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ORGANIZATIONAL LEARNING AND INNOVATION

AS SOURCES OF STRATEGIC FIT

Structured Abstract

Purpose—The main goal of this study is to analyze the role played by organizational learning and innovation in organizations immersed in processes of adaptation and strategic fit in dynamic and turbulent environments. The authors analyze whether organizational learning and innovation act as sources of strategic fit, and whether strategic fit positively affects performance.

Design/methodology/approach—We use data from a survey of a representative sample of 204 respondents from European firms active in high-technology sectors (response rate: 10.42%) and structural equation modelling (using the EQS 6.1 program) to implement a transversal study.

Finding—The model confirms that organizational learning and the capacity to innovate positively influence managers' decisions to adapt their organizations to changes in dynamic environments. The achievement of strategic fit, in turn, improves organizational performance. We propose considering the innovation climate as a facilitator of new product and process development, although the innovation climate is not a direct antecedent of fit.

Research limitations/implications—This study is limited in that the analysis is cross-sectional and all measures used in the study are based on managers' perceptions.

Practical implications—Managers should create and support an entrepreneurial culture that stresses continuous learning, foster programs to develop abilities, and promote incentives for the development of capabilities that facilitate acceptance of organizational change. Investments in building certain capabilities, such as organizational learning and the capacity to innovate, are strategically justified, especially in turbulent environments.

Originality/value—This study is one of the first to investigate the complex interactions among organizational learning, innovation, strategic fit, and performance. The research improves our understanding of the links between strategic fit and performance.

Keywords—Strategic fit, strategic change, organizational performance, innovativeness, capacity to innovate.

Paper type—Research paper

1. Introduction

The concept of strategic fit is a crucial issue in the organization and management literature (Drazin and Van de Ven, 1985; Venkatraman, 1989). The idea of “strategic fit” is rooted in contingency theory (Burns and Stalker, 1961; Lawrence and Lorsch, 1967), as it points to performance as a function of the alignment between an organization and its environment (contingency), its strategy, and its characteristics (Miles and Snow, 1978; Venkatraman, 1989; Peng-Cui et al., 2014). Researchers traditionally have debated whether the fit between the organization’s strategy and its environment has a positive influence on the organization’s end results (Ginsberg and Venkatraman, 1985; Miles and Snow, 1994; Venkatraman and Prescott, 1990; Siggelkow, 2001, 2002). More recent studies have analyzed the relationship between strategic fit and performance from various perspectives, such as human resources (Hsieh and Chen, 2011), knowledge management (Murray et al., 2009), new product development (Harmancioglu et al., 2009), marketing strategy (Slater et al., 2010), service operations (Lillis and Sweeney, 2013), and organizational alliances (Murray and Kotabe, 2005). These studies try to orient organizations on how to adapt, cultivate, and enable strategic fit, thereby creating value and enhancing firm performance.

In that sense, both organizational learning (OL) and innovation have often been analyzed as capabilities that can facilitate the achievement of competitive advantage and improve performance (Garvin, 1993; Hung and Chou, 2013; Izabela et al., 2014). Thus, nearly all firms that compete in dynamic environments understand organizational learning and innovation as fundamental organizational capabilities. However, the literature has not paid specific attention to the complex interactions among OL, innovation, and the strategic fit between the firm and the environment. Therefore, in-depth examinations of how OL and innovation can positively influence managers’ decision making when they face a need to adapt to dynamic environments are lacking, especially in terms of how such processes contribute to achieving competitive advantages. In order to determine the resources and capabilities that companies must be able to develop to ensure strategic fit, and the mechanisms that enable strategic fit, OL and innovation can play an interesting role.

In this research, we seek to develop knowledge that can begin to fill this gap through an empirical study that analyzes the roles of OL and innovation as antecedents of strategic fit, and the influence of fit on organizational performance. In this study, strategic fit is defined in terms of a change that is needed and implemented. Innovation is defined as a two-phase process involving “openness to innovation” (Zaltman et al., 1973, p. 64), which is also called innovativeness, and, the implementation of innovation (Hurley and Hult, 2005), which is referred to as the “capacity to innovate.”

The goal of this study is twofold. First, we wish to extend the extant literature by exploring the relationship between strategic fit and performance, as we lack theoretical and empirical frameworks that show how strategic fit between the environment and the firm contributes to competitive advantage. Second, we aim to identify the capabilities and mechanisms that facilitate the achievement of strategic fit in organizations. To achieve these goals, we analyze OL and innovation, which we measure using two variables—innovativeness and capacity to innovate—as antecedents of strategic fit. We rely on data from a sample of 204 European firms in high-technology sectors. Our results confirm the positive relationships among OL, capacity to innovate, strategic fit, and organizational performance. However, we do not find evidence of a relationship between innovativeness and strategic fit.

This article makes three key contributions to the extant literature. First, although the relationship between strategic fit and performance has received some attention from management researchers (Venkatraman and Prescott, 1990; Siggelkow, 2001), there has been little focus on the perception of the strategy implementation process. In this regard, we develop and test a perceptual measure of strategic fit to study the process of analyzing and implementing strategy in response to changes in the environment. Second, we contribute to contingency theory by analyzing organizational learning, innovativeness, and the capacity to innovate as key tools for cultivating and building strategic fit, which in turn enhances organizational performance. This allows us to better understand the mechanisms that facilitate fit between the environment and the firm's strategy. Third, this paper contributes valuable empirical evidence to widely accepted theoretical frameworks, such as the dynamic capabilities view (see, e.g., Helfat and Peteraf, 2015; Teece, 2007). Our results highlight those organizational contexts that lead firms to sustained competitive advantages through a focus on strategic fit. In this sense, some key variables, such as organizational learning, innovativeness, and capacity to innovate, can be understood as antecedents of dynamic capabilities to respond to competitive environments, and to a desirable alignment between external and internal forces.

The paper is structured as follows. Section 2 presents an overview of the theory related to strategic fit, OL, and innovation. We then justify our hypotheses and research model. Section 3 presents the methodology for the empirical analysis, after which the results of the analyses are provided in Section 4. Finally, we discuss the results, theoretical implications, conclusions, and implications for management, as well as the limitations of our study and opportunities for future research.

2. Theoretical background, hypothesis, and model

2.1. Literature review

Strategic fit

Strategic fit is defined as “the degree to which the needs, demands, goals, objectives and/or structure of one component are consistent with the needs, demands, goals, objectives and/or structure of another component” (Nadler and Tushman, 1980, p. 40). When viewed as a link between the firm and its external environment, strategic fit indicates how the organization adapts, changes, and reconfigures itself to achieve a state of fit (Venkatraman, 1989). Errors in these actions can prevent the firm from responding appropriately to market changes (Zajac et al., 2000; Carmeli and Sheaffer, 2008), thereby incurring risk and reducing performance. As the firm must continuously adapt to dynamic environments, the capability to adapt becomes a resource that permits the firm to create competitive advantages and helps ensure long-term growth (Murray et al., 2009).

The concept of strategic fit is related to strategic change, as the latter involves modifying how firms perceive their position in terms of fit and internally alter that position to achieve the closest fit with the environment surrounding them (Bourgeois, 1980; Ginsberg, 1984). Many studies agree that organizational success is based on the dynamic and evolutionary nature of the fit between an organization and its environment (Gabrielsson et al., 2012; Zajac et al., 2000). This perspective suggests that organizations should seek a means to achieve alignment with competitive, technological, and social changes (Kraatz and Zajac, 2001), especially in terms of adapting structures, policies, resources, and activities to environmental conditions (Weick, 1976).

Contingency variables can be external or internal. Research on strategic change and strategic fit distinguishes between two dimensions of fit—external fit (Venkatraman, 1989;

Venkatraman and Camillus, 1984; Venkatraman and Prescott, 1990), which reflects the fit between the organization's strategy and its environment; and internal fit (Porter, 1996; Vorhies et al., 2003), which refers to the alignment between the organization and its strategy (Carmeli et al., 2010). In this study, we analyze both aspects of fit by conceptualizing strategic change in terms of a set of organizational and environmental factors. In formulating our definition and given the extant literature, we understand the content of strategy (Chandler, 1962; Porter, 1980) as the organization's products, services, target audience, abilities, capacities, and investments in innovation and technology (Doz et al., 2000; Makadok, 2001). In addition, by analyzing the strategy process as the pattern that continually aligns organizational and environmental elements (Mintzberg, 1979; Chakravarthy, 1982), we base our argument on the model proposed by Zajac et al. (2000), in which perceptions of changes in environmental factors highlight a need for strategic changes within organizations. The differences between the strategic changes perceived as necessary, and those planned and implemented by managers relate to fit in the planning of strategy (external fit) and fit in the implementation of strategy (internal fit). Alignment between these two types of fit influences the strategic fit or lack thereof, with repercussions for the organization's performance (Tamayo et al., 2012). Numerous studies stress the important role played by managers' perceptions in adaptation and fit processes (Ambrosini and Bowman, 2009; Eisenhardt and Martin, 2000; Helfat et al., 2007; Barrales-Molina, 2010).

Organizational learning

Organizational learning (OL) may be defined as the extent to which an organization generates, disseminates, and retains knowledge about itself (e.g., Argote and Ophir, 2002; King, Chung, and Haney, 2008). Such practices as training, access to open-learning centers, e-learning systems, job rotation, involvement in multi-disciplinary teams, and access to career-planning tools can interact synergistically to improve organizational performance (Chan, 2003; Di Millia and Birdi, 2010), regardless of whether the processes occur individually or collectively.

OL can be understood as a process in which organizational members are stimulated to continuously strive for new approaches of thinking, and to acquire and share knowledge (Argyris, 1977). It can involve knowledge acquisition, information distribution, storage of collective information, interpretation, and memorization (Templeton et al., 2002). Some authors use the terms acquisition, refinement, creation, and implementation (Wang and Ahmed, 2003). OL is composed of the set of processes oriented toward generating both internal and external knowledge of the environment. Internal learning can arise through such methods as research and development (R&D), training, and production experience, while external learning occurs outside the organization's boundaries and is then integrated into the organization's internal knowledge base. This learning can occur individually or throughout the organization as a whole (Di Millia and Birdi, 2010).

Such knowledge creation, which facilitates adaptation, supports the proposition that OL contributes to the advancement of capabilities that can support the development of competitive advantages (Eisenhardt and Martin, 2000; Zollo and Winter, 2002). OL integrates, builds, and reconfigures strategic factors to enable the organization to address rapidly changing environments (Teece et al., 1997). In other words, firms in today's ever-changing marketplace use OL to learn to respond to their customers' needs.

Innovation: innovativeness and capacity to innovate

By definition, innovation focuses on the development of new products, processes, and/or markets (Schumpeter, 1934). Innovation has been defined as the adoption of an idea or behavior that is new to the organization (Van den Ven, 1986), and may pertain to a product, service, method, device, system, policy, or program (Damanpour and Gopalakrishnan, 2001).

Innovation can enable organizations to adapt to those changes in their environments that leave them only two alternatives: to innovate or to die. The introduction of products and processes into the organization enables the organization to develop a series of routines that facilitate its adaptation to changes in the dynamic environment (Dixon et al., 2014). Innovation has been widely classified (Damanpour, 2009) using binary systems that distinguish between radical and incremental, product and process, continuous and discontinuous, or technical and administrative. Furthermore, innovation is understood as a phenomenon with two different phases: initiation and implementation. The initiation phase entails “openness to innovation” (Zaltman et al., 1973, p. 64), and depends on whether the people within the organization accept or resist innovation. Some authors refer to this stage as innovativeness or an innovative business culture (Hurley and Hult, 1998; Hult et al., 2002), and it is commonly viewed as a variable that reflects the culture, values, and principles that guide the innovation-related behavior and decisions of the organization’s members.

Hurley and Hult (2005, p. 281) refer to the second phase using the term “capacity to innovate,” which they define as the “degree of innovations actually adopted by the organization.” This concept is connected to the decision-making capabilities and the adoption of innovative behavior or, in other words, to the ability to successfully implement innovative ideas, processes, or products. This concept encompasses the materialization of ideas in decisions. In this paper, we understand “capacity to innovate” as referring to outcomes of technological innovation in products, services, and processes (Miller et al., 2007; Lee et al., 2014). This concept is closely related to new product development (NPD), which is one of the most consolidated capabilities in firms (Eisenhardt and Martin, 2000; Bruni and Verona, 2009; Ambrosini et al., 2009; Schilke, 2014; Barrales-Molina, 2015).

We analyze innovation from the perspective of both dimensions—innovativeness and capacity to innovate—in an attempt to generate contributions of greater value to the literature.

2.2. Hypotheses

Organizational learning and innovation

OL inspires new knowledge and ideas, thereby increasing the organization’s potential to understand and apply knowledge and ideas (García-Morales et al., 2007). It assists in the development of organizational intelligence and enhances receptivity to new ideas among members, as it usually involves a participatory decision-making process. This procedure reinforces the organization’s involvement in and commitment to innovating, to supporting creativity, and to enhancing the organization’s innovative culture (Hurley and Hult, 1998). The greater the participation in decision making, the less resistance there will be to change and the greater the willingness to adopt new technologies.

Innovation requires the transformation and exploitation of existing knowledge (Shahin and Zeinali, 2010), which is combined with knowledge acquired from outside the organization and disseminated among organizational members, usually through the exchange of knowledge and information. This process of knowledge dissemination permits the organization and its members to learn from others’ experiences in order to create new ideas. Therefore, a good climate for learning, a good work environment, and managerial support of learning foster an environment favorable for the acceptance of new work processes, as well as new ways of thinking and acting (Martins and Terblanche, 2003).

An organization that wishes to create a climate favorable for innovation should encourage learning among its members. Such learning can be achieved by analyzing the environment and products of competitors, or by developing training programs for workers. Along these lines, various studies have analyzed the positive relationship between learning and a culture of

innovation (Calantone et al., 2002; Jimenez-Jimenez et. al., 2011; Hurley and Hult, 1998). We therefore formulate the following hypothesis:

H1a: OL is positively related to innovativeness.

OL depends on extent to which an organization is capable of absorbing existing knowledge (Cohen and Leviathan, 1990). The stronger a firm's capabilities in this area, the greater its ability to create added value in its processes, thereby improving its ability to successfully undertake new projects. Information is fundamental to innovation. Firms that wish to innovate should be able to identify valuable information that can be assimilated and used in developing new ideas. Tacit knowledge exchange between workers oriented toward transforming assets generates the capacity to execute new ideas and create new products, services, or processes (Carneiro, 2000; Santos Vijande, 2010). Furthermore, we assume that an organization committed to learning enjoys more state-of-the art technologies (Calantone et al., 2002; García Morales et al., 2007), which enhance the organization's innovation capability in terms of implementing new ideas, products, and processes.

Innovation and OL are closely linked. The positive relationship between learning and innovation capability has been widely studied in the academic literature (Calantone et al., 2002; Hurley and Hult, 1998; Hult et al., 2004; Ju et al., 2006; Santos Vijande, 2010; Wang and Wang, 2012). We thus propose the following hypothesis:

H1b: OL is positively related to the capacity to innovate.

Organizational learning, innovation, and strategic fit

To the best of our knowledge, no empirical studies exist that focus on whether OL and innovation facilitate strategic fit. In dynamic environments, a learning organization "improves continually by rapidly creating and refining the capabilities needed for future successes" (Wick and Leon, 1995, p. 299). For this reason, OL has been accepted in the past decade as an important source of competitive advantage. It justifies the emergence of different capabilities and changes in structures and routines by posing questions about the existing knowledge in the organization. Tippins and Sohi (2003) suggest that organizations that learn the most and that best renew their knowledge can identify and respond to market changes faster and more cheaply than the competition for two reasons. First, they are better able to understand competitors' strengths and weaknesses, and they learn from their competitors' successes and failures. Second, they use this knowledge to understand and anticipate customer needs (Calantone et al., 2002).

The more an organization learns, the more knowledge and capabilities it will have to perceive market needs (Sinkula, 1994; Alegre and Chiva, 2008). It will also be better able to understand the effects of environmental changes, and to respond to them more quickly and effectively than competitors (Tippins and Sohi, 2003), thereby achieving strategic fit through the process of change. OL promotes the constant evolution and adaptation of the organization's members, facilitating dissemination of those firm values that foster the desire to change (Rhee et al., 2010). For these reasons, we formulate the following hypothesis:

H2: OL is positively related to strategic fit.

Although the importance of the innovation climate has been analyzed in the literature, its influence on the process of strategic fit has not been sufficiently studied on the empirical level (Burton, 2004). Managerial support for innovative initiatives, and its acceptance of possible errors or failures during the innovation process are determining factors in the emergence of an innovative culture. Vigoda-Gadot et al. (2005) highlight creativity, risk taking, openness to

change, future orientation, and proactiveness as dimensions of innovativeness. An organization that wishes to act proactively and attempts to respond to market changes should facilitate cognitive processes for perceiving, planning, and implementing change-oriented decisions, thereby encouraging the strategic-fit process. Innovativeness has thus been identified as a key factor in organizations' long-term success (Baker and Sinkula, 2002). In this regard, Tuominen et al. (2004) report a positive relationship between adaptability and innovativeness in industrial manufacturing companies. Based on this discussion, we formulate the following hypothesis:

H3a: Innovativeness is positively related to strategic fit.

The capacity to innovate has become a key element in strategic planning in organizations interested in new technologies, products, and processes (Shahin and Zeinali, 2010). It permits organizations to respond to market demands by introducing new products or using new technologies. Thus, although the capacity to innovate is related to the number of innovations implemented, it is also a component of innovation that measures firms' adaptation capacity. It can be viewed as an input, while the firm's competitive advantage is the output (Hult et al., 2004). Firms with greater innovation capacity develop new abilities that respond better to changes in the environment and that can lead them to competitive advantages (Hurley and Hult, 1998).

Innovation occurs when organizations develop external focus and visioning capabilities. Innovative companies can address challenges emerging in the environment faster and better than other firms, thereby achieving strategic fit. Harmancioglu et al. (2009) find a positive relationship between NPD and technical and marketing fit. Similarly, Barrales-Molina et al. (2015) find that NPD allows organizations to develop superior managerial capabilities to match required and realized adaptations to the environment. Schilke (2014) shows that NPD is closely related to competitive advantage given intermediate levels of environmental dynamism. Based on the foregoing, we formulate the following hypothesis:

H3b: The capacity to innovate is positively related to strategic fit.

Strategic fit and organizational performance

The literature on strategic management contains several studies of the relationship between strategic fit and performance. Strategic fit is an important determinant of firm performance, as it gives rise to the capacities to create competitive advantages and generate long-term growth in organizations. Such capacities usually imply an improvement in performance (Vorhies et al., 2003; Tuominen, et al., 2004). Firms that achieve fit with the environment in which they compete improve their performance, whereas those that fail to achieve fit tend to struggle (Zajac et al., 2000).

To the extent that fit and performance are positively related, the capacity to introduce changes perceived as necessary to achieve fit and the ability to put those changes into practice are desirable elements in organizations. Recent studies offer solid support for a positive relationship between strategic fit and organizational performance (Slater et al., 2010; Liao et al., 2010). For example, Zajac et al. (2000) contrast the positive relationship of strategic fit and organizational performance. In an attempt to address the risk of using one-dimensional measures for performance, Carmeli et al. (2010) analyze the positive relationship between strategic fit and economic performance, relationship (process) performance, and product performance. In all cases, the results of their analyses show a positive and significant relationship. This leads us to the following hypothesis:

H4: Strategic fit is positively related to organizational performance.

The hypothesized relationships among these variables are presented in Figure 1.

2.3. Research Model

The relationships hypothesized among these variables are shown in Figure 1, which presents a model relating several capabilities to strategic fit, and the relationship between strategic fit and financial performance. H1 and H2 propose a positive, direct effect of organizational learning on innovativeness, the capacity to innovate, and strategic fit. H3 posits that innovativeness and capacity to innovate have a positive effect on strategic fit. Finally, H4 proposes a positive influence of strategic fit on organizational performance.

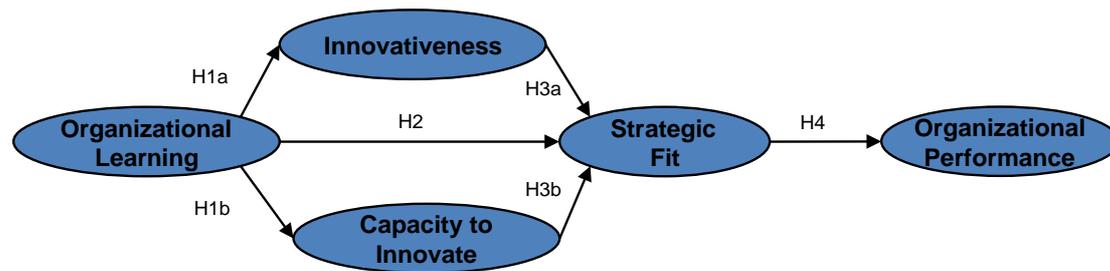


Figure 1: Model of antecedents and consequences of strategic fit in decision-making processes related to strategic change

3. Research methodology

3.1. Target population and survey procedure

The data used in this study come from a cross-sectional study focused on high-technology sectors in the European Union (EU). To obtain the data, we used the following ISIC rev. 4 codes: 26—Manufacturing of computers, electronics, and optical products; 27—Manufacturing of electrical equipment; 29—Manufacturing of motor vehicles, trailers, and semi-trailers; and 61—Telecommunications. This choice was motivated by the importance of learning, innovation, and strategic fit in these sectors due to their high reliance on modern technologies. These sectors are also identified as high-velocity industries (Fines, 1998).

We obtained information on the firms in the study population from the Amadeus database. After identifying the sectors, we reduced the list of organizations through simple random sampling to a total of 1,950. The data were collected using a questionnaire developed through a review of the literature related to the focal variables. After designing the questionnaire, we pre-tested it with randomly selected plants from the list. This testing allowed us to clarify possible ambiguities and correct any mistakes. The final questionnaire was then sent to CEOs of the 1,950 firms in our final sample. A second copy of the questionnaire was sent to firms that did not respond in the first round. We obtained 204 valid responses, which gives a response rate of 10.42%.

To check for possible sample bias, we used the data available in the Amadeus database on the number of employees and turnover. We first performed a Kolmogorov-Smirnov test (Kleinbaum et al., 1988), and found that neither the number of employees ($p = 0.486$) nor turnover ($p = 0.615$) differed significantly between respondents and non-respondents. Second, we checked for differences in the characteristics observed between early and late respondents. We did not find differences in the type of business. Finally, as all measurements were included in the same data-collection system, we used Harman's one-factor test (Konrad and Linnehan,

1995; Scott and Bruce, 1994) to test for common method bias. The results of the principal components analysis of the items showed the existence of five factors, all of which had eigenvalues greater than 1.0. Taken together, the five factors explained 72% of the total variance. As the first factor was not associated with the majority of the variance (18%), a significant amount of common method variance does not seem to exist in this study (Podsakoff and Organ, 1986).

3.2. Sample demographics

The sample's distribution by the firm's country of origin was as follows: 62 from Spain (30.39%), 37 from Sweden (18.13%), 33 from the UK (16.17%), 21 from the Netherlands (10.29%), 20 from Italy (9.80%), 18 from Germany (8.82%), and 13 from France (6.37%). We also analyzed the organizations' size using the number of employees and annual sales. The results showed that 21.73% of the firms had 50 or fewer employees, while 32.84% had 51-250 employees, 20.09% had 251-1,000 employees, and 25% had more than 1,000 employees. In terms of annual sales, 25% reported sales of less than EUR 10 million, 32.84% reported annual sales of EUR 10-50 million, and 42.15% reported annual sales of more than EUR 50 million.

3.3. Measures

Organizational learning

We measured OL using the first two items from the scale developed by Kale et al. (2000) and used by García-Morales (2006), as those items are closely related to our research. We then adapted two additional items found in Edmondson (1999). We asked managers to indicate their perceptions on whether the organization had learned or acquired new and important knowledge in the last seven years; whether they had improved or had been influenced by newly acquired knowledge during that period of time; whether their members had learned or acquired an essential ability during the same period; and on whether the organization was a learning organization. Respondents used a seven-point Likert-type scale (1 = totally disagree, 7 = totally agree), which was validated using a confirmatory factor analysis that showed that the scale was one-dimensional with a high level of reliability ($\alpha = 0.857$).

Innovativeness

We measured innovativeness using a four-item scale advanced by Koys and DeCotiis (1991), similar to that used by Chander et al. (2000). We asked managers, for the last seven years, whether they were willing to try new ways of working; whether they encouraged improvements in their ways of working; whether they discussed new ways of approaching and solving problems; and whether they helped develop new ideas. Respondents used a seven-point Likert-type scale (1 = totally disagree, 7 = totally agree). We validated the scale using a confirmatory factor analysis, which showed that the scale was one-dimensional with a high level of reliability ($\alpha = 0.867$).

Capacity to innovate

To measure this variable, we used a four-item scale (Verdú et al., 2012) based on the work of Miller and Friesen (1983) that focused on process, product, and service innovations, and the use of resources dedicated to the capacity to innovate. We asked managers to indicate, for the last seven years, their opinions of growth in new products or services; improvements in new products or services; changes in the organization regarding production techniques or the provision of services; and whether the organization was more innovative than its competitors. Respondents were asked to use a seven-point Likert-type scale (1 = totally disagree, 7 = totally

agree). We validated our scale using a confirmatory factor analysis, which showed that the scale was one-dimensional with a high level of reliability ($\alpha = 0.880$).

Strategic fit

We drew on the concept of strategic fit (Zajac et al., 2000) that divides the process into three stages: perception of the need for change, planning, and implementation (Bourgeois, 1980). Fit occurs when the perceived necessary change coincides with the programmed change, and the programmed change coincides with the change that is implemented. We based our work in the scales of Doz et al. (2000) and Makadok (2001). In this regard, we designed a seven-point Likert-type scale composed of four items addressed to the CEO and focused on the stages of fit in the change process in the preceding seven years (1 = totally disagree, 7 = totally agree). These items relate to the product and services lines, the target audience, abilities and capacities, and investments in innovation and technology. We measured whether the perceived necessary strategic change agreed with the change programmed by the managers (fit in planning of strategy) and whether the strategic change programmed by the managers agreed with the change that was actually implemented (fit in implementation of strategy). The measurement of strategic fit was obtained as the sum of the two scales. When a change perceived as necessary is the change that the managers really plan and implement, then strategic fit occurs. These first measures cover the external and internal views of fit, respectively. We validated our strategic-fit scale using a confirmatory factor analysis, which confirmed that the item loadings were as proposed and significant ($p < 0.01$). This analysis also offered evidence of convergent validity and high reliability ($\alpha = 0.882$).

Organizational performance

Organizational performance was measured using a seven-point Likert-type scale composed of five items based on the proposal developed by Murray (1998). We asked firm managers to evaluate items relative to key competitors (1 = much worse than our competitors, 7 = much better than our competitors) over the preceding seven years. Managers were asked about ROA, ROE, ROS, market share, and sales growth, as using both financial and non-financial indicators creates a more accurate performance-measurement system. We validated our scale using a confirmatory factor analysis. After deleting some items, loadings were significant ($p < 0.01$), which serves as evidence of convergent validity and high reliability ($\alpha = 0.910$).

Tests for reliability and validity

The scales used in our study were tested in several ways in order to determine their reliability, one-dimensionality, and validity. To analyze reliability, we calculated the Cronbach's α for each scale used (Table 1). The results for all scales showed Cronbach's α values greater than the recommended value of 0.7 (Nunnally, 1978). Second, we analyzed the scales' one-dimensionality by performing exploratory factor analyses using the statistical program SPSS 15.0. The results showed that the items in each scale belonged to a single factor.

The next step consisted of a confirmatory factor analysis (CFA) using the EQS 6.1 program. According to Hulland (1999), this analysis must fulfill three conditions to confirm convergent validity: significant factor loadings ($t > 1.96$; $p < 0.05$), factor loadings greater than 0.4, and individual reliability (R^2) greater than 0.5. Figure 2 includes the values of the factor loadings, t-values, and individual reliability, which fulfill the minimum values required in all cases.

To conclude our analysis of validity, we tested for discriminant validity. In line with Szulanski (1996), we compared the correlation values obtained in the CFA to the correlation values calculated for a case of perfect correlation. To guarantee discriminant validity, the calculated

correlation value must be greater than that of the observed correlation. This is true in our case, which confirms discriminant validity.

4. Results

This section includes the results obtained after analyzing the relationships proposed, using structural equation modelling. Thus, path coefficients, t-values associated and the fit values of the model are analyzed. Previously, in addition to the Cronbach's α values, Table 1 includes the descriptive statistics (means, standard deviations, and correlations) of the variables.

Table 1. Descriptive statistics

Variable	Cronbach's α	Mean	SD	Correlations			
Organizational learning (OL)	.857	5.49	1.00	1			
Innovativeness (INN)	.867	5.41	1.00	.611*	1		
Capacity to innovate (CINN)	.880	4.96	1.16	.542*	.476*	1	
Strategic fit (SFIT)	.882	9.53	2.33	.505*	.562*	.380*	1
Organizational performance (OP)	.910	4.59	1.06	.421*	.387*	.379*	.266*

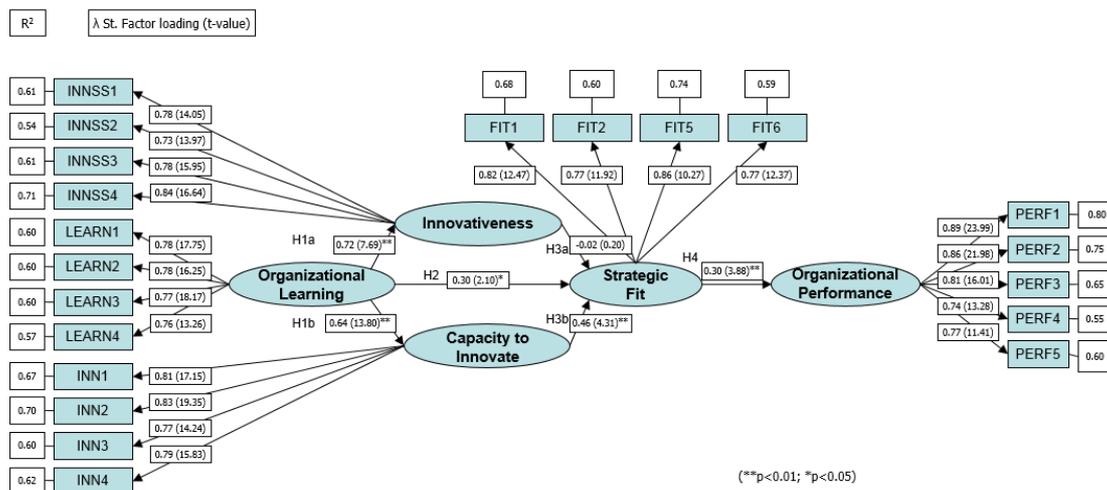
Note: Correlations are significant at the 0.05 level (two-tailed).

Structural Equation Modelling

To analyze our five hypotheses, we undertook structural equation modelling (SEM) using the EQS 6.1 program. Prior to investigating the relationships, we discounted the possibility of multicollinearity between the variables by calculating the variance inflation factors (VIF) and the condition index. In both cases, the results showed values below the established maximums (Kleinbaum et al., 1988), which indicates that multicollinearity is not a problem in our dataset.

The results for the relationships uncovered with SEM are presented in Figure 2. Each relationship is shown together with the corresponding hypothesis, estimated path coefficients, and t-values (t-values for path coefficients greater than 1.96 are significant at $p < 0.05$; t-values for path coefficients greater than 2.58 are significant at $p < 0.01$).

Figure 2. Structural equation modelling



Notes: * $p < 0.05$; ** $p < 0.01$ (only for relationships between hypotheses)

Table 2 summarizes the results for the various hypotheses. We find a positive and significant relationship between OL and innovativeness ($t = 7.69, p < 0.01$), between OL and capacity to innovate ($t = 13.80, p < 0.01$), and between OL and strategic fit ($t = 2.10, p < 0.05$). These results support H1a, H1b, and H2. The relationship between innovativeness and strategic fit is not significant ($t = 0.20$), which leaves H3a unsupported. However, we observe a positive and significant relationship between capacity to innovate and strategic fit ($t = 4.31, p < 0.01$), which indicates support for H3b. We also find a positive and significant relationship between strategic fit and organizational performance ($t = 3.88, p < 0.01$). This supports H4.

Table 2. Results of hypotheses tests

	Result obtained
Hypothesis 1a	Supported
Hypothesis 1b	Supported
Hypothesis 2	Supported
Hypothesis 3a	Not Supported
Hypothesis 3b	Supported
Hypothesis 4	Supported

Finally, we confirmed the values for model fit by analyzing several indicators according to type of fit (Table 3). For the measures of absolute fit, we observe the root mean square error of approximation (RMSEA) and the goodness of fit index (GFI). The RMSEA of 0.055 is lower than the recommended maximum of 0.08. The GFI of 0.88 is slightly lower than the recommended minimum of 0.9). However, as in other studies (e.g., Foote et al., 2005), this slight difference may be due to the “artifact of the large degrees of freedom relative to sample size and the relatively small number of estimated parameters” (Foote et al., 2005, p. 213). All of the values for incremental fit are higher than the recommended minimum of 0.9, thereby affirming the presence of incremental fit. Finally, we assessed parsimony fit using the normed chi-square. The value of 1.608 is lower than the recommended maximum of 3.0, indicating that the fit is good. Based on these results, we can affirm that the global fit of the model is good.

Additionally, to test the fit of our model, alternative models were run and analyzed (four, three, two and one-factor models). All these alternative models showed worst fit indexes, under the acceptance level. These results corroborates that the five-factor model represents the best fit to the data.

Table 3. Goodness of fit statistics for the structural model

Types of fit	Measures	Acceptance levels	Model results
Absolute	χ^2 (sig.)		318.467
	Degrees of freedom		198
	Goodness of fit index (GFI)	> 0.9	0.880
	Root mean square error of approximation (RMSEA)	< 0.08	0.055
Incremental	Comparative fit index (CFI)	> 0.9	0.955
	Incremental fit index (IFI)	> 0.9	0.956
	Normed fit index (NFI)	> 0.9	0.901

	Non-normed fit index (NNFI)	> 0.9	0.948
Parsimony	Normed chi-square χ^2/df	< 3.0	1.608

5. Discussion

The main goal of this study is to analyze the roles played by OL and innovation in organizations immersed in processes of adaptation and strategic change in sectors with dynamic and turbulent environments. To achieve this aim, we use a sample of 204 European high-technology firms to develop a perceptual measure of strategic fit and propose a model in which innovation and OL act as antecedents of achieving strategic fit in organizations and, thereby, improving performance.

Our results suggest that OL is an antecedent of innovation in both phases: innovativeness and capacity to innovate. In line with the extant literature, our empirical evidence shows that OL increases receptivity to new ideas and innovation as part of an organization's innovation culture (Keskin, 2006). Innovation depends on existing knowledge, on the organization's ability to acquire and absorb new internal and external knowledge, and on the existence of a virtuous cycle that generates learning (Wang and Wang, 2012). Our research also confirms that firms can easily innovate in dynamic environments if they develop a capability to efficiently learn from their resources, which in turn increases their competences and capabilities (Calantone et al., 2002; García-Morales et al., 2007; Jiménez-Jiménez, 2011). Through these practices, learning organizations can perceive their own strengths and weakness more easily than others, and they will learn from their errors and their experiences. This enables them to develop a greater capacity to generate new ideas, products, services, and processes (Calantone et al., 2002). These findings support theoretical arguments that the development of capabilities in firms lies in OL (Zollo and Winter, 2002; Easterby-Smith and Prieto, 2008; Barrales-Molina et al., 2010), which suggests that OL is an antecedent of the capacity to innovate.

Our empirical findings confirm OL's role as an antecedent of strategic fit. A learning organization encompasses implicit processes of change in the cognition of managers and workers (Tanriverdi, 2006). Learning firms that renew their knowledge are able to better understand the consequences of changes in their environments and respond faster than competitors (Tippins and Sohi, 2003). An organization committed to learning possesses the knowledge necessary to perceive customers' needs and attempt to respond to them (Santos-Vijande et al., 2010). Therefore, an organizational climate favorable for learning and behaving as a market-driven organization facilitates adaptations to changes in the environment.

Our research also confirms that innovation can play a crucial role in the processes of adaptation and fit. Organizations with a better climate for innovation and a greater capability to implement decisions oriented toward innovation are more likely to successfully navigate the strategic management process. Our empirical analysis shows a direct relationship between innovative capacity and strategic fit. These results are consistent with theoretical contributions indicating that product innovation promotes the renewal and reconfiguration of a firm's resources (Eisenhardt and Martin, 2000; Ambrosini et al., 2009; Schilke, 2014; Barrales-Molina, 2015). These findings suggest that innovation facilitates continuous adaptation to the environment, which corresponds to the goal of achieving strategic change through fit. However, we do not find support for a direct effect of innovativeness on strategic fit. This may be because managers overvalue their organizational environment for innovation (Burton, 2004). The organizational context plays an important role in resource exchange, which can distort managers' perceptions of their organizations' climate for innovation.

The literature on strategic change and strategic fit, which began to expand rapidly in the 1980s and 1990s, has adopted different perspectives on how organizations should face changes in the

environment, adapt based on these changes, change radically when facing a declining organizational situation, or simply face contingencies in the environment that will determine their survival or disappearance. Executives in dynamic industries need “to rely on patterns of attention and decision that keep up with the rapid changes in demand” (Chiaburu, 2010, p. 472). As such, the empirical literature recognizes the importance of managerial cognition in the process of change (Finkelstein et al., 2009; Kaplan et al., 2003). When managers perceive changes in the market, they assume a need to adapt, as they are aware of the importance of the change (Ginsberg, 1988; Zajac and Shortell, 1989). The ability to direct attention to shifts in the organization’s environment and competitive position has been identified as a key capability in organizations (Ocasio, 2011; Plambeck and Weber, 2010). By attending to decision-making processes through our measure of strategic fit, we can include both the external and the internal views of fit. We do so by measuring how the organization matches its capabilities and operation strategies to the demands of the external environment in which it competes (Stepanovich and Mueller, 2002). The results of this study are consistent with prior research that indicates a positive influence of strategic fit on organizational performance (Venkatraman and Prescott, 1990; Zajac et al., 2000; Carmeli, 2010), thereby supporting our initial idea that appropriately adapting to the environment will grant competitive advantages that improve organizational performance.

6. Theoretical contributions

This study contributes significantly to the literature in three ways. The first contribution is to the literature on strategic change and strategic fit which, as stated above, continually seeks mechanisms, resources and capabilities that facilitate development of fit in organizations. Although the alignment between organization and environment, and its impact on performance has been previously explored in the management literature (Venkatraman and Camillus, 1984; Venkatraman and Prescott, 1990), this study goes further by developing and testing a perceptual measure of strategic fit that focuses on the cognitive process of analysis and the implementation of strategy based on the needs of the environment. To the extent that strategic fit occurs between the perception of a need for change and the planning and implementation of that change, the firm will achieve a competitive advantage and will improve its organizational performance. Our model of strategic fit is dynamic—it measures the change that has occurred in the last seven years; multidimensional—it measures external and internal fit; and normative (Zajac, 2000)—it offers a distinctive analytical approach that contributes conceptually and empirically to the literature on strategic fit and strategic change. In our research, we analyze how the content of an organization’s strategy—the product and services lines, the target audience, abilities and capacities, and investments in innovation and technology—can be changed to achieve fit with its environmental and organizational context. Our findings confirm the positive effect of strategic fit on organizational performance in dynamic environments.

Our second contribution is to contingency theory, as we analyze mechanisms that facilitate alignment between the organization and its environment, and thereby enhance performance. This study of the complex interactions among OL, innovation, and strategic fit constitutes a valuable and original contribution to this stream of literature, as it improves our understanding of the effect of these variables on strategic fit. The findings confirms the role that strategic fit can play as mediator of the relationship between both organizational learning and innovation, with organizational performance. Our results show that OL acts as an antecedent of innovation (Calantone et al., 2002; Yalabik et al., 2012), thereby also facilitating strategic fit. This finding is in line with theoretical proposals that OL permits the generation of the knowledge needed to facilitate the firm’s changes and adaptations to its environment (Eisenhardt and Martin, 2000; Teece, 2012; Winter, 2003). We also observe that “capacity to innovate” is directly related to strategic fit, which confirms that innovation facilitates improvements in the organization’s fit with its environment. These findings are consistent with other theoretical contributions suggesting that innovation permits firms to better respond to changes in the environment

(Hurley and Hult, 1998). The results confirm innovation as an important resource of the firm that can improve organizational performance through strategic fit. The concept of innovativeness—which focuses on values, culture, and attitudes (Hurley and Hult, 1998; Hult et al., 2002)—constitutes the phase prior to the development of new products and processes, even if the latter do not materialize. We thus propose considering the “innovativeness” dimension as a facilitator of new product and process development, but not treating it as a capability that directly influences strategic fit.

Lastly, our findings contribute to key theoretical frameworks in strategic management, such as the dynamic capabilities view (Eisenhardt and Martin, 2000; Helfat and Peteraf, 2015; Teece, 2007). The results highlight internal contexts that enable firms to continually respond to competitive environments. Organizational learning, innovativeness, and the capacity to innovate allow firms to sense changes, seize opportunities, and reconfigure internal competences. We have demonstrated that these processes are those that underlie dynamic capabilities (Teece, 2007). Consequently, our paper supports other studies in the field (Danneels, 2002) that argue that an innovative context enhances firms’ abilities to achieve alignment between internal and external forces.

7. Implications for practice

The results of this study have several implications for managers. First, our findings suggest that survival and competitiveness in dynamic environments create capabilities to renew the organization, to change, to overcome inertia, and to achieve adaptability, which can be identified as the essence of strategy. Thus, strategic management can converge with management of change. In turbulent environments, organizations that wish to be adaptable and dynamic should become learning organizations, as learning permits them to enjoy a constant state of renewal (Calantone et al., 2002; Tippins and Sohi, 2003). To achieve this goal, managers should support an entrepreneurial culture that stresses continuous learning, foster programs to develop abilities, and promote incentives for the development of capabilities that facilitate acceptance of organizational changes. They should also focus on creating the abilities needed to generate core competences and contribute to learning.

Second, our research indicates that organizational learning contributes to innovation in firms. Learning organizations learn through experience gained by introducing new models of business development. As the constant exchange of information with workers strengthens learning processes, the organizational culture will be more innovative if workers are motivated to learn and exchange new ideas (Hurley and Hult, 1998). Managers can manage the relevant tasks and the individual qualifications required to perform them in order to achieve a better climate for innovation. The sharing of training and development, reward systems, information-dissemination systems, job appraisals, exploratory dialogues, information bulletins, experimental initiatives, and informal discussions with employees, as well as ensuring the absence of a blame culture will promote a strong commitment to teamwork and, thereby, enhance innovativeness in the firm. Furthermore, if managers wish to promote learning that encourages innovation in their organizations, they should introduce resources and activities that develop the competences needed to achieve this goal, such as technology, training, continuous learning, and teamwork. In other words, organizations must promote a culture oriented toward learning and promoting people practices, which in turn fosters their employees’ efforts to learn so that they develop new skills that increase the capacity to innovate.

Third, our study suggests that investments in building capacities, such as technical-innovation or product-development capabilities, are strategically justified for organizations wishing to achieve strategic fit, especially in turbulent environments. Managers should promote development of new and improved products or services, as well as changes in the organization regarding production techniques or the provision of services. Therefore, analysis and

exploration are fundamental tools for individuals in charge of strategy. Such individuals should attempt to learn from their environment in order to understand its behavior and better predict market tendencies, particularly if markets are dynamic and turbulent. In the attempt to alter the organization's position to achieve the closest fit with its environment, managers should promote the development of factors that contribute to the firm's adaptation to changes in the environment. In this regard, innovation is a capability that facilitates the achievement of strategic fit with the environment by developing new product and services lines, attending to new target audiences, developing new abilities and capacities in the organization, and investing in innovation and new technologies. CEOs can manage their organizations as portfolios of strategic assets that can be aggregated, disaggregated, or reconfigured more rapidly and efficiently than those of their competitors. This management strategy should support them in understanding how changes in fit might positively affect their business performance, and in identifying the strategic content that is fundamental for achieving competitive advantages.

8. Limitations

As a whole, the conclusions of this study are subject to some limitations. First, as our analysis is cross-sectional, the uncovered relationships should be treated with some caution. Although our study is not longitudinal, we have attempted to offset this limitation to some extent by taking the temporal dimension into account in the scales for strategic change and performance. Second, all measures in our study are subjective, as they are based on managers' perceptions. Therefore, the measures cannot demonstrate the exact relationships among the variables. Despite this limitation, our cognitive model requires that we ground our research in managers' opinions. As numerous similar studies have shown, this is the only way to determine managers' mental decision-making processes. Third, the perceptions estimated for each firm were determined using a single person, which may condition the measurement of some variables. This limitation usually occurs when attempting to achieve external validity of the sample for the whole population, which led us to obtain many sample units instead of a large quantity of responses from a small number of firms. Finally, one should be careful about generalizing from the results presented here, as we have only analyzed a selection of high-technology sectors. The results could differ for other industries. Future research should focus on longitudinal studies aimed at measuring the strategic change process and strategic fit in different dynamic capabilities, environmental factors, and dimensions of strategic change that enable achievement of strategic fit.

9. Conclusions

This research allows us to conclude in the following way. First, this paper presents practical evidence of the positive influence of strategic fit in organizational performance. Based on the cognitive process of analysis and the implementation of strategy according to the needs of the environment, this study explore and develop a perceptual measure of strategic fit that shows the positive influence of the fit on the organizational performance. Second, this study's combination of a double measurement of innovation based on innovativeness and the capacity to innovate, and organizational performance, with the perceptual measure of strategic fit constitutes an original contribution to the extant literature. The findings shed light on the importance for firms to generate capabilities that organizations need to adapt to dynamic and turbulent environments. Continuous learning, as well as innovation in terms of new products, services, technologies, or processes to improve the capability for adaptation and change can lead to improved performance (Zollo and Winter, 2002; Helfat and Peteraf, 2015).

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