Market orientation and business economic performance
A mediated model

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Abstract *Previous studies have found that market orientation significantly predicts economic performance. The present study attempts to provide a necessarily partial model for how this impact takes place using innovation degree, innovation performance and customer loyalty as intermediate variables. The study targets the insurance industry in the European Union. The sample accounted for 22 percent of the companies and 17 percent of the insurance premiums in this market. The results suggest that the addition of these variables improves predictions of objective economic performance 52 percent over what is explained by market orientation alone. Furthermore, the study found that the effects of market orientation on economic performance are completely channeled (mediated) through these variables, particularly through innovation degree and innovation performance. Based on the results the paper provide guidelines for improving the market share, premium growth and profitability of European Union insurance firms.*

In a time characterized by increasingly rapid change in consumer preferences, even faster technological progress, and growing competitive rivalry, it becomes essential for companies to develop mechanisms within their organizations to generate market information, analyze it, and respond accordingly. The set of activities developed by companies permanently to monitor, analyze and respond to these market changes is referred to in the Marketing literature as "market orientation". Over the last decade there has been a growing interest in the construct of market orientation (Webster, 1994; Day, 1992) and its usefulness in increasing companies' economic performance (Narver and Slater, 1990; Ruekert, 1992; Jaworski and Kohli, 1993; Lambin, 1996; Deng and Dart, 1994). However, it is still not well understood why there is such an effect and

particularly how it operates. More research is clearly needed in this area (Deshpandé et al., 1993, Deshpandé and Farley, 1998).

Two streams of research have developed aimed at filling this gap. One stream of research has focused on the effects of market orientation on innovation. The other has investigated the links between market orientation and relationship marketing.

Within the first stream we find a line of research that analyzes the effects of market orientation on innovation performance. For instance, Atuahene-Gima (1996) and Gatignon and Xuered (1997) found a significant relationship between market orientation and several measures of new product performance. Yet, another line of research within this first stream focuses on the effects of market orientation on the degree of business innovation. For instance, Lukas and Ferrell (2000) investigated how the different components of market orientation are linked to an increase in business innovations (imitations, lines extensions and new-to-the world). Also, Han et al. (1998) provide empirical evidence concerning the market orientation-organizational innovativeness-performance chain. In their substantial contribution to the advancement on the understanding of the variables that intermediate and make possible the market orientation-performance relationship, these authors concluded that market orientation is conducive to facilitating both technical innovations (involving either products or processes) and administrative-organizational innovations. Interestingly, Calantone et al. (1994) found a non-significant empirical relationship between degree of innovation and degree of innovation success concluding that these two phenomena appear to be distinct. An increase in volume of innovations degree of innovation does not necessarily imply an increase in new products' success rate degree of innovation success.

As for the second stream of research, three studies have investigated the links between market orientation and relationship marketing. Webb et al. (2000), and Baker et al. (1999) report the impact of market orientation on key relationship constructs. As with market orientation, the focal point in the relationship marketing literature is satisfying customers' needs more effectively than the competition, while looking at customer relations from a long-term perspective (Steinman et al., 2000). Since the final objective of relationship marketing is to enhance customer loyalty it is necessary to incorporate the construct of market orientation in relationship marketing models (Webb et al., 2000).

Clearly, a broader model that integrates both streams of research, innovation and relationship marketing, while distinguishing between firms' degree of innovation and their innovation success, is needed to deepen our understanding of the mechanisms that lead the more market-oriented firms to a better economic performance. To fill in this gap we postulate and empirical test a model that hypothesizes that innovation degree, innovation performance and customer loyalty actually mediate the effects of market orientation onto business economic performance.

The rest of this paper is organized as follows. First, we review the construct of market orientation and we discuss existing research evidence on its effects on firms' economic performance. Then, the role of innovation degree, innovation performance and customer loyalty on this market orientation-business performance relationship is discussed, followed by the formulation of a set of hypotheses to be tested. Next, we present our empirical study with due attention being given to a description of the sample, and the validity and reliability issues associated with the measurement instruments. This is followed by analysis of the research results, which reveal the linkages between market orientation, innovation performance and business performance. Finally, we summarize the findings of the study and we provide directions for further research.

Theoretical framework
Market orientation
Market orientation was defined by Narver and Slater (1990) as the competitive strategy that most efficiently generates the right kinds of behavior to create enhanced value for the consumer and therefore assures better long-term results for corporations. According to these authors, market orientation is based on orientation towards the customer, orientation towards competitors and inter-functional coordination. Kohli and Jaworski (1990) identify three structural components of market orientation:

(1) generation and analysis of all relevant information about the market;
(2) dissemination of this information among the various departments of the organization in order to coordinate and arrange strategic planning; and
(3) implementation of strategic initiatives designed to satisfy the market.

In reviewing this construct, Lado *et al.* (1998a) have provided a broader definition of market orientation, which they define as a competitive strategy that involves all functional areas and levels of the organization and embraces the different market participants. These market participants or market forces are:

· the final customer;
· the intermediate customer (distributor);
· the competitors; and
· environmental factors.

To create and hold on to a competitive advantage, companies must analyze and act on every one of these market forces with proper coordination between their functions. As a result, in this theoretical framework, market orientation can be conceptualized as consisting of nine facets:

(1) analysis of the final customers;
(2) analysis of intermediate customers (distributors);

(3) analysis of the competitors;

(4) analysis of the market environment;

(5) strategic actions on the final customers;

(6) strategic actions on intermediate customers (distributors);

(7) strategic actions on the competitors;

(8) strategic actions on the market environment; and

(9) inter-functional coordination.

That market orientation is conceptualized as consisting of nine facets should not be taken to imply that market orientation is a multidimensional concept. Lado *et al.* (1998a) have shown that these facets are well accounted for by a one-factor model. Therefore, these nine facets should be taken as the conceptual components of a unidimensional construct of market orientation, and a unidimensional measure of market orientation is called for.

Market orientation as predictor of firms' economic performance
Several studies have found a consistent positive relationship between businesses' degree of market orientation and their economic performance (Deng and Dart, 1994; Fritz, 1996; Greenley, 1995; Greenley and Foxall, 1997, 1998; Jaworski and Kohli, 1993; Narver and Slater, 1990; Pelham and Wilson, 1996; Pitt *et al.*, 1996; Ruekert, 1992; Selnes *et al.*, 1996; Slater and Narver, 1994;). Yet, in most of these studies (e.g. Deng and Dart, 1994; Fritz, 1996; Greenley, 1995; Greenley and Foxall, 1997, 1998; Pelham and Wilson, 1996; Ruekert, 1992; Selnes *et al.*, 1996) a wide cross-section of industries was employed as target population. In so doing, the observed co-variation between market orientation and economic performance confounds within-industry and between-industry market orientation variability. It is important to separate these two sources of variability since, from an applied perspective, interest lies in assessing increments in firms' economic performance due to within-industry market orientation variability.

The role of innovation degree
In as much as the concept of market orientation subsumes knowledge about clients' present and future needs, competitors trailing and a control of environmental factors, market orientation generates market intelligence and it may be an important source of ideas for new products and services. In this sense, Cooper (1994) reports that a quality relationship with customers provides valuable information to new products' development in the service sector. Also, Subramanian (1997) reports a positive significant association between a multidimensional measure of innovation and organizational performance in the banking industry, while Deshpandé *et al.* (1993) report a positive association between degree of innovation and economic performance in a sample of Japanese corporations. As Gatignon and Xuered (1997, p. 77)

affirm in a recent article, "it is possible that the strategic orientation of the firm leads to, at least in part, superior performance because of the innovation that are brought to market. Although being market-oriented may lead to general benefits for the firm's marketing activities, the ability to bring to market new products, which present the characteristics necessary to be successful, may be critical".

Market orientation may also be an important determinant of innovation in the services sector. According to Atuahene-Gima (1996) in services like the insurance and banking industries, innovation success depends on the firm's market orientation, especially on its customer orientation. Being in touch with your clients wants and needs, and being able to respond appropriately to them is a key to innovation success in the service sector. Furthermore, the market environment in the service sector is likely to be more competitive in terms of product innovation than in other industries. Innovation in services is more easily and quickly imitated (Tufano, 1992) and more difficult to protect by means of patenting. Thus, it may be than in this sector, the relationship between market orientation, innovation and business performance is particularly strong.

The role of innovation performance
In many instances, new products arise from the coordination between marketing and other business units, such as R&D. Also, competitors' monitoring and a close relationship with distributors are key elements to the generation of new concepts for new product development. As these are reflected in the market orientation facets of final client analysis and environmental analysis, one should expect a direct link from market orientation to new product performance.

We find support for this hypothesis in the literature (e.g. Ottum and Moore 1997; Slater and Narver 1994). Also, in a meta-analysis on the determinants of new product success, Montoya-Weiss and Calantone (1994) identify market-related activities as one of the four more important factors that discriminate between a new product success or failure. Successful firms develop superior products that are attuned to customer wants and needs, and they also have strong marketing knowledge and skills to develop and launch the product (Calantone *et al.*, 1996). As Cooper (1994, p. 64) concluded in summarizing the results of new products research "a strong Market orientation is critical both to success and cycle time reduction".

Innovation degree, innovation performance, and business performance are all linked together. Calantone *et al.* (1994) have investigated whether the sheer volume of innovation engaged in by the firm determines the level of new product success. Their findings suggest that the degree of innovation of a firms is related to its new product performance. Hence, firms that attempt to bring out more innovations may be more likely to succeed. Similarly, recent research

shows that increased levels of innovation are associated to superior performance (Robinson *et al.*, 1992, Deshpandé *et al.*, 1993).

Market orientation and customer loyalty
Deshpandé *et al.* (1993, p. 24), point out that "the canons of the marketing concept assert that profit is a reward for customer orientation which creates a satisfied customer, but we have only the beginning of systematic empirical documentation of the presumed relationship". In the present competitive market environment, characterized by globalization, with rapid market entry of new products and maturity conditions in many products and services, attaining a high level of customer loyalty has emerged as a central managerial concern. Clearly, customer loyalty constitutes an important objective for strategic marketing planning (Kotler, 1984) and represents an important basis for developing a sustainable competitive advantage   an advantage that can be realized through market orientation. A high degree of market orientation leads to customer loyalty, which in the long run contributes to better economic performance. In the service sector, the intangible nature of services gives rise to information's asymmetry between buyers and sellers. This results in higher risk perceptions and greater difficulty in customer's quality evaluation (Nayyar, 1990). As a result, market orientation becomes a crucial instrument to establish long-term relations with customers in service firms. Kohli and Jaworski (1990) posited a positive relationship between a firm's market orientation level and customer satisfaction. Webb *et al.* (2000) and Lai (2003) provide further empirical support to this relationship. Jones *et al.* (2002) empirical research on business-to business buyer-seller relationship suggests that a strong salesperson's customer orientation tends to reduce the customer's propensity to switch suppliers. Harrison-Walker (2001) found a positive relationship between market orientation and customer retention, customer willingness to pay a price premium, customer propensity to spread positive word-of-mouth communication and customer propensity to not-alternate among brands/service providers. All these variables are widely used measures of the customer loyalty concept (Jacoby and Chestnut, 1978; Odin *et al.*, 2001; Dick and Basu, 1994).

On the other hand, customer loyalty is expected to have a positive impact on business economic performance since market-oriented firms have a large number of satisfied customer and therefore a higher rate of repeated purchases (Dick and Basu, 1994; McCullough *et al.*, 1986; Loveman, 1998; Kamakura *et al.*, 2002).

The arguments put forth in the preceding sections can be summarized into a series of hypotheses. Our initial hypotheses is:

H1. Within an industry, the more market oriented firms are, the better their objective economic performance.

If this hypotheses is tenable, then we shall investigate what is role of innovation degree, innovation performance and customer loyalty in relation to the hypothesized impact of market orientation on economic performance. We hypothesize that each of these variables, taken separately is an intermediate mediational variable. According to Baron and Kenny (1986), an intermediate variable is said to be a mediator if when introduced within a directed relationship, the directed relationship vanishes (complete mediational effect) or at least it significantly decreases (partial mediational effect).

Thus, our hypotheses are:

H2a. Within an industry, the impact of market orientation on economic performance is at least partially mediated through innovation degree. That is, the more market oriented firms are the higher their innovation degree. This higher innovation degree results in better economic performance.

H2b. Within an industry, the impact of market orientation on economic performance is at least partially mediated through innovation performance. That is, the more market oriented firms are the higher their innovation performance. This higher innovation performance results in better economic performance.

H2c. Within an industry, the impact of market orientation on economic performance is at least partially mediated through customer loyalty. That is, the more market oriented firms are the higher their customer loyalty. This higher customer loyalty results in better economic performance.

If in turn, these hypotheses are tenable, then we need to specify a model that integrates these three intermediate variables within the hypothesized directed relationship of market orientation on economic performance. We hypothesized that:

H3. Taken jointly, innovation degree, innovation performance and customer loyalty completely mediate the impact of market orientation on economic performance. Furthermore, the relationship between innovation degree and economic performance is all conveyed through innovation performance.

This last hypothesis is graphically depicted in Figure 1.

Empirical study
With the objective of isolating within-industry variation we shall adopt a single-industry approach, focusing on the insurance industry. This clearly prevents the generalization of the results outside the scope of the industry considered. On the other side, we can meaningfully assess the impact of unit increments in market orientation on firms' economic performance, and sound
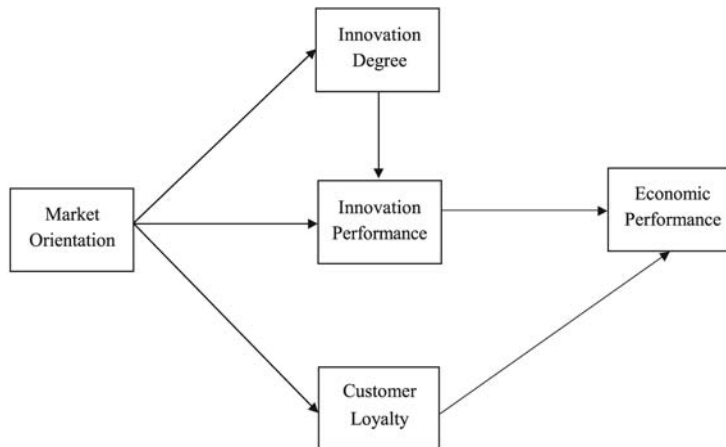
Figure 1.
Hypothetical model

inferences can be drawn on the target population based on the representativeness of the sample used.

The confounding of within-industry and between industry variation is not the only threat to the validity of inferences drawn on the relationship between market orientation and economic performance. A second threat is the noise introduced by environmental variables such as market turbulence, market growth rate, buyer and supplier power, and competitive intensity on business performance. A standard approach to minimize this threat is to focus the research on a single market. The drawback of this approach is that we are not able to capture firms' behavior in facing increasing globalization and market integration. As a compromise between these two ends, the present study targets the European Union market. In this market, the key characteristics of a single market are preserved, but it is also an environment in which we can presently observe how firms struggle in meeting the challenges of internationalization and market integration.

A third threat to the validity of inferences drawn on the relationship between market orientation and economic performance lies in the use of subjective measures of economic performance (i.e. managers' evaluations of their companies' performance). Positive effects of market orientation on economic performance have been reported when subjective assessments of performance were used. However, when objective measures of economic performance have been used, mixed results emerged. For instance, Ruekert (1992) and Lambin (1996) report a positive relationship between market orientation and objectively measured economic performance. However, Bhuian (1997), Jaworski and Kohli (1993), and Selnes *et al.* (1996), failed to find any significant relationship. Clearly, when market orientation and economic performance are concurrently assessed by the firms' managers, a perceptual bias may be introduced. A case in point, Van Bruggen and Smidts (1995) found within one single company

(which has only one performance) a substantial degree of variation in subjective performance assessments. In fact, they report a positive relationship between market orientation and judgments about the company performance within a single company. As they point out "it might be that managers have a more positive view of their company's market orientation when they perceive their company to be performing well" (Van Bruggen and Smidts, 1995, p. 13). Hence, it is important to employ objective measures of economic performance and we shall do so in the present study.

Market orientation in the services sector: the European insurance industry
The insurance sector is of particular interest from a market orientation viewpoint, as it works with intangible commodities in which service, quality, and customer orientation are crucial elements. The competitive characteristics generated by the European Union provide an additional interest in studying market orientation in this area. The insurance sector in Europe has traditionally operated subject to strict regulations and strong protection from international competition. However, for some years now the European Commission has been working on the liberalization of this sector. Effective implementation of this has brought about a major increase in competition within the sector and has provoked a major restructuring of insurance companies and groups. The competitive climate in Europe has also been influenced by a downside in the economic cycle and changes in consumer behavior. European customers now show greater service expectations and less loyalty. As a result, rivalry among competitors is increasing, as is the importance of competitive strategies adapted to this sector's needs. In this background, the degree of orientation toward the customer, distributors, competition, and the general socio-economic environment is becoming an increasingly important area of study, not only for academics, but also for the business world.

Lado *et al.* (1998a,b) have investigated quite extensively the market orientation of insurance firms within the European Union. These authors have not found significant mean differences in market orientation by country. Furthermore, they report substantial agreement between the factor structures of market orientation across countries. Thus, it seems that the European insurance sector can be considered a homogenous population with respect to market orientation.

Data
The population universe considered in this article is defined as the set of insurance companies operating in the European Union which meet the following conditions:

- they operate in private insurance or "mass insurance";
- they have a market share of more than 0.05 percent; and
- their management is independent.

The list of European insurance companies was taken from the *Financial Times Yearbook* for 1996.

It was assumed that senior executives were the people best qualified to assess the company's market orientation, as well as their innovation degree, innovation performance, and customers' loyalty. Therefore, information from these variables was gathered via a postal questionnaire submitted to the senior executive in each of the 554 companies comprising the target population.

We obtained 122 valid questionnaires, giving a response rate of 22 percent. This sample accounts for over 17 percent of total insurance premiums in the European Union.

In order to assess response bias, the questionnaires were divided into quartiles on the basis of reception date (Armstrong and Overton, 1977). An analysis of early and late responses did not indicate any significant difference in terms of means and covariances.

Measures

Business economic performance is a complex construct with multiple possible observed indicators. Here we measure this construct using three reflective indicators[1]:

(1) domestic market share (Jaworski and Kohli, 1993; Deshpandé *et al.*, 1993; Selnes *et al.*, 1996, Greenley and Foxall, 1997, 1998);

(2) premium growth (which is equivalent to sales growth for the insurance companies business (Slater and Narver, 1994; Narver and Slater, 1990; Ruekert, 1992; Greenley and Foxall, 1997, 1998); and

(3) profitability per year averaged over the last three years(similar to the return on investment (ROI) rate (Greenley and Foxall, 1997, 1998)).

All three indicators were expressed as percentages. These data were obtained from the managers responding the questionnaire. Their responses were carefully contrasted with published financial information (e.g. *Reuters Insurance Briefing*).

Market orientation was measured using the Market Orientation Scale-Revised (MOS-R). This scale is a shortened version of the MOS validated by Lado *et al.* (1998a) in the population of insurance companies of Belgium and Spain. Lado *et al.* (1998a) shortened the original MOS scale while extending the previous validation study to target all insurance companies operating in the European Union. In the Appendix we provide the 30 items composing the MOS-R. Each item is to be rated on a ten-point Likert-type scale ranging from 0 (complete disagreement) to 10 (complete agreement).

Innovation degree and innovation performance were assessed by means of multi-item questionnaires akin to Miller and Friesen's (1982). Innovation performance was measured by a four-item questionnaire regarding the success of a new product/service (defined as an improved product, a product extension, or a new product line) introduced by the company. The questions involved

whether the new product/service had succeeded in meeting the sales growth, market share and profit objectives set up by the company.

Innovation degree was assessed by a three-item questionnaire that inquired the rate of new products/services introduced by the company relative to competitors, the amount of new products/services marketed by the company over the past three years, and the nature of change of the new products/services.

Finally, we used a four-item questionnaire based on existing literature (e.g. Dick and Basu, 1994; Javalgi and Moberg, 1997) to evaluate managers' perceptions of their customers' loyalty. The questionnaire taps on the proportion of their customers' insurance premiums taken on by the company, the average time a customer remains in the company's portfolio, the probability of a customer renewing a premium and the overall perception of the company customers' loyalty.

Scale scores for innovation degree, innovation performance and customer loyalty were obtained as an unweighted sum of the corresponding items. Since in all three cases Likert-type items on a 0-7 scale were used, scale scores for these variables range from 0-27, 0-27, and 0-28, respectively. For market orientation, we computed a score for each of its facets as an unweighted sum of the corresponding items. Then a global market orientation score was obtained as a sum of the facets' scores inversely weighted by their number of items. Hence, this market orientation score assigns equal weights to each its facets, and ranges from 0-90.

The scales' reliability (as assessed by coefficient alpha) in this sample were 0.88 (market orientation), 0.70 (innovation degree), 0.91 (innovation performance) and 0.76 (customer loyalty). The means, standard deviations and correlations among all variables considered in this study are presented in Table I. As can be seen in this table, the three indicators of business economic performance are significantly but not largely correlated (the correlations range from 0.20 to 0.29). The correlations among the hypothesized intermediate variables (innovation degree, innovation performance and customer loyalty) are not high except for innovation degree and innovation performance, which share 36 percent of their variance. The correlations of market orientation with the intermediate variables appear significantly larger (they range from 0.55 to 0.58) than with the dependent variables (they range from 0.23 to 0.36). We also observe in Table I that managers report on average a high degree of innovation in their businesses, not so high a level of customer loyalty, and a level of innovation performance just at the scale mean. The average self-reported degree of market orientation is 56 on a 0-90 scale.

Method

All hypotheses were contrasted using covariance structure analysis as implemented in LISREL 8.50 (see Jöreskog *et al.*, 1999). Since all three indicators of business performance are highly positively skewed and present a high

	MST	PG	PROF	INNODR	INNPERF	LOYAL	MO
MST	1.00						
PG	0.20*	1.00					
PROF	0.23*	0.29	1.00				
INNODR	0.30	0.34	0.35	1.000			
INNPERF	0.27	0.32	0.41	0.62	1.00		
LOYAL	0.25	0.19*	0.38	0.40	0.38	1.00	
MO	0.24	0.30	0.36	0.55	0.58	0.57	1.00
x	4.55	7.88	6.26	18.25	14.22	19.96	56.28
Std	5.35	7.49	5.71	3.56	2.92	5.20	13.31

Notes:
$N = 122$, all correlations are significant ($\alpha = 0.01$) except those marked by * which are only significant at an $\alpha = 0.05$
MS = market share, PG = premium growth, PROF = profitability, INNODR = innovation degree, INNPERF = innovation performance, LOYAL = customer loyalty, MO = market orientation

Table I.
Means, standard deviations and inter correlations

degree of kurtosis, throughout this paper, rather than attempting to transform these variables to near-normality we shall employ an estimation approach that is robust to non-normality of the observed variables. The parameter estimates were obtained using maximum likelihood estimation with standard errors suitable for non-normal data (Jöreskog *et al.*, 1999, Equation A.24) and two test statistics were used to assess the goodness of fit (GFI) of the model: the Satorra-Bentler scaled chi-squared statistic (Satorra and Bentler, 1988, Equation 4.1), and Browne's (1984, Equation 2.20a) chi-squared statistic corrected for non-normality. To evaluate better the goodness of fit of this model, several additional indices will also provided: the root mean squared error of approximation (RMSEA (Steiger, 1990)), the standardized root mean squared residual (SRMSR (Jöreskog *et al.*, 1999)), the GFI (Tanaka and Huba, 1985), and the Comparative Fit Index (CFI) using the independence model as baseline (Bentler, 1990; see also McDonald and Marsh, 1990). Adequate to good fit is suggested by RMSEA and SRMSR values approaching 0.05. For the GFI and the CFI indices, values between 0.90 and 1.00 indicate adequate to excellent fit (but see Hu and Bentler, 1999).

Results
H1
The model used to estimate the effects of market orientation on insurance businesses' performance consists of a latent variable representing economic performance with three indicators (market share, premium growth and profitability) and a single exogenous variable (market orientation). This model

is depicted in Figure 2. The parameter estimates and GFIs for this model are given in Table II. The model shows a good fit, although note that it only has two degrees of freedom. According to the model, the best objective indicator of business economic performance is profitability per year: over 34 percent of its variance is accounted for by the model. The standardized regression coefficients reveal that profitability per year is the best objective indicator of
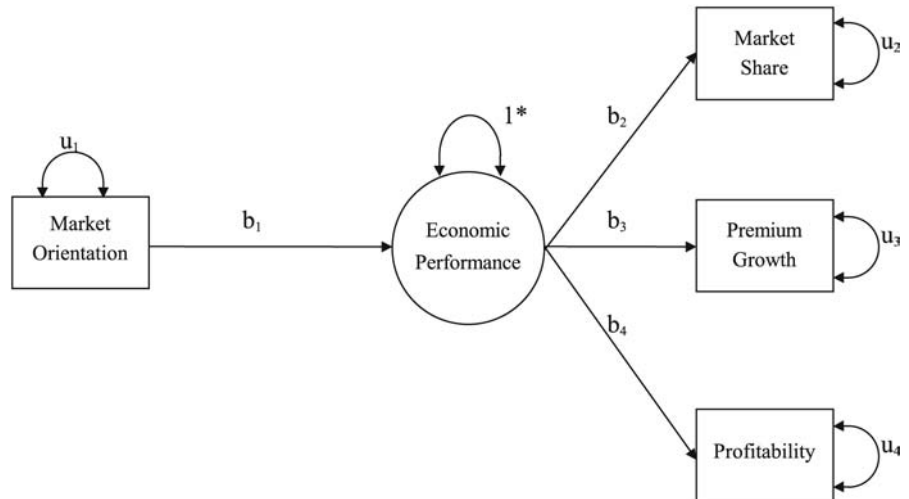

Figure 2.
Market orientation as predictor of economic performance

Note: * parameter fixed for identification purposes

Parameter estimates		Goodness of fit		R^2	
Parameter	Value	Index	Value	Variable	Value
b_1	0.06 [0.61] (0.02)	MFF X^2	0.01 ($p = 0.99$)	Market share	0.15
b_2	1.66 [0.39] (0.49)	SB X^2	0.01 ($p = 0.99$)	Premium growth	0.24
b_3	2.93 [0.49] (0.78)	B X^2	0.01 ($p = 0.99$)	Profitability	0.34
b_4	2.67 [0.59] (0.84)	RMSEA	<0.01	Business performance	0.37
u_1	177.13 [1.00] (22.41)	df	2		
u_2	24.27 [0.85] (7.13)	SRMSR	<0.01		
u_3	42.48 [0.76] (13.64)	GFI	1.00		
u_4	21.41 [0.66] (5.15)	CFI	1.00		

Notes:
Robust asymptotic standard errors are provided in parentheses, standardized parameter estimates are provided in square brackets
MFF X^2 = Minimum fit function chi square; SB X^2 = Satorra Bentler scaled chi square; B X^2 = Browne's chi square corrected for non normality; RMSEA = root mean squared error of approximation; SRMSR = standardized root mean squared residual; GFI = goodness of fit index; CFI = comparative fit index. R^2 = squared multiple correlations for endogenous variables

Table II.
Estimation results for the model depicted in Figure 2

overall business performance. Finally, according to the model almost 37 percent of overall business economic performance is accounted for by the degree of market orientation.

An inspection of the total effects of market orientation on the indicators of economic performance suggests that unit increments of market orientation as measured by the MOS-R are associated with 0.095, 0.168 and 0.153 increments in domestic market share, premium growth and profitability per year averaged over the last three years, respectively.

H2

A mediated model for the relationship between market orientation and business performance is depicted in Figure 3. In this context, a mediating effect is said to exist when:

- both mediating paths $\{b_5, b_6\}$ are significant; and
- the direct effect of the exogenous variable on the outcome variable vanishes (complete mediational effect) or is significantly lower (partial mediational effect) when a mediator variable is introduced in the model.

Condition (2) amounts to b_1 in Figure 3 becoming zero or significantly less that than value reported for Figure 2.

We used the mediated model depicted in Figure 3 to test for mediating effects of innovation degree, innovation performance, and customer loyalty separately on the impact of market orientation on business economic performance. We found that when either innovation performance or innovation
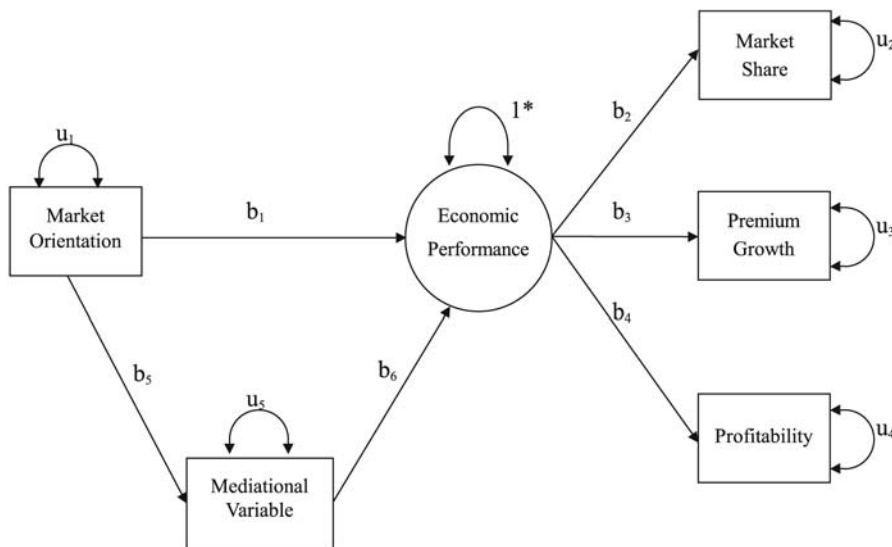
Figure 3.
Mediated model

Note: * parameter fixed for identification purposes

degree were used as mediating variable, all the mediating paths were significant and that direct path from market orientation to business performance was not significantly different from zero: $b_1 = 0.04$, $t = 1.62$, for innovation performance; $b_1 = 0.04$, $t = 1.86$, for innovation degree. Hence, taken separately both innovation degree and innovation performance completely mediate the impact of market orientation on business performance. After fixing b_1 at zero, we re-estimated these two mediational models. The resulting parameter estimates and GFIs for these two models are shown in Table III. On the other hand, customer loyalty was found not to have a mediational effect between market orientation and business performance. The parameter estimates and GFIs for this model are also given in Table III.

As can be seen in Table III, the mediating paths are significant, but the direct path b_1 is significantly different from zero at $\alpha = 0.01$. Furthermore, a 99 percent confidence interval for the value for b_1 reported in Table II (0.03; 0.09) includes the value of b_1 estimated in the mediational model using customer loyalty, 0.04. Hence, this variable does not even partially mediate on the impact of market orientation on business economic performance. The standardized direct impact of market orientation on business performance (0.408) is more than twice the standardized impact of market orientation conveyed through customer loyalty (0.191).

The percentage of variance of business economic performance explained by the model when innovation performance, innovation degree or customer loyalty are used as mediators is very similar (46.5 percent, 45.3 percent and 43.7 percent respectively).

H3

The full model to be fitted corresponding to the hypothesis depicted in Figure 1 is presented in Figure 3. The parameter estimates and goodness of fit test corresponding to this model are given in Table IV (see also Figure 4). As can be seen in this Table, the model fits these data very well.

All the postulated relationships were found to be significant at an $\alpha = 0.01$. Lagrange multiplier tests indicated that the fit of the model would not significantly improve by:

- adding a direct effect of market orientation to business performance; nor
- adding a direct effect of innovation degree on economic performance.

Result (1) is in accordance with the results discussed above, where we saw that innovation degree and innovation performance, even when taken separately, completely mediate the impact of market orientation on business performance. Result (2) confirms our hypothesis that innovation performance completely mediates the impact of innovation degree on business performance.

Given that all effects of market orientation on business performance go through either innovation degree-innovation performance, or through customer

	Parameter estimates				Goodness of fit	
Parameter	Value	Parameter	Value		Index	Value
Innovation performance as mediator						
b_1	0 (fixed)	u_1	177.13 [1.00] (22.41)		MFF X^2	5.60 ($p = 0.35$)
b_2	1.55 [0.40] (0.42)	u_2	24.14 [0.84] (7.11)		S-B X^2	3.80 ($p = 0.58$)
b_3	2.63 [0.48] (0.67)	u_3	43.16 [0.77] (4.55)		B X^2	4.29 ($p = 0.51$)
b_4	2.48 [0.59] (o,81)	u_4	21.13 [0.65] (4.55)		df	5
b_5	0.23 [0.58] (0.03)	u_5	18.03 [0.67] (2.80)		RMSEA	0.03
					SRMSR	0.05
b_6	0.18 [0.68] (0.05)				GFI	0.98
					CFI	0.99
Innovation degree as mediator						
b_1	0 (fixed)	u_1	177.13 [1.00] (22.41)		MFF X^2	7.17 ($p = 0.21$)
b_2	1.69 [0.50] (0.36)	u_2	23.40 [0.82] (7.38)		S-B X^2	4.97 ($p = 0.43$)
b_3	2.82 [0.51] (0.82)	u_3	41.56 [0.74] (4.50)		B X^2	6.13 ($p = 0.29$)
b_4	2.26 [0.54] (0.79)	u_4	23.29 [0.71] (4.60)		df	5
b_5	0.12 [0.55] (0.02)	u_5	5.90 [0.69] (0.78)		RMSEA	0.06
					SRMSR	0.05
b_6	0.31 [0.67] (0.09)				GFI	0.98
					CFI	0.98
Customer loyalty as mediator						
b_1	0.04 [0.41] (0.02)	u_1	177.13 [1.00] (22.41)		MFF X^2	2.30 ($p = 0.68$)
b_2	1.61 [0.40] (0.51)	u_2	24.05 [0.84] (7.11)		S-B X^2	1.55 ($p = 0.82$)
b_3	2.52 [0.45] (0.74)	u_3	44.75 [0.80] (4.55)		B X^2	3.09 ($p = 0.54$)
b_4	2.65 [0.62] (0.92)	u_4	20.13 [0.62] (4.55)		df	4
b_5	0.15 [0.57] (0.02)	u_5	8.63 [0.68] (1.04)		RMSEA	0.0
					SRMSR	0.02
b_6	0.13 [0.34] (0.05)				GFI	0.99
					CFI	1.00

Notes: Robust asymptotic standard errors are provided in parentheses, standardized parameter estimates are provided in square brackets
MFF X^2=Minimum fit function chi-square; SB X^2=Satorra-Bentler scaled chi-square; B X^2 = Browne's chi-square corrected for non-normality; RMSEA = root mean squared error of approximation; SRMSR = standardized root mean squared residual; GFI = goodness of fit index; CFI = comparative fit index.

Table III.
Estimation results
for the model
depicted in Figure 3

Parameter estimates		Parameter estimates		Goodness of fit		R^2	
Parameter	Value	Parameter	Value	Index	Value	Variable	Value
b_1	0.12 [0.55] (22.41)	u_1	177.13 [1.00] (0.02)	MFF X^2	10.59 (p = 0.56)	Market share	0.16
b_2	0.13 [0.34] (0.04)	u_2	5.90 [0.69] (0.78)	S-B X^2	7.85 (p = 0.80)	Premium growth	0.19
b_3	0.15 [0.57] (0.02)	u_3	14.48 [0.54] (2.59)	B X^2	12.67 (p = 0.39)	Profitability	0.38
b_4	0.78 [0.44] (0.15)	u_4	8.63 [0.68] (1.04)	df	12	Business performance	0.56
				RMSEA	0.0		
b_5	0.16 [0.54] (0.05)	u_5	23.91 [0.84] (7.23)	SRMSR	0.05	Innovation performance	0.46
b_6	0.16 [0.37] (0.07)	u_6	45.09 [0.81] (12.71)	GFI	0.98	Innovation degree	0.31
b_7	1.42 [0.40] (0.45)	u_7	20.12 [0.62] (4.60)	CFI	1.00	Customer loyalty	0.32
b_8	2.17 [0.44] (0.64)						
b_9	2.32 [0.62] (0.85)						

Notes:
Robust asymptotic standard errors are provided in parentheses, standardized parameter estimates are provided in square brackets
MFF X^2 = Minimum fit function chi-square; SB X^2 = Satorra-Bentler scaled chi-square; B X^2 = Browne's chi-square corrected for non-normality;
RMSEA = root mean squared error of approximation; SRMSR = standardized root mean squared residual; GFI = goodness of fit index;
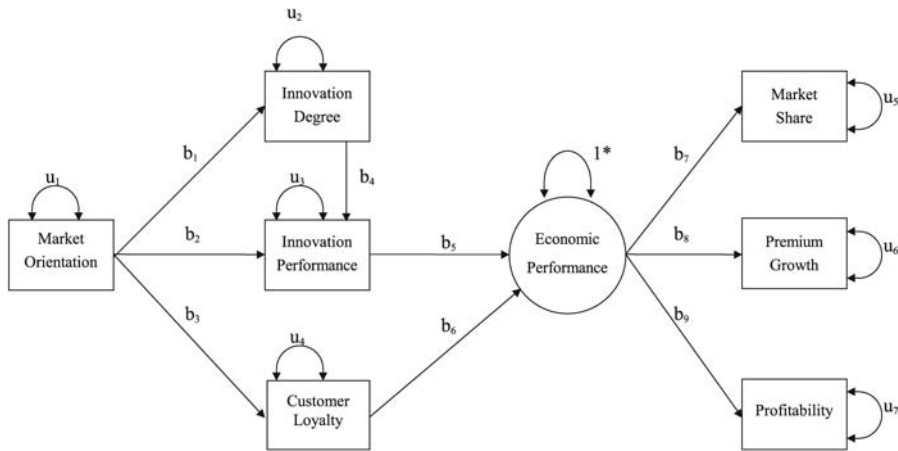CFI = comparative fit index. R^2 = squared multiple correlations for endogenous variables.

Figure 4.
Full model

Note: * parameter fixed for identification purposes

loyalty, a question arises as to the relative importance of the specific effects going through these variables. The standardized specific effect (computed as in Bollen, 1987) going through innovation degree and innovation performance is 0.31 and 0.21 going through customer loyalty. Hence the impact of market orientation going through innovation is 50 percent more than that going through customer loyalty.

We can also see in Table IV that over 30 percent of the variance of the intermediate variables (innovation degree, innovation performance and customer loyalty) are explained by market orientation. In fact, almost 50 percent (46.4 percent to be exact) of innovation performance is explained by market orientation. Furthermore, note that the percentage of variance of business performance explained by the model is 56.1 percent, a 52 percent increment over what is explained by market orientation alone (see Table II), and over a 20 percent increment over what is explained by the mediational models considered previously. Hence, the inclusion of all three intermediate variables in the model improves considerably our prediction of business performance.

Furthermore, we observe in Table IV that the direct effect of market orientation on all three intermediate variables appear to be equal. Also, the direct effects of customer loyalty and of innovation performance on economic performance appear to be equal. We re-estimated the model to test these constraints, obtaining b_1 b_2 b_3 0.133, b_5 b_6 0.157, Satorra-Bentler $X^2(15)$ 8.849, p 0.885, CFI 1.00, GFI 0.975, SRMR 0.06.

Conclusions

Market orientation can be defined as a strategy used to reach a sustainable competitive advantage based on the generation and use of information within

organizations, and on the selection of markets to be satisfied. In this framework, we believe that competitive advantage results from the use of resources and capabilities to generate differential satisfaction in profitable markets. Sustainability is achieved because the performance of the market orientation's behaviors requires complex organizational knowledge that cannot easily be imitated by competitors. Thus, we hypothesize that the satisfaction of profitable markets permits the firm to achieve a psychologically differential position that leads to brand loyalty and thus to higher profits. Previous studies have:

- found a clear impact of market orientation on economic performance;
- assessed the effects of market orientation on innovation; and
- investigated the relationship between market orientation and relationship marketing variables.

The present study proposes and tests a model that integrates both streams of research, innovation and relationship marketing. More research is needed to investigate the role of customer satisfaction within this framework.

In our necessarily partial model, innovation degree, innovation performance and customer loyalty are used as intermediate variables on the effect of market orientation on business performance. Our results suggest that the addition of these variables help improve our predictions of business economic performance 52 percent over what is explained by market orientation alone. Also, we found that innovation degree and innovation performance each taken separately completely mediate the effect of market orientation on economic performance. Furthermore, the impact of innovation degree on economic performance is completely channeled through innovation performance. Customer loyalty by itself does not meditate the impact of market orientation on economic performance, but when considered along with innovation degree and innovation performance, it conveys some of the effects of market orientation on business performance. This seemingly contradictory result arises from the fact that all three intermediate variables are interrelated.

Our results should not be taken to imply that there are no other variables mediate the effect of market orientation on economic performance. We believe that other variables that have not been taken into account in this study, such as product quality and customer satisfaction may also be significant mediators. However, our results do suggest that whenever innovation degree and innovation performance are included in the model as intermediate variables, the effects of market orientation on business performance will mostly be conveyed through these variables. Also, in this study we have adopted the currently most widely accepted approach to measuring customer loyalty which is based on behavioral loyalty measures (e.g. share of category requirements, renew the policy probability, the average customer last in the company portfolio). It would be worth extending the present study by including not only

behavioral measures of customer loyalty, but also attitudinal measures, along the lines of Dick and Basu (1994).

In our opinion, two important contributions of the present research are out use of objective measures of business performance, and our focusing on international markets. Despite the growing role of globalization and market integration, and despite the increasing internationalization of corporations, most studies on market orientation have focused on domestic markets (with notable exceptions, such as Selnes *et al.*, 1996; Webster, 1994). Similarly, most studies on product innovation have also focused on domestic markets. There is a lack of research yielding empirical support to the validity in an international setting to research results obtained in domestic markets. To fill this gap, we targeted the European Union market.

Our study focused on a single industry, the insurance sector. Our sample accounted for 22 percent of the companies and 17 percent of the insurance premiums in the targeted market. An advantage of our single-industry approach is that (with obvious reservations arising from the non-experimental nature of our study and the fact that our sample should not be considered to have been obtained at random), we can draw tentative predictions from our model concerning the impact of market orientation on economic performance in insurance companies operating in the European Union market. An evident drawback of the single-industry approach adopted here is that it is not clear how the present results extrapolate to other industries, even when operating in the same market.

We have found that within the European Union insurance firms that: constantly monitor the evolution of current and potential customer's needs; modify the attributes of the products to adapt them to the distributors requirements; analyze competitors' marketing policy and products; and know best of environmental trends, especially technological and legal changes; are more likely to develop more new products, have their new products accepted by the market and obtain more loyal customers. In turn, increased customer loyalty and increased new product success will result in improved economic performance. However, these conclusions must be taken with some caution as we have used overall measures of innovation and innovation performance. Further research is needed that takes into account the various aspects that constitute innovation.

Previous studies have concluded that insurance companies still see themselves as being product-focused and the industry as a whole is generally distribution driven (Sodano, 2000; Lambin, 1996). This lack of closeness with customers, has in turn contributed to the industry lack of product innovations, and product portfolios of commodity products that only compete on price. Now, the most successful firms are redirecting their focus to the market needs and they are beginning to exploit customer data and use market research to generate ideas for designing new products. In this context, these companies

now face choosing among too many new service options. The managerial implication of our study is that by enhancing their market orientation, firms will know and service its customers better. Thus, they will generate more innovations by adopting a market-based product development process. Also, increasing levels of market orientation enable firms to discriminate more easily which new products have a higher success probability thus enhancing both the efficacy and efficiency of new product development.

Note

1. We considered employing the total volume of premiums for each insurance company as an additional indicator although it seemed to us to be a better indicator of a company's size rather than of its performance. As we suspected, the total volume of premiums was uncorrelated with any of the variables considered in this study except for the company's market share ($r = 0.24$, $p < 0.01$). Hence it is clear that volume of premiums should not be used as an indicator of insurance companies' performance.

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Appendix. Measurement instrument

(a) Item content of the market orientation scale revised (MOS R)
(0 = complete disagreement to 10 = complete agreement)

Analysis of the final customer:

(1) We permanently measure our customers' degree of satisfaction.

(2) We constantly monitor the evolution of our current and potential customers' requirements.

(3) We know the factors influencing our customers' purchasing habits very well.

(4) We collect information necessary for detecting the appearance of new market segments (i.e. groups of customers with new requirements).

(5) We always have full, updated, information on the evolution of the image of our products held by our current and potential customers.

Analysis of the distributor:

(1) We permanently measure the degree of our distributor's satisfaction.

(2) We monitor the evolution of our distributors' requirements.

(3) We collect information on how our products integrate into our distributors' activities.

(4) We have accurate knowledge of the problems that marketing our products may cause to our distributors.

(5) We always have full, current, information for monitoring the image of our products as held by distributors.

Analysis of the competitors:

(1) We know our most dangerous competitors' aims and strategies.

(2) We know our most dangerous competitors' strengths and weaknesses very well.

(3) We have a system for precisely monitoring the evolution of the components of our competitors' marketing policy (products/services, price, communication and distribution).

Analysis of the environment:

(1) We have systems enabling us to closely monitor changes in the legal, social, economic, and technological environments.

(2) We identify the sensitive and risk factors that may impact on our business

Interfunctional coordination:

(1) Major market information is always spread over all the company's functional areas.

(2) Marketing strategies are always drawn up in agreement with the other business functions.

(3) We have implemented actions so that each person in the company feels individually committed to customer satisfaction.

(4) We periodically organize interfunction meetings to analyze all important market information.

(5) We encourage informal exchanges of information between the company's different functions.

Strategic actions on final customers:

(1) We are quicker than the competition in responding to changes in customers' requirements.

(2) Our marketing plan, with its necessary adaptations, is very well implemented overall.

(3) We give our customers complete information so they may use our products to the full and are satisfied with them.

Strategic actions on distributors:

(1) We treat our distributors as though they were our actual customers.

(2) We modify the attributes of our products to adapt them to our distributors' requirements.

(3) We undertake actions to persuade our distributors of the benefits they obtain from working with our company.

Strategic actions on competitors:
(1) We quickly respond to the actions of the most dangerous competitors for our company.
(2) We undertake actions to anticipate the competition.

Strategic actions on the macro environment:
(1) We develop strategies to support the defense of our sector's interests through communication and pressure groups (such as professional associations, employers' associations, etc.).
(2) We actively participate in actions whose aim is to demonstrate the social usefulness of our sector to public opinion.

(b) Item content of the innovation degree scale
(1) The rate, relative to competitors, of new product/service introduction by the firm (1 = less than to 7 = greater).
(2) How many new lines of products or services has your firm marketed in the past three years? (1 = no new lines of product or services to 7 = very many new lines of products or services).
(3) Change in product or lines have been … (1 = been mostly of a minor nature to 7 = usually been quite dramatic).

(c) Item content of the innovation performance scale
(1 = not successful to 7 = very successful.)
(1) To what extent has the new product/service been a success in meeting its sales growth objectives since its launch.
(2) To what extent has the new product/service been a success in meeting its market share objectives since its launch.
(3) To what extent has the new product/service been a success in meeting its sales objectives since its launch.
(4) To what extent has the new product/service been a success in meeting its profit objectives since launch.

(d) Item content of the customer loyalty scale
(1) Of all the types of insurance your customers have, they take on with your company: (1 = a minimum part to 7 = all).
(2) In comparison with your competitors, the average a customer lasts in portfolio in your company is: (1 = much less to 7 = much more).
(3) In comparison with your competitors, if a customer has taken on insurance with your company, the probability of his/her renewing the policy is: (1 = much less to 7 = much more).
(4) In comparison with your competitors, your customers' loyalty level is: (1 = much less to 7 = much more).

(e) Item content of the business performance scale
(1) Domestic market share (percent).
(2) Premium growth (percent per year).
(3) Profitability per year (percent premiums).