

Complementary Resources and Capabilities for an Ethical and Environmental Management: A Qual/Quan Study

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ABSTRACT. Managers' commitment to contribute to sustainable development holds the key to their long-term business success and may be a source of competitive advantage. The managerial perception of business ethics is influenced by the level of moral development and personal characteristics of managers. These perceptions are also shaped by forces existing in the environment of the firm, including available resources, societal expectations, sector, and regulations. The resource-based perspective can thus contribute to the analysis of ethical issues offering important insights on how they can influence the environmental strategy of the firm. The findings of this study show that firm resources have a strong influence on business managers' ethical attitudes. In addition, the application of resource-based rationales to ethical issues can be justified in the following several ways: it influences a managerial perception of natural environment as a competitive opportunity, it requires investments of financial and human resources, flexibility and speed in the adaptation to environmental changes, and it creates new resource-based opportunities through changes in prevention pollution technology, policy process, and market forces.

KEY WORDS: business ethics, social responsibility-resource-based perspective, environmental strategy, legitimacy

Introduction

Every so often, it is important to step back from the day-to-day matters which occupy our time and energy and consider where we are going. The issues are becoming clouded, the context is changing, and the risks incurred in leaving the resolution of business dilemmas to the moral consciousness of managers are

growing (Webley, 2001). Therefore, in every business, a focus on traditional ethical values will not only provide some stability and consistency in the face of such massive changes, but also enable those businesses to command greater trust from their stakeholders and become more successful (Schroeder, 2002).

Although the term 'ethics' is difficult to define, its place in business flows from the corporate values and culture of an organization. Many people struggle with the terms 'ethics' and 'social responsibility.' According to Rushton (2002, p. 137), ethics is the application of moral principles in making choices between right and wrong courses of action; business ethics is the application of those moral principles in making business decisions; and social responsibility has come to mean those positive actions or responses that a firm takes to help discharge its responsibilities to external stakeholders, such as the communities in which it operates, and to the environment. Ethics and values are also at the foundation of sustainability, so successful global businesses will be those that integrate sustainable development, including social responsibility, into their business strategies.

Decisions, both large and small, are unavoidable in business. If all business decisions do contain an ethical component, then the real challenge is "to make the ethical component of business decision-making explicit so as to make it better" (Megone, 2002, p. 28). Good business and sustainable development go hand-in-hand. Managers' commitment to contribute to sustainable development holds the key to their long-term business success and could be a source of competitive advantage (Rushton, 2002). Managers tend to view strategic environmental issues as threats, unless there is strong evidence to do

otherwise. Threats are personally aversive, whereas opportunities are attractive (Dutton, 1988).

Bowen (2002) shows that resource availability and firm visibility are significant factors in determining firm environmental orientation. This is so because the amount of resources available to the organization and firm size will determine the firm's organizational capacity to apply the appropriate environmental initiatives and then its environmental performance (Elsayed, 2006). Brammer and Pavelin (2004) add that the nature and strength of the links between the resources available to firms and their social performance depend upon characteristics which impact the expectations of stakeholders about the behaviors of specific firms. Then, more consideration should be given to determine the sector level realities (Cottrill, 1990). Other reasons given for concentrating on specific sectors are the uniqueness of internal competencies or external pressures inherent in a sector, the degree of public visibility, the different configurations of stakeholders, and their differing degrees of activism on particular issues (Griffin and Mahon, 1997).

The motivations for this research are two-fold. Firstly, most of the literature related to environmental protection highlights that managers need to be able to talk about values in business performance terms (Bansal, 2005; Elsayed, 2006; Stanwick and Stanwick, 2000). One can in fact go further and argue that they need to be able to talk about values and ethics in strategic terms (Rushton, 2002). The concept that enables them to do this is environmental management and the fact that the firm is going to include sustainability in its strategic plan and have a coherent responsibility strategy based on sound ethics and shared values which will deliver clear business benefits, not least an improvement to its competitive position in the market. Secondly, in the environmental management area, businesses not only can increase the productivity of the available resources through green innovation but also design and develop the green products that will allow them to ask for higher profits and improve their corporate image. Besides, the firms pioneering the green innovation can enjoy the 'first-mover advantages' (Bansal and Hunter, 2003). Therefore, investing in green innovation might not only prevent firms from facing environmentalist protests or penalties, but also help them to develop new market opportunities and increase their competitive advantage.

This study has as its aim to answer the following questions: (1) how do firm resources and capabilities influence managers' attitudes toward the natural environment as a competitive opportunity? and (2) are these managers' attitudes and the firm's resources and capabilities linked to the way and the moment in which environmental management is developed?

The article has contributed to the literature in a number of ways. Firstly, through an analysis of the social responsibility level in terms of legitimacy within society, public responsibility within the organization and managerial discretion based upon moral grounds by each individual within the organization. Investing in social responsibility activities can have important consequences for the creation or depletion of fundamental intangible resources and capabilities, for example, those associated with managers, employees and stakeholders. The intensity of the different complementary assets affecting managers' perception of the natural environment as a competitive opportunity are identified and evaluated. Secondly, the processes of social responsiveness including environmental assessment, stakeholder management, and environmental management are studied. Thirdly, the adoption of a pioneering entry strategy that can improve managers' competitive opportunities is subjected to consideration. Social issues, environmental pressures and ecological sensitivity of stakeholders have affected corporate decision-making and behavior, as well as the ecological sensitivity of managers. In fact, some of them have seen in business ethics a competitive opportunity if they move before competitors, because ethical consumers have increased their demand for green and ethically produced goods (Schroeder, 2002). Literature has made relatively few contributions to the analysis of the potential advantages derived from moving first, and always relating them to characteristics typically associated with the introduction of preventive environmental practices, for which the resource-based view has been adopted (Christmann, 2000; Nehrt, 1996). From a methodological point of view, a mixed-method research design in two phases – qualitative and quantitative – has been used, which reinforces the findings of this study because the synergies derived from this integration can be taken advantage of.

The present article has been structured as follows: After carrying out a literature review, a two-phase

research development was presented in which the first phase includes comparative case studies of different sectors in eight Spanish firms, whereas the second phase involves testing the propositions that emerged during the first phase through a structural equation model of both the hotel sector and the group of firms affected by the IPPC¹ law in Spain. The final sections of the article will offer some empirical implications and the main conclusions.

Theoretical background

The development and adoption of the innovative environmental technologies and systems associated with voluntary strategies is a “more comprehensive and socially complex process than compliance, necessitating significant employee involvement, cross-disciplinary coordination and interpretation, and a forward thinking managerial style” (Russo and Fouts, 1997, p. 538). This statement suggests that the organizational context may play an important role in shaping managerial interpretations of environmental issues, particularly in the framing of issues as opportunities as opposed to threats (Sharma, 2000). The application of voluntarism in a pluralistic organization setting may provide an alternative conception of hierarchy as a process to encourage voluntary groups and individuals to deliberate and decide on their own identity, minimizing regulation through institutional control (Child and McGrath, 2001; Rindova and Kotha, 2001). Clarke and Butcher (2006, p. 534) define it as organizational voluntarism, “a stage of organizational evolution; a marker of pluralistic organizational form in which managers recognize the need to engage in debate and action to pursue matters of individual and organization concerns irrespective of hierarchical position or explicit authority.” This voluntary process is best achieved by managerial behaviors that encourage self-organization (Daboub, 2002), valuing difference and conflict (Ashcraft, 2001), the protection of weaker groups (Galunic and Eisenhardt, 2001) and helping groups to create their own values and ethics (Cludts, 1999).

The main aim of ethics in business is to set down rules of “good conduct” for firms which take into account the ethical implications of business decisions (Wilson, 1997). The current awareness of business ethics in present-day societies stems from a rising

distress over the moral offensiveness and wrongdoing of businesses that involves consumers, shareholders, employees, managers, and political leaders (Jones and Pollitt, 1998). If the majority of managers who wish to succeed in the long term believed that ethical actions would eventually lead to greater profits in the long-term (e.g., managers consider natural environment protection as an opportunity), then those managers would definitely have a strong incentive to behave ethically. Hence, managers who are successful in the long term are likely to be socially responsible (Kulshreshtha, 2007). They assign great importance to social and environmental aspects as well as to economic ones (Hutchinson, 1992) and consider that the natural environment improves the organization’s reputation or increases its legitimacy in the market (Clements, 1996; Miles and Covin, 2000; Russo and Fouts, 1997). However, if many managers who wish to succeed in the long term believe that ethical behavior may eventually result in lower profits in this long-term (e.g., managers consider natural environment protection as a threat), i.e., if there is a trade-off between ethics and long-term business success, then not many successful managers will be likely to be socially responsible (Kulshreshtha, 2007). They may consider that environment protection is something imposed by the legislation (Chatterji, 1995; Hutchinson, 1996; Klassen and Angell, 1998; Vastag et al., 1996) that will entail a deviation from the firm’s main tasks along with additional costs. Managers may learn that, although becoming involved in confronting threats is personally risky, if they are successful, they will be rewarded more for preventing the occurrence of loss in the face of threat than for achieving gain in the face of opportunity (Dutton, 1988).

The truth is that managerial perceptions of ethics and social responsibility as an opportunity or a threat and the degree of development of environmental strategies depend on the availability of the complementary resources and capabilities which the firm already owns (Aragón-Correa, 1998; Aragón-Correa and Sharma, 2003; Christmann, 2000; Hart, 1995), defined by Christmann (2000) as “resources which are required in order to reap the benefits associated with a strategy, a technology or an innovation.” The application of resource-based rationales to social responsibility can be justified in several ways (Bansal, 2005, p. 200): it influences firms’ financial performance; it

requires investments of financial and/or human resources; and it creates new resource-based opportunities through changes in technology, legislation, and market forces. In this way, organizations with strong complementary capabilities may adopt practices with more aggressive environmental goals extending their existing proficiencies in pollution prevention and formalizing managerial commitment (Rondinelli and Vastag, 2000). These firms may therefore achieve greater environmental improvements over time because they can more efficiently leverage their internal expertise and facilitate continual environmental improvements that increase organizational efficiency (Christmann, 2000).

Previous research on business strategy and the natural environment emphasizes the role of complementary resources in the environmental area. For example, Christmann (2000) argues that the profit-generating potential of pollution prevention technologies depends on the process innovation skills of a business. In a similar way, Judge and Douglas (1998) find empirical support for the hypothesis that the level of integration of environmental issues into the strategic planning process and available resources is positively correlated. Elsayed (2006) has recently demonstrated that the amount of resources available to the firm and firm size determine its organizational capacity to apply the appropriate environmental initiatives and, then, its environmental performance. However, he does not find evidence that available resources limit the firm's strategic choice and the environmental responsiveness chosen. Similarly, Stanwick and Stanwick (2000) find a nonlinear relationship between available resources and environmental orientation, with the highest level of environmental commitment being shown by firms with moderate available resources. Thus, financial performance has a varying impact on the different components of environmental responsiveness. High-performing firms show higher incidences of environmental policies and/or environmental commitments compared with low-performing ones. However, medium performing-firms have the highest levels of environmental policies and/or environmental commitments. As a consequence of this divergence in the literature, Karagozoglu and Lindell (2000) claim that more studies are needed to examine carefully the effects of this variable as a determinant of firm environmental orientation.

The resources and capabilities required to implement a firm's environmental strategy vary radically depending on whether or not that firm goes beyond compliance to embrace prevention pollution (Russo and Fouts, 1997). And it depends on the way in which managers accept their leadership responsibilities to define ethical behavior and to pursue it relentlessly as a top-priority goal (Thomas et al., 2004). Leadership responsibilities about business ethics may be due not only to the firm's access to additional resources used to implement social performance programs but also to the increased influence of additional stakeholders (Stanwick and Stanwick, 1998), as well as the satisfaction of working for an ethical firm and introducing ethical practice into a given organization (Schroeder, 2002). Thus, the passive, accommodating or proactive environmental attitude of managers and the available resources in the firm are significant factors in determining firm environmental orientation. The environmental technology portfolio,² which results from combining end-of-pipe and pollution prevention technologies, should be used to value some advantages in viewing ethics and values as drivers for the long-term sustainability of a business. It is the composition of this portfolio that determines the net effects of actions related to the environment on the firm's environmental performance (Klassen and Whybark, 1999). For this reason, when the manager has a passive or accommodating attitude, the firm adopts end-of-pipe technologies. Instead, when the manager has a proactive attitude, the firm introduces prevention technologies that can reduce pollution to a greater extent or even remove it completely from the productive process, thanks to the investments made in clean technologies (Luengo, 1992). Shifts from a reactive approach toward pollution prevention require substantial resource allocations in multiple domains: investments in green product and manufacturing technologies, in employee skills and participation, in organizational competences, in formal (routine-based) management systems and procedures and, finally, in the reconfiguration of the strategic planning process (Russo and Fouts, 1997; Buysse and Verbeke, 2003).

Therefore, if the firm pioneers the adoption of a proactive environmental strategy, its activity within a sector will be facilitated during a specific period of time, giving it a temporary edge that will materialize in the achievement of competitive advantages and

influence market development to ensure that these advantages are sustainable (Christmann, 2000; Lee et al., 2000; Aragón-Correa and Sharma, 2003). According to Grant (2002), the firm's initial resources and capabilities determine the ideal entry time. Sharma and Vredenburg (1998), as well as Christmann (2000), highlight such stakeholders' integration into the organization. Stakeholders have at least three different roles in the level of social responsibility adopted by the organization: (1) they are the source of expectations about what constitutes desirable and undesirable firm performance; (2) they experience the effects of corporate behavior, i.e., they are the recipients of corporate actions and output; and (3) they assess how well firms have met expectations and/or how firms' behaviors have affected the groups and organizations in their environment (Wood and Jones, 1995, p. 231).

Among the advantages derived from the adoption of a pioneering strategy stand out in the following: time compression diseconomies³ (Nehrt, 1996), the cost advantages resulting from the greater accumulated experience, and the possibility of influencing the establishment of regulations, laws, standards, etc. (Faucheux et al., 1998; Hart, 1995). According to Russo and Fouts (1997), the latter represents an entry barrier for the rest of the competitors, since those firms that confine themselves to complying with the legislation do not take into account the latest technological breakthroughs. Thus, should the legislation change quickly, they would be forced to introduce radical changes. In the opinion of Bansal and Bogner (2002), the development of proactive strategies will provide the flexibility required to adapt to these changes.

Another advantage of pioneer firms is that they can influence the policy process. They may use an 'information strategy' focused on directly providing policy-makers with information on corporate views and desires and also develop a 'financial incentive strategy' to influence political outcomes providing direct financial support to the decision-makers. And organizations may choose to indirectly influence policy deliberations gaining the support of members of the public who, in turn, are then expected to convey their desires to the policy-makers (Hillman and Hitt, 1999).

Finally, other factors should additionally be considered to perceive the environmental management

as an opportunity to build and sustain a competitive advantage (Bansal and Hunter, 2003). First, proactive environmental strategies need to be adopted by firms perceived to be leaders within the sector. Firms are more likely to mimic the policies and practices of other firms that are perceived as successful and legitimate (Powell and DiMaggio, 1991). If the development of these proactive voluntary strategies does not signal that a firm has become more environmentally responsible, heavy polluters may not be encouraged to certify (Bansal and Hunter, 2003). Second, environmental management must be perceived as giving the firm legitimacy, which may be ascribed by tradition (a belief that the legitimacy has always existed), attitudes, a rational belief in an absolute value or/and legal status by either voluntary agreement or imposed by a legitimate authority (Parsons, 1947). Third, this management must become well known so that it is instantly recognized and even requested by consumers and local community members.

So, without these factors or without own complementary resources and capabilities, early adopters of a proactive environmental strategy reduce the likelihood of improving their competitive position within the market. When this happens, the changes operated in the environment may lead these firms to wrongly anticipate the sector and consequently put them in a situation of competitive disadvantage with respect to their competitors (Hill and Jones, 2004). Under these circumstances, the organizations will be more likely to achieve success in the market as follower firms, as they will incur lower costs than if they decided to enter as pioneers (Christmann, 2000) insofar as they will be able to take advantage of investments already made by other companies and will also learn by imitating the early-movers. Theory will continue to be developed from the results obtained in the qualitative research carried out in this study.

Mixed-method research design

This article has adopted a mixed-method research design. The research was carried out in two phases. A mixed-method study involves the collection and analysis of both quantitative and qualitative data in a single study, where the data are collected concurrently or sequentially and are given a priority, and

involves the integration of the data at one or more stages during the research process (Tashakkori and Teddlie, 1998, p. 19). According to Creswell (2003) and Tashakkori and Teddlie (1998), our strategy is QUAL/QUAN, i.e., the study is sequential and its qualitative and quantitative parts have similar importance. In the present study, qualitative data collection precedes quantitative data collection when exploring the problem, and then the exploration continues with quantitative data amenable to study a large sample so that results might be extrapolated to a whole population. The aims of the qualitative phase are (1) to use the empirical data gathered through case study to reconceptualize and extend theory to identify or narrow the focus of the possible variables around which the propositions should be structured; (2) to improve the measuring instrument to be used in the quantitative phase; and (3) to help to explain and interpret the findings of the quantitative phase; this being especially useful to examine the unexpected results in more detail (Morse, 1991). On the other hand, during the quantitative phase, the data and results serve to (1) confirm the interpretation of qualitative findings; and (2) generalize them to different samples.

Regarding the mixed-method approach used in this study, the combination of qualitative and quantitative methods stems from our view of science philosophy. The methodological debate between quantitative and qualitative researchers changes its focus from paradigm purity to the possibility of integrating qualitative and quantitative methods (Erzberger & Prein, 1997; Teddlie & Tashakkori, 2003). On the one hand, quantitative and qualitative purists posit the incompatibility thesis regarding research methods: compatibility between quantitative and qualitative methods is impossible due to the incompatibility of the paradigms underlying the methods (positivism and constructivism). Both sets of purists view their paradigms as the ideal for research. On the other hand, this article supports the mixed methodologists who posit the use of a different paradigm: pragmatism (Howe, 1988). A major tenet of Howe's concept of pragmatism is that quantitative and qualitative methods are compatible. Moreover, some authors (Johnson and Onwuegbuzie, 2004) present mixed-method research as the third research paradigm, pointing out that both quantitative and qualitative research are important and useful, and that

the goal of mixed-method research is not to replace either of these two approaches but rather to exploit the strengths and minimize the weaknesses of both in single research studies.

Qualitative study

Qualitative research design

Sample

Sampling is crucial for a case study, since the choice of a sample influences the results of the study (Miles and Huberman, 1994). Different cases have been selected for the purpose of obtaining a diverse sample that can provide many possibilities for comparison, as this enables a richer theory development (Glaser and Strauss, 1967; Strauss and Corbin, 1990). The intention was to contrast firms placed in different economic sectors (primary, secondary, and tertiary) and different in terms of environmental pollution levels through comparative case studies. This allows for cross-site comparisons and gives the researcher the chance to see idiosyncratic aspects of any one site in perspective (Miles, 1979). To achieve the study aim, a selection is offered of cases belonging to the different categories proposed by Hutchinson (1996, p. 15), which provide a classification of these sectors according to the pollution levels caused by each one of them. The assumption is that the different sectors generate various levels of environmental impact, from which can be inferred that firms' responses to environment-related opportunities and threats will vary too. In fact, a number of studies that relate the firm's environmental attitude to the type of activity it develops reveal a stronger environmental commitment by the firms which find themselves in those sectors with the most serious pollution-related problems (Cairncross, 1992). The least polluting firms, instead, suffer less pressure, since the main environment protection measures have basically been focused on industrial activities with a direct, visible impact on the environment (Bowen, 2000). Eight cases belonging to the primary (food and agriculture), secondary (plastics, textiles and construction), and tertiary (new technologies, transport, tourism, and industrial waste management) sectors were ultimately selected.⁴

Moreover, a series of requirements were established: firstly, they had to be firms having adhered to

the EMAS Regulation or the ISO 14001 Norm as a reflection of their environmental proactivity; secondly, they had to have integrated environmental issues before the rest of firms operating in their sector; and finally, they had to be firms with wide national and international recognition in the environmental field. Since firms with a high degree of social responsibility attempt to meet the needs of their multiple stakeholders, they will most probably seek out an environmental management system that would both be credible to all parties and fulfill the firm's environmental performance goals. The EMAS Regulation and the ISO 14001 Norm both have a high degree of credibility among such stakeholders as governments, consumers, NGOs, suppliers, and competitors and can improve corporate environmental performance and, therefore, confirm an organization's commitment to social responsibility (Bansal and Hunter, 2003). After several preliminary conversations with relevant staff at each firm, a number of senior managers were identified as key informants. The criterion used to select these respondents was that they had to be either the most senior person directly responsible for environmental issues or a senior manager with substantial responsibilities in this field. All the selected respondents were directly responsible for developing, executing, and monitoring their firms' environmental strategies.

Data collection

Given the qualitative nature of most of the data sought, triangulation appeared as one of the best means to increase construct validity and substantiate findings (Denzin, 1978). Three data sources were used: (a) interviews with environmental managers; (b) direct observation (visit to the facilities and contact with employees); and (c) access to internal documents (in-house information bulletins, environmental declarations, annual reports for the 1997–2003 period, web pages, etc.), as well as external ones (press, commercial registries, SABI database, etc.). This triangulation technique provides a stronger validation of the results if they converge (Yin, 1994). The issue of internal validity was handled conducting multiple iterations and follow-ups throughout the analyses. As for the problem of reliability, it was addressed drawing up detailed case study protocols and following the required documentation and transcription standards. External

validity was increased through the examination of multiple firms and the analysis of comparative findings. To test data interpretation credibility, the analysis was subjected to member checks. The emerging insights were permanently verified with the informants, who were asked to give feedback, sometimes in telephone calls, when some aspect was not sufficiently clear. In addition, the interviewers supervised the findings discussed below, helping to establish their dependability and confirmability.

Data analysis

The extended case method (Burewoy, 1991) has served as a guide to data analysis. This methodological approach uses empirical data gathered through case studies to reconceptualize and extend theory. The extended case method consists of two 'running exchanges' (Burewoy, 1991): (a) between literature review and data analysis; and (b) between data analysis and data collection.

The first phase of the data analysis consisted in exploring the relevant concepts and theories found in the literature. After that, the second phase offered Coato's comprehensive case description based on the identified patterns. The research concern was to identify issues in the areas of interest rather than drawing conclusions about the strength of managers' views. This was the basis for a within-case and a cross-case analysis, after which interviews were held for the rest of cases. Each interview had as its main objective to understand how resources and capabilities influence managers' attitudes toward the natural environment as a competitive opportunity. Managers who were directly concerned with ethical issues would help to provide a richer description of these perceptions. The interview began with respondents answering general questions in order to know if managers had been increasingly confronted by business decisions with ethical implications, and to discover if perceptions of business ethics as a competitive opportunity had changed over time. More specific questions were asked as the interview progressed, e.g., about what sort of available resources were used to develop their environmental management at the firm (asking them to give examples). The questions were developed following the theoretical arguments which link business ethics, resource productivity, and the proactive and pioneering environmental strategy. The environmental

managers were interviewed face-to-face. Each interview lasted 4 hours and was audio-taped. Data collection stopped when theoretical saturation was reached (Strauss, 1987), i.e., when additional data resulted in minimal incremental understanding (Lee, 1999). The fully taped interviews were transcribed afterwards. Furthermore, the drawing of a matrix provided a visual identification of the similarities and differences between the firms examined. The third step was to analyze the interviewees' feedback on the first draft of case descriptions to check their validity. The interviewees checked and accepted the transcripts of their interviews. The fourth step was a category-based comparative analysis of the cases which reached closure when additional iterations did not result in a better accord between findings and cases. Some results derived from the literature review were systematically compared with the evidence from each case for the purpose of assessing how satisfactorily or poorly they fitted in with the case data (Eisenhardt, 1989). The fifth step was the construction of a table that summarized the study findings that would later be tested in a quantitative phase.

Qualitative findings

The development of a pioneering proactive strategy within a firm is determined by the resources and capabilities that the organization had readily available, when it decides to integrate environmental issues into the organization. The same as in the studies carried out by Florida (1996), Aragón-Correa (1998), and Christmann (2000), the capability to innovate and improve continuously has been identified. When this happens, firms stand a better chance and have an incentive to incorporate the natural environment since, being already used to introducing changes in product design or service delivery, they can better absorb the fixed costs associated with them. This study has also shown the capability of permanent experimentation and the ability to generate feasible low-cost solutions to sort out problems, which would justify why all the firms analyze the economic feasibility of their implementation prior to introducing any new environmental practice. The manager of Aznar Textil explains it as follows:

Economic performance determines the relative weight of a social demand and the attention it receives from top decision-makers. In periods of low profitability and situations of high debt, economic demands will have priority over social demands... Economic performance influences the financial capability to undertake costly programs related to social demands

Managers consider that work satisfaction is related to perceptions of organizational ethics, which demonstrates the importance of work attitudes in the management of business ethics. As a primary corporate strategy, organizations offer ethics and environmental management training which cover key firm values, and top leadership oversees such training so that its importance is emphasized on an organization-wide scale (James, 2000). This ethics and environmental management training is particularly useful when such firm values are pertinent to employees' ethical evaluations of specific work challenges (LeClair and Ferrell, 2000; Valentine and Fleischman, 2003). Moreover, greater knowledge and familiarity with these ethical aspects makes staff more confident when it comes to providing possible ideas and suggestions (Valentine and Fleischman, 2004). Although all the firms have established channels of communication with their employees for this purpose, the suggestion box being the most popular one, only the channels developed by Coato and Enplater have ultimately proved effective. Curiously enough, these two firms are the only ones that have motivated their staff to provide ideas or suggestions by means of participative quality and environmental systems and later rewarded those ideas and suggestions with various public acknowledgments and different types of awards.

COATO.-“We annually reward the best suggestions or ideas offered by our partners for the purpose of improving our environmental performance. Last year, two of them were given as a present a trip to the Canary Islands for two people. The experience has been very good, since the quantity and quality of the ideas provided has increased considerably.”

ENPLATER.-“At first, nobody said anything. The suggestion box was not too useful; so we decided to hold a meeting where the importance of their participation was highlighted. Suddenly, one day we received an idea (...), which we published in our quarterly bulletin. That

recognition was highly appreciated and quite a few suggestions started to arrive. Of course, not all of them were useful, but we always send a letter to all the contributors as a token of our thankfulness.”

Previous research indicates that managers in firms possessing a quality management system perceive lower levels of environmental uncertainty (Lewis, 2004). Total quality management is the most common mechanism to integrate natural environmental issues into strategic decision-making. Managers seem most comfortable discussing natural environmental issues within a quality management framework. Insofar as pollution prevention is similar to total quality management in terms of employee involvement and continuous improvement, the synergies derived from the knowledge and experience accumulated in the quality area can be taken advantage of (Hart, 1995). The Aznar Textil manager tells us this:

We use environmental management as a part of the overall quality improvement process. For example, we moved away from products in plastic to adopt cardboard. We saved money and it was a quality improvement because there was less damage to the product, as the harmful packaging, and it was recycled from the start anyway, and could still be recycled.

Moreover, firms have pioneered the introduction of an environmental management system according to the ISO 14001 Norm and the EMAS Regulation. Managers say that this decision is justified because some capabilities facilitate and shorten the necessary time to introduce quick changes in product design or new environmental practices. This gives firms a temporary advantage over competitors, so that when other firms finish the adoption of their environmental practices, the pioneers are already working on new practices.

Firms consider that managers' actions and employees' involvement and knowledge levels are the resources which are most closely related to the chances of developing a pioneering strategy.

All these arguments lead to the following propositions:

P1: The greater the availability of complementary resources and capabilities in the firm, the higher is the likelihood of developing a pioneering entry strategy.

P2: The greater the availability of complementary resources and capabilities in the firm, the higher is the likelihood of developing a proactive environmental management.

Managerial expectations are influenced by the level of moral development and personal characteristics of the persons holding top management positions in the firm. Involvement in ethical issues will depend on the amount of personal resources (time and effort) that managers are willing to expend to reduce the environmental pollution caused by their organizations. In general, managers think that environmental issues must be considered at the same level as economic and social ones. The solution to the environmental problems related to energy-saving, pollution-prevention, waste recycling, or achieving a 'no toxicity' situation, depends on firms' actions. Although they feel that natural environment may mean an additional cost, it can equally be an opportunity if the firm suitably adapts its financial, human, and temporary resources. Similar findings were obtained by Noci and Verganti (1999). The main reasons to adopt environmental practices are: legislative commitment, social responsibility, and reputation. The manager of Enplater provides the following example:

Significant cost advantages can result from environmental improvements such as better waste management, use of cheaper recycled materials and pollution prevention, which limits the costs of compliance with the environmental regulation.

On the other hand, managers have also valued positively the adoption of a pioneering strategy. They consider, as is pointed out by Carpenter and Nakamoto (1994) and Zhang and Markman (1998) in their respective studies, that this affects the memory of consumers, the perception of the products' characteristic features and the formation of value judgments about the competing brands, insofar as consumers learn more about pioneers. Apart from including environmental considerations about technology development and use, new product development and process improvements, these firms can also serve niche markets of ethical consumers (Banerjee, 2002). The Coato manager reviews such processes:

We have been the first firm to obtain the ISO 14001 and the EMAS certifications in the food and agriculture

sector. Moreover, COATO's record in this field has favored the recognition of its activities, both nationally and internationally, by diverse bodies and institutions, which has materialized in the achievement of awards like the 2001 Award to the Best Spanish Food Firm in Environmental Matters, the 2002 National [Spanish] Environmental Award for Firms— or the 2002 European Union Environmental Award—, COATO being the only Spanish firm that has obtained this last award so far. On the other hand, we have also created a line of ecological oil, Ecoato, which is experiencing a considerable increase of sales. At an international scale, we have gone into markets where entrance environmental barriers are very high. One of these barriers is EUREP (Euro Retailer Group), which represents the leading European retail sector firms. EUREP has developed a protocol of good agricultural practices that must be fulfilled if the firm wants to sell in this market.

In general, firms have a good social responsibility image that has improved relations with external actors such as government, associations, community, investors, consumers, suppliers and competitors. Managers' willingness to take stakeholders' concerns into account when determining environmental disclosure may reflect an intrinsic commitment toward stakeholders based upon moral grounds as to how the firm does business (Cormier et al., 2004; Miles and Covin, 2000). All of the firms have participated in courses of environmental formation showing their experiences. And even, some of them, e.g., Coato, Enplater and Cartera Ambiental, have allowed technical visits from other firms to their facilities, in which a mutual sharing of knowledge took place. The Cartera Ambiental and FutureSpace managers provide a clear explanation:

Cartera Ambiental.— Reputation is a fundamental intangible resource. It can be created or depleted as a consequence of the decisions to engage or disengage in ethics activities and disclosure. In our case, social legitimacy becomes essential. We have obtained benefits from building an environmental reputation because the community has considered social responsibilities important.

FutureSpace.— Our environmental reputation is a general organizational attribute that reflects the extent to which external stakeholders see the firm as 'good' and not 'bad.' It is one of the most important intan-

gible resources that provide our firm with a sustainable competitive advantage.

These arguments justify the following propositions:

- P3: The greater the availability of complementary resources and capabilities in the firm, the more managers perceive the natural environment as a competitive opportunity.
- P4: The higher the degree to which the manager sees the natural environment as a competitive opportunity, the higher is the likelihood of developing a pioneering entry strategy.
- P5: The higher the degree to which the manager sees the natural environment as a competitive opportunity, the higher is the likelihood of developing a proactive environmental management.

Finally, the pioneering strategy equally contributes to increase the accumulation of assets generated through the adoption of a 'prevention logic' (Table I), and also to develop and/or create new ones such as the capability to act before the rest of the sector, the ability to anticipate the regulations and the development of an environmental leadership corporate culture. The firms included in this study are pioneers in the adoption of environmental standards and are perceived as leaders within their respective sectors. Other firms are likely to mimic the policies and practices of these firms, which are seen as successful and legitimate (Powell and Dimaggio, 1991), and the competitive success of environmental leaders can encourage these firms to certificate through the EMAS Regulation or the ISO 14001 Norm. As is pointed out by the Manager of the Corona del Mar hotel:

We are pioneers in the hotel sector. So we have decided to give information about environmental technologies to other hotels for two reasons. The first one is that all hotels should have an environmentally responsible attitude and the second one is that our competitors cannot possibly be ahead of us. Communication with other hotels does not reduce our competitiveness in the market, since the hotel is always at the top in environmental issues. In general, we have an advantage of 6–12 months; to which must be added the time that it takes the other hotels to implement the new environmental improvements that we suggested

TABLE I
Investments made in firms' environmental management

End-of-pipe	Prevention
<p><i>Coato</i> Investment in the emission/pollution control equipment Introducing machine fuel collection facilities</p>	<p>Reduction of the total material used Replacement by renewable material Wrapping/packaging reduction Research and development of information technology and networks of access to reusable and recyclable material sources Modification of processes with the aim of reducing waste at the source Change in material and product specifications</p>
<p><i>Enplater</i> Measurements at emission points Selective waste collection Crusher acquisition or rental Stores for copper mud wastes and other wastes which must be protected from the dampness ENPLATER treatment plant Elimination of toxic/dangerous waste</p>	<p>Cyclical use of cloths DISPENSING equipment for ink preparation and recovery (metal containers and dirty solvents) Environmental training and information and staff security courses Replacement of gas-oil by natural gas (INPLANT) equipment which makes it possible to prepare the different ink colors needed to print from a reduced number of base colors Development of decision-making support systems Toxic/dangerous waste treatment Recycling schemes Fundamental changes in process and product design meant to reduce/eliminate environmental accidents, spills and leaks, as well as dangerous waste</p>
<p><i>Aznar Textil</i> Study of loom speeds and energy saving in new machinery acquisitions Noise measurements at the facilities and in the road Toxic/dangerous waste collection by an authorized/qualified manager Acquisition of small buckets which collect the oil and prevent it from falling to the ground if there is a spill</p>	<p>Environmental training and awareness courses Quality and environment integral management Development of a computer program which helps to minimize yarn movements and to use remains of batches Acquisition of a forklift cart to place fancy folders in the looms with the purpose of minimizing spool movements Implementation of a water change system in the gas washer Introducing materials with a lower environmental impact Wrapping/Packaging reduction Recycling scheme Development of decision-making support systems Two-phase decanter for garden watering (patent)</p>

TABLE I
continued

End-of-pipe	Prevention
<p><i>Construcciones Deco</i> Development of control technologies Energy control systems in the buildings and other automatic controls Environmental impact assessment (transport, dust, noises) Creation of safe areas for the storage of products and wastes at the building site Investments in equipment and alarm and control systems Immediate response procedures before emergencies</p>	<p>Introduction of materials with a lower environmental impact Development of low-energy applications and clean technologies</p>
<p><i>Transportes Davi</i> Vehicle service maintenance Waste management Avoiding engine heating when the vehicle is stopped Avoiding screeching, starts, excessive speeds, and unnecessary stops Correct use of the gear box</p>	<p>Forklift trucks and carts with a low aerodynamic resistance coefficient Use of radial tires or with a steel ring on the tire Forklift trucks and carts with a diesel or unleaded petrol engine with a catalytic converter Elimination of the brake shoes or linings which are made of asbestos Logistic study of distribution (routes, vehicle size, etc.) Purchase of vehicles which remain longer in service Purchase of lubricants, degreasers, and polishers which are not aerosols Firm staff awareness and training</p>
<p><i>Corona del Mar</i> Adequate management of the dangerous wastes it generates Periodical machinery inspections Control and measurement of the establishment's environmental aspects</p>	<p>Installation of switches in the sliding doors of terraces to cut the air conditioning Low-consumption lamps Links and bidets with consumption reducers "Climalit"-type glass with double glazing and vacuum chamber to save energy and reduce noise Installation of a high-performance boiler with insulated accumulators Convection-steam oven with an electronic control and consumption reduction system Thermal insulation of the installation of heating columns and sanitary hot water columns Presence detection systems Installation of solar panels</p>

TABLE I
continued

End-of-pipe	Prevention
<p><i>Cartera ambiental</i> Carbonated-steel tanks for the storage of liquid waste Equipment for the conditioning and pre-treatment of wastes: crushers, balers, can/barrel flatteners, mixing tanks, etc. Vehicles for the transport of dangerous waste Equipment for the aspiration and treatment of gases coming from inside the warehouses Emission, immission and noise measurements Water analysis</p>	<p>Reuse, recovery, and recycling treatments Environmental training and awareness courses Prevention, quality, and environment integral management Fundamental changes in the design of processes and products to reduce/eliminate environmental accidents, spills, and leaks as well as dangerous waste Reduction of the total material used Development of decision-making support systems Computer applications for problem management and solution and for the treatment of improvement actions</p>
<p><i>Futurespace</i> Waste management Installation of volume reducers in tanks Installation of mixer taps with a saving system and a smoke analyzer Evaluation and control of boilers with maintenance and emission verification programs</p>	<p>Installation of low-consumption bulbs or fluorescent tubes Turning off the computers when they are not going to be used for a long time Training all the firm staff and raising awareness among them Utilization of reusable internal mail envelopes, two-sided paper printing, etc. Buying raw materials or products in bulk or in larger-sized containers Utilization of returnable containers for their reuse and larger-sized ones to reduce their numbers Drawing up good practice instructions by departments Using less environmentally aggressive chemicals when cleaning the facilities</p>

them. When their practices are effective, we have already developed other new, more advanced environmental actions.

Based on these arguments, the following proposition can be stated:

P6: The higher the degree to develop a pioneering entry strategy, the higher is the likelihood of developing a proactive environmental management.

The conceptual model and all the propositions are shown in Figure 1, after the arguments provided in the exploratory phase.

Quantitative study

Quantitative research design

Sample

It could be observed during the exploratory phase that the most polluting firms, which belonged to the primary and secondary sectors, had to face greater legislative and social pressures than tertiary sector firms. Those pressures materialized in a higher level of managerial commitment to the natural environment. That commitment was associated with the development of processes linked to a voluntary normative based on the adoption of a prevention logic that rejected the importance of the environmental legislation understood from corrective end-of-pipe actions. So, the decision was made to analyze the model drawing a distinction between two groups. In order to find a population that was representative of the most polluting sectors, the Law 16/2002 of July 1st about Integrated Pollution Prevention and Control (IPPC) served as a reference to create a new sector including the set of firms affected by this law. No one has ever heard so far of an environmental law

that has a preventive character for the tertiary sector. This allows the researcher to group together various subsectors as was previously done with primary and secondary sector firms. For that reason, within the tertiary sector, the focus was placed on the tourism subsector, and more specifically on the hotel subsector, because of the relevance that its activities have for Spain's socioeconomic structure.⁵

Data collection

Data to test the propositions were collected using a mail survey among the managers of 3,900 three-, four- and five-star hotels⁶ and 4,187 Spanish firms affected by the IPPC law in September 2004. The cover letter and the instructions indicated that the survey should be answered by an environment director/manager, or should otherwise be forwarded to someone familiar with these issues. The interviewee had the possibility of filling in the questionnaire on a web page too. Four reminder e-mails were sent during the four weeks following the initial mailing so as to encourage response. Moreover, follow-up phone calls starting two weeks later were made. A total of 240 hotels and 208 firms affected by the IPPC law answered, the effective response rates within each population being 6.15% and 4.97%. Considering the length of the questionnaire and the senior level of the managers targeted, the response rates achieved were acceptable and in keeping with those obtained by other researchers who have studied similar organizational phenomena in Spain (Brío et al., 2002; Brío and Junquera, 2001; Carmona-Moreno et al., 2004). In order to detect possible problems related to nonresponse error or bias, a comparison was drawn between early and late respondents within each population (Armstrong and Overton, 1977). The data obtained were divided into thirds in each population according to the number of working days gone by between the initial mailing to the firm and the reception of the questionnaire. The

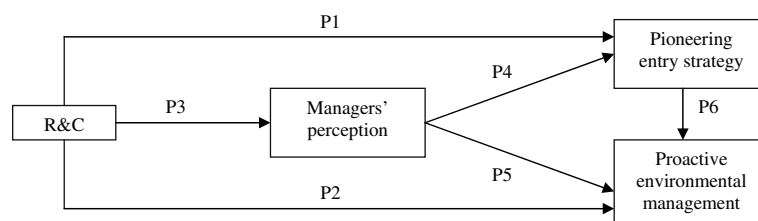


Figure 1. Conceptual model and propositioned relationships.

T-tests between the first and last third revealed no statistically significant differences ($p < 0.05$) in the mail responses for the constructs used. Hence, on an overall basis, nonresponse bias does not appear to be a problem in the present study.

Measurements

Most of the constructs were operationalized using 7-point Likert scales. Size (control variable) was measured from the neperian logarithm of the number of employees. On the other hand, the entry strategy was obtained from the combination of two variables referring to the time (month) during which a firm is involved in some environmental practice and the type of certification obtained.⁷ Table II presents the details of the measuring instruments and the scales used to operationalize the theoretical constructs. This research instrument was vetted by a group of university-based management researchers and industry experts and then pre-tested among a group of eight managers of hotels and firms affected by the IPPC law.

Data analysis

The process proposed by Hair et al. (1998) was followed to model structural equations. The first two steps focused on the development of a model from the literature review and the exploratory research, as well as on the creation of a causal relationships diagram. They had already been developed previously. Next, the path diagram was turned into a set of structural connections. In the following phase, the type of input matrix was chosen and the proposed model estimated. The LISREL 8.5 program was used for this purpose. It was additionally decided to use maximum likelihood (ML) with robust estimators (Satorra and Bentler, 1994) as the method to estimate the parameters, since the assumption of multivariate normal distribution was violated and the measurements of some variables were not continuous. In order to apply this method, an asymptotic variance-covariance matrix was used as the input matrix.

Quantitative findings

Structural equation modeling

Measurement model. LISREL 8.5 was used to (1) evaluate concept reliability, convergent and discriminant validity; (2) perform a confirmatory factor

analysis meant to verify the validity of the causal concept configuration (dimensionality) proposed; and (3) test the propositions formulated (Jöreskog and Sorbom, 1993). Scale unidimensionality tests were performed, and the results indicated that the scales were unidimensional, representing a single factor for each set of cogeneric items (Anderson and Gerbing, 1988). Using a conservative strategy, no factors or covariance paths were changed to create the revised measurement model. The measurement model itself provides evidence of convergent and discriminant validity, assuming that it is considered acceptable if it has significant factor loadings > 0.7 and fit indices > 0.90 . Acceptable convergent validity is achieved when the average variance extracted is $> 50\%$. As shown in Table A1 (Appendix A), the factor loadings in the revised measurement model were statistically significant ($t > 2.196$; $p < 0.05$). Moreover, in order to assess validity when using SEM, Bollen (1989) also recommended examining multiple model-fit indices, since it is possible for a model to be adequate on one fit index but inadequate on many others. The χ^2 probability should be larger than < 0.05 (however, when n is large, as it is in this study, significant χ^2 are typical). The goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI) and the comparative fit index (CFI) should be near or above 0.90. The standardized root mean square residual (SRMR) should be below 0.05, and the root mean square error of approximation (RMSEA) should be less than 0.08 (Jöreskog and Sorbom, 1993).

The results obtained in the confirmatory factor analysis of the initial measurement model are listed in Table A2 (Appendix A). The χ^2 statistic was significant in all cases, and the fit indices approached the preferred 0.90 threshold. Discriminant validity is also supported because no bivariate correlations between the concepts exceed the composite reliability of the concept presented in that column (Tables A3, Appendix A). On the other hand, the measurement model had five scale concepts to each sector with composite reliability > 0.6 and single reliability > 0.4 in most of the items; reliability is therefore supported (Table A4, Appendix A). Thus, there appears to be no risk that the relationships could be inflated because one person provided information for all the concepts. In short, the measurement model showed reliable measurements of the latent concepts,

TABLE II
Scales resulting from literature review and indicator reduction

Variable	Conceptualization	Literature review	Dimension/indicators
Complementary resources and capabilities***	Set of technologies, skills, knowledge, etc. which are generated and enlarged over time	Barney (1991), Grant (1995), Hart (1995), Florida (1996), Aragón-Correa (1998), Christmann (2000)	<p>r&c1: the top management's behavior inspired the acceptance of change by all the other organization members (λ_{x11} **)</p> <p>r&c2: all the organization members knew and shared the firm's mission and objectives (λ_{x21})</p> <p>r&c3: we adapted to the new market conditions more rapidly and in better conditions than our competitors (λ_{x13})</p> <p>r&c4: we identified the new consumer and market opportunities because we had established a watch and monitoring system (λ_{x23})</p> <p>r&c5: the employees were aware of the progress made in their work areas (new knowledge, new practice development, etc.) (λ_{x12})</p> <p>r&c6: the knowledge owned by individuals was transmitted and readily accessible to all their workmates (λ_{x22})</p> <p>r&c7: the employees were able to take initiatives and decisions on their own thanks to the encouragement of authority delegation (λ_{x32})</p> <p>r&c8: our close relationships with suppliers and consumers allowed us to know at first hand and before the rest of firms the existence of new products or services, needs, new technologies or machinery (λ_{x33})</p> <p>r&c9: on some occasions, other firms were consulted in order to improve in some specific aspects</p> <p>r&c10: we could make rapid changes in product design and/or introduce new ones fast (λ_{x43})</p> <p>r&c11: we acted in accordance with quality management principles and practices (λ_{x53})</p> <p>r&c12: we collaborated in the sponsorship of sporting and social activities*</p> <p>r&c13: we were able to apply a higher price than the rest of firms with which we competed*</p>

TABLE II
continued

Variable	Conceptualization	Literature review	Dimension/indicators
Managerial interpretation	Attitude and behavior of managers with responsibilities in the introduction of environmental approaches into the firm	Hutchinson (1992), Shen (1995), Clements (1996), Nijkamp et al. (1999)	man1: environmental initiatives slow down growth (λ_{Y11}) man2: the environment represents an opportunity for the firm (λ_{Y21}) man3: the environment entails an additional cost* man4: reasonable environmental management is not an option, but a necessity* man5: environmental issues can only be attended to during periods of economic prosperity, since they do not generate profit for the firm (λ_{Y31}) man6: the solution to technological problems depends on new technologies, not on the actions that firms may perform (λ_{Y41}) man7: concern for the environment is a passing fad (λ_{Y51})
Environmental management	The part of the management system which includes organizational structure, responsibilities, practices, procedures, processes, and resources to maintains a specific environmental behavior with the aim of reducing the impact generated by the firm's operations on the natural environment.	Judge and Douglas (1998), Sharma and Vredenburg (1998), Klassen and Whybark (1999), Christmann (2000), Karagozoglu and Lindell (2000), Giménez et al. (2003)	Dimension 'organizational aspects'**** emorg1: the firm formally communicates its environmental policy and strategy to all its employees emorg2: the management team encourages and participates in environmental management initiatives emorg3: procedures are defined and documented for all the activities, products and processes which have, or may have, unless they are controlled, a significant direct or indirect impact on the environment emorg4: environmental and procedure manuals are revised periodically emorg5: the organizational structures (the organizational chart and the description of roles within the firm) are adapted or modified, if necessary, with the purpose of facilitating environmental management emorg6: barriers to environmental communications are removed, including the encouragement for employees to communicate directly with their managers or with other firm employees emorg7: the employees have the environmental competencies required to develop their professional activity emorg8: when there is a wish to improve in some environmental aspect, collaboration is established with other firms so that they can help to achieve the improvement emorg9: support is given to experimentation with new methods with the aim of identifying possible environmental improvement areas emorg10: emergency procedures are established in order to respond to environmental problems and accidents

TABLE II
continued

Variable	Conceptualization	Literature review	Dimension/indicators
			<p>emorg11: the elaboration of financial and operational plans and indicators is carried out taking into account the environmental policy</p> <p>emorg12: environmental savings and costs are quantified in the budget</p> <p>emorg13: priority is given to the purchase of less harmful components and/or products</p> <p>emorg14: the suppliers' environmental record is evaluated</p> <p>emorg15: a standardized system is used for the treatment of consumer complaints</p> <p>emorg16: an environmental report is elaborated</p> <p>emorg17: environmental events are sponsored and/or collaboration is established with ecologist organizations*</p> <p>emorg18: information about environmental management is regularly provided to suppliers, consumers and institutions</p> <p>Dimension 'technical aspects (IPPC law)'</p> <p>emtec1: selection of low-impact materials</p> <p>emtec2: alternative production techniques (MTDs)</p> <p>emtec3: reduction of stages in the manufacturing process</p> <p>emtec4: lower energy consumption*</p> <p>emtec5: consumption of renewable or less polluting energies*</p> <p>emtec6: lower resource consumption</p> <p>emtec7: consumption of cleaner resources</p> <p>emtec8: simpler/clean/reusable packaging</p> <p>emtec9: energetically more efficient logistics (optimization of routes and loads, packaging standardization, etc.)</p> <p>emtec10: favoring the reuse of the complete product</p> <p>emtec11: favoring recycling</p> <p>emtec12: convenient elimination/treatment/storage of the remaining waste</p> <p>DIMENSION 'TECHNICAL ASPECTS (HOTEL)'</p> <p>emtec1: respect and promotion of the autochthonous vegetation in gardens and green areas</p> <p>emtec2: selection of low-impact products (low energy content light bulbs, climalit, recycled paper, detergents, etc.)*</p> <p>emtec3: waste reduction (selective collection, use of returnable bottles, crushers, etc.)</p> <p>emtec4: convenient elimination/treatment/storage of the remaining waste</p>

TABLE II
continued

Variable	Conceptualization	Literature review	Dimension/indicators
			<p>entec5: lower resource consumption (reducing water consumption, filters, good practice instructions, osmosis tanks, incorporation of leak detection, etc.)</p> <p>entec6: consumption of lower-impact resources (phytosanitary products, etc.)★</p> <p>entec7: ensuring low energy consumption (incorporating automatic stranger functions, presence detection cells)★</p> <p>entec8: use of clean energy sources (hydraulic, natural gas, sun, wind, etc.)</p> <p>entec9: favoring product reuse/recycling (returnable bottles, larger-volume bottles to reduce their numbers)</p>

★ The items with the symbol “★” were removed following the advice of experts who revised the initial questionnaire.

★★ With the aim of identifying the items that constitute the scales of each one of the variables studied in later tables, in brackets appear the symbols $\lambda_{X_{xy}}/\lambda_{X_{xy}}$, which will be used to identify the said items. The items without these symbols have not been considered measurement indicators in the model, because they did not fulfill some of the requirements to form part of the measuring instrument.

★★★ After performing an exploratory factor analysis, the following factors for the variable ‘Resources and Capabilities’: FIR&C ($\lambda_{X_{x1}}$) = action and involvement of the management in the firm’s activity; F2R&C ($\lambda_{X_{x2}}$) = employees’ learning and knowledge; F3R&C ($\lambda_{X_{x3}}$) = rapidity and flexibility with which the firm introduces changes to adapt to the new environmental conditions were obtained.

★★★★ After performing an exploratory factor analysis of the organizational and technical aspects included in the variable ‘environmental management’, the following factors: FIEMORG ($\lambda_{Y_{11}}$) = organizational aspects linked to knowledge and learning in the development of environmental practices; F2EMORG ($\lambda_{Y_{21}}$) = variables which reflect the connection link between the firm and the stakeholders during the development of its environmental management; F3EMORG ($\lambda_{Y_{31}}$) = variables which highlight the link between environmental management and the firm’s economic structure; F4EMTEC ($\lambda_{Y_{41}}$) = variables linked to the process of optimization of the product’s distribution and end-life system. Two more factors are used in the group of firms affected by the IPPC law: F5EMTEC ($\lambda_{Y_{51}}$) = variables related to the optimization of materials; F6EMTEC ($\lambda_{Y_{61}}$) = variables linked to the optimization of the production techniques used during the development of environmental management were obtained. Instead of incorporating all the indicators into the measurement model, these factors have been used as aggregate variables of the indicators for structural modeling, i.e., when measuring environmental management, not every single factor with its corresponding measuring indicators has been considered, but only the factors which are determined by a single indicator resulting from the sum of them all. In this way, each one of the factors related to technical and organizational aspects is considered an indicator of the latent variable ‘environmental management’, the value of which is the sum of all the indicators which form the said factor in the original measurement model. This practice has been used in various studies (Cribbons and Hocevar, 1998; Landis et al., 2000) with the aim of reducing the number of parameters to be estimated and weakening the complexity of the model.

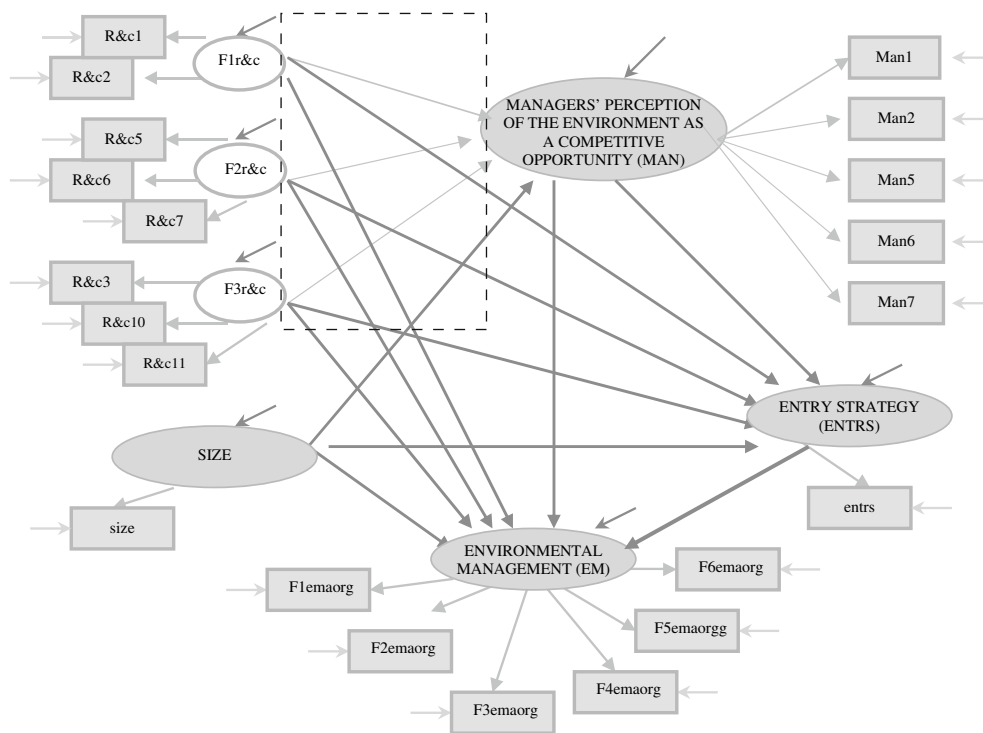


Figure 2. Path diagram.

convergence between the measures of each concept and divergence between concepts.

Structural model. The observed independent variables (managerial perception, entry strategy and environmental management) and the dependent variables (F1r&c, F2r&c, F3r&c and size) were added to the revised measurement model so as to create a full structural model using LISREL 8.5. The model, shown in a path diagram in Figure 2, has as its aim to provide estimates of the magnitude and significance of proposed causal connections between sets of variables. More specifically, an analysis served to check whether managerial perception is influenced by R&C; entry strategy is affected by managerial perception and R&C; and environmental management is influenced by R&C, managerial perception and entry strategy. Size was included as a control variable too.

Table B1 (Appendix B) reports the fit indices for this model. The full structural model produced a strong data fit. The Chi-square was significant and the fit indices were substantially above the preferred 0.90 threshold. The estimated standardized path

coefficients between endogenous and exogenous variables are offered in Table III.

As can be inferred from Table III, the relationship between complementary resources and capabilities and managerial perception and the proactivity of the environmental management is statistically significant, thus supporting P2 and P3. A statistically significant relationship is equally found between these assets and the development of a pioneering entry strategy in the IPPC law sector. Therefore, P1 is supported in this sector, but not in the hotel sector. However, support is given to P4 and P5, i.e., that managers' perception favors the development of a pioneering and proactive environmental management. Finally, a higher degree of development of a pioneering entry strategy positively affects the development of a proactive environmental management, thus supporting P6. On the other hand, the R^2 coefficient, similar to the determination coefficient in the regression, reaches a value of 0.210 (hotel) and 0.556 (IPPC law) in the managers' perception equation, i.e., the factors respectively account for 21% and 55.6% of the variance for the managerial interpretation of the natural environment. The R^2

TABLE III
Relationships between exogenous and endogenous variables

Model	Coefficients (<i>T</i> -Value)		Reliability of structural equations (R^2)	
	Hotel	IPPC	Hotel	IPPC
Size* → Man	ns	ns	0.210	0.556
F1R&C** → Man	ns	0.37 (3.16)		
F2R&C → Man	ns	0.34 (3.81)		
F3R&C → Man	0.59 (2.10)	ns		
Size → ENTRRS	0.43 (5.79)	0.21 (3.90)	0.271	0.409
F1R&C → ENTRRS	ns	ns		
F2R&C → ENTRRS	ns	0.21 (2.41)		
F3R&C → ENTRRS	ns	ns		
MAN → ENTRRS	0.49 (3.34)	0.35 (3.95)		
Size → EM	ns	0.14 (3.31)	0.725	0.984
ENTRRS → EM	0.51 (8.89)	0.13 (1.98)		
F1R&C → EM	ns	ns		
F2R&C → EM	0.42 (2.70)	0.22 (3.20)		
F3R&C → EM	ns	0.16 (1.98)		
Man → EM	0.55 (3.98)	0.68 (8.26)		

* Control variable.

** See F1R&C in Table A1 (Appendix A).

Note: ns = not significant at the 0.05 level. *T*-values above 1.976 are significant.

coefficient is 0.271 (hotels) and 0.409 (IPPC law) in the entry strategy equation. Finally, the R^2 coefficient is 0.725 (hotels) and 0.981 (IPPC law) in the environmental management equation. These data show the existence of other variables that were not considered here but can influence these variables too, among which stand out the pressure exerted by stakeholders, uncertainty, and the environmental legislation.

Discussion

It must be highlighted in relation to the link existing between complementary resources and capabilities and managerial attitude that managers in the group of firms affected by the IPPC law consider a greater number of resources and capabilities than those developing their professional activity in the hotel sector when it comes to perceiving the natural environment as a competitive opportunity. As is said in the studies of Judge and Elenkov (2005) and Bansal (2005), managers in the latter sector value

how quickly and flexibly the hotel can adapt to the changes operated in the environment. These changes basically have to do with their consumers' decisions and actions and can be related to the integration of environmental practices, but also to their elimination. In the IPPC law sector, the influence of this factor on managerial interpretation is also positive, though not significant, probably due to the fact that the decisions made in this sector tend to be more complex as deeper changes in the process, in the technologies and in the product itself are required. In other words, unlike what happens in the tourist accommodation sector, it is difficult to pull out once the decisions have been made.

On the other hand, in the group of firms affected by the IPPC law, managers take into account their potential degree of involvement and actions in the area of natural environment protection. This does not happen in the tourist accommodation sector. It is a difference that already became evident during the information-collection process; it was observed that the person responsible for environmental issues in the hotel sector was mostly the head of reception,

whereas in the group of firms affected by the IPPC law, there was a manager specifically dedicated to this area. Finally, managers value their employees' learning and knowledge skills in the group of firms affected by the IPPC law, something that is not found in the tourist accommodation sector, probably due to the high turnover level in this sector. The capability to decentralize control mechanisms and to involve all the staff has also been studied by Aragón-Correa (1998), who classifies them within what he calls 'administrative strategic dimensions.'

Regarding firm size, after analyzing the relationships within this model one by one, it becomes evident that larger-sized firms tend to integrate environmental practices into their organization earlier than smaller ones in the two sectors under study. Firm size may reflect the legitimacy principle or to what extent the firm is visible to the public. This occurs because a large firm is either seen as a sector leader (Henriques and Sadorsky, 1996; Moore, 2001) or is likely to have a greater environmental risk (Chen et al., 2006). Nevertheless, only in the IPPC law sector can size be considered a determinant for the degree of proactivity in the development of environmental management. The significant effect of size in this case may be due either to the greater capacity or slack that larger firms have to absorb the risks and unpredictability associated with voluntary environmental strategies or to these firms' higher visibility (and hence, higher external scrutiny) (Elsayed, 2006). Large firms have greater resources available to hire and train such personnel. Because environmental regulations and public perceptions tend to focus on major polluters with more extensive resources, in the IPPC law group, large firms are more likely to invest in new ways to reduce the production of various types of waste. Bowen (2002) suggests that it is not size *per se* that promotes environmental responsiveness, but the elements of an organization's visibility and the resources available to it that may result from its size. Larger firms, therefore, are more likely to find their reputation suffering if they do not perform well on social measures, and act accordingly (Moore, 2001). These aspects lead us to raise two ideas. On the one hand, that one cannot overlook some of the arguments of small-sized firm managers, generally linked to the impossibility to face the initial investments required to develop a suitable environmental strategy because profits are too low (Pava and Krausz, 1996).

These arguments are similar to those found by the Fundación Entorno in a study carried out in 2003. Among them stands out the fact that managers do not own the resources needed to encourage the change required, that is, they lack time, are understaffed, cannot afford it and/or do not have available the knowledge and skills required for the implementation of a suitable environmental management. And also that it is in the most highly polluting sectors that the environmental investment (size) needed to achieve a proactive management scheme is higher insofar as a greater financial, time and knowledge-related effort is needed for the adaptation of processes, technologies and/or products. These changes are negligible in the tourist accommodation sector, though.

On the other hand, it can be observed that the more managers perceive the natural environment as a competitive opportunity, the higher is the degree of proactivity in the environmental management developed by the firm and the faster environmental practices are integrated into the organization. Furthermore, the latter steps up the proactive environmental management. This is so because managers take two aspects into account when they make estimates about the correct evolution of environmental technology. Firstly, managers know that being the first to adopt environmental practices allows them to create new barriers to imitation, such as the possibility of influencing the policy process (Cho et al., 2006) and to simultaneously attract ethical consumers who share ethical values to some extent and consider them in their decision-making (Castelo and Lima, 2006). Secondly, as managers pointed out during the phase of qualitative research, they know about the existence of aids and subsidies that they can receive from the authorities, about the possible low-interest financing offered by some financial institutions for the development of preventive technologies and also about the reduction of their insurance premiums as a result of the diminished environmental risk. This is a way to alter the 'incentives' for firms to behave ethically (Baumol and Blackman, 1991). Moreover, this incentive-based approach to business ethics can be immensely useful for regulators to guarantee observance of ethical behavior by firms (Kulshreshtha, 2007). Thanks to these aids and subsidies, managers can include in their management policy proactive environmental techniques such as the ones shown in Table I during the exploratory phase.

In relation to the link between complementary resources and capabilities and the adoption of a pioneering proactive strategy, it has been verified that, in the tourist accommodation sector, the capability which influences managers' attitudes and leads them to regard the natural environment as a competitive opportunity is the speed and flexibility with which the hotel adapts to the new environmental conditions. However, the organization members' learning and knowledge is the resource that the manager takes into account when the time comes to decide the right moment to integrate environmental issues and the degree of proactivity to be reached. Regarding the IPPC law sector, the situation is quite similar but reversed. In other words, managers feel that their way of acting and their employees' learning and knowledge levels are factors thanks to which competitive opportunities will be achieved if the environment is integrated into their organization. In any case, of those two factors, only employees' learning and knowledge has a significant positive impact on the development of a pioneering proactive strategy. That is why the investment in employee training and education is usually high, generally linked to the organization of training and information courses meant to adjust the knowledge of workers to the changes in the productive process resulting from the introduction of new environmental improvements. These results empirically confirm the approach presented by Govindarajuru and Daily (2004) from a theoretical point of view. These authors describe the importance of giving employees both the ability and the responsibility to take active steps to identify problems in the working environment that affect quality or consumer service and to deal with them effectively.

Dutton (1988) indicates that 'agenda building' refers to the process through which strategic issues catch the decision-makers' attention and are legitimated within the organization. The agenda-building model proceeds from the fundamental proposition that an issue is placed on the strategic agenda when individuals are aware of the issue (issue exposure) and/or those persons who are aware of the issue are involved with the issue (issue interest). In our study, the managers' level of participation in the development of the environmental management is not significant, which reflects that ethical issues receive less attention than other strategic issues in the organizations. This suggests that the ethical treatment of adaptation and

change in the firm will only be important when managers consider how organizational and environmental pressures translate into a strategic issue context (Dutton and Penner, 1993). Besides, it can be pointed out that although the flexibility and speed in the adaptation to environmental changes have not been determining factors in the evolution of managerial attitudes, they have indeed had an impact on the environmental management developed by the firm. Bansal (2005) also emphasizes the weight of this capability in corporate sustainable development, above all in the early stages, when only a few firms have adopted environmental practices.

Practical implications

This study has several practical implications. Firstly, the managerial perception of the natural environment as a competitive opportunity is influenced by the level of moral development and personal characteristics of managers. These perceptions are shaped by forces existing in the organization's environment, including available resources, societal expectations, sector, and regulations (Logsdon and Yuthas, 1997).

Secondly, firm size is seen as a relevant factor that may determine firm environmental orientation (Elsayed, 2006), although several possible alternatives deserve to be mentioned too. Small-sized firms refer to lack of time, staff, and financial resources as the justification for their limited environmental investment. However, these aspects cannot be considered an obstacle for the following reasons. Obviously, for environmental practices to be applied as foreseen, firms need the presence of a manager who assumes the ultimate responsibility in relation to moral issues. It is true that large firms need a person with an exclusive dedication who has a professional qualification suiting the requirements of the work position, but small firms only need a person whose activities in the ethical field are added to his/her main job. Besides, small-sized firms can benefit from various aids and subsidies granted by the government or other public bodies (Darnall and Edwards, 2006), and some monetary amount can be deduced from certain taxes if environmental investments are undertaken,⁸ which reduces considerably both the financial and the time effort. As for the training required, the Public Administration organizes free

specific courses by areas of activity and sectors in which firm members can participate.

Thirdly, the resource-based perspective can contribute to the analysis of ethical issues offering important insights on how it can influence a firm's environmental strategy. The importance of intangible resources such as employees' learning and knowledge skills and the flexibility and speed in the adaptation to environmental changes has been explicitly recognized. The application of resource-based rationales to ethical issues can be justified in several ways, some of which were identified by Bansal (2005) as well: it influences a managerial perception of natural environment as a competitive opportunity, requires investments of financial and human resources and creates new resource-based opportunities through changes in prevention pollution technology, policy process, stakeholders, and market forces.

Fourthly, managers consider important an intrinsic commitment approach to the relationships with their stakeholders. Firms need to achieve social legitimacy in their environmental management. Building good relations with stakeholders can lead to increased financial returns because it helps firms to develop valuable intangible assets which are likely to become sources of competitive advantage, because such assets can differentiate a firm from its competitors (Castelo and Lima, 2006; Hillman and Keim, 2001). However, managers do not get too involved in the development of environmental management. This shows that differences of opinion regarding social and ethical obligations exist, but does not prove that ethical issues are unnecessary or meaningless (Pava and Krausz, 1996). Perhaps, it would be interesting to introduce some questions: Should ethics be considered a key component of management work? Is ethical behavior in business something that may be created? And therefore, would it be interesting to include ethics in the business school curriculum? (Mortensen et al., 1989).

Fifthly, in the hotel sector, the Spanish manager has the capability to make decisions quickly but cannot encourage collaboration among workers and has no specific knowledge or experience about this matter either. This is an important problem because only when employees believe that the organizations for which they work have strong ethical values, do they appear to be more likely to engage in ethical behavior (Valentine and Barnett, 2002). To minimize this problem, appropriate actions should be included, e.g., the crea-

tion of ethical codes, which give employees guidelines to cope with difficult decisions. Some specific environmental tools and techniques such as the preparation of training courses, the restructuring of the organizational chart, the description of new jobs and an adequate design of the authority and information links or the decisions made in the firm would also be advisable.

Sixthly, those businesses that want to survive and prosper in a changing world will need strong ethical values and standards (Rushton, 2002). In the group of firms affected by the IPPC law, managers must stop underrating the organization's capability to react and adapt to changes in the environment when they start thinking about environmental concern as a competitive opportunity since, as has already been seen, this is a key capability for the modification and adaptation of processes, technologies and/or products with the aim of reducing the environmental impact caused by the firm's business activity. Some of the strategic implications to react and adapt to changes in the environment related to ethic issues could be considered demands made by society on the firm and might affect the achievement of the firm's objectives (Schroeder, 2002).

Finally, voluntary normative, i.e., the EMAS Regulation and the ISO 14001 Norm, should be perceived as giving the firm a high degree of credibility with such stakeholders as governments, consumers, NGOs, suppliers, and competitors, and can improve corporate environmental performance and, therefore, confirm an organization's commitment to social responsibility. However, if the standard becomes an easy hurdle to which any firm, no matter how polluting it might be, can subscribe, then other firms, even the polluting ones, may not subscribe to the standard (Bansal and Hunter, 2003).

Conclusion

Good business and sustainable development go hand-in-hand. Managers' commitment to contribute to sustainable development holds the key to their long-term business success and could be a source of competitive advantage. The amount of resources available to the organization along with firm size may influence the managerial perception of business ethics. Three incentives for business ethics are underlined: getting the best out of staff; appealing to ethical consumers; and personal satisfaction. Once the firm

assumes its environmental responsiveness, there is no reason why it should limit the organizational capacity when applying the level of proactive environmental initiatives to improve its environmental performance. Investing in ethical issues has important consequences for the creation or depletion of fundamental intangible resources, namely those associated with managers, employees, and stakeholders. Apart from allowing firms to attract these groups, improved social performance, through its environmental component, may lead to more efficient processes, improvements in productivity, lower compliance costs, and new market opportunities.

Finally, some limitations and future research lines should be considered. First, in the qualitative study, the specific nature of multiple case studies as well as the fact that all the firms examined are environmental leaders in their respective sectors should be highlighted. Future studies could try to distinguish between 'good' and 'bad' firms. Second, in the quantitative study, since this research article heavily on self-reported measurements provided by firm managers, future research works could add to the confidence in the results reported here replicating this study with more direct objective measurements of the theoretical constructs. All the same, in relation to environmental management, this alternate approach may also be inadequate since it may not fairly reflect a firm's overall environmental management as a consequence of its multidimensional nature, as Griffin and Mahon (1997) along with Johnson and Greening (1999) explicitly discuss in their studies about the social performance variable. Third, it would be worth establishing new causal relationships between some of the factors identified in the study, e.g., legislation, leadership, legitimization, uncertainty, available resources, managerial perception, and competitive advantage. Fourth, there are significant differences in social responsibility across sectors. The uniqueness of internal competencies or external pressures inherent in a sector, the degree of public visibility, the different configurations of stakeholders and their differing degrees of activism on particular issues are some of the reasons for these differences and suggest that more consideration should be given to determine the sector-level realities. Our findings are possibly limited to the sectors analyzed in the Spanish context, but the authors are currently engaged in replicating and extending the study to other European countries.

Future studies may also replicate and extend the study to other sectors in which environmental perceptions can appear differently as in the hotel sector and in the firms affected by the IPPC law.

Notes

¹ IPPC is the acronym for Integrated Pollution Prevention and Control.

² Environmental technologies are defined as "the equipment, methods and procedures used at the production, product design and product distribution mechanisms which save energy and natural resources, minimize the environmental problems generated by human activities and protect the natural environment" (Shrivastava, 1995).

³ Time compression diseconomies are defined as "the 'law of diminishing returns' when one input is held constant." For instance, in the case of R&D, the presence of time compression diseconomies implies that maintaining a given rate of R&D spending over a particular time interval produces a larger increment in the stock of R&D know-how than maintaining twice this rate of R&D spending over half the time interval (Dierickx and Cool, 1989, p. 1507).

⁴ All firms that participated in the qualitative study consented to being identified as participants.

⁵ In economic terms, the sector was directly or indirectly responsible for the generation of 11.8% of the Gross Domestic Product in 2002 (National Statistics Institute Information Bulletin, 2002; INE, 2003) and 10% of employment (National Statistics Institute Information Bulletin, 2003), figures confirming that it is the top Spanish productive sector.

⁶ A decision was made to take these legal categories as a reference because they are the most dynamic and innovative ones and correspond to hotels showing a wider variety of characteristics and possibilities, such as size, chain membership or the types of tourism they can offer.

⁷ The main objective is to ensure that firms pioneer the adoption of preventive environmental practices. For this purpose, the variable 'time-month' was weighted according to whether the firm was not certified (0.2), had a certification in accordance with the ISO 14001 or another type of norm (0.4), had a certification in accordance with the ISO 14001 and another type of norm (0.6), or was verified according to the EMAS Regulation (0.8). The last verification has been weighted to a greater extent because of the higher degree of rigidity to which firms are subjected in their attempts to achieve it.

⁸ In Spain, a deduction of the corporation tax full payment is made which corresponds to 10% of the value of the part of the investments made in material asset goods destined to environment protection purposes.

Appendix A

TABLE A1
Standardized parameter estimates for the indicators of the eight latent variables in the model

	Hotels	IPPC law
Resources and capabilities* λ_{x11}	0.73	0.78
Resources and capabilities λ_{x21}	0.91	0.86
Resources and capabilities λ_{x12}	0.58	0.83
Resources and capabilities λ_{x22}	0.77	0.83
Resources and capabilities λ_{x32}	0.83	0.83
Resources and capabilities λ_{x13}	0.72	0.70
Resources and capabilities λ_{x23}	**	0.72
Resources and capabilities λ_{x33}		0.69
Resources and capabilities λ_{x43}	0.68	0.64
Resources and capabilities λ_{x53}	0.74	
Managerial interpretation λ_{Y11}	0.76	0.74
Managerial interpretation λ_{Y21}	0.79	0.78
Managerial interpretation λ_{Y31}	0.57	0.57
Managerial interpretation λ_{Y41}	0.56	0.58
Managerial interpretation λ_{Y51}	0.62	0.57
Environmental management λ_{Y12}	0.90	0.80
Environmental management λ_{Y22}	0.73	0.78
Environmental management λ_{Y32}	0.75	0.65
Environmental management λ_{Y42}	0.79	0.84
Environmental management λ_{Y52}		0.69
Environmental management λ_{Y62}		0.70

* After performing a factor analysis, the following factors for the variable 'Resources and Capabilities': F1R&C (λ_{Xx1}) = action and involvement of the management in the firm's activity; F2R&C (λ_{Xx2}) = employees' learning and knowledge; F3CRC (λ_{Xx3}) = rapidity and flexibility with which the firm introduces changes to adapt to the new environmental conditions were obtained.

** Items with no information have not been considered measurement indicators in the model (for the sector studied), because they did not fulfill the requirements necessary to form part of the measurement instrument. This confirms the necessity to validate the scales for each analyzed sample.

TABLE A2
LISREL fit indices

		χ^2 Satorra-Bentler (g.l)/p-value	GFI	Standardized RMR	BBNFI	BBNNFI	AGFI	NC ($\chi^2/g.l$)
Hotels	R&C	20.99 (17)/0.23	0.97	0.031	0.97	0.98	0.94	1.234
	MAN	4.83 (4)/0.304	0.99	0.025	0.98	0.98	0.96	1.20
	EMA	3.42 (6)/0.177	0.99	0.016	0.91	0.99	0.96	1.73
IPPC law	R&C	27.71 (20)/0.12	0.97	0.034	0.96	0.97	0.92	1.38
	MAN	4.59 (4)/0.332	0.99	0.025	0.98	0.99	0.96	1.15
	EMA	10.13 (7)/0.181	0.98	0.028	0.98	0.98	0.94	1.45

TABLE A3
Discriminant validity

	F1r&c	F2r&c	F3r&c	Man	F1emorg	F2emorg	F3emorg	F4emtec	F5emtec	F6emtec
<i>Hotel vector</i>										
F1r&c	0.807									
F2r&c	0.531**	0.773								
F3r&c	0.533**	0.606**	0.757							
Man	0.318**	0.203**	0.351**	0.799						
F1emorg	0.425**	0.404**	0.443**	0.377**	0.892					
F2emorg	0.351**	0.385**	0.382**	0.270**	0.671**	0.680				
F3emorg	0.379**	0.340**	0.393**	0.409**	0.658**	0.558**	0.659			
F4emtec	0.433**	0.370**	0.427**	0.377**	0.709**	0.539**	0.614**	0.871		
<i>IPPC law sector</i>										
F1r&c	0.810									
F2r&c	0.590**	0.870								
F3r&c	0.558**	0.688**	0.788							
Man	0.007	0.039	-0.117	0.805						
F1emorg	0.465**	0.360**	0.481**	-0.084	0.920					
F2emorg	0.452**	0.275**	0.283**	-0.041	.533**	0.757				
F3emorg	0.445**	0.376**	0.502**	-0.132	0.618**	0.553**	0.794			
F4emtec	0.464**	0.321**	0.468**	-0.115	0.516**	0.549**	0.654**	0.640		
F5emtec	0.404**	0.417**	0.597**	-0.190**	0.534**	0.336**	0.582**	0.542**	0.660	
F6emtec	0.391**	0.393**	0.571**	-0.132	0.568**	0.393**	0.542**	0.615**	0.641**	0.861

* Significant correlation at a 0.05 level (bilateral).
** Significant correlation at a 0.01 level (bilateral).

TABLE A4
Single and composite reliability

	Hotels		IPPC law	
	Single	Composite	Single	Composite
Resources and capabilities λ_{x11}	0.53	0.81	0.61	0.81
Resources and capabilities λ_{x21}	0.83		0.75	
Resources and capabilities λ_{x12}	0.52	0.77	0.69	0.87
Resources and capabilities λ_{x22}	0.59		0.69	
Resources and capabilities λ_{x32}	0.68		0.69	
Resources and capabilities λ_{x13}	0.34	0.76	0.52	0.78
Resources and capabilities λ_{x23}	*		0.49	
Resources and capabilities λ_{x33}			0.48	
Resources and capabilities λ_{x43}	0.47		0.42	
Resources and capabilities λ_{x53}	0.54			
Managerial interpretation λ_{Y11}	0.58	0.80	0.55	0.81
Managerial interpretation λ_{Y21}	0.62		0.61	
Managerial interpretation λ_{Y31}	0.34		0.43	
Managerial interpretation λ_{Y41}	0.33		0.44	
Managerial interpretation λ_{Y51}	0.40		0.43	
Environmental management λ_{Y12}	0.81	0.87	0.64	0.88
Environmental management λ_{Y22}	0.54		0.61	
Environmental management λ_{Y32}	0.56		0.42	
Environmental management λ_{Y42}	0.62		0.71	
Environmental management λ_{Y52}			0.48	
Environmental management λ_{Y62}			0.48	

* Items with no information have not been considered measurement indicators in the model (for the sector studied), because they did not fulfill the requirements necessary to form part of the measurement instrument. This confirms the necessity to validate the scales for each analyzed sample.

Appendix B

TABLE B1
LISREL fit indices (full model)

		χ^2 Satorra–Bentler (g.l)/p-value	GFI	Standardized RMR	BBNFI	BBNNFI	AGFI	NC (χ^2 /g.l)
Man + R&C →	Hotels	74.55 (70)/0.33	0.957	0.032	0.944	0.98	0.926	1.065
ENTRS + EM	IPPC law	56.60 (46)/0.136	0.958	0.030	0.953	0.979	0.917	1.23

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