Linking market orientation, innovation, unlearning and performance: A multiple mediation model.

Completed Research Paper

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Abstract

Many studies uphold market orientation as a key factor in creating and sustaining a firm's competitive advantage. The present research model explores this topic further by including within the model the links between organizations' innovation outcomes, its process of organizational unlearning and business performance. In particular, the model empirically tests the mediating role of innovation outcomes and organizational unlearning in the relationship between market orientation and business performance. The present study uses a sample of 145 firms from the Spanish automotive components manufacturing sector and employs partial least squares (PLS) in order to test the research hypotheses.

Keywords: *market orientation, innovation outcomes, organizational unlearning, business performance, partial least squares, multiple mediation.*

1. Introduction

Firms are currently competing within an extremely turbulent and dynamic context. Under such conditions, firms are forced to constantly renew their products and services, as these quickly become obsolete. In this sense, the organizations' ability to renew its knowledge bases would provide them an advantage over its competitors in the innovation contest, and hence make them improve its performance (Sanz-Valle, Naranjo-Valencia, Jiménez-Jiménez, & Perez-Caballero, 2011). Organizational learning capability plays a crucial role to this end. In this sense, the firm's capacity to learn faster than competitors is perhaps the only way of attaining sustainable competitive advantages (Senge, 1990). Nevertheless, organizational learning alone might be insufficient for the effective fostering of knowledge and insight, as a process of organizational unlearning (OU) may also be necessary (Akgün, Byrne, Lynn, and Keskin, 2007).

Innovation enhances the firms' capacity to face the uncertainty that characterizes the current competing fields. This capability enhances the firm's ability of seeking new opportunities and exploiting the existing ones more efficiently (Matzler, Abfalter, Mooradian, & Bailom, 2013). Moreover, innovation also constitutes a key factor in the creation and sustaining of competitive advantages, which in turn expands business performance. Being innovative involves making the firm's structures more flexible. By virtue of such flexibility, firms find easier to adapt to their business environment, thus enabling them to leverage

opportunities better than their competitors (Damanpour & Gopalakrishnan, 2001).

It seems clear that in order to succeed within the new hypercompetitive manufacturing environment, firms ought to be more innovative. To this end, they need to remain up to date of the multiple changes and fluctuations that constantly appear in the market. This involves staying oriented to their customers, proactively adopting a market orientation (MO) strategy (Laforet, 2009). The ultimate aim of developing a market orientation strategy deals with enhancing the firm's innovativeness and performance.

There is plenty of literature positing that organizational learning and firm innovativeness are both antecedents and influencers of business performance (March, 1991; Vijande, Pérez, González, & Casielles, 2005). However, few studies assess the link between organizational unlearning (OU) and business performance (BP). For instance, Cegarra-Navarro et al. (2011) reveal that an unlearning context mediates the effects of knowledge exploration and exploitation on business performance. This finding suggests that OU potentially enables employees to leverage the existing knowledge and makes them able to generate new knowledge, which supposes in turn two fundamental aspects in order to attaining competitive advantages. The results of this study conclude that market orientation is positively related with business performance and that OU and IO drive this relationship. Therefore, the present paper proposes that unlearning and innovation are mediators of the direct relationship between market orientation and business performance.

The paper proceeds as follows. The next section presents the theoretical background together with the research model and hypotheses arising from the literature review. The third section comprises a description of the research methodology followed in order to test these hypotheses. The forth section presents the results of the data analyses using partial least squares (PLS) path-modeling technique. Finally, the fifth section brings together the discussion, implications, limitations, and directions for future research.

2. Literature Review and Research Hypotheses

Within this section we develop the theoretical foundations concerning the distinct variables and hypotheses included in the research model.

2.1. The Link Between Market Orientation and Performance

Market orientation is defined by Narver and Slater (1990) as a second order multidimensional construct shaped by three dimensions: (i) Customer orientation: organizational actions oriented to identify the customers' perceptions, needs and desires and trying to satisfy them through their adapted supply. (ii) Competitors orientation: organizational actions oriented to know the competitors' weaknesses, strengths, opportunities and strategies and being able to react and design the proper response. (iii) Inter-functional coordination: joint and efficient use of the firm's resources and capacities in order to provide greater value to its customers.

Plenty of empirical works have analyzed the role of market orientation as an antecedent of business performance. However, the assessment of the link between market orientation and performance has aroused inconclusive results, as some research studies failed to find support for this direct relationship (Noble, Sinha & Kumar, 2002). Other studies obtain mixed results (Jaworski & Kohli, 1993).

Nevertheless, the literature in this field widely suggests the existence of a positive relationship between the firms' market orientation, new products success and overall performance (Narver & Slater, 1990; Desphande et al., 1993; Appiah-Adu & Singh, 1998).

This positive relationship is explained because market orientation enables firms to generate long-term greater value for its customers (Morgan & Strong, 1998). The market orientation strategy helps firms to obtain vital information about the market needs and trends, and hence, enables them to enhance their decision-making capability and adjust their offer (Jiménez-Jiménez, Sanz-Valle & Hernández-Espallardo, 2008). Consequently the firm is more connected to the customers' requirements, who will correspond arising higher doses of satisfaction and loyalty (Kohli & Jaworski, 1990).

Some empirical studies such as the one developed by Pelham (2000) find a positive relationship between market orientation and financial performance (e.g. growth in sales, gross profit enhancement, etc.). This author argues that organizations will increase their profits when they rely on certain actions and behaviors related with satisfying the customers' needs. Therefore, we posit the following hypothesis:

H1: Market orientation relates positively to business performance.

2.2. The Mediating Roles of Firm Innovation and Unlearning

2.2.1. The mediating role of firm innovation on the market orientation-performance link

Market orientation has been extensively assessed with regard to its relation with innovation outcomes. There are several research studies that reveal a positive impact of MO on new products development –especially at the early stages of the product life cycle– and incremental innovations (Atuahene-Gima, 1996; Laforet, 2009).

The organizational innovation process is to a large extent dependent of the amount of information obtained from the market. In this vein, the firm needs to be oriented to the market, this is to be aware of the changes in the customers needs and behaviours, as well as carefully monitoring what competitors and suppliers are doing (Kohli & Jaworski, 1990). Strong evidence supports the impact of market orientation on firm innovativeness both in manufacturing and service companies (Harryson, 1997; Lukas & Ferrell, 2000).

It is widely accepted that firms that innovate are more efficient, attain higher performance, and are more likely to survive (Damanpour & Schneider, 2006; Leal-Rodríguez et al., 2014). Organizations that promote creativity and innovation are more likely to identify and attract opportunities that might lead to valuable results. Innovation always encompasses a certain degree of risk and its success in never guaranteed. Most empirical research studies posit the existence of a positive relationship between innovation and performance (Roberts, 1999; Hansen, Nohria & Tierney, 1999). An innovative approach enables firms to deal with a turbulent and dynamic environment and helps them to achieve and sustain long-term competitive advantages (Leal-Rodriguez, Eldridge, Roldán, Leal-Millán & Ortega-Gutiérrez, 2014). Accordingly, we propose the following hypothesis:

H2: Innovation outcomes positively mediate the relationship between market orientation and business performance.

2.2.2. The mediating role of unlearning on the market orientation-performance link

According to Cegarra and Sánchez's (2008) framework, organizational unlearning (OU) is a second order multidimensional construct shaped by three dimensions. The three dimensions that comprise OU are: (i) the examination of lens fitting; (ii) the consolidation of emergent understandings; and (iii) the framework for changing individual habits. The first dimension deals with a change of perspective oriented to disrupt the employees' usual state of comfort,

and hence, being able to raise their awareness of new perceptions. The second dimension involves the organizational processes that permit employees to apply and develop their problem solving skills. In other words, this dimension deals with allowing individuals to perform a critical assessment of the problem instead of following standard instructions. Finally, the last OU dimension refers to the firm's attempts to inhibit bad habits and inappropriate values or attitudes before bringing new ideas or knowledge-based changes into the organization's operations (Cegarra-Navarro, Sánchez-Vidal, & Cegarra-Leiva, 2011).

A research study developed by Lee and Tsai (2005) assessed the links between market orientation, learning orientation, innovation and culture. In this vein, these authors suggest that market orientation, learning orientation and innovativeness influence business performance. Many studies have demonstrated the impact exerted by OL on business performance (Pérez-López, Montes-Peón & Vázquez-Ordás, 2004; Real, Leal & Roldán, 2006). In this vein, firms will have a superior performance than their competitors when they are able to learn more efficiently (Inkpen & Crossan, 1995).

In order to reach success in organizational innovation and performance, it becomes fundamental the firm's market orientation and learning orientation (Slater & Narver, 1995). According to Baker and Sinkula (1999) OL also involves the extent to which organizations are committed to challenge the main beliefs, norms, practices and values. In the same line, Baker and Sinkula (2002) sustain that the firm's market orientation will only lead to business performance improvement when it is combined with an effective OL strategy. Martin de Holan and Phillips (2004) affirm that firms must abandon certain knowledge, practices, and routines in order to acquire new knowledge. The literature on organizational learning posits that learning is a dynamic process where the forgetting of knowledge, old logics, behaviors, and routines is succeeded by new knowledge acquisition (Hedberg, 1981). This process of organizational unlearning as a dynamic process whereby the firm can identify obsolete knowledge and routines and then eliminate them is a prerequisite for the acquisition of new knowledge. McGill and Slocum (1993, p.67) state, "The first step to learning is to challenge these ways of thinking that worked so well in the past." Cepeda-Carrión, Cegarra-Navarro, and Leal-Millán (2012, 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". Thus, we hypothesize:

H3: Organizational unlearning positively mediates the relationship between market orientation and business performance.

3. Research Method

3.1. Data collection and sample

This research identifies as study population the whole sector of Spanish firms belonging to the automotive components manufacturing industry. The sample comes from a list of Sernauto, the Spanish Association of manufacturers of equipment and components for the automotive industry. From this sector's 906 companies, 418 fulfil the selection criteria (i.e., being knowledge-intensive firms that are innovation and learning oriented). After two mailing efforts, the outcome is 145 usable surveys (a 34.7% response rate). Questionnaires were answered by top managers.

3.2. Measures

The literature review in Section 2 provides the basis for the survey design. This study

adapts scales from previous works in which the items and responses appear on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). To assess the organizational unlearning (OU) as an aggregate multidimensional construct, the methodology adapts 18 items (five items to measure the examination of lens fitting, six items to measure the consolidation of emergent understandings, and seven items to measure the framework for changing individual habits) from Cegarra and Sánchez (2008). MO is assessed through the scale developed by Narver and Slater (1990). This scale comprises 14 items (five to measure customer orientation, four to measure competitors orientation, and five to measure inter-functional coordination). Building on the previous work of Powel (1995), five items compose the scale for business performance (BP). For the innovation outcomes (IO) variable, this work adapts the eight items that Prajogo and Ahmed (2006) use in their study. Due to space limit within this paper we could not include the questionnaire items. However, we will be delighted to submit the questionnaire by e-mail to whom may require it.

3.3. Data analysis

To test the research model, the present study uses partial least squares (PLS), a variance-based structural equation modeling (SEM) method. PLS is a suitable technique for use in this study due to the following reasons (Roldán & Sánchez-Franco, 2012): (1) the sample (n = 145) is small; (2) the focus of the study is the prediction of the dependent variables; (3) the research model entails considerable complexity with regard to the type of relationships in the hypotheses; and (4) this study uses latent variables' scores in the subsequent analysis for predictive purposes. The present work uses the SmartPLS software (Ringle, Wende, & Will, 2005) for the simultaneous assessment of the measurement model and the structural model.

4. Results

The analysis of a PLS model comprises two phases: (1) assessment of reliability and validity of measurement model, and (2) evaluation of structural model.

4.1.   Measurement model

The assessment of reflective measurement model evaluates model's reliability and validity. Results show that measurement model meets all common requirements. First, reflective individual items are reliable because all standardized loadings are greater than 0.7 (Table 1). Consequently, the individual item reliability is adequate (Carmines & Zeller, 1979). Second, all reflective constructs meet the requirement of construct reliability, since their composite reliabilities (ρc) are greater than 0.7 (Nunnally & Bernstein, 1994) (Table 1). Third, these latent variables achieve convergent validity because their average variance extracted (AVE) surpasses 0.5 level (Fornell & Larcker, 1981) (Table 1). Finally, all variables meet discriminant validity requirements. Confirmation of this validity comes from comparison of the square root of AVE versus the corresponding latent variable correlations (Table 2). For satisfactory discriminant validity, diagonal elements should be significantly greater than off-diagonal elements in the corresponding rows and columns (Roldán & Sánchez-Franco, 2012).

Table 1: Measurement model

CONSTRUCT/dimension/indicator	Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
MARKET ORIENTATION		0.955	0.876
Customer orientation	0.904		
Competitors orientation	0.963		
Inter-functional coordination	0.940		
ORGANIZATIONAL UNLEARNING		0.976	0.930
Examination of lens fitting	0.975		
Consolidation of emergent understandings	0.950		
Framework for changing individual habits	0.968		
INNOVATION OUTCOMES		0.970	0.803
BUSINESS PERFORMANCE		0.920	0.697

Table 2: Discriminant validity

	IO	MO	BP	OU
IO	**0.896**	0	0	0
MO	0.628	**0.936**	0	0
BP	0.711	0.870	**0.935**	0
OU	0.504	0.919	0.859	**0.965**

Diagonal elements (bold) are 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.

4.2.   Structural model

Table 3 shows the explained variance (R^2) in the endogenous variables and the path coefficients for the three models under study. Bootstrapping (5000 samples) provides t-values that enable the evaluation of relationships' statistical significance in the research model (Roldán & Sánchez-Franco, 2012).

Table 3: Structural model results

Relationships	Model 1	Support	Model 2	Support
	$R^2_{BP} = 0.759$		$R^2_{BP} = 0.161$	
			$R^2_{IO} = 0.394$	
			$R^2_{OU} = 0.844$	
MO→BP	0.871*** (44.773)	Yes	0.161^{ns} (1.509)	No
MO→IO			0.628*** (13.316)	Yes
IO→BP			0.337*** (7.608)	Yes
MO→OU			0.919*** (69.387)	Yes
OU→BP			0.541*** (5.658)	Yes

Notes: MO: Market orientation; IO: Innovation outcomes; OU: Organizational unlearning; BP: Business performance
*t* values in parentheses *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ns: not significant (based on t(4999), one-tailed test). t(0.05, 4999) = 1.645; t(0.01, 4999) = 2.327; t(0.001, 4999) = 3.092

Table 3 includes the direct paths for both models 1 and 2. Model 1 solely comprises the MO-BP direct link. In such scenario, results support H1, which describes the direct relationship between market orientation (MO) and business performance (BP) (a = 0.871; t = 44.773). In addition, model 2 encompasses the rest of direct relationships once included the IO and OU variables within the model. Results reveal that b_1, c_1, b_2 and c_2 are significant as direct effects. This is a first step to demonstrate the existence of an indirect effect of MO on BP via IO (H2).

Table 4: Summary of mediating effect tests

Total effect of MO on BP		Direct effect of MO on BP			Indirect effects of MO on BP				
Coefficient	t-value		Coefficient	t-value		Point estimate	Percentile 95% CI		VAF
							lower	upper	
0.871***	44.773	H1 = a'	0.161ns	1.509	Total = b1c1 + b2c2	0.709	0.433	0.972	84.40%
					H2 = b1c1	0.212	0.130	0.301	24.34%
					H3 = b2c2	0.497	0.303	0.671	57.06%

We also demonstrate the existence of an indirect effect of MO on BP via OU (H3). We have followed the methodological approach proposed by Preacher & Hayes (2008) and Taylor et al. (2008) in order to verify our mediation hypotheses (H2 and H3). Such mediating effects are quantified and contrasted (Table 4). Following Williams & MacKinnon´s (2008) proposals, we used the bootstrapping technique to test the mediation effect. Chin (2010) suggests a two-step procedure for assessing indirect effects on PLS. The first step deals with using the specific model in question including both direct and indirect paths, performing N-bootstrap resampling and finally multiplying the direct paths that make up the indirect path under evaluation. The second step is the estimation of significance and the size of the indirect effects in relation to the total effect, through the assessment of the variance accounted for (VAF). Thereby, it is possible to determine the extent to which the variance of the dependent variable is indirectly explained via the mediator variables. VAF = $(b_1*c_1)/(b1*c_1+a)$. VAF values under 20% imply the direct effect is very strong and there is no mediation. Values among 20% and 80% reveal the existence of partial mediation, whereas when VAF reaches values over 20% 80% we can affirm the existence of a full mediation (Hair et al., 2014). As Table 4 reveals, for both hypotheses (H2 and H3), there exists partial mediation, as VAF values are within the 20-80% interval. This means that IO and OU partial mediate the influence of MO on BP. As for the total effect, VAF is over 80%, which means that the joint indirect effect of IO and OU fully mediate the MO-BP link. This study's 5000 resamples also generate 95% confidence intervals (percentile) for the mediators as shown in Table 4 (Picón, Castro & Roldán, 2014).

Figure 1: Structural model: a multiple mediation model

<div align="center">A) Model with total effect</div>

<div align="center">B) Model with multiple mediation</div>

H2: MO→OU→BP (+)
H3: MO→IO→BP (+)
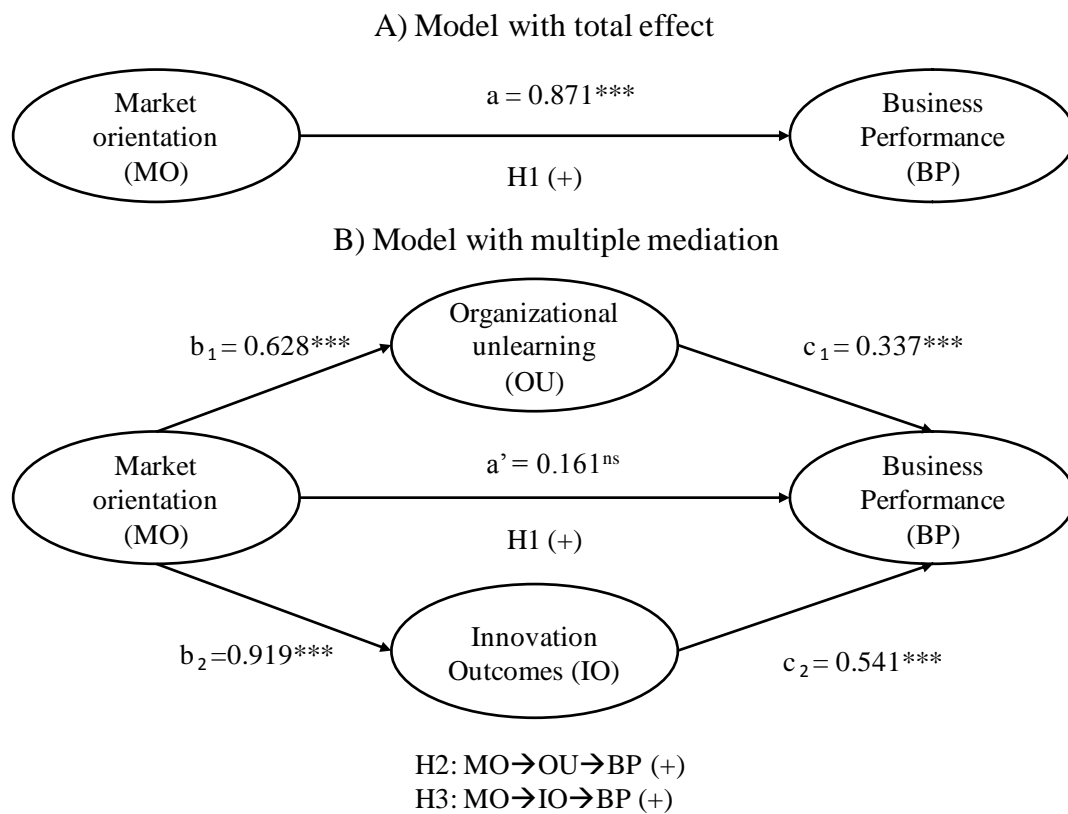
5. Discussion

The literature traditionally highlights the role of firm innovativeness as a source of competitive advantages for organizations. Recently, variables such as organizational learning and market orientation are also being studied as drivers of business performance. Besides, some studies sustains that they are key antecedents of innovation and that they affect performance by means of their effect on this variable (Jiménez-Jiménez et al., 2008). However, there is a scarcity of empirical studies that include the impact of organizational unlearning on these relationships. Therefore, this work simultaneously assesses the direct link between market orientation and performance as well as the mediating role of innovation and unlearning on this tie. This study contributes to enhancing the recent research on the firm's strategic efforts on market orientation, innovation and unlearning, in their attempt to improve business performance.

Firstly, we find support for the direct relationship between MO and BP. This result is in line with prior related studies (Narver & Slater, 1990; Desphande et al., 1993; Kohli & Jaworski, 1990) and provides additional evidence to sustain the relevance of market orientation as a driver of business performance enhancement and hence as a source of competitive advantage. Secondly, our results support the hypothesis of considering MO as an antecedent of firm innovativeness. This finding is consistent with previous studies (Weerawardenaa and O'Cassb, 2004; Jiménez-Jiménez et al., 2008) that argue that firms, in order to be innovative, must rely on mechanisms of acquisition and leveraging of external knowledge –knowledge from customers, competitors, suppliers, etc.– as well as on the firm's internal knowledge. Similarly, we find support for the direct link between MO and OU, proving hence that MO is an antecedent of unlearning. Finally, our results provide evidence to support the direct effects of IO and OU on BP. The IO-BP link was previously posited in

research studies (Narver & Slater, 1990; Jaworski & Kohli, 1993). On the other hand, although plenty of studies have addressed the OL-BP tie (Nevis et al. 1995; Brockmand and Morgan, 2003), the link between OU and BP has been scarcely assessed. Cegarra-Navarro et al. (2011) prove that unlearning contexts mediate the effects of knowledge management on organizational performance (Leal-Rodríguez et al. 2015).

This work has some important academic implications. First, it should be noted that prior related works have examined in a single research model the relationships between market orientation, organizational learning, innovation and performance, but they have never included the organizational unlearning variable within the model. Second, our results are in line with the theory as they prove the influence exerted by MO as an antecedent of BP. Furthermore, according to our results, we conclude that this influence of MO on performance is through its effect on IO and OU, since when such variables are introduced within the model, the direct MO-BP relationship becomes unsupported. This means that both IO and OU play a mediating role on the MO-BP tie.

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