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Market Orientation and Innovation in Services Entreprises: Some Empirical Results from the Insurance Business

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Market Orientation and Innovation in Services Entreprises: Some Empirical Results from the Insurance Business

The following hypotheses will be examined in this research:

H_1: A firm's degree of innovation will be greater the higher its degree of market orientation.

H_2: The results of a firm's innovation will be better the greater its degree of market orientation.

H_3: The results of a firm's innovation will be better the greater its degree of innovation.

Covariance structure analysis was used to determine whether the model proposed was appropriate for these data. In line with results of previous studies, we have found that the extent of firms' market orientation has a significant positive effect on innovation in insurance companies. Our results indicate that the greater the intensity of a firm's market orientation, the higher is its degree of innovation. As a firm's market orientation increases, so does its ratio of new products (new lines or modifications of existing products) relative to its competitors.

However, we have found that market orientation does not have a direct effect on innovation performance. Instead, that effect is completely mediated through degree of innovation. Thus, degree of innovation has a significant effect on innovation performance. The firms that placed most new or modified products on the market stated that they had more successfully achieved the goals they had set themselves in terms of market share, sales and profitability of their innovations.

We believe that this research makes two main contributions: First, it responds to calls from several authors for extending research on MO to outcome variables other than economic performance (Kohli and Jaworski, 1990; Lambin, 1996), and specifically to new products (Narver and Slater, 1990). Second, since we targeted (and obtained a sample of) all relevant companies in the European Union, we advance our understanding of MO in the ambit of a supranational market, in this case the European Union. This is particularly important at a time when firms are increasingly involved in internationalisation processes and require studies whose conclusions are applicable to global markets.

THEORETICAL FRAMEWORK AND PROPOSED MODEL

According to Calantone, di Benedetto and Bhoovaraghavan (1994), companies that seek to adopt an optimum strategic stance must become strongly market oriented. Moreover, the attitudes of companies to risk-taking and innovation will be strongly influenced by the quality of their orientation towards market needs. To concentrate solely on innovation is no guarantee that products will succeed in the market if there is no parallel marketing effort.

According to Narver and Slater (1990), on the other hand, market orientation is the competitive strategy that most efficiently generates the right kinds of behaviour to create enhanced value for the consumer and therefore assures better long-term results for enterprises. As these authors see it, MO is based on orientation towards the customer, orientation towards competitors and inter-functional coordination.

Kohli and Jaworski (1990) identify three structural behavioural 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 organisation in order to coordinate and arrange strategic planning; and (3) implementation of strategic initiatives designed to satisfy the market. Other authors have put forward similar definitions of the concept of MO. For example, Ruekert (1992) defines MO as the intensity with which companies (a) obtain and use information on customers, (b) develop strategic plans on the basis of that information, and (c) implement these plans, thus responding to customers' wishes and needs.

Table 1. Components of market orientation.

ANALYSIS	COORDINATION	ACTION
• Analysis of final customer • Analysis of distributors • Analysis of competitors • Analysis of environment	• Inter-functional coordination	• Actions on final customer • Actions on distributors • Actions on competitors • Actions on the environment

Source: Lambin, 1996.

On the basis of these ideas, Lambin (1996) has produced a broader definition of the construct of market orientation, which he defines as a competitive strategy that involves all functional areas and levels of the organisation and embraces the different market participants. These 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 analyse

and act on every one of these market forces with proper coordination between their functions. Market orientation, then, comprises nine elements as shown in Table 1.

Regarding the consequences of MO for the activities and capabilities required for business innovation, some authors hold that to go overboard in taking on the concept of marketing can be detrimental to a firm's ability to break new ground and favours only innovations demanded by the market (Bennett and Cooper, 1981). The argument is that over-emphasis on MO would lay too much stress on minor innovations, with negative consequences for the long term. Nevertheless, Lawton and Parasuraman (1980) investigated whether adoption of the marketing concept tends to reduce companies' capacity to innovate and found no significant effect. More recently, thanks to the contributions of Narver and Slater and Kohl and Jaworski to the MO construct and its measurement, clear empirical evidence has emerged on the positive effect of MO on business innovation (Narver and Slater, 1990, ; Deng and Dart, 1994, Slater and Narver, 1994, Atuahene-Gima, 1995, 1996; Pelham and Wilson, 1996, Greenley and Foxall, 1997, Gatignon and Xuereb, 1997).

When studying the influence of MO on companies' innovation, it is important to examine not only the possible effects of MO on the amount of new products being introduced in the market and on their degree of innovation, but also the effects MO on the performance of those new products. The latter does not seem to have been subjected to any empirical investigation yet. We shall consider these two aspects in the present research.

TARGET HYPOTHESIS

If we take MO to be the generation of market intelligence (i.e., ascertaining current and future customer needs, and monitoring competitors as well as environmental factors), it follows that MO is a source of ideas for new products and services and that it should therefore positively affect the degree of innovation in companies.

At the same time, the market-oriented firm's greater understanding of its market environment should also reduce the incidence of new product failures (Cooper, 1993, Ottum and Moore, 1997). In a recent study, Song and Parry (1996), using data on 788 new products introduced by 404 Japanese firms, examined the links between new product performance and several factors. Their findings clearly support the importance of market understanding for the success of new products. Also, in their cross-national research on the controllable factors of new product performance, Calantone, Schmidt and Song (1996, pp 341) concluded that "it is important to collect and assess market and competitive informations in order to understand customers' needs, wants and

specifications for the product (...) to understand customers' purchase decisions, and to learn about competitors' strategies...". Given that MO provides enhanced knowledge of customers' preferences and wants and that enables companies to adapt better to these wants, we may assume that market orientation will positively affect innovation performance. Finally, there is empirical evidence that suggests that the volume or degree of a firm's innovation partly determines innovation performance (Calantone, di Benedetto and Bhoovaraghavan, 1994). This is why the new hypothesis is included in the target model.

In sum, the following hypotheses will be examined in this research:

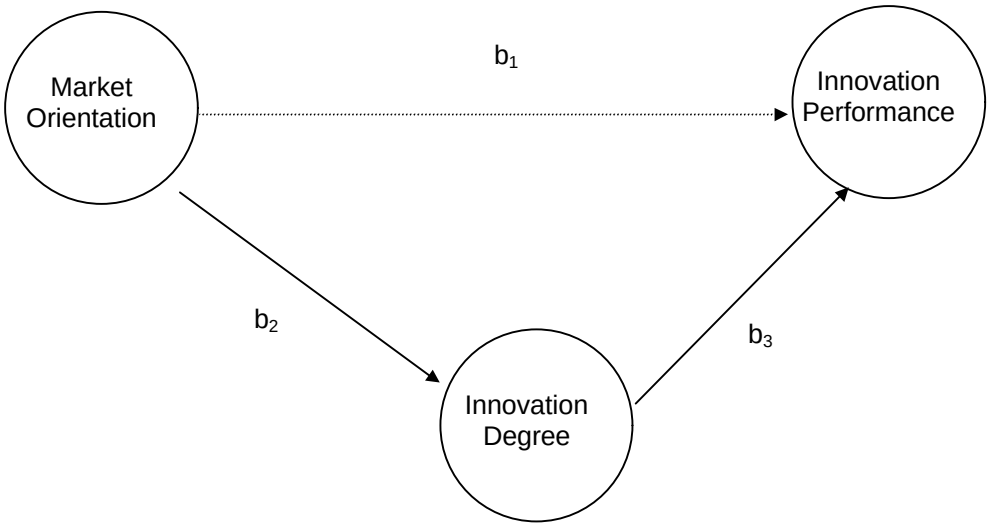
H_1: A firm's degree of innovation will be greater the higher its degree of market orientation.

H_2: The results of a firm's innovation will be better the greater its degree of market orientation.

H_3: The results of a firm's innovation will be better the greater its degree of innovation.

These relationships are set out schematically in Figure 1.

Figure 1. Model of relationships between MO and Innovation.



Note: There are 9 indicators for market orientation, 3 for degree of innovation and 4 for innovation performance. The dotted line denotes a non-significant effect.

METHODOLOGY

The population universe considered in this article is defined as a set of insurance companies operating in the European Union which meet the following conditions: a) they operate in private insurance or "mass" insurance; b) they have a market share of more than 0.05%; and c) their management is independent. The list of European insurance companies was taken from the

Financial Times yearbook for 1995.

It was assumed that senior executives were the people best qualified to assess their firms' market orientation degree, innovation degree, and innovation performance. These variables were therefore measured using the responses of firms' executives on a number of questions about their own companies. This information was gathered via a postal questionnaire. In view of the size of the target population (554 firms), it was decided to send the questionnaire to all companies

MEASUREMENTS

Since the target variables are not directly observable, a series of indicators was used for each one.

♦ *Measurement of degree of MO:* This was measured using nine sub-scales, one for each component of the model. All in all, the nine sub-scales consist of 30 items. Each item was presented as a statement representing the ideal behaviour of a market-oriented company. A scale from 0 to 10 was used for these items, where 0 indicated that the statement "was entirely untrue" of the firm, 5 that it was "more or less true" and 10 that "it was entirely true". The initial questionnaire is based on Lambin (1996), and has been subsequently used by Lado, Maydeu-Olivares and Rivera (1998) to measure the market orientation of insurance companies.

♦ *Measurement of degree of innovation in companies:* We used a scale developed by Miller and Friesen (1982) which has been used in numerous subsequent studies (e.g., Calantone, di Benedetto and Bhoovaraghavan, 1994). This is a Likert scale comprising three items.

♦ *Measurement of innovation performance:* We used the four-item scale developed by Atuahene-Gima (1996) to evaluate the extent to which the objectives set for new products are achieved in terms of sales, market share, sales growth and profits. Here, the respondent is asked to choose a new product/service that the company has introduced in the last five years; a new product is defined as an improved product, the expansion of a product line or a totally new product. This new product is used as a reference for responses as to the degree of achievement of objectives measured on a Likert scale.

SAMPLE

137 European insurance companies returned valid questionnaires, giving a response rate of over 20%. In order to assess the possibility of non-response bias, the questionnaires were divided into quartiles on the basis of reception date (Armstrong and Overton, 1977). A t-test applied to the first and fourth quartiles (the earliest and the latest received) showed that there were no significant

differences in the responses to the target scales.

Table 2 shows the distribution of premiums by country in the sample and the population of the European Union. The sample represented 17% of total premiums in the EU. However, the distribution of premiums by countries is somewhat different from that of the population.

Table 2. Distribution of premiums in sample and population.

(million US dollars)

	sample		***total EU (*)***	
Country	**Premiums**	**%**	**Premiums**	**%**
Austria	7759	7.8	12873	2.1
Belgium	8859	8.9	14973	2.6
Denmark	-	-	9186	1.5
Finland	632	0.6	9250	1.5
France	7522	7.6	146244	24.4
Germany	13582	13.8	152525	25.5
Greece	1344	1.4	1836	0.3
Italy	7060	7.2	39634	6.6
Ireland	57	0.1	4810	0.8
Luxembourg	-	-	4423	0.7
Holland	7363	7.5	36013	6.1
Portugal	1017	1.0	5223	0.9
Spain	9653	9.8	27582	4.6
Sweden	3250	3.3	11763	2.-
United Kingdom	30464	30.9	122342	20.4
total	98562	100	598679	100

(*) Source: CEA, 1996.

METHODOLOGY

Covariance structure analysis was used to determine whether the model sketched in Figure 1 was appropriate for these data. As indicated above, the constructs of innovation degree and innovation performance appearing in Figure 1 have three and four indicators respectively. As for the construct of market orientation, since the sample size is rather small we shall use as indicators the nine sub-scales instead of the original 30 items. The reliability of these sub-scales is provided in Table 3. As the table shows, all sub-scales exhibited acceptable levels of reliability.

Table 3. Reliability of the market orientation sub-scales

sub-scale	*No. Items*	*Alpha Cronbach reliability coeff.*
analec	5	0.86
actiec	3	0.67
analdis	5	0.85
actidis	3	0.70
analcom	3	0.89
acticom	2	0.77
analenv	2	0.83
actienv	2	0.83
coord	5	0.83

Notes: ANALEC = analysis of final customer, ACTIEC = actions oriented towards the final customer, ANALDIS = analysis of distributor, ACTIDIS = actions oriented towards the distributor, ANALCOM = analysis of competitors, ACTICOM = actions oriented towards competitors, ANALENV = analysis of environment, ACTIENV = actions oriented towards the environment, COORD = inter-functional coordination

Since the observed variables were approximately normal, maximum-likelihood estimation was used.

We should not expect any model to hold exactly in the population. Hence, issues concerning whether the proposed model fits exactly in the population should be re-phrased in terms of how close is the model to the population covariance matrix. Here, we shall use the Root Mean Squared Error of Approximation (RMSEA: Steiger, 1990) to assess this discrepancy. A value of .05 has been suggested as an upper limit for close-fitting model (Browne & Cudeck, 1993).

Other statistics have been suggested for judging the goodness of fit of a covariance structure model. For instance, the Root Mean Squared Residual (RMSR; Jöreskog & Sörbom, 1993), the Goodness-of-Fit Index (GFI; Jöreskog & Sörbom, 1993), and the Comparative Fit Index (CFI; Bentler, 1990). Adequate to good fit is suggested by RMSR values approaching .05. For the GFI and the CFI indices, values between .80 and 1.00 indicate adequate to good fit.

Table 4. Factor loadings for the final model

variables	***market orientation***	***innovation degree***	***innovation performance***
analec	7.05 [0.77] (0.69)	0	0
actiec	4.32 [0.83] (0.38)	0	0
analdis	6.47 [0.74] (0.66)	0	0
actidis	3.32 [0.61] (0.44)	0	0
analcom	4.11 [0.73] (0.43)	0	0
acticom	2.95 [0.32] (0.32)	0	0
analenv	2.91 [0.32] (0.32)	0	0
actienv	2.63 [0.39] (0.39)	0	0
coord	6.40 [0.70] (0.75)	0	0
innode1	0	0.44 [0.62] (0.07)	0
innode2	0	0.68 [0.70] (0.09)	0
innode3	0	0.50 [0.63] (0.08)	0
innoperf1	0	0	0.69 [0.84] (0.08)
innoperf2	0	0	0.71 [0.84] 0.09
innoperf3	0	0	0.87 [0.94] (0.10)
innoperf4	0	0	0.73 [0.81] (0.09)

Notes: standard errors of parameters are shown in round brackets, standardised parameters in square brackets. ANALEC = analysis of final customer, ACTIEC = actions oriented towards the final customer, ANALDIS = analysis of distributor, ACTIDIS = actions oriented towards the distributor, ANALCOM = analysis of competitors, ACTICOM = actions oriented towards competitors, ANALENV = analysis of environment, ACTIENV = actions oriented towards the environment, COORD = inter-functional coordination, INNODE1 = rate of introduction of new products, INNODE2 = new product lines, INNODE3 = intensity of product modifications or changes, INNOPERF1 =

achievement of sales growth objectives with new products, INNOPERF2 = achievement of market share objectives in new products, INNOPERF3 = achievement of sales volume objectives in new products, INNOPERF4 = achievement of profitability objective in new products.

RESULTS

For these data, the RMSEA was estimated as .054 with a 90% confidence given by (0.030 ; 0.075). Hence, the model provides a good approximation to the population covariance matrix. A formal test of close fit, H_0: RMSEA $\leq$ .05 yields $\underline{p}$ = .15, on 101 degrees of freedom. Other goodness of fit statistics for the model are SRMSR = .050, GFI = .88, CFI = .95.

All parameter estimates in this model are significant but for the direct relationship between market orientation and innovation performance (b_1 = 0.25, t-value = 1.27). In other words, the effect of market orientation onto innovation performance is all conveyed through the firm's degree of innovation.

The model was re-estimated after setting b_1 = 0. The RMSEA, GFI and CFI for the revised model do not change, and SRMSR = .052. We provide in Table 4 the factor loadings of the revised model. The direct relationships (and their standard errors) between the latent variables in this model were b_2 = 1.06 (0.18), b_3 = 0.90 (0.18). These two direct effects are very similar, as evidenced by their standardised values: 0.73 and 0.79. According to the model, 53% of the variance of the latent variable innovation degree is attributable to market orientation, while 63% of the variance of innovation performance is attributable to the effect of market orientation mediated by the degree of innovation.

CONCLUSIONS

In line with results of previous studies, we have found that the extent of firms' market orientation has a significant positive effect on innovation in insurance companies. Our results indicate that the greater the intensity of a firm's market orientation, the higher is its degree of innovation (H_1). As a firm's market orientation increases, so does its ratio of new products (new lines or modifications of existing products) relative to its competitors.

However, we have found that market orientation does not have a direct effect on innovation performance (H_2). Instead, that effect is completely mediated through degree of innovation. Thus, degree of innovation has a significant effect on innovation performance (H_3). The firms that placed most new or modified products on the market stated that they had more successfully achieved the goals they had set themselves in terms of market share, sales and profitability of their innovations.

We believe that this research makes three main contributions: First, it responds to calls from several authors for extending research on MO to outcome variables other than economic performance (Kohli and Jaworski, 1990; Lambin, 1996), and specifically to new products (Narver and Slater, 1990). Second, since we targeted (and obtained a sample of) all relevant companies in the European Union, we advance our understanding of MO in the ambit of a supranational market, in this case the European Union. This is particularly important at a time when firms are increasingly involved in internationalisation processes and require studies whose conclusions are applicable to global markets. Third, this research examines empirically market orientation in the service sector, whose distinguishing characteristics – such as the intangibility and heterogeneity – are of special interest to the field of marketing.

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