexist and represent a high level of competitive excellence (Vorhies, 1998). Indeed, previous research (Chrisman, Hofer, & Boulton, 1988; Day, 1990; Hamel & Prahalad, 1989; Murray, 1988) focuses on the practical viability of adopting differentiation and cost leadership strategies at the same time. However, recent work (Acquaah & Yasai-Ardekani, 2008; Li & Li, 2008; Spanos, Zaralis, & Lioukas, 2004) is a reminder of the still considerable discussion on the question of whether cost leadership and differentiation represent mutually exclusive or compatible approaches. The present study therefore attempts to contribute to this debate by analyzing whether OL simultaneously fosters the implementation of leading cost and differentiation competitive strategies, and whether the two strategies implemented together lead to superior performance.

A differentiation strategy means product development with added advantages, perceived to be unique or different in the industry and to offer greater benefits to the customer. Differentiation strategies have

a strong link with innovation activities. The literature in this field widely recognizes the influence of OL on innovation as a support for creativity, and an inspiration for new knowledge and ideas as well as increasing the ability to understand and implement them (Aragón-Correa, García-Morales, & Cordón-Pozo, 2007; Weerawardena et al., 2006). Indeed, the most advanced form of OL (i.e., generative learning) is decisive for the adoption of radical innovations. Accordingly, the usefulness of OL for providing superior customer value by means of continuous market-linking activities is particularly clear as OL underpins firms' ability to implement new ideas, methods, or devices to satisfy customer requirements (Kaleka & Berthon, 2006). Thus, OL likely contributes to the implementation of differentiation strategies.

H1. OL relates positively with the implementation of differentiation strategies.

A cost leadership strategy aims to achieve lower costs than the competition without compromising quality, service, or other aspects. This strategy attempts to transform internal efficiency into lower costs or reduced prices for the customers. The OL economic school (Bell, Whitwell, & Lukas, 2002) considers learning by doing work as one of the best mechanisms for obtaining an increase in companies' productivity. Cumulative experience allows an organization to reduce the necessary amount of resources to expend to accomplish a task. The organization thus gains CA by converting this cost reduction into productivity gains. Additionally, Senge (1990) extends the influence of OL to manufacturing activities, and Fang and Wang (2006) demonstrate that OL fosters the extent to which a firm works to reduce manufacturing costs, while maintaining quality and reliability. Hence, learning organizations are more likely to implement cost leadership strategies underpinned by learning curves.

H2. OL relates positively with the implementation of cost leadership strategies.

2.3. Organizational learning and flexibility

The increased rates of change in today's markets together with the continuous fragmentation of customer requirements make adaptability a basic requirement for competing (Grewal & Tansuhaj, 2001). Accordingly, the marketing and strategy literature increasingly acknowledges strategic flexibility as a critical organizational competence for achieving and maintaining CA and superior performance (Johnson, Pui-Wan, Saini, & Grohmann, 2003; Matthyssens, Pauwels, & Vandenbempt, 2005; Zhang, 2006). Hitt, Keats, and DeMarie (1998, p. 26) define strategic flexibility as "*a firm's ability to proact or respond quickly to a changing competitive environment*". Flexible organizations have, in sum, the ability to rapidly identify major market changes, to commit resources to new strategic responses, and to react promptly when the time comes to stop or reverse such resource commitments (Shimizu & Hitt, 2004).

OL enables firms to attain a CA by improving information processing activities, which allows faster and more effective adjustment to changing environments and market conditions than the competition (Dickson et al., 2001). Learning organizations are able to capture the relevant information at any given time more precisely, anticipating in this regard market tendencies and discarding the routines that are no longer operative. Similarly, McNiff (2000) advocates the development of generative forms of learning to deal with an external reality in which everything is constantly evolving or becoming. This reasoning sees OL as allowing greater strategic flexibility to neutralize environmental threats, to take advantage of market opportunities, and even to shape market evolution (Argyris & Schön, 1978). Therefore, the greater a firm's accumulated experience, the greater its ability to continually restructure and respond effectively to the modern economic environment (Kenny, 2006).

H3. OL relates positively with the development of strategic flexibility.

2.4. Flexibility and competitive strategy

Hitt et al. (1998) argue that in modern markets firms face multiple discontinuities that often occur simultaneously and are not easily predicted, which compels organizations to continuously rethink their operations to achieve a rapid adaptation. In this sense, strategic flexibility represents the organizational ability to manage market changes by promptly responding in a proactive manner to market threats and opportunities (Grewal & Tansuhaj, 2001). Dreyer and Grønhaug (2004) highlight the increasing relevance of strategic flexibility for researchers and managers in recent years as a source of CA in competitive, uncertain, and dynamic markets. More recently, Rudd, Greenley, Beatson, and Lings (2008) also note that, although the notion of flexibility has received much attention in the strategic management literature given its key role in coping with evolving market conditions, empirical research on this concept in the strategic planning context is very scarce. Thus, work prior to the present study has not investigated the relationship between strategic flexibility and competitive strategy implementation.

According to Dreyer and Grønhaug (2004) flexibility is a company-specific skill, and therefore constitutes one of the bases that firms can resort to in formulating their competitive strategy (Hunt & Morgan, 1995). From this perspective, strategic flexibility can be an antecedent of both of Porter's strategies. In this sense, Overby, Bharadwaj, and Sambamuthy (2005) argue that firms possessing strategic flexibility tend to have flexible resource pools and diverse portfolios of strategic options, thereby enabling them to plan for major shifts.

Regarding the relationship between strategic flexibility and the implementation of a cost leadership strategy, the literature establishes that strategic flexibility is vital to several value-creating operational and manufacturing strategies, including mass customization, time-to-market, operational excellence, lean manufacturing, and stockless inventory (Kotha, 1995; Stalk, Evans, & Shulman, 1992), whose ultimate aim is to improve the firms' productivity and hence the opportunity to reduce costs. Dreyer and Grønhaug (2004) shed some light on this issue since they find a positive correlation between firms' flexibility and productivity, which suggests that flexibility can be an antecedent of cost leadership implementation.

Strategic flexibility also involves the ability, inherent to the implementation of a differentiation strategy, to rapidly identify market trends and respond to new market demands (Hoskisson, Hitt, & Ireland, 2008). Flexible firms base their response ability on uncommitted resources that can be mobilized as required, which is especially valuable in developing entrepreneurial activities (Tang & Wang, 2010).

The potential contribution of strategic flexibility to differentiation and cost leadership strategies is also reinforced since several scholars believe that strategic flexibility has the potential to contribute to both differentiation and cost leadership strategies by enabling the firm to avoid the trade-off between the two in offering high-quality products and services at low costs (Boynton, 1993; Hitt, Ireland, & Hoskisson, 2007; Lei, Hitt, & Goldhar, 1996).

H4. Strategic flexibility relates positively with the implementation of differentiation strategies.

H5. Strategic flexibility relates positively with the implementation of cost leadership strategies.

2.5. Competitive strategy and performance

A cost leadership strategy provides customers with standard products and services at the most competitive prices, so that firms can lower prices to match or beat their rivals and still make profits, whereas a differentiation strategy creates customer value by means of innovative products,

superior quality and technology, differentiated brand image, and good service, thus enabling the firm to set premium prices (Li & Li, 2008).

The literature has traditionally linked the effects of Porter's competitive strategies on the attainment of CA to the achievement of improved financial results (as measured by profits, margins, and ROI) and market results (as measured by sales and market share) relative to competing firms (Weerawardena, 2003). In this sense, several previous studies verify the positive relationship between low cost and differentiation strategies and business performance (Acquaah & Yasai-Ardekani, 2008; Li & Li, 2008). However, from a marketing perspective, the aforementioned indicators may have only a limited capacity to capture the provision of superior customer value. The present study aims to provide empirical evidence on this matter by additionally considering a customer-related performance measure as a mediating variable in the competitive strategy → business performance connection. Customer performance is a firm's ability to effectively satisfy customers and develop a loyal customer base, which ultimately links to a higher level of business performance. Competitive strategy implementation (both differentiation and cost leadership) will likely have a positive impact on customers' satisfaction, perceived added value, and loyalty, and ultimately that better customer performance will result in improved business performance.

H6. The implementation of differentiation strategies relates positively with business performance.

H7. The implementation of cost leadership strategies relates positively with business performance.

H8. The implementation of differentiation strategies relates positively with customer performance.

H9. The implementation of cost leadership strategies relates positively with customer performance.

H10. Customer performance relates positively with business performance.

Fig. 1 shows the theoretical model, depicting the hypothesized relationships among OL, strategic flexibility, competitive strategies, and performance.

3. Method

3.1. Sample and data collection

SABI is a database of Spanish and Portuguese companies that provides access to general information on more than 480 000 Spanish and 40 000 Portuguese companies. This database was used to establish a population of 1820 medium-sized manufacturing companies from a broad cross-section of industries (food; chemical and plastic; iron, steel, and metal; machinery; electric, electronic, and optical equipment; and transportation equipment). In this way, the empirical results are less affected by the uncontrollable, idiosyncratic effects of any particular sector, thus allowing for a higher degree of external validity (Tippins & Sohi, 2003).

The questionnaire was prepared following an exhaustive literature review, and pre-tested by means of in-depth interviews with five outstanding academic scholars and three senior managers (Thorpe & Morgan, 2007). General Managers were used as key informants. They are expected to have comprehensive knowledge of the firm's operations, strategy, and performance (Weerawardena et al., 2006). The final response rate was 9.95%, a total of 181 valid responses. This rate is comparable with previous survey-based studies carried out in Spain (Santos et al., 2005) and the U.S. (Fang & Cavusgil, 2005). Potential non-response bias was studied following the procedure suggested by Armstrong and Overton (1977). All the indicators of the latent variables in the conceptual model were used for the non-response bias test. The results indicate that no statistically significant differences exist between early and late respondents.

3.2. Measurement scales

All the items are measured via seven-point scales. The Appendix presents these scales in full detail. All the model's constructs are measured using reflective indicators. Regarding organizational learning (OL), to date no widely accepted scale exists for measuring this variable, although several efforts have been made to tackle this matter (Hult & Ferrell, 1997; Jeréz-Gómez, Céspedes-Lorente, & Valle-Cabrera, 2005; Templeton, Lewis, & Snyder, 2002; Tippins & Sohi, 2003). OL is considered to be a process which involves the acquisition of information, dissemination of knowledge, shared interpretation, and organizational memory (Huber, 1991; Slater & Narver, 1995). This construct was measured using an existing scale developed by López-Sánchez et al. (2010, 2011). Respondents were asked to rate their opinion on several items of the OL measurement scale (1 = completely disagree and 7 = fully agree). Also, to guarantee the content validity of this scale, both literature review and extensive discussions with academics and practitioners during the aforementioned pre-test were carried out. Further details about the scale development process and literature support are available from the authors.

The strategic flexibility scale includes six items derived from previous research by Theoharakis and Hooley (2003), Tsai and Shih (2004), and Vorhies and Morgan (2003, 2005). Respondents were asked to rate to what extent their organizations were able to respond rapidly to new market and competitive conditions compared to their major competitors (1 = hardly at all, and 7 = very easily). The measurement of competitive strategy was by means of an adapted version of Slater and Narver's (1996) scale, which itself was built on in-depth studies of Porter (1980) and Dess and Davis (1984). In particular, six items were employed to measure differentiation, and five items to evaluate cost leadership strategy. Respondents were asked to rate to what extent their organizations laid emphasis on various strategy implementation activities (1 = much less than competitors, and 7 = much more than competitors). These scales have proved to be reliable and valid, hence their use in the current study.

Regarding customer and business performance, respondents were also asked to respond how well their firms performed over the last 3 years compared to their major competitors (1 = much worse, and 7 = much better). This temporal reference allows the competitive advantages obtained to be assessed while minimizing the influence of short-term variations on the reporting firm's performance (Acquaah & Yasai-Ardekani, 2008; Grant, 1991). The explicit comparison with major competitors allows industry effects to be minimized and reduces subjective responses, introducing a reference against which to make the comparison (Kraft, 1990). Customer performance includes eight items that assess the firm's adaptability to customer needs and desires (Lings, 2004), the perceived added value (Vorhies & Morgan, 2005), the level of customer satisfaction (Hooley, Greenley, Cadogan, & Fahy, 2005), the level of customer loyalty (Zahay & Griffin, 2004), the communication achieved with customers, the reduction in the number of customer complaints, and the customer's perception of the firm's image (Lings, 2004). The measurement of business performance focuses on sales growth (Greenley, 1995), market share (Yilmaz, Alpkan, & Ergun, 2005), and profits (Theoharakis & Hooley, 2003).

4. Results

4.1. Measurement testing

The study uses the following measures: organizational learning (OL), strategic flexibility, differentiation strategy, cost leadership strategy, customer performance, and business performance. Following Churchill (1979), Gerbing and Anderson (1988), and Slater, Hult,

and Olson (2010), the assessment of the measures employs a three-step approach: first, a confirmatory factor analysis (CFA) of the measures; second, an examination of the psychometric properties (reliability and validity) of the measures; and third, a test of whether or not common method variance is a potential problem.

The first step of the analysis consists of robust maximum likelihood (ML) estimation to avoid problems of non-normality with the data (Bentler, 1995). The procedure divides the measures into two subsets of variables: (a) OL's lower-order factors (i.e., information acquisition, information dissemination, information interpretation, and organizational memory); and (b) strategic flexibility, differentiation strategy, cost leadership strategy, customer performance, and business performance. The following indices serve to evaluate the fit of the measurement models: Bentler–Bonnett Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA) (Bentler, 1995; Hu & Bentler, 1999).

First-order (NNFI = 0.96, CFI = 0.97, IFI = 0.97, SRMR = 0.04, RMSEA = 0.05), second-order (NNFI = 0.96, CFI = 0.96, IFI = 0.96, SRMR = 0.05, RMSEA = 0.05), and third-order (NNFI = 0.96, CFI = 0.97, IFI = 0.97, SRMR = 0.05, RMSEA = 0.05) CFA models verify the higher-order measurement structure of OL (Table 1). The results of the measurement analyses, after dropping indicators that performed poorly (Gerbing & Anderson, 1988), produced satisfactory statistics.

Furthermore, the first-order and the second-order CFA models showed lower fit indices and higher comparative criteria – Akaike's Information Criterion (AIC) and the Consistent AIC (CAIC) (Steenkamp & Baumgartner, 1998) – than the third-order CFA model. These results show that OL is a higher-order measurement structure. Composite reliabilities of the measures within the aforementioned CFA settings ranged from 0.83 to 0.94, while the standardized parameter estimates ranged from 0.72 to 0.94, and the average variances extracted ranged from 0.62 to 0.81.

Regarding the CFA model with the other subset of variables (Table 2), after dropping indicators that performed poorly, the fit of the CFA model was satisfactory (NNFI = 0.93, CFI = 0.94, IFI = 0.94, SRMR = 0.06, RMSEA = 0.04). Composite reliability estimates ranged from 0.83 to 0.90, with standardized parameter estimates ranging from 0.60 to 0.94, and with the average variances extracted ranging from 0.46 to 0.75. In addition, within all the aforementioned CFA models, convergent validity was confirmed by the standardized parameter estimates and their associated robust *t*-values all being above recommended thresholds (Churchill, 1979; Gerbing & Anderson, 1988; Slater et al., 2010). For every pair of latent variables, the square root of the AVE exceeded the correlations between the latent variables, demonstrating the discriminant validity of the model (Fornell & Larcker, 1981). A post-hoc check of the potential of common method variance using (a) Harman's single-factor test and (b) the latent variable approach controlling for the effects of a single unmeasured latent methods factor (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003) showed that common method variance was not a problem in this study. Finally, all the measures demonstrated reliability as exceeding the standards for acceptance. Table 3 presents the correlation matrix, means, standard deviations, and Cronbach's alpha coefficients for the latent variables.

Table 1
Organizational learning measures.

Measures	Standardized lambda	Robust *t*-value	Scale CR	AVE	Scale CA
First-order measures					
IA1 ← direct IA	0.83	14.03	0.85	0.66	0.85
IA2 ← direct IA	0.79	9.83			
IA3 ← direct IA	0.81	10.57			
IA9 ← indirect IA	0.72	9.42	0.83	0.62	0.82
IA10 ← indirect IA	0.84	13.33			
IA11 ← indirect IA	0.79	10.72			
KD2 ← knowledge dissemination	0.75	10.18	0.89	0.66	0.88
KD4 ← knowledge dissemination	0.84	14.35			
KD5 ← knowledge dissemination	0.84	16.58			
KD6 ← knowledge dissemination	0.81	15.41			
SI1 ← shared interpretation	0.79	12.27	0.88	0.64	0.87
SI2 ← shared interpretation	0.84	14.03			
SI5 ← shared interpretation	0.78	13.03			
SI6 ← shared interpretation	0.79	14.28			
OM4 ← organizational memory	0.80	12.53	0.87	0.62	0.86
OM5 ← organizational memory	0.83	11.44			
OM6 ← organizational memory	0.77	9.30			
OM7 ← organizational memory	0.75	11.34			
Second-order factor model					
Direct IA ← information acquisition	0.91	10.99	0.87	0.78	0.77
Indirect IA ← information acquisition	0.85	8.57			
Third-order factor model					
Information acquisition ← organizational learning	0.94	10.43	0.94	0.81	0.90
Knowledge dissemination ← organizational learning	0.93	9.49			
Shared interpretation ← organizational learning	0.90	10.92			
Organizational memory ← organizational learning	0.81	9.41			

Summary statistics
First-order model: S-B $\chi^2 = 174.36$, $df = 125$, NNFI = 0.96, CFI = 0.97, IFI = 0.97, SRMR = 0.04, RMSEA = 0.05, AIC = −75.64, and CAIC = −600.45.
Second-order model: S-B $\chi^2 = 181.27$, $df = 128$, NNFI = 0.96, CFI = 0.96, IFI = 0.96, SRMR = 0.05, RMSEA = 0.05, AIC = −74.74, and CAIC = −612.14.
Third-order model: S-B $\chi^2 = 180.58$, $df = 130$, NNFI = 0.96, CFI = 0.97, IFI = 0.97, SRMR = 0.05, RMSEA = 0.05, AIC = −79.41, and CAIC = −625.22.
Key: IA = information acquisition, CR = composite reliability, AVE = average variance extracted, and CA = Cronbach's alpha coefficient.

4.2. Model testing

The development and testing of the structural equation model were done by using a robust maximum likelihood estimation procedure. The results show that the model is a good representation of the data. The fit indices of the model as a whole are acceptable (S-B $\chi^2 = 500.94$, $df = 367$, NNFI = 0.92, CFI = 0.92, IFI = 0.93, SRMR = 0.06, RMSEA = 0.05). Table 4 lists the standardized path coefficients and robust *t*-values. The results support Hypotheses H1 and H2 relating to the positive effect of organizational learning on differentiation and cost leadership (0.59, robust *t*-value = 4.94; and 0.38, robust *t*-value = 4.19). The hypothesized relationship of organizational learning on strategic flexibility (H3) is also positive and statistically significant (0.37, robust *t*-value = 3.46).

The analysis also confirms Hypotheses H4 and H5, that is, the positive effects of strategic flexibility on the implementation of differentiation and cost leadership strategies (0.18, robust *t*-value = 2.12; and 0.25, robust *t*-value = 2.83). For H6 and H7, the results indicate that, while a differentiation strategy relates positively to business performance (0.38, robust *t*-value = 3.04), a cost leadership strategy does not (0.00, robust *t*-value = 0.03). The hypothesized relationships of strategy differentiation and cost leadership strategy (H8 and H9) have the predicted positive effect on customer performance (0.19, robust *t*-value = 2.25; and 0.26, robust *t*-value = 2.06). Furthermore, customer performance also exerts a positive effect on business performance, supporting H10 (0.26, robust *t*-value = 2.06).

The statistics of the comparison of the theoretical model with competing models (Table 5) show that the theoretical model (Model 1) is

Table 2
Other measures used in the model.

Measures	Standardized lambda	Robust *t*-value	Scale CR	Scale AVE	Scale CA
First-order measures					
FLEX1 ← strategic flexibility	0.63	8.28	0.84	0.51	0.78
FLEX2 ← strategic flexibility	0.79	11.96			
FLEX3 ← strategic flexibility	0.87	11.94			
FLEX4 ← strategic flexibility	0.61	5.76			
FLEX6 ← strategic flexibility	0.64	6.23			
STRATD1 ← differentiation strategy	0.60	7.17	0.83	0.46	0.82
STRATD2 ← differentiation strategy	0.63	7.33			
STRATD3 ← differentiation strategy	0.78	10.05			
STRATD4 ← differentiation strategy	0.70	6.42			
STRATD5 ← differentiation strategy	0.70	9.35			
STRATD6 ← differentiation strategy	0.71	6.60			
STRATC1 ← cost leadership strategy	0.76	8.67	0.87	0.58	0.87
STRATC2 ← cost leadership strategy	0.60	6.76			
STRATC3 ← cost leadership strategy	0.76	9.94			
STRATC4 ← cost leadership strategy	0.90	11.70			
STRATC5 ← cost leadership strategy	0.77	8.86			
CPERF1 ← customer performance	0.75	8.46	0.84	0.47	0.84
CPERF2 ← customer performance	0.65	8.70			
CPERF3 ← customer performance	0.68	6.83			
CPERF4 ← customer performance	0.70	7.89			
CPERF5 ← customer performance	0.63	8.02			
CPERF7 ← customer performance	0.70	8.90			
BPERF1 ← business performance	0.94	13.08	0.90	0.75	0.89
BPERF2 ← business performance	0.89	12.22			
BPERF3 ← business performance	0.76	10.78			

Summary statistics
First-order model: S-B $\chi^2 = 351.68$, $df = 265$, NNFI = 0.93, CFI = 0.94, IFI = 0.94, SRMR = 0.06, and RMSEA = 0.04.
Key: CR = composite reliability, AVE = average variance extracted, and CA = Cronbach's alpha coefficient.

Table 3
Correlation matrix.

	1	2	3	4	5	6
1. Organizational learning	*0.90*					
2. Strategic flexibility	0.30	*0.71*				
3. Differentiation strategy	0.53	0.25	*0.67*			
4. Cost leadership strategy	0.42	0.28	0.44	*0.76*		
5. Customer performance	0.61	0.37	0.43	0.33	*0.69*	
6. Business performance	0.38	0.36	0.47	0.24	0.44	*0.87*

The square root of the average variance extracted (AVE) is in italics on the diagonal. Correlations are below the diagonal. The calculations of the correlation coefficients used the mean of the scores of the indicators that make up each of the latent variables.

preferable to the competing models. For example, comparison of Model 1 with Model 2, which is a model that does not consider the causal connection between organizational learning (OL) and strategic flexibility (treating this variable as exogenous), shows the former to have lower levels of the information criteria (AIC = −233.06 and CAIC = −1773.91), providing evidence for its robustness.

5. Conclusions

The primary aim of this study is to test hypotheses and provide evidence on OL's role in the implementation of firms' competitive strategies, their development of strategic flexibility, and the improvement of their competitiveness. A basic proposition in this research is that continuous learning constitutes a key dynamic capability to favor firms' adaptation to turbulent and dynamic markets; hence OL facilitates organizations' strategic flexibility, allows the implementation of efficiency-based operations and quality-based innovation through a continuous flow of cumulative experience and new knowledge that inspires creativity and, ultimately, allows the achievement of CA.

The study demonstrates that learning organizations can implement a double strategy, that is, that OL simultaneously supports the implementation of differentiation and cost leadership strategies. From this perspective, learning organizations have the ability to focus either on a pure cost leadership strategy or on a pure differentiation strategy. This is a relevant issue since, although the literature has broadly discussed the potential benefits of a dual strategy, that is, a competitive strategy involving high levels of emphasis on both cost leadership and differentiation strategies simultaneously (Acquaah & Yasai-Ardekani, 2008; Li & Li, 2008), previous work does not explain how a firm can focus on both strategies at the same time since each strategy requires different resources and organizational arrangements (Porter, 1980). In this sense, one of the major risks that firms face is that of developing a stuck-in-the-middle strategy in which a firm fails to successfully pursue either a cost leadership or a differentiation strategy. However, today's ever-changing environment challenges firms to simultaneously perform exploitative and explorative activities, that is, to be highly efficient in resource exploitation and to provide a broader market offering (Tang & Wang, 2010). In this regard, Porter (1996) acknowledges that unique product advantages to meet customer requirements and lower prices for the customer than the competition are

Table 4
Structural model: standardized path coefficients and robust *t*-values.

Paths specified	Expected sign	Standardized path coefficients	Robust *t*-value	Result
H1: organizational learning → differentiation strategy	+	0.59	4.94	Sig.
H2: organizational learning → cost leadership strategy	+	0.38	4.19	Sig.
H3: organizational learning → strategic flexibility	+	0.37	3.46	Sig.
H4: strategic flexibility → differentiation strategy	+	0.18	2.12	Sig.
H5: strategic flexibility → cost leadership strategy	+	0.25	2.83	Sig.
H6: differentiation strategy → business performance	+	0.38	3.04	Sig.
H7: cost leadership strategy → business performance	+	0.00	0.03	N.Sig.
H8: differentiation strategy → customer performance	+	0.50	4.77	Sig.
H9: cost leadership strategy → customer performance	+	0.19	2.25	Sig.
H10: customer performance → business performance	+	0.26	2.06	Sig.

Key: Sig. = significant result at the 0.05 level and N.Sig. = not significant at the 0.05 level.

Table 5
Comparison of theoretical and competing models.

Model	Description	S-B χ^2	*df*	NNFI	CFI	IFI	SRMS	RMSEA	AIC	CAIC
1	Theoretical	500.94	367	0.92	0.92	0.93	0.06	0.05	−233.06	−1773.91
2	W.R. OL→SF[a]	517.20	368	0.91	0.91	0.92	0.09	0.07	−218.80	−1763.85
3	W.R. OL→SF[a] and R. CL→DE	512.10	367	0.91	0.92	0.92	0.09	0.07	−221.95	−1762.75

Key: W.R. = without relationship, R. = with relationship, OL = organizational learning, SF = strategic flexibility, CL = cost leadership strategy, DE = differentiation strategy.
[a] Strategic flexibility is treated as exogenous.

determinants for firms' competitiveness in modern markets. This research confirms that OL helps firms to implement each of Porter's basic competitive strategies, and therefore constitutes a suitable basis from which to approach a dual strategy implementation which has also proven to produce above average results in previous research (Li & Li, 2008; Spanos et al., 2004). These results reinforce the role of OL as an organizational capability that sustains competitive strategy, and contribute to better understanding OL's role in strategy implementation.

The study also shows that OL enhances the firm's ability to respond rapidly to environmental contingencies, that is, strategic flexibility. Empirical evidence on the antecedents of firms' strategic flexibility is scarce. Only Rudd et al. (2008) consider the mediating role of firms' flexibility in the strategic planning–performance relationship and prove that flexibility is a consequence of strategic planning. Those authors also acknowledge that flexibility requires the managerial ability to generate appropriate alternative decision options and to consider unfamiliar decisions and risk, aspects in which OL may play a relevant role in fostering strategic flexibility.

Learning organizations capture the relevant information at any time on current and future market trends, which they can then use to anticipate adaptation. Also, as OL involves questioning the prevailing mental models and organizational routines, learning organizations have an enhanced ability to reconfigure their operations. This finding is consistent with the work of Eisenhardt and Santos (2002) and Hitt et al. (1998), who indicate that successful firms need to learn quickly to be flexible in order to face unstable and unpredictable business conditions. OL proves to be a solid forerunner of the firm's greater capability, relative to its main competitors, to face the challenges of the 21st century markets which require quick reaction and adaptation. In this sense, the findings reinforce the consideration of OL as a true dynamic capability.

As in the case of OL, the results of this investigation show that organizations which possess strategic flexibility are in a better position to implement both cost leadership and differentiation strategies. This evidence supports the importance of strategic flexibility in avoiding the trade-off between differentiation and cost leadership strategies, that is, in implementing a dual strategy if required. As an organizational capability, strategic flexibility merits the consideration of forming a relevant basis for competitive strategy design and implementation (Dreyer & Grønhaug, 2004), but the precise mechanisms through which strategic flexibility leads to lower costs or greater differentiation have remained obscure. Indeed, Rudd et al. (2008) and Dreyer and Grønhaug (2004) warn about the fuzziness of the term flexibility, and that different types of flexibility are identified in the literature. In this study, flexibility refers to the ability to promptly react to changes in the market (consumers and competitors), in technology, and in the economy. This use of the term is close to the operational and technological flexibilities identified in the study of Rudd et al. (2008). As these authors state, "flexibility is the extent to which new and alternative decisions are generated and considered in strategic planning, allowing positive organizational change and adaptation to environmental turbulence" (Rudd et al., 2008, p. 100). Therefore, in the present study, organizations that possess strategic flexibility can anticipate future changes in customer preferences, competitor movements, technology evolution, and economic tendencies, and reposition themselves in a timely fashion by reconfiguring their competences. Strategic flexibility therefore increases the likelihood that a firm will be capable of successfully adjusting its marketing offerings, mix of products and/or services, and production capacity, and hence increases its potential to implement both cost leadership and differentiation strategies.

The results also indicate that strategic flexibility partially mediates the relationship between OL and a competitive strategy. One reason for testing mediation is to try to understand the mechanism through which OL affects strategy implementation. Mediation indicates that, together with the knowledge and experience provided by OL, the implementation of competitive strategies also benefits from the firm's ability to commit resources in anticipation of change.

In addition, the study provides empirical evidence that both cost leadership and differentiation strategies have a positive and significant impact on customer performance, which in turn mediates the impact of those competitive strategies on business performance. Although the results show that a cost leadership strategy has less impact on customer performance than a differentiation strategy, the former is still positive. Therefore, in modern competitive markets where specialized customers rapidly change their preferences, cost control also proves to have a positive impact on competitiveness through customer performance.

The findings of this research also reveal that the differentiation strategy exerts a positive, direct influence on business performance, unlike the cost leadership strategy which does not influence business performance, even though prior studies describe support for a positive link between the cost leadership strategy and various measures of business performance in different environments (Spanos et al., 2004). A possible explanation for this apparent discrepancy could be that different performance measures may apply better to different business strategy types (Matsuno & Mentzer, 2000; Walker and Ruekert, 1987). Acquaah and Yasai-Ardekani (2008), for example, prove that implementing a cost leadership strategy positively influences firm performance in terms of return on sales (ROS) and return on assets (ROA) in a transition economy. Similarly, Li and Li (2008) find that the cost leadership strategy has a positive effect on ROA in an emerging economy such as China. However Menguc, Auh, and Shih (2007) prove that, while cost leadership contributes to firm efficiency as measured in terms of profitability, return on investments, ROS, and ROA, this strategy does not relate significantly to firm effectiveness, a parameter which refers to the same business performance measures used in the present study: growth in market share, in profits, and in sales. In addition to this argument, Li and Li (2008) claim that the effect of competitive strategies on performance also depends on the alignment of the strategy with contextual factors. In this regard, Murray (1988) suggests that a cost-leadership strategy does not work in mature industries, whereas Miller (1988) and Ward, Bickford, and Leong (1996) report that this type of strategy works best in conditions of environmental stability. More specifically, Li and Li (2008) find that, when market concentration is low (i.e., markets characterized by many smaller competitors and widespread opportunistic behavior), the positive effect of cost leadership on ROA weakens. Therefore, the absence of a positive direct relationship between the low cost strategy and business performance may be due to the type of business performance measures used or to the contextual factors that

prevail in the sectors analyzed. This issue merits further research since the empirical evidence available is not always conclusive.

The overall conclusion deriving from these results is that OL allows, with the collaboration of strategic flexibility, the simultaneous implementation of cost leadership and differentiation strategies, which ultimately yields above average customer and business performance relative to the competition. These results have several implications for managers that may be especially valuable under the severe economic and industrial crisis that the Spanish economy is suffering. Research on economic crises shows that surviving firms, in comparison with failing firms, focus on both external and internal environments, which is a critical feature of OL, and on the attainment of a balance between the two environments, which is an important aspect of strategic flexibility (Grewal & Tansuhaj, 2001). The results of this study indicate that by focusing on OL managers can improve their understanding of the external market, take advantage of the firm's accumulated internal knowledge and experience, and develop the ability to react more rapidly to new market requirements by flexibly reconfiguring their resources in advance. During late 2009 and 2010 the Spanish economy has been grazing the edge of the specter of deflation; falling prices require firms to improve their efficiency and, in this way, cost leadership strategies become highly valuable. The empirical evidence provided in this research suggests that managers need to appreciate the combined effect of OL and strategic flexibility since both contribute to the implementation of cost leadership strategies.

Recent research also highlights the continuing importance of product innovation during an economic downturn since consumer habits with respect to everyday goods are slow to change: consumers' purchase intent and value perceptions for new products remain stable over time, regardless of macroeconomic conditions (Nielsen Company, 2009). Previous research also notes the relevance of innovation for organizational growth and renewal in times of environmental turbulence such as an economic crisis (Danneels, 2002). In this sense, in order to compete firms cannot afford to abandon differentiation strategies, and here again managers can find in OL and strategic flexibility key instruments for the implementation of those strategies. Both of Porter's two strategies provide better results among customers and contribute to CA at the organizational level, which strengthens the basic premise initially adopted in this research: that superior customer value and lower costs relative to competitors can both be key positional advantages with which to compete in modern markets.

Any generalization of the results of this research requires caution since, like in many empirical studies, they are subject to limitations. One limitation is that the study employs cross-sectional data. Thus a possibility exists that the causal relationships may vary or even lose their meaning over the long term. A longitudinal study would overcome this limitation and strengthen the results. Another limitation is that the study relies on the perceptions of General Managers as key informants operating in a specific national and industrial context. Further research examining complementary and competing models may provide additional insights into the causal relationships that the study explores. In this regard, the replication of this research to learn whether or not the aforementioned causal relationships are contingent on different environmental features, such as competitive intensity and technological uncertainty, and using different performance indicators could be interesting. Similarly, the OL scale merits testing in other competitive environments. Also, although the study measured some latent variables by means of established scales, the AVEs in two of these cases (differentiation strategy and customer performance) fell below 0.5. Hence, in accordance with Slater et al. (2010, p. 556): "*these measures should be revisited if they are used in future studies*". Finally, one needs to gain a more detailed understanding of how flexibility facilitates strategy implementation. In this task, the consideration of the different types of flexibility identified in the literature (Dreyer & Grønhaug, 2004; Rudd et al., 2008) together with their potential interactions may be of help.

Appendix

Organizational learning scale	
Information acquisition (IA)	
IA1	The employees are informed of how the firm was created and its philosophy of work.
IA2	We collect and use the information generated during organizational changes.
IA3	Employees' interaction and participation to gather information about possible changes are encouraged.
IA4	*We constantly evaluate the need to adapt to the business environment.*
IA5	*The members of the organization use informal means to find out about the most recent events regarding the market or the environment.*
IA6	*As a result of the knowledge acquired in the course of time the employees are more efficient in exercising their responsibilities.*
IA7	*We collect information about what our competitors do through different means.*
IA8	*When we do not have the specific knowledge required we look for it and acquire it outside the organization.*
IA9	We periodically check whether our strategy is aligned with the business environment.
IA10	Problems are approached proactively, that is, we learn from other entities to be able to respond to these problems before they arise.
IA11	We use formal and reiterative procedures to evaluate our results and compare them with those of the competition.
Knowledge dissemination (KD)	
KD1	*We have a meeting schedule among departments to integrate the existing information.*
KD2	We devote some time to discussions about the organization's future needs.
KD3	*We use databases and organizational files to support our work.*
KD4	The company's general objectives are communicated throughout the organization.
KD5	We are really interested in providing employees with an overall view of the company's operations, even with personnel turnover.
KD6	There are people responsible for collecting the proposals made by the staff and for distributing them internally.
KD7	*Vital information is transmitted quickly to all employees.*
Shared interpretation (SI)	
SI1	We systematically examine and update our opinion about the business environment.
SI2	We try to develop an interpretation as uniform as possible of relevant information.
SI3	*The employees have at their disposal a wide variety of communication tools (telephone, e-mail, fax, intranet, etc.).*
SI4	*We generate concise reports intended to avoid excess information that may limit our capacity to interpret it adequately.*
SI5	Before a decision is taken the different alternatives are thoroughly analyzed.
SI6	We review relevant information periodically in case it is obsolete or may lead to error.
SI7	*We do not oppose changes in the way of doing things.*
Organizational memory (OM)	
OM1	*We have our own expert personnel in the most essential aspects of the organizational operations.*
OM2	*Personnel turnover does not risk our capacity to create new knowledge and solve problems.*
OM3	*We carry out training programs (for example: workshops, seminars, etc.) for the members of the organization.*
OM4	We are aware of who has the specific abilities and the experience to intervene when an opportunity or problem arises.
OM5	Key employees when the organization faces a new opportunity or problem can be conveniently contacted.
OM6	People in the organization who are helpful when an opportunity or problem arise are actively committed to looking for possible solutions.
OM7	There is an atmosphere of trust and collaboration among the personnel of the company to cooperate when opportunities or problems arise.
Strategic flexibility scale (FLEX)	
FLEX1	Entry of new competitors.

(continued on next page)

Appendix *(continued)*

FLEX2	Change of customers' product/service preferences.
FLEX3	Radical technological changes or the anticipated obsolescence of current technologies.
FLEX4	Important economic changes.
FLEX5	*Detection of new business threats.*
FLEX6	Detection of new business opportunities.
Competitive strategy scale	
Differentiation strategy (STRATD)	
STRATD1	Providing extensive services before and after sale.
STRATD2	Adopting new marketing techniques.
STRATD3	Offering differentiated products.
STRATD4	Offering a broad product line.
STRATD5	Emphasizing company's brands.
STRATD6	Offering high quality products.
Cost leadership strategy (STRATC)	
STRATC1	Optimizing capacity utilization.
STRATC2	Negotiating the best price when buying raw materials.
STRATC3	Modernizing manufacturing.
STRATC4	Improving the productivity of the manufacturing system.
STRATC5	Lowering manufacturing costs.
Customer performance scale (CPERF)	
CPERF1	Customer satisfaction.
CPERF2	Customer loyalty/retention.
CPERF3	Added value provided to our customers.
CPERF4	Delivering what our customers want.
CPERF5	Improved communication with our customers.
CPERF6	*Reduction in the number of customer complaints.*
CPERF7	Improved perceived image of the firm for customers.
CPERF8	*Retaining valued customers.*
Business performance scale (BPERF)	
BPERF1	Sales growth.
BPERF2	Market share growth.
BPERF3	Profits growth.

The items dropped are shown in italics.

References

Acquaah M, Yasai-Ardekani M. Does the implementation of a combination competitive strategy yield incremental performance benefits? A new perspective from a transition economy in Sub-Saharan Africa. Journal of Business Research 2008;61(4):346–54.

Akgün AE, Lynn GS, Yilmaz C. Learning process in new product development teams and effects on product success. A sociocognitive perspective. Industrial Marketing Management 2006;35(2):210–24.

Aragón-Correa JA, García-Morales VJ, Cordón-Pozo E. Leadership and organizational learning's role on innovation and performance: lessons from Spain. Industrial Marketing Management 2007;36(3):349–59.

Argyris C, Schön D. Organizational learning: a theory of action perspective. Reading, MA: Addison Wesley; 1978.

Armstrong JS, Overton TS. Estimating no response bias in mail surveys. Journal of Marketing Research 1977;14(3):396–402.

Azadegan A, Dooley KJ. Supplier innovativeness, organizational learning styles and manufacturer performance: an empirical assessment. Journal of Operations Management 2010;28(6):488–505.

Bapuji H, Crossan MM. From questions to answers: reviewing organizational learning research. Management Learning 2004;35(4):397–417.

Barney J. Firm resources and sustained competitive advantage. Journal of Management 1991;17(1):99-120.

Barney J. Gaining and sustaining competitive advantage. Ontario: Addison-Wensley; 1997.

Barney JB. Is the resource-based 'view' a useful perspective for strategic management research? Yes. Academy of Management Review 2001;26(1):41–56.

Beer M, Voelpel SC, Leibold M, Tekie EB. Strategic management as organizational learning: developing fit and alignment through a disciplined process. Long Range Planning 2005;38(5):445–65.

Bell SJ, Whitwell GJ, Lukas BA. Schools of thought in organizational learning. Journal of the Academy of Marketing Science 2002;30(1):70–86.

Bell SJ, Mengüç B, Widing RE. Salesperson learning, organizational learning, and retail store performance. Journal of the Academy of Marketing Science 2010;38(2):187–201.

Bentler PM. EQS: structural equations program manual. Los Angeles, California: BMDP Statistical Software; 1995.

Bhatnagar J. Predictors of organizational commitment in India: strategic HR roles, organizational learning capability and psychological empowerment. International Journal of Human Resource Management 2007;18(10):1782–812.

Boynton A. Achieving dynamic stability through information technology. California Management Review 1993;35(2):58–77.

Chrisman J, Hofer Ch, Boulton W. Toward a system for classifying business strategies. Academy of Management Review 1988;13(3):413–28.

Churchill GA. A paradigm for developing better measures of marketing constructs. Journal of Marketing Research 1979;16(1):64–73.

Constantin JA, Lusch RF. Understanding resource management. Oxford, OH: The Planning Forum; 1994.

Cross R, Baird L. Technology is not enough: improving performance by building organizational memory. Sloan Management Review 2000;41(3):69–78.

Cross R, Parker A, Prusak L, Borgatti SP. Knowing what we know: supporting knowledge creation and sharing in social networks. Organizational Dynamics 2001;30(2):100–20.

Cyert RM, March JG. A Behavioural Theory of the Firm. New Jersey: Prentice-Hall. Englewood Cliffs; 1963.

Danneels E. The dynamics of product innovation and firm competences. Strategic Management Journal 2002;23(12):1095–121.

Darroch J. Knowledge management, innovation and firm performance. Journal of Knowledge Management 2005;9(3):101–15.

Dawson R. Knowledge capabilities as the focus of organisational development and strategy. Journal of Knowledge Management 2000;4(4):320–7.

Day G. Market driven strategy: processes for creating value. New York, NY: The Free Press; 1990.

Day GS. Continuous learning about markets. California Management Review 1994: 9-31. [summer].

Day GS, Wensley R. Assessing advantage: a framework for diagnosing competitive superiority. Journal of Marketing 1988;52(April):1-20.

De Holan P, Phillips N, Lawrence TB. Managing organizational forgetting. Sloan Management Review 2004;45(2):45–51.

Dess GG, Davis PS. Porter's (1980) generic strategies as determinants of strategic group membership and organisational performance. Academy of Management Journal 1984;27(3):467–88.

Dickson PR, Farris PW, Verbeke W. Dynamic strategic thinking. Journal of the Academy of Marketing Science 2001;29(3):216–37.

Dreyer B, Grønhaug K. Uncertainty, flexibility and sustained competitive advantage. Journal of Business Research 2004;57(5):484–94.

Eisenhardt K, Santos FM. Knowledge-based view: a new theory of strategy? In: Pettigrew A, Thomas H, Whittington R, editors. Handbook of strategy and management. London: Sage; 2002. p. 139–64.

Fang WS, Cavusgil T. Organizational learning, commitment, and joint value creation in interfirm relationships. Journal of Business Research 2005;59(1):81–9.

Fang SC, Wang JF. Effects of organizational culture and learning on manufacturing strategy selection: an empirical study. International Journal of Management 2006;23(3):503–14.

Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research 1981;18(1):39–50.

Gerbing DW, Anderson JC. An updated paradigm for scale development incorporating unidimensionality and its assessment. Journal of Marketing Research 1988;25(2): 186–92.

Grant R. A resource-based theory of competitive advantage: implications for strategy formulation. California Management Journal 1991;33(3):114–35.

Grant RM. Contemporary strategy analysis: concepts, techniques, applications. 2nd ed. Cambridge, Massachusetts, USA: Basil Blackwell Inc.; 1995.

Greenley GE. Market orientation and firm performance. British Journal of Management 1995;6(1):1-13.

Grewal R, Tansuhaj P. Building organizational capabilities for managing economic crisis: the role of market orientation and strategic flexibility. Journal of Marketing 2001;65(April):67–80.

Hamel G, Prahalad CK. Strategic intent. Harvard Business Review 1989;67(3):63–74.

Helfat CE, Peteraf MA. The dynamic resource-based view: capability lifecycles. Strategic Management Journal 2003;24:997-1010.

Hershey R. Commercial intelligence on a shoestring. Harvard Business Review 1980: 22–30. [September-October].

Hitt M, Keats B, DeMarie S. Navigating in the new competitive landscape: building strategic flexibility and competitive advantage in the 21st century. The Academy of Management Executive 1998;12(4):22–42.

Hitt MA, Ireland RD, Hoskisson RE. Strategic management: competitiveness and globalization, concepts and cases. 7th edition. South-Western College Pub.; 2007

Hooley GJ, Greenley GE, Cadogan JW, Fahy J. The performance impact of marketing resources. Journal of Business Research 2005;58:18–27.

Hoskisson RE, Hitt MA, Ireland RD. Competing for advantage. 2nd ed. Cincinnati: Thomson South-Western; 2008.

Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis. Structural Equation Modeling 1999;6(1):1-55.

Huber GP. Organizational learning: the contributing processes and the literatures. Organization Science 1991;2(1):88-115.

Hult GT, Ferrell OC. A global learning organization structure and market information processing. Journal of Business Research 1997;40(2):155–66.

Hult GT, Nichols EL, Giunipero LC, Hurley RF. Global organizational learning in the supply chain: a low versus high learning study. Journal of International Marketing 2000;8(3):61–83.

Hult GT, Ketchen DJ, Slater SF. A longitudinal study of the learning climate and cycle time in supply chains. The Journal of Business and Industrial Marketing 2002;17(4):302–23.Hult GT, Hurley RF, Knight GA. Innovativeness: its antecedents and impact on business performance. Industrial Marketing Management 2002;33(5):429–58.

Hult GT, Ketchen Jr DJ, Nichols Jr EL. Organizational learning as a strategic resource in supply management. Journal of Operations Management 2003;21(5):541–57.

Hunt SD. On the service-centered dominant logic of marketing. Journal of Marketing 2004;68(1):21–2.
Hunt SD, Morgan RM. The comparative advantage theory of competition. Journal of Marketing 1995;59(2):1-15.
Jeréz-Gómez P, Céspedes-Lorente J, Valle-Cabrera R. Organizational learning capability: a proposal of measurement. Journal of Business Research 2005;58(6):715–25.
Johnson JL, Pui-Wan LR, Saini A, Grohmann B. Market-focused strategic flexibility: conceptual advances and an integrative model. Journal of the Academy of Marketing Science 2003;31(1):74–89.
Kaleka A, Berthon P. Learning and locale: the role of information, memory and environment in determining export differentiation advantage. Journal of Business Research 2006;59(9):1016–24.
Kandemir D, Hult GT. A conceptualization of an organizational learning culture in international joint ventures. Industrial Marketing Management 2005;34(5):430–9.
Katila R, Ahuja G. Something old, something new: a longitudinal study of search behaviour and new product introduction. Academy of Management Journal 2002;45(6): 1183–94.
Kenny J. Strategy and the learning organization: a maturity model for the formation of strategy. The Learning Organization 2006;13(4):353–68.
Koffman F, Senge PM. Communities of commitment: the heart of learning organizations. Organizational Dynamics 1993;22(2):5-23.
Kotha S. Mass customization: implementing the emerging paradigm for competitive advantage. Strategic Management Journal 1995;16:21–42.
Kraft K. Are product and process innovations independent of each other? Applied Economics 1990;22(8):1029–38.
Lawrence BS. Historical perspective: using the past to study the present. Academy of Management Review 1984;9(2):307–12.
Lei D, Hitt M, Goldhar J. Advanced manufacturing technology: organizational design and strategic flexibility. Organization Studies 1996;17(3):501–17.
Li CB, Li JJ. Achieving superior financial performance in China: differentiation, cost leadership, or both? Journal of International Marketing 2008;16(3):1-22.
Lings IN. Internal market orientation: constructs and consequences. Journal of Business Research 2004;57(4):405–13.
Liu C-L, Ghauri PN, Sinkovics RR. Understanding the impact of relational capital and organizational learning on alliance outcomes. Journal of World Business 2010;45(3):237–49.
López-Sánchez JA, Santos-Vijande ML, Trespalacios-Gutiérrez JA. Organisational learning and value creation in business markets. European Journal of Marketing 2010;44(11/12):1612–41.
López-Sánchez JA, Santos-Vijande ML, Trespalacios-Gutiérrez JA. The effects of manufacturer's organizational learning on distributor satisfaction and loyalty in industrial markets. Industrial Marketing Management 2011;40(4):624–35.
Lumpkin GT, Lichtenstein BB. The role of organizational learning in the opportunity-recognition process. Entrepreneurship Theory and Practice 2005;29(4):451–72.
Madhavaram S, Hunt SD. The service-dominant logic and a hierarchy of operant resources: developing masterful operant resources and implications for marketing strategy. Journal of the Academy of Marketing Science 2008;36:67–82.
Mahoney JT, Pandian JR. The resource-based view within the conversation of strategic management. Strategic Management Journal 1992;13:363–80.
Matsuno K, Mentzer JT. The effects of strategy type on the market orientation–performance relationship. Journal of Marketing 2000;64(4):1-16.
Matthyssens P, Pauwels P, Vandenbempt K. Strategic flexibility, rigidity and barriers to the development of absorptive capacity in business markets: themes and research perspectives. Industrial Marketing Management 2005;34:547–54.
McGuinness T, Morgan RE. The effect of market and learning orientation on strategy dynamics. The contributing effect of organisational change capability. European Journal of Marketing 2005;39(11/12):1306–26.
McNiff J. Action research in organizations. London: Routledge; 2000.
Menguc B, Auh S, Shih E. Transformational leadership and market orientation: implications for the implementation of competitive strategies and business unit performance. Journal of Business Research 2007;60(4):314–21.
Miller D. Relating Porter's business strategies to environment and structure: analysis and performance implications. Academy of Management Journal 1988;31(2):280–308.
Milliken FJ. Perceiving and interpreting environmental change. Academy of Management Journal 1990;33(1):42–63.
Murray AI. A contingency view of Porter's generic strategies. Academy of Management Review 1988;13(3):390–400.
Nielsen Company. New product innovation in a recession: resist the impulse to pull back. Consumer Nielsen News; 2009.
Olivera F. Memory systems in organizations: an empirical investigation of mechanisms for knowledge collection storage and access. Journal of Management Studies 2000;37(6):811–32.
Overby E, Bharadwaj A, Sambamuthy V. A framework for enterprise agility and the enabling role of digital options. In: Baskerville R, Mathiassen L, Pries-Heje J, DeGross JI, editors. Business agility and information technology diffusion. New York: Springer Verlag; 2005. p. 295–311.
Paisittanand S, Digman LA, Lee SM. Managing knowledge capabilities for strategy implementation effectiveness. International Journal of Knowledge Management 2007;3(4):84-110.
Podsakoff PM, Mackenzie SB, Lee J, Podsakoff NP. Common method biases in behavioral research: a critical review of the literature and recommended remedies. Journal of Applied Psychology 2003;88(5):879–903.
Porter M. Competitive strategy: techniques for analysing industries and competitors. New York: The Free Press; 1980.
Porter M. Competitive advantage: creating and sustaining superior performance. New York: The Free Press; 1985.
Porter M. What is strategy? Harvard Business Review 1996;74(6):61–78.
Rudd JM, Greenley GE, Beatson AT, Lings IN. Strategic planning and performance: extending the debate. Journal of Business Research 2008;61(2):99-108.
Santos ML, Sanzo MJ, Álvarez LI, Vázquez R. Organizational learning and market orientation: interface and effects on performance. Industrial Marketing Management 2005;34(3):187–202.
Schulze WS. The two schools of thought in resource-based theory: definitions and implications for research. Advances in Strategic Management 1994;10A:127–51.
Senge PM. The fifth discipline. New York: Doubleday/Currency; 1990.
Shimizu K, Hitt MA. Strategic flexibility: organizational preparedness to reverse ineffective strategic decisions. The Academy of Management Executive 2004;18(4):44–58.
Simon HA. Bounded rationality and organizational learning. Organization Science 1991;2(1):125–34.
Sinkula J. Market information processing and organizational learning. Journal of Marketing 1994;58(1):35–45.
Slater SF, Narver JC. Market orientation and the learning organization. Journal of Marketing 1995;59(3):63–74.
Slater SF, Narver JC. Competitive strategy in the market-focused business. Journal of Market-Focused Management 1996;1(2):159–74.
Slater SF, Hult GT, Olson EM. Factors influencing the relative importance of marketing strategy creativity and marketing strategy implementation effectiveness. Industrial Marketing Management 2010;38(7):732–42.
Spanos YE, Zaralis G, Lioukas S. Strategy and industry effects on profitability: evidence from Greece. Strategic Management Journal 2004;25(2):139–65.
Speed R. Maximising the potential of strategic typologies for marketing strategy research. Journal of Strategic Marketing 1993;1:171–88.
Stalk G, Evans P, Shulman L. Competing on capabilities: the new rules of corporate strategy. Harvard Business Review 1992;70:57–69.
Steenkamp JEM, Baumgartner H. Assessing measurement invariance in cross-national consumer research. Journal of Consumer Research 1998;25(1):78–90.
Stein A, Smith M. CRM systems and organizational learning: an exploration of the relationship between CRM effectiveness and the customer information orientation of the firm in industrial markets. Industrial Marketing Management 2009;38(2): 198–206.
Tang J, Wang L. Flexibility–efficiency tradeoff and performance implications among Chinese SOEs. Journal of Business Research 2010;63(4):356–62.
Teece D, Pisano G, Shuen A. Dynamic capabilities and strategic management. Strategic Management Journal 1997;18(7):509–33.
Templeton GF, Lewis BR, Snyder A. Development of a measure for organizational learning construct. Journal of Management Information Systems 2002;19(2):175–218.
Theoharakis V, Hooley G. Organizational resources enabling service responsiveness: evidence from Greece. Industrial Marketing Management 2003;32:695–702.
Thorpe ER, Morgan RE. In pursuit of the ideal approach to successful marketing strategy implementation. European Journal of Marketing 2007;41(5/6):659–77.
Tippins MJ, Sohi RS. IT competency and firm performance: is organizational learning a missing link? Strategic Management Journal 2003;24:745–61.
Tsai MT, Shih CM. The impact of marketing knowledge among managers on marketing capabilities and business performance. International Journal of Management 2004;21(4):524–30.
Tucker AL, Nembhard IM, Edmonson AC. Implementing new practices: an empirical study of organizational learning in hospital intensive care units. Management Science 2007;53(6):894–907.
Vorhies DW. An investigation of the factors leading to the development of marketing capabilities and organisational effectiveness. Journal of Strategic Marketing 1998;6:3-23.
Vorhies DW, Morgan NA. A configuration theory assessment of marketing organization fit with business strategy and its relationship with marketing performance. Journal of Marketing 2003;67:100–15.
Vorhies DW, Morgan NA. Benchmarking marketing capabilities for sustainable competitive advantage. Journal of Marketing 2005;69(1):80–94.
Walker OC, Ruekert RW. Marketing's role in the implementation of business strategies: a critical review and conceptual framework. Journal of Marketing 1987;51(3): 15–33.
Ward PT, Bickford DJ, Leong GK. Configurations of manufacturing strategy, business strategy, environment and structure. Journal of Management 1996;22(4):597–626.
Weerawardena J. The role of marketing capability in innovation-based competitive strategy. Journal of Strategic Marketing 2003;11(1):15–36.
Weerawardena C, O'Cass A, Julian C. Does industry matter? Examining the role of industry structure and organizational learning in innovation and brand performance. Journal of Business Research 2006;59(1):37–45.
Wu LY. Applicability of the resource-based and dynamic-capability views under environmental volatility. Journal of Business Research 2010;63(1):27–31.
Yilmaz C, Alpkan L, Ergun E. Cultural determinants of customer and learning oriented value systems and their joint effects on firm performance. Journal of Business Research 2005;58(10):1340–52.
Zahay D, Griffin A. Customer learning processes, strategy selection, and performance in business-to-business service firms. Decision Sciences 2004;35(2):169–203.
Zhang MJ. IS support for strategic flexibility, environmental dynamism, and firm performance: an empirical investigation. Journal of Managerial Issues 2006;XVIII(1): 84-103.
Zollo M, Winter SG. Deliberate learning and the evolution of dynamic capabilities. Organizational Science 2002;13(3):339–51.