Green marketing strategy and the firm's performance: the moderating role of environmental culture

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Abstract: Following the natural-resource-based view of the company, this study analyzes how green marketing strategy influences different dimensions of organizational performance. In this task, it also studies how the integration of the environmental values within the firm's internal culture determines the effect of green strategies on performance. To meet these aims, the present research collects data from 361 manufacturing firms of a European country. Structural equation modelling with EQS software was the method applied to analyze the information. Findings indicate that green marketing strategy lead firms to improve their profitability by optimizing marketing performance and reducing costs. However, dimensions of organizational results, like process performance, are not positively related to economic success. It also reveals that environmentally-oriented firms are more likely to achieve a superior operational and marketing performance from environmental practices.

Keywords: green marketing strategy; environmental culture; natural-resource-based view of the firm; firm's performance; structural equation modelling.

Introduction

Environmental degradation issues and society's concerns for sustainable development have modified competitive scenarios and provided firms with new challenges to overcome. In this task, marketing practitioners have responded to this awareness by designing and commercializing greener strategies that have allowed companies to project a responsible image in the marketplace and to achieve higher levels of efficiency. From an academic perspective, academics refer to the rise of the green marketing strategy (GMS) as the firms' desire for developing actions aimed to align corporate and marketing objectives with the protection of the natural environment (Kärnä, Hansen and Juslin, 2003).

Traditionally, strategic management research has been absent from environmental issues or has assumed that managing them negatively influences firms' economic stability (Walley and Whitehead, 1994). On the contrary, latest research recognizes the existence of tangible and intangible benefits associated to certain proactive practices and to GMS (Porter and van der Linde, 1995; Baker and Sinkula, 2005), originated as the result of the development of cost (i.e., low costs, low selling price, processes efficiency) and differentiation advantages (i.e., product characteristics, customer support). However, there is a lack of studies devoted to analyze how companies translate their environmental actions into profits and to identify the critical resources that they must develop to capture such benefits. For strategic management it is relevant to ascertain not only if GMS allows firms to improve their results, but also to investigate paths of influence of environmental actions on different dimensions of organizational performance (Sharma and Vredenburg, 1998); and to explore the circumstances under which this optimization is produced, since not all companies are able to translate environmental strategies into a competitive advantage (Christmann, 2000).

To fill these gaps, this paper follows Hart's (1995) natural resource view of the company by exploring: patterns of influence of GMS (a strategy) on different dimensions of

organizational performance (as expressions of competitive advantages); and the role of environmental culture (EC) (a corporate resource) as a determinant factor in the successfully implementation of GMS. The study's findings will shed light on the debate about the competitive consequences of environmental proactive behaviours and reinforce the natural-resource-based-view literature identifying key resources required for the efficiently development of greener practices.

To meet such aims, this paper opens explaining how environmental issues have influenced strategic management, especially in the marketing field. This section also introduces a model that discusses the influence of GMS on business results and the moderating effect of EC. Then, it explains the methodology employed to meet the study's objectives. This is followed by the scales' validation and the hypotheses' contrast. And, finally the paper closes with the main conclusions, implications and limitations derived from the study.

Theoretical Background

The resource-based view of the firm affirms that companies differ in their results because they own heterogeneous resources (Barney, 1991; Dierickx and Cool, 1989). Such heterogeneity is a consequence of the development of rare, valuable, non-substitutable and imperfectly imitable resources and capabilities that favour the development of competitive advantages over the rest of competitors. Hart (1995) argues that environmental constraints force firms to build up new and distinctive resources and capabilities. These capabilities allow firms to more efficiently respond to environmental pressures through the design of new and flexible strategies that, in turn, will be likely to be translated into sustainable competitive advantages. This study, following Hart's (1995) approach, poses GMS as a competitive strategy that allows firms to optimize different dimensions of organizational performance, viewed as expressions of competitive advantages. Within this framework, EC is seeing as an intangible

asset that moderates the influence of GMS on performance, in such a way that companies that present a strong environmental culture will be more prone to translate their GMS into higher profits (Christmann, 2000). Figure 1 displays the model and the hypotheses.

(Figure 1)

Environmental issues and the marketing function

Up to date companies' concerns for environmental issues have been reflected in the adoption of new management practices that have allowed them to efficiently control the depletion of the natural resources (Sheth and Parvatiyar, 1995). Within this context, some concepts, like green or environmental marketing, have been brought about in the academia to conceptualize firms' responsibility towards environmental issues (Fuller, 1999). Far from representing a threat for the company, integrating ecological issues within strategic management is viewed as a competitive opportunity by firms that decide to adapt their conduct to the society's norms, beliefs and expectations. At this point, GMS does not refer to an isolated strategy that helps organizations to address ecological issues in certain moments, but covers all those activities that mainly aim: to meet the customers' expectations for greener products and services and for a more sustainable and ethical company's behaviour; to reach the firm's economic goals; and, to minimize the environmental damage that stems from its industrial and commercial activities (Peattie, 1995).

The implementation of environmental values within strategic management requires firms to adopt a holistic approach, since reducing environmental risks requires the assumption of coordinated responsibilities and actions. This means that the scope of GMS goes beyond simply selling and promoting environmental products aimed to green customers segments and involves other areas like production, logistics and administration departments. Otherwise, the occasional utilization of "green" arguments in communication may lead consumers to confusion and to perceive firms' environmental actions as opportunistic and oriented to create

profits for the company and not for the society (Coddington, 1993). Therefore GMS is understood to encompass proactive environmental actions that aim to respond to environmental concerns but that does not exist in isolation (Baker and Sinkula, 2005). It focuses on whether firms consider the environment in decision making melding ecological concerns and marketing strategies through substantial and visible commitments oriented towards the desire of "doing the right thing" (Menon and Menon, 1997).

GMS and firm's performance

Despite the relevant impact that environmental proactive strategies have on the firm's performance, little empirical research has been devoted to explore such relationship (Menguc and Ozanne, 2005). Most of the literature focusing on this link is based on case studies of large corporations that successfully have developed environmental proactive initiatives (Elkington, 1994; Shrivastava, 1995) and the number of quantitative studies is scarce and offer inconclusive findings. Some of these studies argue that environmental actions impede profit maximization due to the large investments that the implementation of prevention technologies requires (Walley and Whitehead, 1994). Other theoretically approaches identify literature's myths and pose environmental modern solutions as a business panacea rather than an efficient management system (Aragón and Rubio, 2007; Newton and Harte, 2003). The arguments behind these affirmations lays on widespread and questionable assumptions like the continuous growth of the green markets, the potential of environmental technologies to cut down costs, or the differentiation power of standardized behaviors like the adoptions of environmental certifications (Zhao, 2008). Some of these arguments have also received empirical support in studies showing that, in certain industries, reactive firms were more profitable that those that went beyond environmental regulations (Elsayed and Patton, 2005; Jaggi and Freedman, 1992).

Contrary to this stream of the literature, current discussions emphasize the existence of positive outcomes from the development of environmental strategies (Aragón, Hurtado, Sharma and García, 2008; Baker and Sinkula, 2005; Pujari, Wright and Peattie, 2003), what leaves the debate about the competitive consequences of environmental strategies still opened. However, it is important to note that most of the quantitative studies in the literature employ proxy measures of environmental behaviour, like pollutant emission indexes, and single indicators of financial performance such as the return on the investments (Klassen and MacLaughlin, 1996; Russo and Fouts, 1997). Therefore, not only because of the questionable findings in the literature, but also because of the need for capturing different patterns of influence of environmental actions on organizational performance, it is essential to adopt a multidimensional view of this variable (González and González, 2005; Nair and Menon, 2008).

One of these paths is based on the assumption that proactive environmental strategies help companies to increase their operational performance. Operational performance reflects the improvement of the processes' efficiency, including indicators like product quality, processes' time and flexibility, the firm's innovation capacity, etc. (Venkatraman and Ramanujam, 1986). Meeting pollution reduction objectives requires changes in products and processes that reduce the quantity of waste generated and optimize the productivity of some resources (i.e., using cheaper and cleaner raw materials or reducing the consumption of energy and water) (Hart, 1995; González and González, 2005). Indeed, environmental prevention practices reduce production cycles, eliminate inefficient processes (Hammer and Champy, 1993) and minimize potential liability costs derived from environmental laws (Rooney, 1993).

In this line, green marketing involves proactive activities that result in a more rational management of the company's resources (Menon and Menon, 1997; Rivera, 2007). For

example, the design and manufacture of environmentally friendly products require the use of recycled materials or the implementation of productive systems able to minimize consumptions (Sharma, Iyer, Mehrotra and Krishnan, 2010). Integrating environmental concerns in distribution also contributes to attain economic and environmental objectives allowing firms to reduce production costs. Firms can select cleaner transportation systems that reduce the fossil carburant consumption or require cleaner alternative energy sources (Polonsky, 1995). Also, reverse logistic systems allow firms to recover products or packaging that can be reincorporated into their processes (Florida, 1996). Therefore, the development of a GMS positively influences the company's operational results, which result in a better economic performance. Following this idea, hypotheses 1 and 2 state that:

Hypothesis 1: The development of GMS positively influences the firm's operational performance

Hypothesis 2: The optimization of the firm's operational performance positively influences its economic performance

Previous research points at the importance of incorporating more intangible indicators to measure the outcomes of sustainable practices (Sharma and Vredenburg, 1998). Following this idea, marketing performance refers to the effectiveness of the marketing functions to meet the customers' requirements and society's expectations (González and González, 2005), and it is seen as an important consequence of the development of a GMS.

The commercialization of environmentally friendly products and services generates important differentiation advantages that allow firms to avoid fines and penalties and to access to new market opportunities (Chen, 2008). Miles and Covin (2000) affirm that green marketing enhances the company's reputation since green practices shape stakeholder's perceptions on the company's ethical behaviour. Indeed, environmental reputation is seen as a critical factor when pressure groups, like regulatory lobbies, suppliers or non-profit

organizations, have to choose a company for creating green alliances (Fombrun, 1996). Focusing on market's expectations, companies which have specific abilities and resources to meet their customers' environmental demands will obtain important market gains. Some of the marketing benefits associated to the development of advanced environmental marketing programs are (Menon and Menon, 1997): a better image of commercial brands; more satisfied and loyal customers; and the dispelling of negative publicity. Thus, environmental responsibility may create positive associations in the individual's mind, favouring the attitude towards the company and its brands, and enhancing the perception of the product quality (Hartmann and Apaolaza, 2006; Kinnear and Taylor, 1973). Consequently, it is proposed that GMS yields the optimization of the company's marketing performance, and such improvement contributes to economic performance growth, what is reflected in hypotheses 3 and 4:

Hypothesis 3: The development of GMS positively influences the firm's marketing performance

Hypothesis 4: The optimization of the firm's marketing performance positively influences its economic performance

The moderating role of environmental culture

Within Hart's (1995) thinking, environmental resources have a pivoting role for the development of successfully environmental strategies. One of the resources that may contribute to create superior business performance is environmental culture (EC) (Banerjee, 2002). Culture refers to the norms, values and assumptions that are shared among the organizational members and that tend to persist in time (Kotter and Hesket, 1992). Culture can be assumed, invented, discovered or developed by the managerial team in an effort for disseminating a desired set of values that will guide the corporation and employees' behaviour (Schneider, 1988). In coherence with this idea, EC reflects to what extent the

company has internalized the environmental preservation values within the entire organization and is typically codified in mission statements, formal policies and procedures, training and information programs for employees and managers, etc. (Banerjee, 2002; Stone, Joseph and Blodgett, 2004).

Previous research shows that organizational learning related to corporate environmentalism requires the generation and dissemination of environmental information and knowledge that facilitates the translation of environmental values into corporate and functional strategies (Banerjee, Iyer and Kashyap, 2003). Thus, formal and informal environmental norms and values that govern the firm's routines facilitate the implementation of tangible environmental practices because all the departments and employees acknowledge and share the same environmental values (Kärnä *et al*., 2003). Additional benefits associated to environmentally oriented cultures are a positive word of mouth towards external stakeholders (Wilson, 2001) or employee satisfaction and organizational adaptability (Angle and Perry, 1981).

Therefore, EC can be seen as a strategic asset that allows companies to translate their environmental proactive strategies into a better performance. Having a strong EC allows firms to capture the benefits associated to these practices because all the corporate and functional levels share the same environmental values and norms. The generation and dissemination, across levels and functions, of environmental information and knowledge facilitates companies to develop abilities and routines required to successfully implement environmental strategies. In this way, truly environmentally oriented firms will be able to overcome certain barriers that impede the generation of competitive advantages, like employees reluctance to new prevention-oriented routines and technologies. On the contrary, companies that decide to simply put proactive strategies into practice, without previously adopting a strong EC, could have not enough experience to successfully implement them (Christmann, 2000). Specifically,

we may expect that EC acts as a complementary resource that strengthens the influence of GMS on operational and marketing performance (Teece, 1986):

Hypothesis 5: The effect of GMS on operational performance is superior in firms that present a stronger EC

Hypothesis 6: The effect of GMS on marketing performance is superior in firms that present a stronger EC

Method

Data collection

A population of manufacturing firms of a European country that were included in a purchased data base was used for data collection. This target population, similar to other studies' on this topic (Banerjee *et al*., 2003; Menguc and Ozanne, 2005), covered 2098 companies that employ more than 150 employees in different industrial sectors. The most representative industrial sectors were: chemical and plastics; food and beverages; basic metals; wood and paper; vehicle manufacturing; and non-mineral products.

Environmental managers were selected as being considered as the most suitable respondents because of their experience and knowledge in the implementation and consequences of environmental management (Henriques y Sadorsky, 1996). Through the first mailing, respondents were also granted the possibility of answering the survey on-line, through a website that was designed for such purpose. The contact with the firms was made through a postal survey and a personalized letter sent to each company's environmental manager. This first mailing packet also contained a postage-paid envelope with the return-address printed on it. Additionally we offered firms to receive a report with the main results of the study as an incentive to respond. A month after the first mailing a reminder letter was sent to the non-respondents. After screening the obtained questionnaires in order to discard those responded by other employees, 361 of them were considered valid, which represents a

response rate of 17.20%, similar to other studies within this research field (Baker and Sinkula, 2005). Respondents' profiles were also controlled by means of an opened-question where respondents had to indicate their position within the company.

No significant differences existed between the population and the obtained sample in terms of industrial sector, size and geographical location of the firms. Also, non-response bias was not found since T-tests revealed no significant differences between early and late respondents in the study's items (Armstrong and Overton, 1977). Besides, common method bias was discarded using Harman test that revealed that six different factors emerged from a factor analysis that explained more than the 70% of the extracted variance (Podsakoff and Organ, 1986).

Measure development

Given the lack of reliable scales in previous studies, a novel scale to measure the concept of GMS was developed using a qualitative approach. Such method was preceded by a review of the green marketing literature focused on analyzing papers that involved themes like environmental marketing mix, the scope of green marketing strategies and the evolution of the construct. After a preliminary selection of indicators following previous works, the qualitative stage started, carrying out in-depth interviews with seven CEOs executives of major manufacturing firms of a European country and two academics experts on environmental management research. Each interview was audio-recorded and lasted, on average, one hour. Likewise, additional data like sustainability and social responsibility reports, internal procedures handbooks, promotional and advertising material, etc. were obtained. The interviews' information was organized and analyzed, after being codified, with the help of NUDIST-NVIVO software. The proposed final scale, presented in the appendix, collected 14 items where managers scored the degree of integration of different environmental activities within their organizations (5-point-Likert scale: 1 = null intensity; 5 = high intensity).

To measure operational, marketing and economic performance, scales were designed on the basis of the feedback obtained in the qualitative research and by adapting some instruments used in previous studies (González and González 2005; Sharma and Vredenburg 1998). In this case, each manager was asked to score the relative position of his/her company according to different measures of organizational performance (5-point-Likert scale: 1 = with respect to our competitors, our position is much worse; 5 = with respect to our competitors, our position is much better).

Finally, to measure EC, the scale proposed by Banerjee (2002) was considered. This scale involves items that express to what extent the company adopts the environmental values and formalizes them through internal politics, mission statements and formation and communication programs for employees. This scale covers 6 items where managers were asked to score whether they agreed with different propositions (5-point-Likert scale: 1 = strongly disagree; 5 = strongly agree). Table 1 displays the scales finally employed in the study.

(Table 1)

Results analyses

Structural Equation Modeling (SEM), using SPSS 14.0 and EQS 6.1 statistics software, was the selected method to analyze the collected data. First, in order to validate the scales, the "measurement model" was assessed by analyzing the scales' statistical properties in terms of dimensionality, reliability and validity. Exploratory and confirmatory factor analyses were run for that purpose. Second, the "structural model" was tested, what would provide empirical evidence to reject or not the different hypotheses (Hair, Anderson, Tatham and Black, 1998; Kline, 2005).

Validation of the scales

To assess the scales' reliability, the Cronbach's Alpha value and the item-scale correlations were studied. Cronbach's Alpha for all the scales exceeded the critical limit of 70% (Nunnally, 1978), and the item-to-total correlation analysis were above the value of 0.5 (Nurosis, 1993) for most of them. Only items EP2 (market share) and EP5 (sales growth) had to be discarded at this stage because of their low correlation with the scale. In order to identify the dimensions underlying the different scales, a principal component factor analysis was carried out. Tables 2, 3 and 4 display the structure matrix of the scales after carrying out a varimax orthogonal rotation.

(Tables 2, 3 and 4)

Items of the GMS scale, as can be observed in Table 2, loaded into two different factors. The first factor captures practices that involve eco-design, the use of cleaner or recycled materials in packaging and products, green logistics and reverse distribution systems. These activities refer to internal processes that favour the improvement of environmental performance by reducing emissions of pollutants or by employing more sustainable alternative raw materials. Consequently, this factor received the name of *process oriented environmental actions* (POEA). The second one referred to short-term focus and reversible practices like green advertising, the launch of green product lines, the use of eco-labels or the sponsorship of environmental groups and events. These activities cannot, by themselves, reduce the firm's environmental impact, but are key variables in order to reveal firm's environmental actions to the external stakeholders. This construct received the name of *market oriented environmental actions* (MOEA).

As observed in Table 3, marketing performance indicators loaded on a single factor explaining 68.43% of the variance, while economic performance also presents a uni-dimensional solution that explains 84.35% of the variance. In relation to operational

performance, factorial analysis leaded to a two-dimension solution: *cost performance*, that involved process efficiency and final production costs; and *process performance*, that included items like the product's quality, the firm's innovation capacity and pace of new products launching (Table 4). Therefore, the hypotheses related to the dimensions obtained in the factor analyses for the GMS and the operational performance scales were divided into two and four sub-hypotheses.

The second phase of the validation procedure involved performing a confirmatory factor analysis to assess these constructs more rigorously. Table 5 summarizes the results obtained with SEM and ML robust estimation method, which indicates that scales had good psychometric properties. Constructs exceed the level of 0.6 for composite reliability and the level of 0.5 for the extracted variance, which proves the scales' internal consistency (Hair *et al*., 1998). Convergent validity criteria were also satisfied (Jöreskog and Sörbom, 1993) since lambda coefficients for the observed variables were significant ($t > 1.96$) with standard loadings and R^2 coefficients above 0.5. The model also fits the sample's data since it shows acceptable goodness of fit values (Hair *et al*., 1998; Kline, 2005), with the exception of the chi-square test ($p<0.01$), that is highly sensitive in large samples. Data also confirmed discriminant validity because: the confidence intervals between-factor correlations do not include the value 1; the squared correlation between any pair of constructs is lower than the individual average extracted variance. Also comparisons between the unconstrained model with constrained ones, where correlations between every pair of constructs were set to 1, revealed no problems with discriminant validity.

(Table 5)

Model contrasting

The dimensions obtained in the previous factor analyses were used as the input variables in the structural model. Table 6 reports the results of such model and displays the standardized regression coefficients, their t-value and the goodness of fit of the causal model.

(Table 6)

Hypothesis 1, which proposed a positive relation between GMS and operational performance, was supported. The influence of the process and market oriented actions on operational performance was positive and significant. As regards to hypothesis 2, only cost reduction positively affected economic performance while the structural path between process performance is positive but non-significant. Therefore, this hypothesis can only be partially supported. These results indicate that GMS allows firms to more efficiently manage their resources what, in turn, will increase productivity and reduce costs. However, operational processes' improvements are not linked to profits growth, what indicates that managers perceive that certain environmental investments are difficult to offset at least in the shorter term. Results supported hypothesis 3, which postulated a positive effect of GMS on marketing performance. Also, the influence of marketing performance on economic performance was positive and significant what supports hypothesis 4.

As regards to hypotheses 5 and 6, a multisample analysis was performed. It required the division of the sample between companies that presented a strong EC and those with a weak EC. To establish such differentiation data were analyzed with cluster routine with the software SPSS 14.0, using the average score of the EC scale (Cronbach's Alpha = 0.901) as the input variable. In order to guarantee the validity of the results, a two-step procedure was followed, carrying out a nonhierarchical analysis and a hierarchical one. Two clusters emerged from this analysis. The first cluster covered 122 companies with the lowest scores of EC, with a mean of 2.5, and the second one included 239 companies with the highest EC and

a mean of 4.1. The robustness of this solution was corroborated by replicating cluster analyses with randomly selected subsamples (Buysse and Verbeke, 2003; Rivera, 2007). Then, the model was independently estimated for each of the obtained clusters and, finally, it was estimated imposing the condition that the regression coefficients for the structural model were equal in both subsamples. Configural invariance, or similarity of factor structures across groups, was confirmed and metric invariance was explored by constraining the factor pattern coefficients to be equal in both subsamples (Steenkamp and Baumgartner, 1998). This analysis revealed non-statistical differences across them, thus confirming metric invariance. Table 7 presents the results of the multisample analysis.

(Table 7)

These findings partially supported hypotheses 5 and 6. On average, paths for the companies that present a stronger EC were higher than for the weaker ones. LM test revealed significant differences for the paths between process oriented practices on cost performance and market oriented actions on marketing performance. Given the nature of GMS factors, this result might be expected since process oriented activities involve tangible changes in products and processes that bring about a growth in operations efficiency, while market focused activities are aimed to differentiate the environmental image of the company. Therefore, results indicate that not all the companies are bound to obtain similar benefits from GMS because the successful implementation of environmental strategies will depend on the bundle of resources they own.

Discussion and conclusions

Although environmental concerns have received major attention on behalf of the business world, the question about the competitive consequences of implementing proactive sustainable initiatives have remained inconclusive for much time. Previous literature has basically focused on analyzing how different innovative solutions and technologies

contributed to enhance the firm's profitability by reducing costs and increasing efficiency. However, green marketing actions have received little attention in a competitive scenario where firms' marketing departments have been trying to internalize the pro-environmentalism values within its strategies, responding to the greater environmental concern that society and customers have been expressing during recent decades. To fill such gap in the literature this paper focused on analyzing how GMS contributes to optimize different dimensions of organizational performance and in exploring under which circumstances this positive effect is strengthened.

Our findings, coherently with recent research (Baker and Sinkula, 2005; Menguc and Ozanne, 2005), support the idea that GMS leads firms to improve their profitability. Specifically, processes-oriented activities like eco-design, reverse logistics or the use of cleaner materials in products and packaging seem to contribute to cut costs and to improve efficiency. The nature of these actions require operational-level modifications that will allow companies not only to reduce their environmental impact, but also to increase their efficiency by, for example, using cheaper and more responsible alternative raw materials or by recuperating products and packages that previously were spilled out. However, findings also indicate that process performance is not translated into higher benefits, which could mean that firms perceive that certain environmental investments are difficult to offset, at least in the shorter term, and do not contribute to the optimization of their economic performance. In coherence with this finding, some other works also report a negative relationship between environmental practices and the company's results, arguing that firms discard the implementation of certain proactive actions because the short-run effect on their results is negative (Jaggi and Freedman, 1992). But integrating green values in the marketing strategy does not only help firms to more rationally manage their resources, but also to improve corporate image and reputation and, given the values that prevail in today's modern societies,

to better satisfy the demands of highly environmentally-aware customers. Findings suggest that companies recognize the potential that environmentally friendly activities have for the generation of a favourable attitude among consumers (Canning and Hamner-Lloyd, 2007) and perceive that projecting a sustainable image enhances their relationships with other stakeholders (Miles and Covin, 2000).

As previously mentioned, this study is also in line with some of the ideas exposed in González and González's (2005) study. They defend the multidimensionality of environmental proactivity and the need for incorporating different dimensions of organizational performance. Green marketing and environmental proactivity actions have been acknowledged to present a heterogeneous nature and to involve a great plethora of actions whose responsibility is shared by different areas and departments. Therefore, the impact of these dimensions on organizational performance is not based on a single path, but different ways to increase firm's results may exist (i.e. costs advantages, employee performance or product differentiation). Thus, future research should bear in mind that the adoption of environmental proactive strategies will have different patterns of influence over the diverse dimensions of business performance.

Results also support the natural resource view proposed by Hart (1995) and highlight the critical relevance that resources have to create positive outcomes from environmental management. Firms that develop certain valuable resources to address the barriers imposed by the natural environment, and to take advantage of its opportunities, will be more likely to achieve a superior performance. Specifically, this study shows that a strong environmental culture may help firms to more efficiently implement environmental strategies. The reason for this argument lays on the better information-gathering abilities that environmentally oriented firms may have and that will help them to identify profitable opportunities from environmental pressures.

Implications for management and limitations

Despite the controversial findings in the literature, recent research supports the existence of a positive link between environmental proactive strategies and organizational performance. In this line, this paper supports that view and poses that green marketing should be seen by managers as an excellent strategy that allows their firms to optimize their results, not only because it helps to reduce costs and to achieve a greater resources productivity, but also because contributes to create differentiation advantages what, in turn, will be translated into higher incomes. However, managers should be aware of the fact that the projection of an environmental responsible image has to be firmly supported by the development of tangible eco-friendly processes and products aligned with customers' requirements. In this task of creating and communicating these environmental activities, firms have to be especially meticulous if they do not want to fall in the common greenwashing. On the contrary, if customers perceive a gap between what the organization is doing and what its messages are externally communicating, their marketing performance may be decreased, negatively affecting corporate image and reputation (Polonsky and Rosenberg III, 2001). Besides, when communicating environmental actions, managers must balance other stakeholders reactions, since certain green announcements may not be favourably supported by other groups like stockholders (Marthur and Marthur, 2000).

Managers should be also aware of the fact that keeping their firms simultaneously sustainable and competitive must be a long-term objective that is more complicated to achieve than the literature, sometimes, suggests. As mentioned, firms should implement environmental modern strategies in coherence with their resources and capabilities. Establishing formal policies and objectives, implementing environmental management systems or appointing environmental managers and departments, are preliminary decisions that firms can take to contribute to create an internal culture oriented towards sustainability.

The adoption of a strong environmental culture where organizational members share similar values and assumptions will facilitate the creation and dissemination of information on the opportunities to reduce pollution that can also generate higher benefits. Moreover, internal-environmentally oriented firms are more likely to develop valuable capabilities related to the creation of a sense of shared vision between organizational members, knowledge generation and cross-functional integration (Barret and Murphy, 1996; Marcus and Geffen 1998). Therefore, creating this internal environmental climate before developing environmental strategies is critical. Otherwise, these decisions could result in a poorer performance. As Aragón, Matías and Senise (2004) point out, the first step to achieve a commitment towards the environment within an organization should be appointing persons specifically in charge of environmental management. Granting enough discretion to these environmental managers would allow companies to start to create a culture orientated towards sustainability and to address issues derived from employee reluctance to organizational changes.

Thus, our findings suggest that, in coherence with Christmann's research (2000), companies should not try to merely implement environmental practices expecting that their results be optimized. Firms should develop cleaner initiatives in coherence with their resources and capabilities, and companies that lack certain complementary resources can find obstacles to successfully implement innovative environmental practices. In any case, managers should consider that it is the combination of more technological tangible assets, like pollution-prevention processes, with certain cultural aspects, what in turn will be the most efficient way to create sustainable advantages from environmental practices (Christmann, 2000).

This study is not free of some limitations that open the possibility of developing future research lines. Perhaps the most relevant limitation of the study is that data is stressed to a single country, what hampers the results generalization. Cultural differences among different

countries' companies may exist and firms' reactions to environmental pressures would be different. Also, the study's scales are based on subjective perceptions what can generate social desirability bias. Future works should include additional objective measurements of the social, environmental and financial performance, which would reinforce subjective perceptions and add more validity to our findings. This study stresses its scope to analyze EC as a moderating variable, while exploring how other technological and human resources determine this relationship may be relevant (Christmann, 2000). Indeed, focusing on other outcomes of environmental activities, such as employees' attitudes and behaviours towards the company, should be considered in future research. Finally, this study provides cross-sectional data, while carrying out longitudinal studies in order to capture the dynamic consequences of green marketing would seem interesting. These analyses would shed light on this debate allowing researchers to explore the fluctuations that environmental practices causes on company's performance. Additionally, because the results are based on correlation tests, an alternative interpretation could be that more profitable firms are more concerned with safeguarding their image adopting environmental initiatives. Longitudinal research would also help to ascertain causality at this point.

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