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Strategic orientations, marketing capabilities and innovation: an empirical investigation

Isabel Maria Bodas Freitas

Grenoble Ecole de Management & DISPEA, Politecnico di Torino

Isabel-Maria.BODAS-FREITAS@grenoble-em.com

Roberto Fontana

roberto.fontana@unibocconi.it

Pamela Adams

padams@fc.edu

Abstract

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Interest in the strategic orientations of firms and their impact on performance has increased in recent years. Customer orientation with a view to satisfying customers' needs is often contrasted to more product or technology-related orientations that rely on research for new product development ideas. Our study links these orientations directly to innovation by examining their relationship with the ability of firms to develop and commercialize innovative products. Our empirical analysis is based on survey data from a sample of 1645 French firms. Our results show that, different from previous studies, high levels of both customer orientation and technology orientation are able to influence the innovativeness of firms. Further, our analysis shows that firms with lower levels of customer orientation benefit more from marketing capabilities than firms whose strategic orientation is towards the understanding of the needs and wants of customers.

INTRODUCTION

Interest in the strategic orientations of firms and their impact on performance has increased in recent years. Customer orientation with a view to satisfying customers' needs is often contrasted to more product or technology-related orientations that rely on research for new product development ideas. Our study links these orientations directly to innovation by examining their relationship with the ability of firms to develop and commercialize innovative products. We differentiate four types of strategic orientation, with different focus on market and technology orientations, developed in the literature (Isolated, Followers, Shapers and Interactors) (Berthon, Hulbert and Pitt, 1999) and test the impact of these orientations on the turnover of firms from innovation. Our empirical analysis is based on data from two surveys from a sample of 1645 French firms in a wide range of manufacturing industries between 2003 and 2006. Our results show that high levels of both customer orientation and technology orientation are able to influence the innovativeness of firms. The analysis then goes further to analyze how firms deploy their orientations and how that might impact performance. This is done by examining the impact of marketing capabilities on the turnover from innovative products across the four types of strategic orientations. Consistent with marketing theory, we show that firms with lower levels of customer orientation benefit more from marketing capabilities than firms which are strategically oriented to understanding the needs and wants of customers.

This paper is organized as follows. In the next section we will discuss the relevant literature from management and marketing and use prior research to build testable hypotheses concerning strategic orientation and innovation. We then do the same for the concept of marketing capabilities. The section that follows describes the dataset and the methodologies used

for the analysis. We then present the major results of our study as well as our conclusions. We end with a discussion of both the implications and limitations of the research.

THEORETICAL FRAMEWORK AND HYPOTHESES

Strategic Orientations

The recent literature in strategic management has given increasing attention to the relationship between the strategic orientations of organizations with respect to their business activities and firm performance. Two broad strategic orientations may be identified in this work. The first is a customer (or market) orientation. Although the specific nature of this orientation is still the subject of much debate in the literature (Slater and Narver, 1999; Connor, 1999; Hult, Ketchen and Slater, 2005), in general terms it holds that “the key to achieving organizational goals consists in determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors” (Kotler, 1988: 17). Most of the research concerning customer-led (Day, 1999) and market responsive orientations concerns how firms conduct and use market research to uncover, understand, and then satisfy the expressed needs of customers. The second broad orientation revolves around products, technologies, and R&D (Gatignon and Zuereb, 1997; Hamel and Prahalad, 1994; Tushman and Anderson, 1986; Wind and Mahajan, 1997). For our purposes this will be called a technology orientation. The basic assumption in this case is that the firms that provide better solutions in terms of performance, quality, features and value, will demonstrate better market performance. Therefore, firms that follow a technology orientation spend their energy inventing and refining superior products rather than studying customer needs.

Since the 1990's, much work has been done to develop constructs for these orientations and to test their relationship with specific measures of business performance including profitability, sales growth and new product success. This is especially true for the customer or market orientation literature in marketing (Atuahene-Gima, 1995; Deshpande *et al.*, 1993; Deshpande and Farley, 1998; Han *et al.*, 1998; Jaworski and Kohli, 1993; Li and Calantone, 1998; Pelham and Wilson, 1996; Slater and Narver, 1994). The majority of studies suggests, in fact, that being market oriented leads to improved performance for most indicators. A recent meta-analysis has also demonstrated a positive and significant link between market orientation and firm performance (Kirca, Jayachandram, and Bearden, 2005). Extensive work has also been done on the link between market orientation and innovation (Baker and Sinkula, 2005; Gotteland and Boulé, 2006; DeLuca, *et al.*, 2010). According to recent reviews of this literature, the findings of these studies reveal that (1) market orientation positively influences the new product's market performance defined in terms of market share, sales, perceived product quality, customer acceptance and customer satisfaction; (2) market orientation is positively linked to the financial performance in terms of ROI; (3) market orientation is positively correlated with a firm's ability to innovate.

Such research is relevant in light of the debate that has developed regarding whether or not a focus on the needs and wants of customers impedes breakthrough innovation in organizations (Christensen and Bower, 1996; Christensen, 1997; Meredith, 2002). Some authors argue that market orientation enhances the innovativeness of firms by increasing the amount of information used by firms to develop products and by instilling a continuous and proactive drive to satisfy customer needs (Han *et al.*, 1998; Atuahene-Gima, 1996). A market orientation has also been linked to both an ability to create new products (Hult and Ketchun, 2001) and to sell new products on the market (Im and Workman, 2004). Yet other scholars point out the negative

consequences of a strong focus on the needs and wants of customers. Their view is that firms that are overly oriented to satisfying the needs of customers risk producing incremental improvements more than real innovations (Bennett and Cooper, 1981). They also show that a customer orientation may cause firms to lose foresight in a market when they listen too closely to customers and ignore developments in technologies (Hamel and Prahalad, 1994; Christensen and Bower, 1996; Christensen, 1997). Finally, it is suggested that customers may not have sufficient knowledge to have true insight that is able to drive firms toward highly innovative solutions (Leonard-Barton and Doyle, 1996). Such observations have led to suggestions that, rather than focus on customer needs, firms should devote their energy to inventing and refining superior products in order to drive innovation.

The question thus becomes if and to what extent are firms better able to innovate with a strategic orientation towards customers/markets versus an orientation towards products/technologies. Previous studies in this field mentioned in the reviews cited above focus mainly on the effects of a market orientation on innovative performance. This study proposes to contribute to this literature by comparing and contrasting the effects of both customer and technology orientation on the innovative ability of firms. An empirical analysis will be done using a framework that incorporates both orientations with a view that neither is exclusive of the other, but rather they must be combined to different degrees. This framework is drawn from the work of Berthon, Hulbert and Pitt (1999; 2004). These authors develop a two-by-two matrix shown below (Figure 1) to distinguish four typologies of strategic orientation. The two axes may be used to represent the degree to which a firm follows a customer orientation or a technology orientation. “*Follower*” organizations are those in which both formal and informal market research informs choices concerning new product development. “*Shapers*”, by contrast, are oriented by innovative technologies and products. These firms believe that new products may

induce changes in basic behavior and therefore, may define new areas of customer demand that may not even have been imagined by the customers themselves. The other two categories represent sharper combinations of these two typologies. “*Interactors*” are at the positive end and represent firms that follow both customer and technology orientations. They gather market knowledge (Li and Calantone, 1998; Sinkula, 1994) which, rather than being used to direct product decisions, is used to create a dialogue with other research and product design functions within the firm concerning innovations. “*Isolated*” firms, on the other hand, represent cases in which firms have little communication with either customers or between market and technology functions within the firm. Technologies and new products are not developed or are developed in absence of any input from the market through market research.

[Insert Figure 1]

Taking these differences across firms in the pursuit of technological and market orientation, we examine to what extent firms in each of the category are likely to develop and benefit from the successful commercialization of innovative products. By innovative products we mean products that have been defined by the firms as “new to the market”. We use commercialization as an indicator of successful innovation. Given that *Interactors* should be able to understand customer wants and needs through market research and to combine this knowledge with technology and product design teams that have a strong orientation to create innovative solutions, it is expected that this category will be the most successful at innovation. For similar reasons, firms in the *Isolated* category will be the least likely to produce and succeed at product innovation; they lack both input and dialogue with customers and internal direction for the development of technology. We therefore propose:

Hypothesis 1a: Firms in the “interactor” category achieve the highest returns from product innovation;

Hypothesis 1b: Firms in the “isolated” category achieve the lowest returns from product innovation.

The remaining two categories are more complex to analyze. By definition, *Shapers* should be more apt to develop product innovations. But in this case, such innovations are driven more by a vision of technological developments than by an understanding of customer needs. As a result, they may not meet the immediate demands of the market or may have more difficulty gaining sales. By contrast, and in line with the arguments presented above, the customer focus of *Followers* may inhibit innovation. Customers, in fact, may lack both the foresight and knowledge necessary to stimulate significant product innovation. However, there are many lines of argument that could be used in support of the thesis that *Followers* could be more successful at product innovation than either *Shapers* or *Isolated* firms. First, recent research shows that the greater the market orientation of firms, the better the performance of new products (De Luca *et al.*, 2010). Second, advocates of the market orientation approach argue that such an approach must consider both expressed and latent needs of customers (Slater and Narver, 1999). If this is the case, many of the objections based on the shortsightedness of market research on consumers or on the inability of a customer focus to stimulate creativity would be weakened. Third, much of the recent work on user-producer collaboration and co-creation (Prahalad and Ramaswamy, 2004), as well as on user innovation (von Hippel, 2005), indicates that customers may actually be sources of highly innovative solutions to their own needs and that, by working with customers, firms may

tap into knowledge bases that serve to stimulate new product ideas. For all of these reasons, we propose:

Hypothesis 2a: Firms in both the “follower” and “shapers” categories achieve higher returns from product innovation than “isolated” firms, but lower returns than “interactors”;

Hypothesis 2b: Firms in “follower” category achieve higher returns from product innovation than “shapers”.

Marketing Capabilities

Although strategic orientation may affect innovative performance, it should not be considered the only factor in such analyses. As Hult and Ketchum (2001) note, in fact, the potential impact of strategic orientations on firm performance should be considered with other firm capabilities as well. According to these authors, it is not enough to know that a firm has a specific orientation. We also need to know how the firm employs resources in support of an orientation, and the processes by which it implements an orientation, in order to understand if the potential value of the orientation is likely to be realized. Although these comments are made in reference to the debate concerning market orientation, the same conclusions may be made regarding a technology orientation, or some combination of the two.

To understand the importance of firm capabilities we must draw from the literature on the resource-based view of the firm. This theory suggests that firms differ in terms of their resource base, where resources are defined as the assets that allow managers to develop and execute value-creating strategies. These differences in the resource base of firms are thus fundamental in

explaining differences in firm performance as well (Barney, 1991). Taking this further, the literature on dynamic capabilities posits that it is not simply differences in resources, but in the capabilities by which these resources are acquired and deployed that explains variance in firm performance (Teece, Pisano and Shuen, 1997). These theories have recently begun to be applied to the literature on strategic orientations with the aim of analyzing how firms deploy their orientations and how that might impact performance (Dutta *et al.*, 2003; Morgan *et al.*, 2009; Vorhies and Morgan, 2005).

In this study the link will be made between orientation, firm capabilities and innovation. Innovation is defined as the successful commercial exploitation of new ideas (Schumpeter, 1942; Dodgson, Gann and Salter, 2008). The capabilities most closely related to commercialization process are those associated with the marketing function. At the core of this function sit the processes involved in establishing the marketing mix (the 4 P's), or value proposition of the firm towards the market (Kotler, 1998). If a significant and direct relationship exists between a firm's marketing capabilities and performance, it is likely that a similar relationship will hold for innovation as defined above. The question remains whether it will hold equally for all types of orientations.

Marketing theory suggests that products that originate from a customer orientation should sell easier than products that emerge from a technology orientation. This is because products that closely meet customer needs and that are developed to deliver superior customer value should require less effort of "selling" (Kotler, 1998). Products that are focused on technological innovations and that are developed with less attention to the needs and wants of customers may need more attention at the moment of commercialization. Much of the literature on the diffusion of innovations, in fact, underlines the need for careful communication to assist customers in their learning processes when the relative advantage of products is less clear, when products are more

complex to understand and when products are less compatible with what customers currently expect (Rogers, 1995). Being first to perfect, produce or sell a product is not always sufficient to secure success (Berthon, Hulbert and Pitt, 2005). As a result, firms selling such products may benefit more from marketing capabilities than firms with a stronger customer orientation.

Therefore, we propose:

Hypothesis 3: Firms in both the "isolated" and "shapers" categories will benefit more from a firm's marketing capabilities than firms in either the "follower" or the "interactors" categories.

DATA AND METHODS

The data for the analysis are drawn from the 'sixth wave' of the French Community Innovation Survey (CIS) carried out in 2007, and from the French organizational survey Changements Organisationnels et Informatisation (COI) carried in 2006. Both surveys target companies with 10 or more employees. The CIS investigates the process of innovation development by firms in the three year period preceding the survey 2004-2006 and focuses only on manufacturing firms.¹ The organizational survey (COI) investigates the organizational structure and routines of both manufacturing and service firms in two periods: the year of the survey (i.e. 2006) and 3 years

¹ In particular, firms are asked about the type of innovation introduced in the three years preceding the survey, as well as the sources of information and collaboration used on that process, investments in several types of innovation activities, and on the mechanisms used to protect innovations. In addition, the survey asks firms about the effects of the innovation on the turnover, as well as on the achievement of objectives related to products and market, process and standards achievement. The questionnaire of this survey can be accessed from the French Ministry of Economy and Industry: <http://www.industrie.gouv.fr/sessi/enquetes/innov/cis2006/cis.htm>.

before the survey (i.e. 2003).² For the purpose of our analysis, we concentrated on a sample of 1,645 manufacturing firms that have responded to both COI and CIS surveys.

From the CIS survey we extract information on innovation and marketing capabilities. From the COI survey we collect information on the firms' customer and technology orientation.

Dependent Variable. We measure innovation performance by considering the proportion of turnover in 2006 due to product innovations, developed and introduced over the 2004-2006 time period. In particular, the variable *Returns from product innovation* provides information on the share of turnover that firms declared to be due to the launch of *products new-to-the-market*.³

Independent Variables. In the COI survey, respondents are asked about their company's customer orientation and a technology orientation. Specifically, respondents are asked how their company organizes the design and marketing activities. Two options can be chosen: the company relies on market studies and surveys of customer satisfaction and behaviour for conception and marketing studies; the company relies on collaboration with other private firms and private labs, universities and public research organizations for design and marketing. Firms that responded that in 2003 relied on market studies, surveys of customer satisfaction and behavior are considered to have high customer orientation; otherwise they are considered to have a low customer orientation. Firms that responded that in 2003 relied on collaboration for design and

² In particular, COI focuses on the way the company uses different management tools, including Information technologies (IT) in the production, conception and marketing and HRL, as well as in their relationship with clients and suppliers. <http://www.enquetecoi.net/>.

³ In the survey respondents are asked whether they developed a product innovation in the period 2004-2006 and to characterize those new products as *new-to-the-market* (i.e. the new products were introduced before their competitors) or *new-to-the-firm* (i.e. the products were similar to ones already available in the market when the firm launched them). We focus only on products new-to-the-market. For this type of products firms were then asked to estimate the share of turnover that is due to these products. This share is our dependent variable.

marketing are considered to have a high technology orientation; otherwise they are considered to have a low technology orientation.

Based on this assessment of firms' engagement in customer and technology orientation, we construct the following variables to identify the strategic orientation of the firms in our sample. *Followers* is a dummy equal to one for those firms with both a high customer orientation and a low technology orientation and equal to zero otherwise. *Interactors* is a dummy variable equal to one for firms with both a high customer and technology orientation and equal to zero otherwise. *Shapers* is a dummy variable equal to one for firms with both a low customer orientation and a high technology orientation and equal to zero otherwise. *Isolated* is a dummy variable equal to one for firms with both a low customer and technology orientation and equal to zero otherwise. This is the reference category.

Table 1 below reports the frequencies of innovation for each category for the firms in our sample.

[Insert Table 1 about here]

The data show that *Interactors* are the most innovative category, followed by *Shapers*. *Isolated* firms instead rank last in terms of turnover from product innovation.

To capture *marketing capability* we compute a variable which accounts for the number of innovations in the following four marketing tools: packaging, promotion, channels of distribution, and price, in the period 2004-2006. The variable varies between zero and four depending on the number of innovations in the marketing tools reported and it is lagged with respect to the dependent variable to mitigate issues of endogeneity and 'reverse causality' arising

from the fact that while marketing capabilities are likely to improve the innovative performance, innovative firms may also be more likely to possess better market capabilities. The moderating role played by marketing capabilities is assessed by creating linear interactions between this variable and each of the categories introduced above.

Control Variables. We control for the influence on firms' performance of the following firm-level characteristics: size, intensity of R&D investment, and industry-level fixed effect. The variable *firm size* is the logarithm of the number of employees. We also include the square of firm size to account for the presence of non-linearities. We control for the level of a firm's investment in R&D by including the variable *R&D Intensity* which is the ratio of a firm's R&D expenditure (intramural R&D activities, extramural R&D activities, and acquisition of other external knowledge) over overall firm sales (Rothaermel and Alexandre, 2009). *R&D Intensity* has been log transformed to reduce the skewness and kurtosis of its distribution. Finally, we control for industry-specific effects by including an industry dummy for each NACE 2-digit industry. The variable *Other manufacturing activities* is taken as the reference category. This allows controlling for the presence of cross-industry differences in terms of speed, and pattern of market and technology evolution (Abernathy and Utterback, 1978; Granstrand, *et al.*, 1997; McGahan and Silverman, 2001).

Estimation Method. The variable *Returns from product innovation* is the share of turnover due to product new to the market and is a proportion ranging between 0 and 1. In these circumstances, OLS estimates would produce inconsistent estimates. Therefore, we use Tobit regression models with robust standard errors to analyze the data. In these estimates, our dependent variables can be treated as a censored continuous variable bounded by zero from below and 1 from above. As a

robustness check we have also estimated a model employing a Fractional Logit model, an extension of the General Linear Model (GLM) binomial family with a logit link. This is an estimation method that is appropriate when the dependent variable is a proportion (Papke & Wooldridge, 1996; Hardin & Hilbe, 2007). The signs and significance of the coefficients for the Fractional Logit are equal to those obtained from the Tobit regression and are not reported. They are available from the authors upon request.

Results

Table 2 reports the means, standard deviations and zero-order pairwise correlations among all study variables.

[Insert Table 2 about here]

Our main results are summarized in Table 3. Model 1 is our baseline specification that includes only the controls. Model 2 adds the simple effect of strategic orientation as well as of marketing capabilities. Model 3 adds the linear interaction between the strategic orientations and marketing capabilities.

[Insert Table 3 about here]

Results in models 2 and 3 highlight that that the coefficients for *Interactors*, *Followers*, and *Shapers* are positive and significant. In particular, the coefficient for *Interactors* is the highest thus suggesting that these type of firms have the highest share of returns from product innovation. This finding supports H1a. *Isolated*, our reference category, are those with the lowest share of

returns from product innovation. This finding supports H1b. In addition to this, the coefficients for both *Followers* and *Shapers* are positive and significant but lower in magnitude than the coefficient of *Interactors*. This supports H2a. Finally, the magnitude of the coefficient of *Followers* is lower than the coefficient for *Shapers* which does not support our H2b. However, a Wald Chi-square test reports that there is no statistical difference between the two coefficients.

Results in model 3 allow us assess the role of marketing capabilities as moderators of the impact of strategic orientation upon the returns from product innovation. In this respect, our results suggest that while the simple effect of marketing capabilities on innovative performance is positive, their moderating role changes depending on the strategic orientation of firms. The coefficients of the interaction terms for both *Followers* and *Interactors* are negative and significant. The coefficient of the interaction for *Shapers* is also negative but weakly significant, nevertheless suggesting that the moderating effect of marketing capabilities is the most beneficial for our reference category *Isolated* firms.

To gain a better understanding of how the moderating effect of marketing capabilities changes depending on the strategic orientation of firms we plotted their effect on the innovative performance, following a common procedure in the literature (Aiken and West, 1991; Jansen et al., 2006). Figure 2 plots the estimated returns from product innovation when the effect of the interaction is computed at the mean of all the control variables.

[Insert Figure 2 about here]

Figure 2 shows that marketing capabilities allow both *Isolated* firms and *Shapers* to decrease the performance gap with respect to firms with different strategic orientation. This finding supports H3.

Robustness check

As a robustness check, we look at the extent to what our results are sensitive to the definition of the firm categories introduced above. We do this by supplementing the information on how firms organized their marketing and design activities in 2003, which have been used to define the strategic orientation of firms in our sample, with information on the ‘effectiveness’ of their behavior in the subsequent period 2004-2006. In particular, firms that responded that in 2003 relied on market studies, surveys of customer satisfaction and behavior to organize their design and marketing activities and that in the period 2004-2006 have reported to have spent money in those activities are considered to have high customer orientation; otherwise they are considered to have a low customer orientation. Firms that responded that in 2003 relied on collaboration for design and marketing and that in the period 2004-2006 have reported to engage in R&D in a continuous manner are considered to have a high technology orientation; otherwise they are considered to have a low approach technology orientation.

Model 1 in Table 4 reports the new results for this new classification.

[Insert Table 4 about here]

The sign of the coefficients is similar to those reported in Table 3 though the magnitude of the coefficient is now higher. Generally, results tend to confirm our previous results and our H1a, H1b, H2a, and H3. It can be noticed that the magnitude of the coefficient for *Followers* is now higher than the coefficient for *Shapers* thus confirming H2b. However, once again, the two coefficients are not statistically different.

CONCLUSION AND DISCUSSION

This study provides several important contributions to the debate on strategic orientations. We find that both customer orientation and technology orientation have a positive impact on innovation. This finding contributes to the ongoing debate about marketing orientation. Contrary to arguments that an orientation towards customer needs may inhibit innovation, our study indicates that a higher market orientation facilitates innovation. Although our construct differs from that used by Slater and Narver (1998, 1999) our results support their argument that market orientation is not necessarily a myopic vision that leads to a continuous flow of minor product improvements, but may also lead to more substantial innovations. Our findings also support the ideas suggested by research on the benefits of collaboration with users and co-creation with customers. A strategic orientation which involves interaction between customers and technology/product functions within a firm produce the greatest results in terms of sales of innovative products.

Our study also contributes to research on the resource-based view of the firm and dynamic capabilities by showing the importance of marketing capabilities on innovation. Our findings show a direct and positive relationship between marketing capabilities and innovation as measured by turnover. They also show that these capabilities are all the more beneficial when firms are less oriented to understanding the needs of customers through market research. In this sense, stronger marketing seems to benefit more those 'isolated' companies that are more oriented to product than to market or technology, followed by firms that are more oriented to technology than the needs of customers and may, therefore, face greater challenges in communicating the benefits of their products to the market.

Finally, our study represents an important empirical test of the implications of strategic orientation for innovation across a wide sample of different industries. Differently from previous marketing studies that rely upon small surveys of market and customer perception by firms, this study relies on a large scale survey, and uses information directly provided by the respondents as indicators of innovation performance.

Though interesting, our study has some limitations. Addressing these limitations could open up new directions for future research. First, this study is based upon cross-section data. Our results represent a snapshot for a single time period and do not address the issue of whether the relationships we find hold over time. Further research using data from multiple periods could test whether returns from product innovation are persistently higher for firms that follow a market and a technology orientation, and whether or not marketing capabilities are continuously beneficial. The fact that the study relies on large scale surveys raises a second limitation, which is derived from the fact that we are unable to better observe and characterize the strategic orientations of the firms and the extent to what firms complement or substitute their strategic orientation with marketing capabilities. Further research focusing on collection and analysis of qualitative data based on interviews and case studies can provide richer insights into these processes, and their impact on firms' innovation performance. Finally, this study relies on data from a single country, France. Further cross country research combining both qualitative and quantitative methods could provide further insights into the generalizability of our results.

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List of tables

Table1: Innovative firms by strategic orientation

		Technology Orientation	
		Low	High
Customer orientation	High	<i>Followers</i> 141/ 368 (38%)	<i>Interactors</i> 299/522 (57%)
	Low	<i>Isolated</i> 134 / 561 (24%)	<i>Shapers</i> 102/194 (53%)

Table 2: Summary statistics and correlation table

	Min	Max	Mean	S. Dev.	1	2	3	4	5	6	7	8
1) Followers	0.00	1.00	0.22	0.42	1							
2) Interactors	0.00	1.00	0.32	0.47	-0.366**	1						
3) Isolated	0.00	1.00	0.34	0.47	-0.386**	-0.490**	1					
4) Shapers	0.00	1.00	0.12	0.32	-0.196**	-0.249**	-0.263**	1				
5) Marketing capabilities	0.00	4.00	0.75	1.08	0.056*	0.140**	-0.168**	-0.027	1			
6) Size	1.79	11.48	5.71	1.26	-0.007	0.316**	-0.330**	0.039	0.202**	1		
7) Square Size	3.21	131.81	34.21	14.70	-0.02	0.316**	-0.317**	0.035	0.200**	0.986**	1	
8) R&D intensity	0.00	0.08	0.00	0.01	-0.044	-0.036	0.044	0.043	0.037	-0.320**	-0.291**	1

Table 3: Estimation of the returns from product innovation

	Model 1	Model 2	Model 3
Size	0.261*** [0.047]	0.222*** [0.045]	0.213*** [0.045]
Square Size	-0.013*** [0.003]	-0.012*** [0.003]	-0.011*** [0.003]
RD intensity	12.922*** [1.749]	11.876*** [1.701]	11.821*** [1.709]
Marketing capabilities		0.054*** [0.008]	0.111*** [0.016]
Followers		0.049+ [0.026]	0.104** [0.034]
Interactors		0.118*** [0.025]	0.187*** [0.031]
Shapers		0.089** [0.028]	0.125*** [0.032]
Followers x Marketing capabilities			-0.069*** [0.021]
Interactors x Marketing capabilities			-0.083*** [0.019]
Shapers x Marketing capabilities			-0.048+ [0.027]
Constant	-1.246*** [0.159]	-1.176*** [0.153]	-1.193*** [0.153]
sigma	0.289*** [0.018]	0.281*** [0.018]	0.279*** [0.018]
Observations	1,652	1,645	1,645
Degrees of Freedom	13	17	20
F Statistic	13.78	13.51	11.97
log Likelihood	-614.1	-567.1	-557.7
Pseudo R Squared	0.184	0.244	0.256

Note: Robust standard errors in brackets. *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table 4: Robustness check

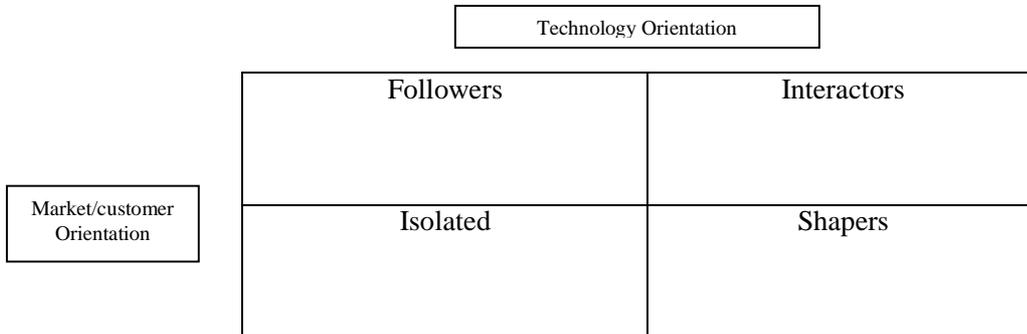
Size	0.190*** [0.044]
Square Size	-0.011*** [0.003]
RD intensity	10.240*** [1.704]
Marketing capabilities	0.079*** [0.012]
Followers	0.237*** [0.038]
Interactors	0.312*** [0.040]
Shapers	0.202*** [0.027]
Followers x Marketing capabilities	-0.066** [0.020]
Interactors x Marketing capabilities	-0.080*** [0.019]
Shapers x Marketing capabilities	-0.043+ [0.025]
Constant	-1.056*** [0.148]
sigma	0.276*** [0.017]

Observations	1,652
Degrees of Freedom	20
F Statistic	13.47
log Likelihood	-520.3
Pseudo R Squared	0.309

Note: Robust standard errors in brackets. *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

List of Figures

Figure 1: Typology of strategic orientation



Source Berthon, Hulbert and Pitt, (1999)

Figure 2: The moderating effect of marketing capabilities on the returns from product innovation

