Management international
International Management
Gestiòn Internacional

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Fomento del espíritu empresarial mediante la vinculación del des-aprendizaje y la innovación organizacional: el papel moderador de la empresa familiar

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Volume 21, numéro 2, hiver 2017

Innovation & Entrepreneuriat
Innovation and Entrepreneurship
Innovación y emprendimiento

URI : https://id.erudit.org/iderudit/1052689ar
DOI : https://doi.org/10.7202/1052689ar

Aller au sommaire du numéro

Éditeur(s)

HEC Montréal
Université Paris Dauphine

ISSN

1206-1697 (imprimé)
1918-9222 (numérique)

Découvrir la revue

Citer cet article

Leal-Rodríguez, A. L., Peris-Ortiz, M. & Leal-Millán, A. G. (2017). Fostering Entrepreneurship by Linking Organizational Unlearning and Innovation: The Moderating Role of Family Business. *Management international / International Management / Gestiòn Internacional*, *21*(2), 86–94. https://doi.org/10.7202/1052689ar

Résumé de l'article

L'innovation est un élément clé de l'entrepreneuriat et est considéré comme crucial pour obtenir un avantage concurrentiel durable. Le modèle de reserche de cet article explore la relation entre le désapprentissage organisationnelle et la performance de l'innovation. Le modèle évalue l'influence modératrice de l'entreprise familiale dans ce lien. Les hypothèses ont été testées à l'aide d'un échantillon de 145 entreprises dans le secteur manufacturier espagnol composants automobiles. Les relations entre les constructions ont été évaluées à l'aide des moindres carrés partiels (PLS). Les résultats montrent un effet positif et significatif de désapprentissage organisationnelle dans la performance de l'innovation de l'entreprise.

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ABSTRACT

Innovation is a key component of entrepreneurship and is considered crucial for achieving sustainable competitive advantage. The research model in this paper empirically explores the link between organizational unlearning and innovation outcomes. The model assesses the moderating influence of family business ownership on this link. Hypotheses were tested using a sample of 145 firms in the Spanish automotive components manufacturing sector. Relationships between the constructs were assessed using partial least squares (PLS) SEM path modeling. Results show the significant positive effect of organizational unlearning on the firm's innovation outcomes.

Keywords: organizational unlearning, innovation outcomes, entrepreneurship, family business, partial least squares (PLS)

RÉSUMÉ

L'innovation est un élément clé de l'entrepreneuriat et est considéré comme crucial pour obtenir un avantage concurrentiel durable. Le modèle de reserche de cet article explore la relation entre le désapprentissage organisationnelle et la performance de l'innovation. Le modèle évalue l'influence modératrice de l'entreprise familiale dans ce lien. Les hypothèses ont été testées à l'aide d'un échantillon de 145 entreprises dans le secteur manufacturier espagnol composants automobiles. Les relations entre les constructions ont été évaluées à l'aide des moindres carrés partiels (PLS). Les résultats montrent un effet positif et significatif de désapprentissage organisationnelle dans la performance de l'innovation de l'entreprise.

Mots clés : désapprentissage organisationnelle, résultats de l'innovation, entrepreneuriat, entreprise familiale, moindres carrés partiels (PLS)

RESUMEN

La innovación es un componente clave del emprendimiento y se considera crucial para lograr una ventaja competitiva sostenible. El modelo de investigación explora la relación entre el desaprendizaje organizacional y los resultados de innovación. El modelo valora la influencia moderadora de la propiedad familiar del negocio en este enlace. Las hipótesis se testaron utilizando una muestra de 145 empresas en el sector de fabricación de componentes de automoción español. Las relaciones entre los constructos fueron evaluadas utilizando mínimos cuadrados parciales (PLS). Los resultados muestran un efecto positivo y significativo del desaprendizaje organizacional en los resultados de innovación de la empresa.

Palabras clave: desaprendizaje organizacional, resultados de la innovación, emprendimiento, empresa familiar, mínimos cuadrados parciales (PLS).

Entrepreneurship, knowledge management, and learning are three approaches with a shared focus on studying firms and with a shared goal of studying innovation and the competitive advantages developed by firms. Despite the different terminology and theory corresponding to each of these three approaches, all three converge on a single view of the phenomenon under study, namely the process of unlearning within the firm, the relationship of this unlearning with innovation, and the effects of different management approaches on this relationship. This paper examines how family ownership and different management styles affect the relationship between organizational unlearning and innovation outcomes.

In its relationship with entrepreneurship, business management has two dimensions. The first dimension corresponds to the discovery of new opportunities, whereas the second dimension corresponds to creating and exploiting opportunities. In the words of Shane and Venkataraman (2000, p. 218), entrepreneurship is "the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them." Numerous scholars have adopted this description of entrepreneurial action (Barret and Mayson, 2008; Hitt *et al.*, 2001; Peredo and McLean, 2006; Shane *et al.*, 2003; Venkataraman, 1997), and it features prominently in two research streams. The first research stream examines the entrepreneur as the

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individual who *discovers opportunities* within the economic and institutional framework (Cuervo, 2005; Hitt *et* al., 2001; Schumpeter, 1934, 1950), whereas the second research stream depicts the entrepreneur as a corporate entrepreneur as well as a discoverer. Under this second approach, the entrepreneur is an agent who develops new combination of factors, *drives innovation, and exploits opportunities* (Hayton, 2005; Lounsbury and Glynn, 2001; Schumpeter, 1934, 1950).

The current study examined the relationship between organizational unlearning and innovation outcomes. This process fundamentally corresponds to internal affairs of the organization and to the way the organization manages knowledge and learning. The values, shared goals (Nonaka, Toyama and Conno, 2000), and management incentives must be fostered and set by the corporate entrepreneur (Hayton, 2005, 2006). In family businesses, however, management style, conditioned by the family ownership structure, is a complex issue (Tagiuiri and Davis, 1996) that may hinder corporate entrepreneurial development and delay innovation. Nevertheless, watchfulness by the ownership of the business can yield advantages derived from control that is more distanced from the organization's daily operations, thereby enabling unlearning through interventions and encouraging innovation.

Examining these two opposing forces within the family business and their influence on the relationship between innovation and unlearning is the focus of this research. The purpose of this study was therefore to develop a model that (1) examined the relationship between firms' organization unlearning (OU) mechanisms and innovation outcomes (IO) and (2) assessed the influence of family-based firms on the link between OU and IO. The paper proceeds as follows. The next section presents the theoretical background and research hypotheses. Section 3 describes the research method used to test the hypotheses, and section 4 presents the results of the data analyses. Finally, implications, limitations, and future research directions are presented in section 5.

Theoretical Background

Antecedents

In recent decades, effective innovation and knowledge management strategies have been widely acknowledged as critical for enabling entrepreneurship as a form of sustainable value creation and competitive performance. Accordingly, these issues have attracted growing interest from both scholars and practitioners everywhere. Pursuing innovation frequently leads organizations to seek out new opportunities and to capitalize on existing ones (Matzler et al., 2013; Shane and Venkataraman, 2000). Furthermore, innovation is a fundamental factor in attaining sustainable competitive advantage and hence improving firm performance. Such competitive advantage enables firms to exploit opportunities better than their competitors (Anderson and Reeb, 2003, Damanpour and Gopalakrishnan, 2001 Morris et al., 2011).

Abundant literature discusses the existence of a strong relationship between knowledge management, organizational learning, and innovation within organizations (Cohen and Levinthal, 1990; Jiménez-Jiménez and Sanz-Valle, 2010; Loasby, 2007; Nonaka and Takeuchi, 1995). Firms must now face problems derived from the dynamism of their environment. In such turbulent environments, firms' products, services, and knowledge rapidly become obsolete. Therefore, the most skillful firms at updating and renewing their knowledge bases will become leaders in the pursuit of innovation. They will hence be more capable of improving their performance (Hitt el al., 2001; Morris et al., 2011; Sanz-Valle et al., 2011). According to Senge (1990), the capacity to learn faster than competitors is perhaps the only way of obtaining sustainable competitive advantage. Akgün et al. (2007), in contrast, argue that organizational learning is not enough to develop and foster organizational knowledge and insight because a process of organizational unlearning (OU) may also be required. According to Ortega-Gutiérrez et al. (2015), an unlearning context contributes to enhancing corporate managers' willingness to reduce the adverse effects of inappropriate or undesired knowledge and helps them combine new knowledge with their prior knowledge base.

Although scholars from many disciplines have extensively studied knowledge management and innovation, most traditional management literature focuses on firms where management and ownership are separate, usually excluding firms where management and ownership overlap or interact closely. A strong association between ownership and management is typical of family firms. The active involvement of family owners in daily management gives firms distinctive characteristics, incentives, structures, and norms. These firms therefore develop distinctive ways of gaining and using resources and capabilities. There are therefore compelling reasons to believe that family and non-family firms have different strategies and different forms of corporate entrepreneurship.

Linking organizational unlearning with innovation outcomes

Nonaka (1994) defines organizational learning as the process whereby new knowledge and insights appear within a firm. This new knowledge stems from employees' expertise (Barney and Wright, 1998) and knowledge base (Nonaka and Takeuchi, 1995; Nonaka et al., 2000). Consequently, a learning organization is an organization capable of creating, acquiring, and transferring knowledge, and in turn modifying its behavior to embrace new knowledge and insights (Garvin, 1993).

Damanpour (1991) defines innovation as the generation and development of new products, services, or processes. Consistent with Damanpour and Gopalakrishnan (2001), innovation is a critical element to achieve sustainable competitive advantages. They argue that innovative firms tend to be more flexible and adaptable to change, and more capable of exploiting opportunities than their competitors (Baumol, 1968; Morris et al., 2011). Fiol (1996) argues that organizations' potential to generate innovation outcomes (IO) stems from knowledge absorption. Scholars have widely assumed a reciprocal relationship between knowledge management (KM) and innovation in the sense that innovative efforts are a result of the firm's efforts in fostering KM strategies. Similarly, innovation outcomes (i.e., new product and process development) contribute to generating and absorbing new knowledge (Prajogo and Ahmed, 2006). Cohen and Levinthal (1990)

posit that the ability to effectively exploit external knowledge is vital for firms to enhance their IO. In corporate entrepreneurship (Baron, 2004; Hayton, 2005), organizations' absorptive capacity lets organizations convert their knowledge into new innovative products, services, and processes (Cepeda-Carrión et al., 2012a).

Rampersad (2003) posits that knowledge rapidly becomes obsolete, hence the reason why individuals and organizations should adopt an attitude of continuous learning. Organizations achieve superior performance if their members can learn and apply knowledge faster than competitors' members can. According to Casillas et al. (2010, p. 163), "learning is the process of acquisition, integration and interpretation of new knowledge with the objective of a later use." Following De Holan and Phillips (2004), an unlearning context is the context where firms are willing to eliminate knowledge that can prevent the achievement of organizational goals. In situations of turbulence and continuous change, knowledge quickly becomes outdated (Hedberg, 1981). This rapid obsolescence forces companies to renew their knowledge periodically. Hedberg calls such renewal activities "unlearning," pointing out that a core weakness of many firms is in fact their inability to unlearn.

The review of the literature on organizational learning reveals that learning is itself a dynamic process whereby forgetting knowledge —abandoning old logics, behaviors, and routines— is followed by new knowledge acquisition (Hedberg, 1981; Leal-Rodríguez et al., 2015). De Holan and Phillips (2004) suggest that firms should forget certain knowledge, practices, and routines before acquiring new knowledge. This process of organizational unlearning —a dynamic process whereby organizations identify and eliminate obsolete knowledge and routines— is a prerequisite for the effective acquisition of new knowledge. Cepeda-Carrión et al. (2012b, p. 1552) argue that "the replacement of old knowledge could be essential for organizations that wish to create new products or services that require new points of view and ideas." Similarly, McGill and Slocum (1993, p. 67) claim that "the first step to learning is to challenge those ways of thinking that worked so well in the past."

Organizations that want to develop innovative products, services, and processes rely on the absorption of new knowledge (Leal-Rodríguez et al., 2013). Absorptive capacity enables firms to turn knowledge into new products, services, and processes and support innovation (Cohen & Levinthal, 1990; Cepeda-Carrión et al., 2012a). The KM literature widely reports that the firms' endeavor and investment in enriching its knowledge base is reflected in IO enhancement.

The above arguments depict organizational learning as a dynamic cycle within corporate entrepreneurship (Baron 2004; Loasby, 2007) where an initial knowledge base is required to absorb new knowledge (Cohen & Levinthal, 1990) and the abandonment of obsolete and useless knowledge that no longer fits the firm's strategy is critical to succeed as an innovative organization. The following hypothesis captures this argument:

H1: *Organizational unlearning relates positively to innovation outcomes.*

2.3. Family business and innovation outcomes

According to Sirmon and Hitt (2003), family businesses have a distinctive set of resources shaped by the interaction of the family and the business. Such interaction may affect the ways resources are managed and deployed within family firms and may yield both advantages and disadvantages (Tagiuiri and Davis, 1996). Chua et al. (1999) report that family businesses are unique because of their patterns of ownership, governance, entrepreneurial orientation, management, and succession, all of which ultimately influence the firm's goals, strategies, and structure. This argument is consistent with the assumption that firm innovativeness might differ between family and non-family businesses (Gudmundson et al., 2003).

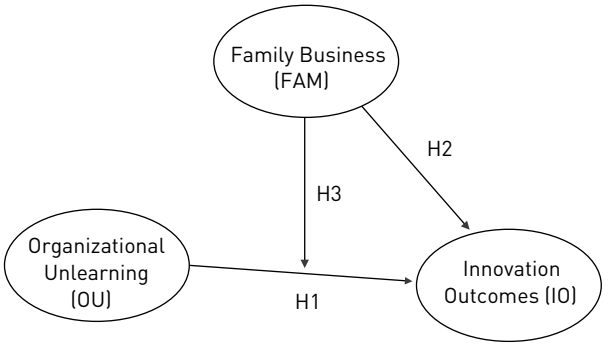
In any case, the relationship between organizational family nature and innovation remains unclear. Some studies posit a negative relationship between family business and innovativeness, whereas others suggest a positive link. Family businesses are mostly SMEs, so unlike larger firms, which usually have the capacity and resources to invest in R&D, SMEs tend to struggle to perform R&D (Schumpeter, 1934). Nevertheless, several studies highlight the growing number of SMEs with innovative products, services, and processes. Many SMEs survive thanks to their innovative spirit (De Jong & Marsili, 2006; Laforet, 2013). Although most SMEs lack the necessary means and know-how to invest in innovation, they have a major advantage over larger firms: Their size means they are more flexible and less bureaucratic, which may help family businesses in their pursuit of innovation (Laforet, 2008).

Therefore, a family ownership structure may directly and negatively affect innovation outcomes because the ownership structure limits corporate entrepreneurship freedom. Conversely, family ownership could also enhance innovation through unlearning because of the distance between managers (or entrepreneurial orientation) and owners. Despite contradicting the first statement, the second statement makes sense in terms of unlearning. Family businesses have several characteristics that may enable or enhance the effect of OU on IO. These characteristics such as gathering and sharing of information may therefore enhance the effects of the relationship between ownership and management (Silva & Majluf, 2008). This argument yields the following hypotheses:

H2: *Family ownership relates negatively to innovation outcomes.*

H3: *Family ownership moderates (enhances) the OU–IO link.*

FIGURE 1
Research model



Method

Data collection and sample

Data for this research came from a sample of Spanish firms belonging to the automotive components manufacturing sector. The sample came from a list from Sernauto, the Spanish Association of manufacturers of equipment and components for the automotive industry. This sector has 906 companies, of which 418 met the selection criteria (i.e., knowledge-intensive companies that pursue innovation). After two mailing efforts, we obtained 145 usable surveys (a 34.7% response rate). Top executives responded to the questionnaires. Table 1 presents demographic data for the sample.

TABLE 1
Demographic data

Managerial level	Level 1	Level 2	Level 3
	110	32	3
	76%	22%	2%
Sector	**Industry**	**Service**	**Commercial**
	118	18	9
	81%	12%	6%
Firm size	**Small**	**Medium**	**Large**
	18	55	72
	12%	38%	50%
Firm age	**1–15 years**	**16–30 years**	**over 30 years**
	12	57	76
	8%	39%	52%

Measures

Section 2 outlines the foundations of the survey design. The survey drew on scales adapted from prior studies. Executives responded to items using 7-point Likert scales ranging from 1 = (*completely disagree*) to 7 (*completely agree*). We assessed organizational unlearning (OU) as an aggregate multidimensional construct. We first adapted 18 items (5 items to measure the examination of lens fitting, 6 items to measure the consolidation of emergent understandings, and 7 items to measure the framework for changing individual habits) from a study by Cegarra and Sánchez (2008). Second, to measure innovation outcomes (IO), we adapted eight items by Prajogo and Ahmed (2006). Finally, a single item ("to what extent do you think your company is a family business?") measured the extent to which firms were family businesses. Questionnaire items appear in the appendix.

Data analysis

To test the research model and hypotheses, we used partial least squares (PLS), a variance-based structural equation modeling (SEM) method. PLS was suitable for this study for the following reasons (Roldán & Sánchez-Franco, 2012): (1) the sample was small (n = 145); (2) the study sought to predict the dependent variables; (3) the research model described complex relationships in the hypotheses; and (4) the study used latent variables' scores in subsequent predictive analysis. We used SmartPLS software (Ringle, Wende, & Will, 2005) to assess both the measurement and structural models.

Results

Assessing and interpreting PLS models has two phases: (1) assessing reliability and validity of the measurement model and (2) evaluating the structural model.

Measurement model

We assessed reliability and validity. The measurement model met all requirements established in the literature. First, results support the requisite reliability of the individual reflective items because all standardized loadings were greater than 0.7 (Carmines and Zeller, 1979) (Table 2). Second, the model also had construct reliability because the composite reliabilities (ρc) of all reflective constructs were greater than 0.7 (Nunnally and Bernstein, 1994) (Table 2). In addition, latent variables showed convergent validity because their average variance extracted (AVE) was greater than 0.5 (Fornell and Larcker, 1981) (Table 2). Finally, all variables displayed discriminant validity, assessed by comparing the square root of the AVE with the correlations of the reflective latent variables (Table 3). Diagonal elements should be notably greater than off-diagonal elements in the corresponding rows and columns (Roldán & Sánchez-Franco, 2012).

To assess formative measurement models, it is necessary to test for potential multicollinearity between items and to analyze weights (Henseler et al., 2009). We used IBM-SPSS software to perform collinearity tests. The maximum variance inflation factor (VIF) values for the indicators that shape the formative multidimensional construct OU were 4.841, 2.327, and 4.829, well below the threshold of 5 (Hair et al., 2011) (Table 2). Weights supply information about the contribution of each formative dimension to OU. Therefore, they form a kind of ranking of these dimensions in terms of their contribution (Henseler et al., 2009). Table 2 shows that the framework for changing individual habits (0.773) and the examination of lens fitting (0.248) were the most significant dimensions in OU.

Structural model

The structural model was evaluated using the algebraic sign, magnitude, and significance of the structural path coefficients. The R^2 values assessed predictive relevance. Table 4 shows the explained variance (R^2) in the endogenous variables and the path coefficients for the two models under study (baseline model and model with interaction effect). Bootstrapping (5,000 samples) provided t-values to evaluate the significance of the relationships in the research model (Roldán & Sánchez-Franco, 2012).

The two direct effects hypothesized in Fig. 2.A. (baseline model) were significant, thereby providing support for H1 and H2 (Table 4). To test the moderating effect of family ownership of the firm on the OU–IO link (H3), we followed the product-indicator technique proposed by Henseler and Fassott (2010). As in regression analysis, we multiplied the predictor (OU) and the moderator (FAM) variables to obtain the interaction term. We followed Chin et al.'s (2003) recommendation of standardizing the product indicators. The coefficient of OU×FAM→IO (0.225***) was statistically significant (Table 4). The R^2 for this interaction model was then compared to the R^2 for the baseline model, in which the interaction term was excluded (Chin, 1998). The difference in the R-squared value yielded the

TABLE 2
Measurement model

CONSTRUCT/ dimension/ indicator	VIF	Weight	Loading	Composite reliability (CR)	Average variance extracted (AVE)
Organizational unlearning				**N.A.**	**N.A.**
Examination of lens fitting					
	4.841	**0.248**		**0.959**	**0.824**
ou1a			0.909		
ou1b			0.909		
ou1c			0.900		
ou1d			0.881		
ou1e			0.939		
Consolidation of emergent understandings					
	2.327	**0.003**		**0.923**	**0.666**
ou2a			0.821		
ou2b			0.826		
ou2c			0.776		
ou2d			0.846		
ou2e			0.766		
ou2f			0.857		
Framework for changing individual habits					
	4.829	**0.773**		**0.973**	**0.839**
ou3a			0.937		
ou3b			0.921		
ou3c			0.908		
ou3d			0.904		
ou3e			0.913		
ou3f			0.910		
ou3g			0.917		
Innovation outcomes					
				0.970	**0.803**
io1			0.917		
io2			0.906		
io3			0.881		
io4			0.889		
io5			0.914		
io6			0.897		
io7			0.886		
io8			0.877		
Family nature					
				1	**1**
fam			1		

N.A.: not applicable

TABLE 3
Discriminant validity

	FAM	IO	OP	OU
FAM	**1**	0	0	0
IO	-0.375	**0.896**	0	0
OP	-0.332	0.709	**0.883**	0
OU	-0.384	0.644	0.857	**N.A.**

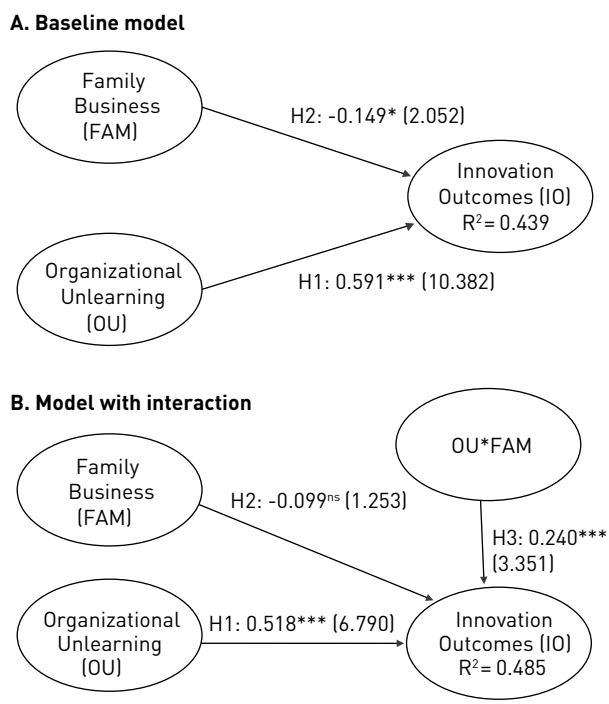
Diagonal elements (bold) show the square root of variance shared between the constructs and their measures (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, the diagonal elements should be larger than the off-diagonal elements. N.A.: not applicable.

overall effect size f^2 for the interaction effect. The effect size f^2 was obtained as follows: $f^2 = (R^2\text{included} - R^2\text{excluded})/1 - R^2\text{included}$. Values of f^2 up to 0.02, 0.15, and 0.35 indicated that the interaction term respectively had a weak, moderate, or strong effect on the criterion variable. The interaction term had an f^2 value of 0.097, thereby supporting H3. Fig 2 / TAB 4

Discussion

This study explored the influence of organizational unlearning on innovation outcomes and examined the moderating effect of organizational size in these relationships. Many scholars have studied ties between innovation, performance, and organizational learning, but few empirical studies have included OU in the analysis. Furthermore, the literature on the links between innovation, unlearning, and firm size is still scarce.

FIGURE 2
Structural model



*** p < 0.001, ** p < 0.01, * p < 0.1 (based on t(4999), two-tailed test)

TABLE 4
Structural model results

	Baseline Model	Model with interaction	Support
	$R^2_{IO} = 0.439$	$R^2_{IO} = 0.485$	
		$f^2 = 0.089$	
Hypotheses	**Path coefficient**	**Path coefficient**	
H1: OU → IO	0.591*** (10.382)	0.518*** (6.790)	Yes
H2: FAM → IO	(-0.149)* (2.052)	(-0.099)^{ns} (1.253)	No
H3: OU×FAM → IO		0.240*** (3.351)	Yes

*** p < 0.001, ** p < 0.01, * p < 0.1, ns: non-significant (based on t(4999), two-tailed test)

This paper makes three major theoretical contributions. First, this study responded to scholars' calls for research on OU in the current turbulent and hypercompetitive industrial sector (e.g., automotive), where knowledge rapidly becomes obsolete. Second, this study showed how focusing on the OU–IO link may unveil the drivers behind new sources of competitive advantage. Finally, results show that family business and OU together foster firms' capacity to learn, develop new knowledge, innovate, and adapt to market and environmental changes.

The entrepreneurial implications of the study are clear. This research provides insights that can teach decision-makers within family business about how characteristics of family business owners affect knowledge management and innovation and how innovation and unlearning practices should be tailored to suit such characteristics. Hence, family ownership of firms and the entrepreneurial characteristics of family businesses are in fact far from being a barrier to unlearning and innovation. Instead, they can actually enhance such relationships.

This study has certain limitations. First, despite providing evidence of causality, we were unable to test causality because researchers always make assumptions about the direction of causal relationships. Second, this research was based on the perceptions of survey respondents, and we employed only one method to elicit these insights. Finally, this study focused on one sector (the automotive components manufacturing industry) and one geographical context (Spain). Therefore, researchers should take care when generalizing these conclusions and insights to different scenarios.

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APPENDIX 1
Questionnaire scales

A. Organizational Unlearning (Cegarra and Sánchez, 2008).

1. In my company...
- Employees are able to easily identify problems (new ways of doing things)
- Employees are able to identify mistakes from their colleagues
- Employees are able to listen to the customer (eg: complaints, suggestions...)
- Employees are able to easily share information with the Managers
- Employees try to reflect and learn from their own mistakes

2. In my company...
- Managers seem to be open to new ideas and ways of doing things
- Managers have tried to start projects
- Managers recognize the value of acquiring, assimilating and applying new information
- Managers adopt the employees' suggestions in the form of new routines and processes
- Managers are willing to work together with the employees of the company and resolve problems together
- Managers are concerned about the fact that the way to respond to unforeseen circumstances will be known by all

3. In my company...
- The existence of new situations have helped individuals to identify their own mistakes
- The existence of new situations have helped individuals to undesirable attitudes
- The existence of new situations have helped individuals to identify behaviors improper for the place
- Individuals recognize the forms of reasoning or to arrive at solutions such as inadequate
- The existence of new situations have helped individuals to change their behaviors
- The existence of new situations have helped individuals to change their attitudes
- The existence of new situations have helped individuals to change their thoughts

B. Innovation Outcomes (Prajogo and Ahmed, 2006).

1. In my company...
- The level of novelty (innovation) of the new products is very high
- We use the latest technological innovations in our new products
- We are very quickly in the development of new products
- We have a large number of new products introduced into the market
- We possess a high technological competitiveness in everything we do (greater than all our competitors)
- We are very quickly in the adoption of the latest technological innovations in our processes
- Actuality and novelty of the technology used in our processes are high
- We possess a high rate of change and renewal in our processes, procedures and techniques

C. Family Business

1. To what extent do you think your company is a family business