The Influence of Strategic Dynamic Capabilities on Organizational Outcomes through the Organizational Learning Process

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Abstract

In this research we demonstrate the effects of transformational leadership capability on organizational outcomes by examining its intermediate influence on other capabilities, such as shared vision and teamwork cohesion. We also show how these capabilities affect the organizational learning process to improve organizational innovation and performance. Based on the literature, we develop a theoretical model that shows interrelations between these concepts. The hypotheses are tested using data collected from 408 CEOs in Spanish organizations. The paper provides several implications for future research.

Keywords: Transformational leadership capability, shared vision capability, teamwork cohesion capability, organizational learning process, organizational innovation, organizational performance.

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1. Introduction

To survive and prosper under conditions of change, firms must develop dynamic capabilities (Easterby-Smith et al., 2009). But what dynamic capabilities can we develop to ensure that firms identify, create, exploit, extend, modify, renew and apply knowledge flows to improve organizational innovation and performance? A dynamic capability "is the capacity of an organization to purposefully create, extend or modify its resource base" (Helfat et al., 2007, 1). Under conditions of environmental turbulence, transformational leadership capability (TLC) is essential for firms to readjust their strategies continually and integrate dynamic capabilities that impact positively on firms' performance (Ambrosini et al., 2009). TLC makes it easier to influence the fundamental attitudes and assumptions of an organization's members by creating, extending or modifying a common mentality to attain the firm's goals and fulfil its mission. TLC stimulates the firm's search for new opportunities and ways to tackle its tasks and challenges by motivating the other members of the organization. TLC usually generates higher levels of innovation and performance, whereas transactional leadership capability focuses on promoting the individual interests of the leaders and their followers and satisfying contractual obligations for both by establishing objectives, monitoring, and control of results (Bass, 1999). TLC can be defined as the capacity to create, extend or modify the consciousness of collective interest among the organization's members, enhancing their shared vision capability (SVC). It helps them to obtain the capacity for cohesion and to achieve their collective goals; that is, it creates teamwork cohesion capability (TCC) (Bass and Avolio, 2000). TLC makes it easier for individuals to recognize their capabilities and those of others in the organization, enabling them to guide their organizational outcomes to foster SVC and to design a conscious atmosphere of teamwork (TCC) (Plan, 2008).

Although evidence shows that TLC influences outcomes substantially, our understanding of how it exerts this influence is still limited and largely speculative (Conger, 1999). Dynamic capabilities imply only the potential for good performance. The relationship between developing dynamic capabilities and superior performance cannot be assumed without empirical confirmation (Zahra et al., 2006). Since dynamic

capabilities create, modify, or extend the resource base of an organization, change in the resource base implies only that the organization is doing something different, not necessarily that it is doing something better than before (Helfat et al., 2007).

"Since dynamic capabilities create, modify, or extend the resource base of an organization and since dynamic capabilities also comprise part of this resource base, this implies that dynamic capabilities can modify or extend dynamic capabilities" (Helfat et al., 2007, 4). In many instances, one dynamic capability can and does alter another dynamic capability (Helfat and Peteraf, 2003). The main goal of this research paper is to increase knowledge of the capabilities grounding innovation, learning processes and outcomes. This study tries to clarify the relationship between dynamic capabilities (TLC, SVC and TCC) that currently exists in modern management, by showing that organizations survive and prosper under changing conditions and must develop dynamic capabilities that reinforce learning as an organizational and managerial process in order to obtain sustainable competitive advantages. The relatively slight attention paid in practice to these topics contrasts with their importance for the world's sustainability and practitioners.

In today's knowledge society, TLC, SVC, and TCC are key capabilities enabling firms to identify, create, exploit, extend, modify, renew, and apply knowledge flows in new ways to improve organizational innovation and performance (Nonaka and Takeuchi, 1995; Senge, 1990). Organizations should give these complementary capabilities serious attention (Idris and Ali, 2008). Because these capabilities are usually valuable, rare and difficult to imitate or replace, managing them effectively can provide firms with a source of sustainable competitive advantage (Grant, 1996).

TLC helps the organization's members to extend their interests beyond ordinary limits, stimulating the capacity to create, extend or modify a shared vision and thus influencing organizational results (Bass, 1985). SVC is the capacity to create, modify, or extend a deeply meaningful and broadly-held common sense of direction (Senge, 1990). It drives a guiding philosophy/ideology and coherent collective aspirations (Maani and Benton, 1999).

An organization without SVC cannot create, extend or modify its future; it can only react to it. When managers truly have the capability to share a vision, they succeed in encouraging many people to connect and commit to a common aspiration, because this aspiration reflects each individual's personal vision. This SVC connects disparate

emerging initiatives and provides coherence to the whole, creating unity from diversity in a creative way and providing guidance for changes in the organization. It ensures the necessary commitment by the organization's members to guarantee that unity. Thus, SVC creates, modifies or extends a common commitment to a desired future, as well as a common sense of the organization's purpose and what is important.

TLC has a positive effect on the capacity to create, extend or modify cohesion in the group and to influence organizational outcomes (Carless et al., 1995; Shamir et al., 1998). TCC refers to a firm's capacity to create, modify, or extend the generation of complementary skills and interactions of the people involved in order to facilitate the realization of planned objectives and creation of cohesive team spirit (Edmondson, 1999). TCC supports collegiality in organizational environment, stimulating the members' desire to help others (Koys and DeCottis, 1991; Lloréns et al., 2005). TCC is proposed as a key to competitive advantage because of its influence on socialization inside firms and the difficulty of imitating the complex interactions comprising teamwork (Nonaka, 1991; Nonaka and Takeuchi, 1995).

These capabilities —TLC, SVC and TCC— influence organizational innovation and performance through the organizational learning process (OLP). Numerous authors relate leadership style to the OLP (McGill et al., 1992; Senge et al., 1994). "Given the significance for corporate performance, understanding ways in which managers can influence the OLP is becoming increasingly important" (Zagorsek et al., 2009, 145). Although there are implicit assumptions that TLC is the guiding force behind the OLP, the two fields of inquiry have largely remained disconnected (Vera and Crossan, 2004). SVC is vital for the learning organization because it provides the focus and energy for the OLP. It gives us the strength to express our thoughts and learn from mistakes, fuelling us for experimentation and innovation (Senge, 1990). TCC influences OLP and converts it into a force valuable to the whole organization, not only to specific individuals. Management should thus enhance TCC to create, modify and expand coherent work teams that promote the OLP (Lloréns et al., 2005).

Learning is proposed as an organizational and managerial process essential for obtaining sustainable competitive advantage (Teece, 2007, 2009; Teece and Pisano, 1994; Teece et al., 1997; Vera and Crossan, 2004). Research notes that critical dynamic capabilities influence OLP, making it more likely to obtain business performance (Kang and Snell, 2009; Nonaka and Takeuchi, 1995; Teece, 2007, 2009; Teece et al., 1997).

This process involves knowledge acquisition, knowledge sharing, and knowledge utilization (DiBella et al., 1996). Organizational learning is the process by which knowledge created by individuals is increased in an organized way and transformed into part of the organization's knowledge system. This process occurs within a community of interaction where knowledge is created and expands in a constant dynamic way between the tacit and the explicit. Organizational learning involves cognitive and behavioural changes (Nonaka and Takeuchi, 1995).

More than ever, the development of the OLP has become a need rather than a choice (Argyris and Schön, 1996; Senge, 1990). The OLP usually has positive connotations in organizational outcomes (organizational innovation and performance), but this effect must be analyzed empirically, not assumed theoretically (Snyder and Cumming, 1998).

The OLP stimulates organizational innovation (García, Lloréns and Verdú, 2007). Innovations are widely recognized to be essential for the survival and growth of organizations (Damanpour and Gopalakrishnan, 2001; Hurley and Hult, 1998). By the 1990s, most industrial economies had moved to an "innovation-driven" stage, during which firms competed to innovate rapidly and profitably (Porter, 1990). In this context, it is especially important to understand better the capabilities influencing the successful development of innovations.

Different definitions of innovation have been proposed. Firm innovation has been widely defined as the adoption of an idea or behaviour pertaining to a product, service, method, device, system, policy, or program that is new to the adopting organization (Damanpour and Gopalakrishnan, 2001). Innovation is widely prescribed as a means to improving organizational performance. But many firms do not or cannot properly obtain this innovation. Researchers have urged attention to what enables firms to innovate (Zollo and Winter, 2002).

The role of CEOs is fundamental. They are crucial in developing these dynamic capabilities, since they determine the types of behaviour that are expected and supported. Although numerous actors may be involved in the management process, the CEO is ultimately responsible for plotting the organization's direction and plans, as well as for leading the actions to realize them (Westphal and Fredrickson, 2001). To make sense of the complex environment surrounding them, managers tend to form simplified internal cognitive representations (mental models). Managers use these mental models to focus on certain capabilities that they assume to be critical. They make decisions and

measure their performance, innovation, etc. based on these variables (Senge et al., 1994).

The article is structured as follows. Section 2 proposes a series of hypotheses. Section 3 presents the data and the method used to analyze empirically the hypotheses developed in Section 2 in Spanish firms. Section 4 presents the results obtained. Section 5 discusses the results and some limitations of this study.

2. Theoretical background and hypotheses

2.1. Influence of TLC on SVC and TCC

TLC drives the capacity to create, extend or modify an SVC (Helfat et al., 2007). Transformational leaders with this capability facilitate not only the capacity to generate ideas but also the capacity to share them (Senge et al., 1994). Such leaders have the capacity to promote the integration and identification of the organization's members with the firm's objectives, reinforcing the existence of a common vision. They become the engines and transmitters of this vision (Bass and Avolio, 1992). Without effective awareness of the changes needed and without SVC, the organization cannot to advance in SVC (Senge, 1990). SVC facilitates the union of the organization's members and the achievement of common interests (Maani and Benton, 1999).

TLC pushes the organization's members to go beyond self-interest to benefit the organization's interest (Bass, 1985). It influences others by fostering social identification, stimulating specific values and common ideology, and generates capacity to present a vision attractive to all. Various studies demonstrate the relationship between the transformational leader or TLC and the presence of SVC (Rafferty and Griffin, 2004; Zagorsek et al., 2009). Based on the foregoing, we formulate the following hypothesis:

Hypothesis 1. Higher levels of TLC influence SVC in a positive way.

Transactional leadership capability has been characterized as highly individualistic and asystematic, hindering the work and the process of learning of organizational teams. In contrast, TLC inspires employees to participate with enthusiasm and cohesion in the team's efforts and to think critically beyond their own interests, reorienting the

construction of teams (Bass, 1999). TLC motivates and integrates the opposing interests of different people, stimulating the firm's capacity for unity that enables activities to be carried out efficiently, taking advantage of such competences as teams' talent and intelligence (Senge, 1990; Senge et al., 1994).

Beech and Crane (1999) explain that successful teamwork occurs in a climate of community, TLC and TCC. Becker (2001) identifies absence of TLC as one of the most important reasons for the failure of TCC. TLC helps to generate capacity to build teams and provide them with energy, cohesion and support for change, innovation and learning. Shamir et al. (1998) indicate that TLC has a positive effect on the capacity to generate internal cohesion, strength and group culture.

TCC appears in various studies as a variable mediating the relation between TLC and performance. Carless et al. (1995) demonstrate that leaders with TLC predict performance in different branches of banks and that the strength of this relationship is explained by the capacity to create cohesion in each bank office. Lloréns et al. (2005) show that support leadership will be positively associated with TCC and obtaining teamwork cohesion. Thus:

Hypothesis 2. Higher levels of TLC influence TCC in a positive way.

2.2. Influence of TLC, SVC and TCC on the OLP

Previous studies assert relationships between leadership and the processes or mechanisms of organizational learning (McGill et al., 1992; Senge, 1990; Senge et al., 1994; Zagorsek et al., 2009). Most of this research is prescriptive and says little about the leadership styles through which CEOs or top management teams contribute to the OLP (Vera and Crossan, 2004). A capability that allows the organization to learn through experimentation, exploration, communication and dialogue (Lei et al., 1999; Senge et al., 1994; Slater and Narver, 1995), TLC supports OLP (Bass, 1999; Maani and Benton, 1999; Slater and Narver, 1995).

More specifically, TLC contributes to the OLP by promoting intellectual stimulation, inspirational motivation, and self-confidence among organization's members (Coad and Berry, 1998). Leaders who take advantage of TLC will be catalysts, mentors, facilitators and trainers in the OLP. They have the capacity to promote shared mental models in

organizations that encourage and facilitate processes of continuous learning and the use of new technologies (Senge et al., 1994).

Vera and Crossan (2004) link Bass's (1985) model of TLC to the model of organizational learning developed by Bontis et al. (2002), emphasizing the effect of TLC on the learning process at individual, group, and organizational levels. Other authors stress that TLCs have an influence on OLPs or mechanisms through intermediate variables such as communication (Argyris and Schön, 1996; Lei et al., 1999; Senge et al., 1994). On the basis of these arguments, we propose the following:

Hypothesis 3. Higher levels of TLC influence OLP in a positive way.

SVC is related to the OLP (Maani and Benton, 1999). It pushes the organization's members to work in the same direction to obtain common objectives (Slater and Narver, 1995). Along with the capabilities of reinforcing personal mastery, mental models, team learning and systems thinking, SVC fosters the OLP (Senge, 1990; Senge et al., 1994). Today's organizations must foster mechanisms and processes of continuous learning, and these are reinforced by the capabilities of transformational leadership and shared vision (Hodgetts et al., 1994). SVC has thus been systematically highlighted as "a necessary condition, but not sufficient in itself, for the development of an organization that can learn, adapt, and respond effectively to a rapidly changing competitive environment" (Dess and Picken, 2000, 22).

Many studies assume a positive relationship between SVC and the OLP (Hodge et al., 1998; Senge, 1990; Senge et al., 1994). The absence of SVC may be one of the most important causes of failure in OLPs (Fahey and Prusak, 1998). However, imposing instead of generating SVC will not enhance the organizational learning but will lead to apathy, complacency and even resentment (Maani and Benton, 1999; Senge et al., 1994). Thus:

Hypothesis 4. Higher levels of SVC influence OLP in a positive way.

TCC plays a central role in the development of the OLP by bridging organizational and individual learning (Dibella et al., 1996; Nevis et al., 1995; Swieringa and Wierdsma, 1992) and enhancing knowledge flows between teams or individuals in a team (Marquardt, 1996). To reach a high level of OLPs, management must pay active attention to the TCC to generate the conditions that create cohesion, coordination and teamwork. Although the sphere of learning is organizational, in learning organizations, learning is developed through work teams (Swieringa and Wierdsma, 1992).

TCC reinforces the team's learning process. Since the team is the fundamental learning unit, the organization cannot learn without TCC and team learning. OLPs are encouraged by TCC, joint planning and coordinated action (Senge, 1990; Senge et al., 1994). The literature contains numerous recommendations on how to strengthen TCC on organizational learning (Dibella et al., 1996; Nevis et al., 1995). The above arguments imply the following:

Hypothesis 5. Higher levels of TCC influence OLP in a positive way.

2.3. Influence of the OLP on organizational innovation

Recent strategic literature regarding organizational innovation has received important contributions from studies on organizational learning. Many of these contributions focus on the key role of OLPs as antecedents of organizational innovation (Aragón et al., 2007; García, Lloréns and Verdú, 2007; García, Ruíz and Lloréns, 2007). Several models attempt to explain the relationship between these terms (Baker and Sinkula, 2007; Cohen and Levinthal, 1990; Nonaka and Takeuchi, 1995). Different OLPs are also closely and positively linked to innovation (Forrester, 2000). The deeper an innovation reaches, the greater the change process rate and the degree of learning required. Thus, the organizational knowledge creation process by which new knowledge is drawn from existing knowledge (OLP) is the cornerstone of innovative outcomes (Nonaka and Takeuchi, 1995). Organizational innovation is dependent on the organization's knowledge base, which in turn is promoted by the OLP (Cohen and Levinthal, 1990).

While many studies report mechanisms and OLPs as antecedents of organizational innovation, empirical studies are needed to link the OLP to organizational innovation. A high degree of effective OLP is required for an innovation to emerge in organizations (García, Ruíz and Lloréns, 2007). An increasing number of firms are analyzing innovation as an OLP (MERIIT, 1992). OLPs perform an essential role in innovation by supporting creativity, inspiring new knowledge and ideas, and increasing the potential to understand and apply them (García, Ruíz and Lloréns, 2007), thus developing organizational intelligence and an innovative culture (Hurley and Hult, 1998).

An organization committed to learning increases its innovation because such an organization is not likely to miss the opportunities created by emerging market demand.

Such organizations have the knowledge required to anticipate and understand customer needs, possess more state-of-the art technology, and use that technology in innovations. They also have a stronger capacity to understand rivals' strengths and weaknesses. By learning from rivals' successes and failures, an organization can generate greater innovation than its competitors (Calantone et al., 2002). Thus, we propose the following hypothesis:

Hypothesis 6. Higher levels of OLP influence organizational innovation in a positive way.

2.4. Performance outcomes of the OLP and organizational innovation

The literature emphasizes the importance of OLPs for the company's survival and effective performance (Argyris and Schön, 1996; Senge et al., 1994; Malik and Kotabe, 2009). However, empirical analysis of this relationship has been limited, due to difficulties such as ambiguity, the time delay between the two (today's learning affects tomorrow's performance) and the possibility that the results of learning are disguised by exogenous factors. The actual connection between OLP and performance must, however, be determined empirically, not assumed in the definition, as is often done (Snyder and Cumming, 1998; Zahra et al., 2006).

It is wrong to claim that an increase in OLP always leads to growth in organizational performance. OLPs do not necessarily improve the organization's results (Inkpen and Crossan, 1995). Nonetheless, in general terms, OLPs have a positive influence on performance (Argyris and Schön, 1996; Senge et al., 1994). Some recent works support this positive relationship in organizations. Decarolis and Deeds (1999) maintain that knowledge generation, accumulation and application can generate superior performance. They demonstrate that there is a positive relationship between knowledge flows and stocks and organizational performance in the biotechnology sector. Bontis et al. (2002) use respondents from 32 Canadian funds to show that stocks of learning at all organizational levels have a positive relationship to organizational performance. Zahra, Ireland, and Hitt (2000) show a strong relationship between international diversity, mode of market entry and the breadth, depth, and speed of a new venture firm's OLP, especially when the firm undertakes formal knowledge integration.

Organizations with greater breadth, depth and speed in their OLPs have higher performance levels (Hurley and Hult, 1998). The primary aim of the OLP is to enhance performance quality and quantity, allowing the organization to improve its sales; to achieve more support; and to create, maintain and enlarge its customer base. Further, organizations that learn and learn quickly stimulate strategic capabilities that enable them to maintain competitive advantage and improve their results (Senge et al., 1994; Teece, 2009). Taking the foregoing into account, we propose:

Hypothesis 7. Higher levels of OLP influence organizational performance in a positive way.

Different theories reveal that innovation is essential to improving organizational performance. In the framework of strategic theory and the theory of resources and capabilities, innovation contributes significantly to explaining organizational performance. Strategic theory studies argue that organizations that adopt an innovation first are better able to create 'isolation mechanisms' that render knowledge of the innovation inaccessible to competitors, protecting profit margins and gaining important benefits (Lieberman and Montgomery, 1988).

In an empirical study of Australian forms, Yamin et al. (1997) found that performance depends on the organization's ability to achieve competitive advantage. This advantage is obtained through organizational innovation. From a strategic perspective, Aragón et al. (2007) show how both an individual feature like leadership style and a collective process like organizational learning affect organizational innovation simultaneously and positively, which in turn affects organizational performance. Organizations with greater innovation will achieve better response from the environment, increasing organizational performance and consolidating sustainable competitive advantage (Hurley and Hult, 1998; García, Ruíz and Lloréns, 2007).

Studies based on the theory of resources and capabilities argue that the combination of human capabilities and knowledge that a firm needs in order to develop different kinds of innovation make outside imitation more difficult and stimulate performance (Lengnick-Hall, 1992). Likewise, having the capacities and technologies needed to adopt the innovation will help the firm to achieve greater sustainability of related advantages, enabling the profits obtained to last over time.

Empirical study shows that the more valuable, imperfectly imitable and rare innovations are, the higher performance will be (Irwin et al., 1998). Using econometric

methods, Lööf and Heshmati (2002) demonstrate that the capital proceeding from knowledge contributes to heterogeneity among firms. Therefore, not developing projects and innovative activities will have a negative impact on productivity. Many studies in this research line argue the existence of a positive relationship between organizational innovation and organizational performance within the framework of the theory of resources and capabilities through different variables such as organizational slack and customer-based or supply chain assets (e.g. Ruiz et al., 2008).

Some researchers advice against assuming a positive relationship between organizational innovation and organizational performance, as creative destruction can occur (McCraw, 2007). The relation between the two concepts should thus be tested empirically. Others assert that one cannot establish a relationship between innovation and organizational performance but only between different aspects of innovation and performance, as some aspects are related positively, while others are not related or even negatively related (Danneels and Kleinschmidt, 2001). Thus, we propose to verify the following hypothesis empirically:

Hypothesis 8. Higher levels of organizational innovation influence organizational performance in a positive way.

3. Methodology

3.1. Sample and Procedures

We initially interviewed CEOs, consultants and academics interested in dynamic capabilities and strategic variables to analyze the main difficulties with the questionnaire, obtain suggestions and confirm that all the items were comprehensible and would provide the information desired in the research. After the interviews, we developed a structured questionnaire to better understand how CEOs face these issues. We then established a reliable list of the CEOs, with the help of partial funding from the Spanish Ministry of Science and Research. We surveyed CEOs because they were the informants best able to determine the impact of the variables studied on the rest of the organization's activities. CEOs are also the most knowledgeable regarding their organizations. Their perception of strategic capabilities is essential for improving organizational outcomes. The same types of informant were chosen to ensure a constant level of influence among the organizations to increase validity in measuring the variables.

The study population consisted of companies possessing the greatest turnover in Spain according to the Duns and Bradstreet Spain (2001) database and belonging to the four sectors we sought to examine (food-farming, manufacturing, construction and services). We randomly drew a sample of 900 organizations from this source. Choosing a sample of firms from a relatively homogeneous geographic, cultural, legal and political space minimizes the impact of variables that cannot be controlled. Although using a database on Spain may have some drawbacks, the Spanish market is relatively well developed and is representative of and wholly integrated into the European Union. It has had a slightly better rate of growth in recent years than the European market overall. However, Spain has received relatively little attention from organizational researchers (Aragon et al., 2007).

We made several calls and visits to each business to increase the percentage of responses, as it is usually low in this kind of research. The CEOs knew the objective of the study and the importance of their response to the study. They also knew that the data obtained would be confidential and would be treated in aggregate form. We offered them the possibility of receiving a comparative study specific to their firm of the capabilities and variables analyzed. This enabled us to obtain 408 valid responses, an approximate response rate of 45% (Table 1).

Insert Table 1 about here

The possibility of non-response bias was checked by comparing the respondents' characteristics to those of the original population sample. A series of chi-square and t-statistics revealed no significant differences between respondents and sample or between early and late respondents. We did not find significant differences based on type or size of business either. Since all measures were collected in the same survey instrument, we tested for common method bias using Harman's one-factor test (Konrad and Linnehan 1995). A principal components factor analysis of the questionnaire measurement items yielded five factors with eigenvalues greater than 1.0 that accounted for 71 percent of the total variance. Since several factors, as opposed to one single factor, were identified and since the first factor did not account for the majority of the variance, a substantial amount of common method variance does not appear to be present (Podsakoff and Organ 1986).

3.2. Measures

TLC. We used scales designed by Podsakoff et al. (1996) and Bass and Avolio (2000). We established a Likert-type 7-point scale (1-"*total disagreement*", 7-"*total agreement*") of five items (Appendix) to reflect the CEOs' perceptions of TLC in the organization. We sent the same questions to members of selected firms and contrasted their responses with those obtained from the CEOs. We did not find significant differences when using the CEOs' responses in the research. Through a confirmatory factor analysis (χ^2_5=16.24, RMSEA=.07, NFI=.98, NNFI=.97, CFI=.98, GFI=.99), we validated our scales and verified the scale's unidimensionality, high validity and reliability (α=.851).

SVC. We selected six items from the previous scales of Jehn (1995), Oswald et al. (1994) and Tsai and Ghoshal (1998). We developed a confirmatory factor analysis to validate our Likert-type 7-point scale (1-"*total disagreement*", 7-"*total agreement*") of six items, which required deletion of Item 6 (χ^2_5=25.78, RMSEA=.09, NFI=.99, NNFI=.98, CFI=.99, GFI=.99). This procedure allowed us to choose five items (Appendix) with high validity and reliability (α=.907)

TCC. We selected three items from previous scales proceeding from Wagner (1995) and Koys and DeCottis (1991) that had been used in other recent studies to measure TCC from the CEO's perspective (Lloréns et al., 2005). We sent the same questions to the members of selected firms and contrasted their responses with those obtained from the CEOs. We did not find significant differences when using the CEOs' responses in the research. We developed a confirmatory factor analysis to validate our Likert-type 7-point scale (1-"*total disagreement*", 7-"*total agreement*") and showed that the scale (Appendix) was unidimensional and had high validity and reliability (α=.852).

OLP. We used the first two items from the study of Kale et al. (2000) and added two items based on Edmondson's (1999) work. We developed a confirmatory factor analysis (χ^2_2=4.04, RMSEA=.05, NFI=.99, NNFI=.99, CFI=.99, GFI=.99) to validate our Likert-type 7-point scale (1-"*total disagreement*", 7-"*total agreement*") of four items (Appendix). We showed that the scale was unidimensional with high reliability (α=.903).

Organizational Innovation. The strategic literature uses both subjective and objective data to measure organizational innovation (Hurley and Hult, 1998). We included questions that involved both types of assessment, taking objective data from Amadeus and Hoover's databases. We calculated the correlation between objective and subjective

data and found it to be high and significant. To avoid possible response bias, we used three items of objective data (Appendix, α=.747).

Organizational Performance. After reviewing how performance is measured in different strategic research studies (Homburg et al., 1999; Venkatraman and Ramanujan, 1986), we developed a 4-item scale to measure organizational performance. We used confirmatory factor analysis to validate our scales (χ^2_2=79.18, RMSEA=.07, NFI=.97, NNFI=.92, CFI=.97, GFI=.98) and showed that the scale of four items was unidimensional with high reliability (α=.882). Many researchers use managers' subjective perceptions to measure beneficial outcomes for firms, but some prefer objective data, such as return on assets (Wan and Hoskinson, 2005). Scholars have widely established high correlation and concurrent validity between objective and subjective data on performance, which implies that both are valid when calculating a firm's performance (Homburg et al., 1999). We included questions that drew on both types of assessment, taking the objective data from the Amadeus and Hoovers databases. We calculated the correlation between the objective and subjective data and found it to be high and significant. To avoid possible response bias, we used the objective data (Appendix).

Control variables. The size indicators initially used in this research are firm income and number of employees. Information for these variables was gathered through the survey and validated using Duns and Bradstreet. Correlations between these sources are strong and significant. Because size and income are highly correlated, the analysis uses number of employees only in the model (Aragón et al., 2007). Major industry type is measured by the two-digit SIC code level and then aggregated to four wide categories, as described under "Sample" above. This variable controls for the potential influence of industry (Li, 1995). The environment is analyzed by considering the level of change in the sector (Escribano et al., 2009), for which we used an item (1-"*total disagreement*", 7-"*total agreement*") from Tan and Litschert (1994). Different investigations stress the importance of external knowledge (Escribano et al., 2009). We adapted an item from Simonin (1999) to analyze the importance of different information sources (1-"*total disagreement*", 7-"*total agreement*").

3.3. Model and Analysis

The LISREL 8.30 program was used to test the theoretical model. Figure 1 shows the basis of the model proposed and the hypotheses to be contrasted. We used a recursive non-saturated model, taking TLC (ξ_1) as the exogenous latent variable; SVC (η_1) and TCC (η_2) as the first-grade endogenous latent variables; and OLP (η_3), organizational innovation (η_4) and organizational performance (η_5) as the second-grade endogenous latent variables.

Insert Figure 1 about here

4. Results

Table 2 shows the means and standard deviations as well as the inter-factor correlation matrix for the study variables. There are significant and positive correlations among TLC, SVC, TCC, OLP, organizational innovation and organizational performance. There are also significant and positive correlations among the study variables and control variables, external knowledge and the environment, which demonstrate the influence of the latter. A series of tests (e.g. tolerance, variance inflation factor) shows the non-presence of multicolinearity (Hair et al., 1999). Structural equation modelling was performed to estimate direct and indirect effects using LISREL with the correlation matrix and asymptotic covariance matrix as inputs. Figure 2 shows the standardized structural coefficients.

Insert Table 2 and Figure 2 about here

Regarding the quality of the measurement model for the sample, the constructs display satisfactory levels of reliability, as indicated by composite reliabilities ranging from 0.81 to 0.97 and shared variance coefficients ranging from 0.70 to 0.89 (Table 3). Convergent validity can be judged by observing the significance of the factor loadings and shared variance. The amount of variance shared or captured by a construct should be greater than the amount of measurement error (shared variance>0.50). All multi-item constructs meet this criterion, each loading (λ) being significantly related to its underlying factor (t-values>24.76) in support of convergent validity. A series of chi-square difference tests on the factor correlations showed that discriminant validity is achieved among all constructs. Discriminant validity was established between each pair of latent variables by constraining the estimated correlation parameter between them to 1.0 and performing a chi-square difference test on the values obtained for the constrained and unconstrained models (Anderson and Gerbin, 1988). The resulting

significant differences in chi-square indicate that the constructs are not perfectly correlated and that discriminant validity is achieved.

Insert Table 3 about here

The overall fit measures, multiple squared correlation coefficients of the variables (R^2s), and signs and significance levels of the path coefficients all indicate that the model fits the data well (χ^2_{244}=413.09, p>.001; χ^2_{ratio}=1.69; NFI=.97; NNFI=.99; GFI=.98, CFI=.99, IFI=.99, PGFI=.80). The hypothesized model fits significantly better than the null model (χ^2_{276}=15384.05, p>.001; $\Delta\chi^2_{32}$=14970.96, p>.001). All modification indices for the beta pathways between major variables were small, suggesting that additional paths would not significantly improve the fit. The residuals of the covariances were also small and centred around zero.

If we examine the standardized parameter estimates (Table 4), the findings show that TLC is closely related to and affects SVC (γ_{11}=.53, p<.001, R^2=.86) and TCC (γ_{21}=.50, p<.001, R^2=.36), as predicted in Hypotheses 1 and 2 respectively. The OLP is influenced by TLC (γ_{31}=.35, p<.05), SVC (β_{31}=.37, p<.05) and TCC (β_{32}=.24, p<.001), supporting Hypotheses 3, 4 and 5 respectively. We also observe an indirect effect (.32, p<.001) of TLC on the OLP by SVC (.53x.37; see Bollen [1989]) and TCC (.50x.24). The global influence of TLC on the OLP is thus 0.67 (p<.001). Comparing the magnitudes of these effects indicates that the effect of TLC on the OLP is greater than the effect of TLC on SVC or TCC. Overall, the model explains the OLP well (R^2=.76).

We find a significant relationship between the OLP and organizational innovation (β_{43}=.55, p<.001, R^2=.72), supporting Hypothesis 6. We have also shown an indirect effect of TLC on organizational innovation (.37, p<.001) through the OLP (.35x.55), SVC – OLP (.53x.37x.55), and TCC – OLP (.50x.24x.55); of SVC on organizational innovation (.20, p<.05) through the OLP (.37x.55); and of TCC on organizational innovation (.13, p<.001) through the OLP (.24x.55). Comparing the magnitudes of these effects indicates that the effect of the OLP on organizational innovation is greater than the global effect of TLC, SVC or TCC although these effects are substantial.

Finally, organizational performance is directly affected by the OLP (β_{53}=.53, p<.001) and organizational innovation (β_{54}=.24, p<.05). The OLP also affects organizational performance indirectly (.13, p<.05) through organizational innovation (.55x.24). The global effect of the OLP on organizational performance is 0.66 (p<.001). Hypotheses 7 and 8 are thus supported. In addition, we find an indirect effect of TLC (.44, p<.001),

SVC (.24, p<.001), TCC (.16, p<.001) on organizational performance (Bollen, 1989). Comparing the magnitudes of these effects indicates that the global effect of the OLP on organizational performance is larger than the global effect of TLC, SVC, and TCC on organizational performance, but these effects are important. Globally, organizational performance is explained well by the model (R^2=.89).

Insert Table 4 about here

5. Conclusions

Following recommendations on challenges for future dynamic capabilities research from Easterby-Smith et al. (2009), our research presents a focused study of dynamic capabilities, explores the capabilities in fairly traditional industries from Spain, and establishes linkages between dynamic capabilities and OLPs. We illuminate how TLC affects intermediate dynamic capabilities, such as SVC and TCC, which influence OLPs to improve organizational innovation and performance. Thus, reinforcing these capabilities is essential for organizations. Different implications for management emerge. First, the leadership factor included in most of the models (e.g. MBNQA, EQA) may well be associated with the capability factor in a resource-based view of the firm (Idris and Ali, 2008). Since knowledge is one of the important organizational resources, leadership capability plays an important role in facilitating knowledge acquisition (Nonaka and Takeuchi, 1995) and the OLP (Senge, 1990; Senge et al., 1994). TLC has great power to effect change in any organization. TLC makes it easier to inspire subordinates, providing them with valuable direction and care for the results. It encourages organization managers to provide direction and vision, recognize and nurture individual abilities, and inspire people to commit fully to accomplishing organizational goals (Idris and Ali, 2008). It also fosters managing effective working relationships, and interactive skills and leadership. TLC must exist on all levels of the organization to enable it to respond to turbulent environments, thus initiating change and transforming organizations. TLC acts as a catalyst for firms enabling them to become more competitive and flexible. We must remember that the benefits that firms obtain from their dynamic capabilities depend not only on effective underlying organizational and managerial processes, but also on the context in which the capabilities are employed (Helfat et al., 2007).

Second, a higher degree of TLC mediated by other capabilities or practice has a positive effect on organizational outcomes (Helfat et al., 2007; Idris and Ali, 2008). TLC stimulates SVC by generating the capacity for effective communication and motivation (Bass and Avolio, 1992). SVC helps to provide goal clarity and is likely to foster sustained organizational commitment, even in complex business environments, by creating an organization-wide strategic purpose and rethinking the company's basic business model. It implies that the organization's members have the capacity to hold collective beliefs about its objectives and mission and its strategic role in developing business models for the future. Firms with SVC could develop business models faster

than firms lacking this capability (Hart, 1995). SVC should be developed by fostering personal mastery in the organization, thereby generating levels of creative tension. To achieve this goal, it is strategic to possess leaders with TLC who generate openness to ideas and the capacity to transcend and unify them in an SVC (Senge, 1990; Senge et al., 1994). Leaders with TLC become the motors and transmitters of this vision, encouraging social identification and stimulating common values and ideology (Bass and Avolio, 1992).

Third, TLC stems from the leader's capability to inspire trust, loyalty, and admiration in followers, who work in a cohesive group (Zagorsek et al., 2009). Cohesion capability binds teams. It makes people feel better and is a crucial ingredient for team viability. Managers must create TCC by encouraging trust and communication. Although we have technological improvements we must not lose the human side of communication.

Fourth, research proposes organizational learning as a fundamental strategic process for obtaining sustainable competitive advantage (Teece, 2007, 2009; Vera and Crossan, 2004). Firms with strategic capabilities manage to redirect OLP to obtain better organizational outcomes (Aragón et al., 2007; Argyris and Schön, 1996; Bontis et al., 2002; Decarolis and Deeds, 1999; Lloréns et al., 2005). The dynamics capabilities achieved through OLP allow the firm to face both present and future situations, achieving competitive advantage with the characteristics necessary to guarantee sustainability over time (Vera and Crossan, 2004).

This study has several limitations that suggest possibilities for further empirical research. First, survey data based on self-reports may be subject to social desirability bias (Podsakoff and Organ, 1986). However, an assurance of anonymity can reduce such bias even when responses relate to sensitive topics (Konrad and Linnehan, 1995). The low risk of social desirability bias in this study was indicated by several managers who commented at the end of their questionnaires that it made no sense for their companies to go beyond regulatory compliance. Still, the responses are subject to interpretation by individual managers. The second limitation is the absence of an objective measure of the OLP. External validation of this variable and some variables from the archival data of a subset of respondents increased confidence in the self-reports and reduced the risk of common method variance. We also tested for common method bias using Harman's one-factor test, and none appears to be present (Konrad and Linnehan, 1995; Podsakoff and Organ, 1986).

Third, the cross-sectional nature of the research into a series of dynamic capabilities allows us to analyze only a specific situation in time of the organizations studied, not their overall conduct over time. Our approach reduces the magnitude of this problem by including items that reflect dynamic characteristics. Causal affirmations can be made if the relationships are based on theoretical rationales (Hair et al., 1999). We therefore began with a theoretical effort to check the formal existence of the different cause-effect relationships. Dynamic capabilities are difficult to measure empirically (Easterby-Smith et al., 2009). Quantitative measures are viable for conducting research into dynamic capabilities, while maintaining the clarity of theoretical question (McKelvie and Davidsson, 2009). Nonetheless, future research should focus on longitudinal study to provide insights into the practice of dynamic capabilities (Easterby-Smith et al., 2009).

Fourth, the use of a single respondent could affect the accuracy of some measurements. Difficulties in obtaining sponsorship for research based on multiple views for each firm, lack of an alternative database of organizational characteristics for Spanish firms, the value of CEOs' knowledge of their firms, and common practice in organizational research all supported the use of CEOs as respondents. Fifth, we have concentrated exclusively on four sectors. Firms from other sectors may yield different results.

Finally, our model analyzes the direct and indirect relationship between TLC, SVC, TCC, the OLP, organizational innovation and organizational performance. Other capabilities could be analyzed. We should also examine other consequences in firms (e.g., quality improvement, staff satisfaction). More attention to the influence of specific capabilities is necessary in the future. Future studies should be based on a larger sample, preferably in more than one country, and might well explicitly integrate the influences of external factors. It would also be interesting to study similar characteristics with information provided by lower levels of management and employees in the organization.

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Figure 1 Hypothesized model

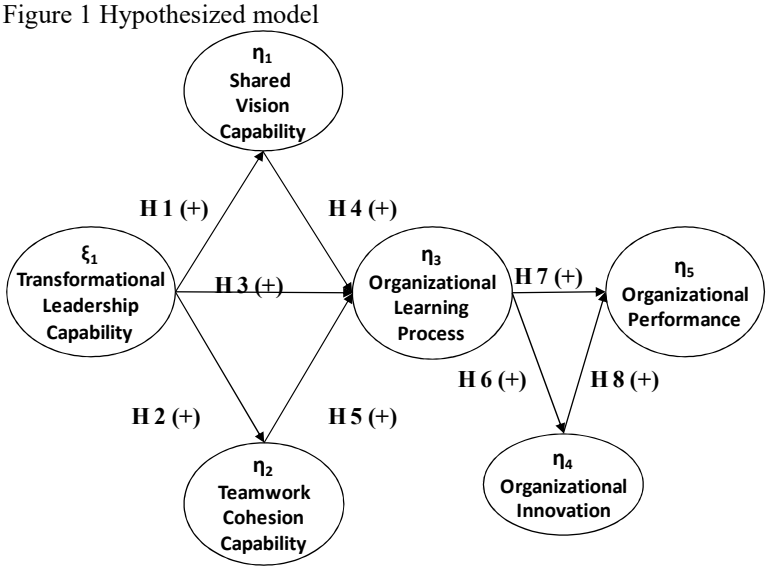

Figure 2 Results of structural equation model

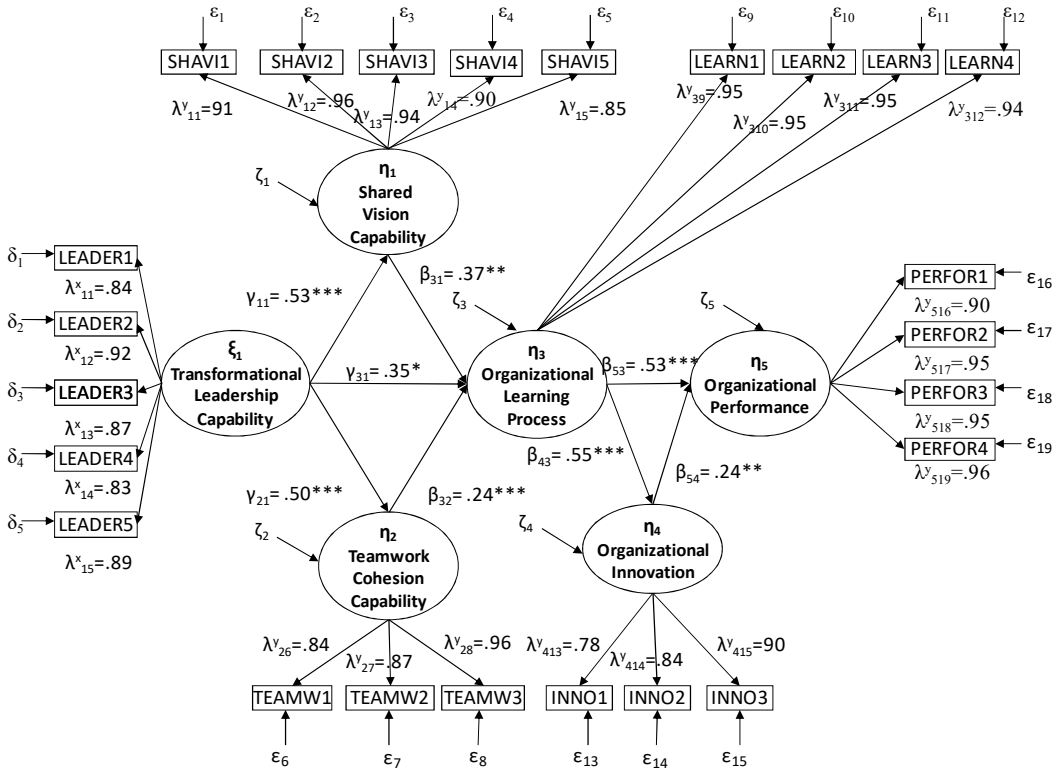

Table 1
Technical details of the research

Sector	Food-farming	Manufacturing	Construction	Services	Total
Sample size	130	160	325	285	900
Response size (%)	53 (40.7%)	52 (32.5%)	140 (43.07%)	163 (57.19%)	408 (45.3%)
Profits	11,419,230 €	4,474,896 €	8,414,169 €	19,232,387 €	11,813,105 €
Assets	13,823,278 €	35,459,714 €	19,833,399 €	408,688,230 €	181,701,570 €
Net worth	5,168,704 €	41,469,835 €	13,823,278 €	174,293,510 €	87,124,070 €
Cash flow	27,045,545 €	24,040,484 €	18,631,375 €	22,237,448 €	22,997,551 €
Own resources	84,141,695 €	90,151,816 €	150,253,030 €	102,172,060 €	101,921,640 €
Geographical location	Spain				
Methodology	Structured questionnaire				
Procedure	Stratified sample with proportional allocation (sectors and size)				
Universe of population	50,000 companies				
Sample error	4.8%				
Confidence level	95 %, p-q=0.50; Z=1.96				

Table 2
Means, standard deviations and correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1.- Transf. Leadership Cap.	5.220	0.943	1.000									
2.- Shared Vision Cap.	5.366	1.147	0.604***	1.000								
3.- Teamwork Cohesion Cap.	4.672	1.123	0.317***	0.306***	1.000							
4.- Organiz. Learning Proc.	5.372	1.154	0.473***	0.464***	0.381***	1.000						
5.- Organiz. Innovation	4.350	1.270	0.387***	0.352***	0.237***	0.597***	1.000					
6.- Organiz. Performance	4.679	1.081	0.564***	0.523***	0.395***	0.603***	0.541***	1.000				
7.- Size	3.432	1.683	-0.082	-0.021	0.092	-0.026	0.055	-0.073	1.000			
8.- Sector	2.919	1.100	0.042	0.043	0.096	0.096	-0.010	0.090	-0-043	1.000		
9.- Environment	4.458	1.413	0.232***	0.211***	0.207***	0.281***	0.342***	0.282***	-0.043	0.005	1.000	
10.- External Knowledge	5.652	1.235	0.091†	0.092†	0-164***	0.178***	0.104*	0.149*	-0.005	0.633	0.011	1.000

Notes: † p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001 (two-tailed)

Table 3
Validity, reliability and internal consistency

Variable	Item	Parameter	Validity, reliability and internal consistency			Goodness of Fit Statistics
			λ*	R^2	A. M.	
Transformational Leadership Capability	LEADER1	λ^x_{11}	0.84(f.p.)	0.71	α=.851 C.R.=.939 S.V.=756	χ^2_{244}=413.09 (*P*>0.01) GFI=0.98 AGFI=0.98 CN=263.14 NFI=0.97 NNFI=0.99 IFI=0.99 NCP=169.09 RFI=0.97 CFI=0.99 RMSEA=0.04
	LEADER2	λ^x_{12}	0.92***(33.16)	0.84		
	LEADER3	λ^x_{13}	0.87***(31.92)	0.75		
	LEADER4	λ^x_{14}	0.83***(29.26)	0.68		
	LEADER5	λ^x_{15}	0.89***(33.60)	0.59		
Shared Vision Capability	SHAVI1	λ^y_{11}	0.91(f.p.)	0.83	α=.907 C.R.=.963 S.V.=.839	
	SHAVI2	λ^y_{12}	0.96***(57.83)	0.92		
	SHAVI3	λ^y_{13}	0.94***(56.39)	0.89		
	SHAVI4	λ^y_{14}	0.99***(45.72)	0.81		
	SHAVI5	λ^y_{15}	0.85***(36.91)	0.72		
Teamwork Cohesion Capability	TEAMW1	λ^y_{21}	0.84(f.p.)	0.70	α=.852 C.R.=.813 S.V.=795	
	TEAMW2	λ^y_{22}	0.87***(36.51)	0.77		
	TEAMW3	λ^y_{23}	0.96***(35.64)	0.92		
Organizational Learning Process	LEARN1	λ^y_{31}	0.95(f.p.)	0.90	α=.903 C.R.=.972 S.V.=.896	
	LEARN2	λ^y_{32}	0.95***(67.26)	0.90		
	LEARN3	λ^y_{33}	0.95***(67.68)	0.89		
	LEARN4	λ^y_{34}	0.94***(60.51)	0.89		
Organizational Innovation	INNO1	λ^y_{41}	0.78(f.p.)	0.60	α=.747 C.R.=.879 S.V.=.709	
	INNO2	λ^y_{42}	0.84***(24.76)	0.71		
	INNO3	λ^y_{43}	0.90***(25.46)	0.82		
Organizational Performance	PERFOR1	λ^y_{51}	0.90(f.p.)	0.81	α=.882 C.R.=.968 S.V.=.885	
	PERFOR2	λ^y_{52}	0.95***(43.74)	0.90		
	PERFOR3	λ^y_{53}	0.95***(42.90)	0.90		
	PERFOR4	λ^y_{54}	0.96***(43.57)	0.93		

Note: λ* = Standardized Structural Coefficient (t-students are shown in parentheses); R^2 = Reliability; α = Alpha Cronbach; C.R. = Composite Reliability; S.V. = Shared Variance; f.p. = fixed parameter; A.M. = Adjustment Measurement; *$p < .05$; ** $p < .01$; *** $p < .001$(two-tailed).

Table 4
Structural model results (direct, indirect and total effects)

Effect from		To	Direct Effects	*t*	Indirect Effects	*t*	Total Effects	*t*
Transf. Leadership Cap.	→	Shared Vision Cap.	0.53***	29.03			0.53***	29.03
Transf. Leadership Cap.	→	Teamwork Cohesion Cap.	0.50***	14.17			0.50***	14.17
Transf. Leadership Cap.	→	Organiz. Learning Proc.	0.35*	2.38	0.32***	3.51	0.67***	26.60
Transf. Leadership Cap.	→	Organiz. Innovation			0.37***	7.78	0.37***	17.78
Transf. Leadership Cap.	→	Organiz. Performance			0.44***	22.94	0.44***	22.94
Shared Vision Cap.	→	Organiz. Learning Proc.	0.37**	2.61			0.37**	2.61
Shared Vision Cap.	→	Organiz. Innovation			0.20**	2.60	0.20**	2.60
Shared Vision Cap.	→	Organiz. Performance			0.24***	2.61	0.24**	2.61
Teamwork Cohesion Cap.	→	Organiz. Learning Proc.	0.24***	4.87			0.24***	4.87
Teamwork Cohesion Cap.	→	Organiz. Innovation			0.13***	4.77	0.13***	4.77
Teamwork Cohesion Cap.	→	Organiz. Performance			0.16***	4.86	0.16***	4.86
Organiz. Learning Proc.	→	Organiz. Innovation	0.55***	22.77			0.55***	22.77
Organiz. Learning Proc.	→	Organiz. Performance	0.53***	9.02	0.13**	2.88	0.66***	36.28
Organiz. Innovation	→	Organiz. Performance	0.24**	2.85			0.24**	2.85

Notes: Standardized Structural Coefficients; $^{\dagger}p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

APPENDIX

❖ Transformational Leadership Capability

The organization's management has the capability to:

1. Constantly seek new opportunities for the unit / department / organization.
2. Invest a high percentage of its time and energy in teaching and developing the competences of other members of the organization.
3. Dedicate a high percentage of its time and energy to trying to motivate the rest of the company.
4. Speak with enthusiasm and optimism of the future it seeks to achieve in the organization, expressing confidence that it will achieve these objectives.
5. Promote learning from mistakes, suggesting different ways to perform work and solve problems.

❖ Shared Vision Capability

The organization has the capability to create:

1. A clear vision guiding strategic change in the organization.
2. Organizational leaders who share a common vision of the organization's future.
3. The appropriate vision guiding change in the organization.
4. Agreement among the people working in the organization about what is important to the group.
5. Ambitions and visions shared between all organizational units and other work units.

❖ Teamwork Cohesion Capability

The organization has the capability to achieve:

1. Great team spirit among employees.
2. The habit of teamwork among employees who help each other rather than working individually in the organization.
3. Employees who care about their co-workers.

❖ **Organizational Learning Process**

In the last three years:

1. The organization has established processes to acquire and use much new and relevant knowledge.

2. The organization's members have acquired critical capacities and skills through learning processes.

3. Organizational improvements have been influenced fundamentally by new knowledge entering the organization through learning processes.

4. The organization was a learning organization.

❖ **Organizational Innovation**

Provide for the last three years:

1. Number of new products, processes, methods or ideas developed and marketed by the organization.

2. Number of new markets that the firm entered.

3. Total amount that the organization spent on R&D.

❖ **Organizational Performance**

In the last three years:

1. The firm's performance measured by Return on Assets.

2. The firm's performance measured by Return on Equity.

3. The firm's performance measured by Return on Sales.

4. The firm's market share in its main products and markets.

❖ **Size**

1. Number of employees in the organization.

❖ **Sector**

1. Sector of the organization.

❖ **Environment**

1. Numerous changes in the sector (technology, customers, providers, laws, etc.) affect the organization.

❖ **External Knowledge**

1. The organization's knowledge is the product of many interdependent techniques, routines, individuals and resources acquired through various external knowledge sources.