
The influence of stakeholders on the environmental perception of managers: a mixed methods study

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Abstract: The purpose of this study is to determine which environmental stakeholders exert more pressure on a firm as well as the degree of cooperation existing between the firm and these groups. In addition, this article analyses how stakeholders' actions influence the perception of managers about the environment as a competitive opportunity in different sectors. A sequential mixed methods study has been carried out, specifically a QUAL→QUAN design. The first stage (qualitative) is a multiple case study of eight Spanish firms from the primary, secondary and service sectors. The second stage (quantitative) includes a structural equations model for a sample of 239 hotels and 208 manufacturing firms. The findings show that stakeholders' influence on the managerial perception of the environment as a competitive opportunity depends on the sector analysed. This influence is stronger in the group of manufacturing firms affected by Spain's Integrated Pollution Prevention and Control law (IPPC) than in the hotel industry. As for the degree of collaboration between stakeholders and the firm, it is higher among suppliers in the primary and secondary sectors, whereas in the service sector, it is customer participation that has prevailed.

Keywords: natural environment, environmental managers, stakeholders, mixed methods, Spain.

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Introduction

The choice between the adoption of a passive or a proactive environmental attitude depends, among other factors, on the sector in which the business activity is carried out (Bowen 2000; Brunnermeier and Levinson 2004) and the role played by stakeholders (Roome and Wijen 2006; Sharma and Henriques 2005). In other words, the environmental practices implemented by a specific firm must suit its particular circumstances.

The purpose of this study is to determine which environmental stakeholders exert more pressure on a firm as well as the degree of cooperation existing between the firm and these groups. In addition, this article analyses how stakeholders' actions influence the perception of managers about the environment as a competitive opportunity in different sectors. This study makes several contributions to the literature. From a theoretical and empirical point of view, an analysis is carried out of the *stakeholder* variable as an environmental factor which can have an impact on the managerial attitude toward the

environment as a competitive opportunity. Specifically, an overall analysis is made of the pressures exerted by stakeholders along with the degree of cooperation between these groups and firms. From a methodological point of view, the use of a previous qualitative phase helps improve several aspects of the quantitative research. In particular, the qualitative research extends theory-deriving propositions, improves the measuring instrument to be used in the quantitative phase and helps explain and interpret the findings of the quantitative phase. The quantitative part tests the propositions derived from the qualitative phase, generalising them to different samples.

The present paper has been structured as follows. After the initial literature review, the research is presented in two phases. The first is a qualitative part through comparative case studies of different sectors in eight Spanish firms. The second phase involves testing the propositions which emerge in the first phase through a structural equations model of both the hotel sector and the firms affected by the IPPC law in Spain. The paper finishes with a summary of the most important conclusions drawn from the study.

Literature review

Quite a few studies have dealt with the theory of stakeholders from an environmental approach. These studies can be divided into four groups (Céspedes-Lorente *et al.* 2003): (1) those which emphasise the role of external stakeholders in the assessment of environmental performance and risk; (2) those which highlight the importance of interest groups for the adoption of environmental communication and information schemes by firms; (3) those which identify the most relevant stakeholders as far as environmental issues are concerned and examine the influence of these groups on the firm's environmental strategy; and (4) other studies which analyse the cooperation between firms and stakeholders.

Regardless of the approach used, they all focus on exploring the degree to which these groups influence the environmental actions undertaken by the firm. According to Zutshi and Sohal (2003), all stakeholders must be involved, though customers, employees and suppliers must carry the most weight. Furthermore, as Madsen and Ulhoi (2001) point out, one must take into account not only the influence that stakeholders can exert on the firm but also the opportunities and threats associated with that influence.

The attitude of managers towards the protection of the environment will have a decisive influence on the firm's environmental behaviour. That is, for the firm to decide to start environmental practices and, above all, to introduce a prevention management system, managers have to perceive the sources of opportunities and threats derived from the firm-stakeholders dialogue. Some managers consider this dialogue an opportunity. These managers are characterised by the importance they assign to social and environmental aspects along with the economic ones and by their behaviour as good citizens who accept that not all their resources belong to them and that, therefore, they must guard them for future generations (Hutchinson 1992). In this case, the manager perceives that the environment is neither a hindrance to growth nor a passing fad which is only adopted during times of economic prosperity, but a means to increase efficiency (Nijkamp *et al.* 1999) and to improve the firm's reputation or relevance in the market. At the same time, the manager believes that looking after the environment is nothing but a way to achieve legitimacy within the business environment, community or sector (Shen 1995), as a result of which the potential sources of competitive advantage can grow. Nevertheless, other managers see environment protection as something imposed by the legislation (Chatterji 1995; Hutchinson 1996; Klassen and Angell 1998) which is going to mean a deviation from the firm's main tasks as well as incurring higher costs. For these managers, the protection of the environment is a threat. This is why they do not identify the potential advantages that can be obtained in the long run, e.g. the development of new markets, products and productive processes (Hutchinson 1992) and the actual survival of their firm.

No matter whether managers regard environmental protection as an opportunity or as a threat, if they do not protect the environment, society may put pressure on them, increasing the cost of their unsustainable business practices, and customers can even refuse to purchase their products and services. This process may distance the firm from the rest of the society, resulting in a worse reputation, higher costs and a decrease in the shareholder's value following the erosion of its licence to act (Hill 2001). Further theory will be developed from the findings obtained in the qualitative research carried out.

Methodology

The research work was carried out in two phases. We adopted a mixed-method research design which involves the collection or analysis of both qualitative and quantitative data According to Creswell and Plano Clark (2007), Tashakkori and Teddlie (2003) and Morse (1991), 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, firstly to explore the problem under study and then to follow up on this exploration with quantitative data which are amenable to the examination of a large sample so that findings might be inferred to a population. The aims of the qualitative phase are (1) to use empirical data gathered through a case study to reconceptualise and extend the theory so that it can 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 is useful in order to examine unexpected results in more detail (Morse 1991). On the other hand, in the quantitative phase, the data and findings serve (1) to confirm the interpretation of qualitative findings and (2) to generalise them to different samples.

Qualitative study

Sample and data collection

The sampling of case studies is crucial, as sample choice influences the findings of a study (Miles and Huberman 1994). Different cases were selected to achieve a diverse sample providing many possibilities for comparison, which enables richer theory development too (Strauss and Corbin 1990). Our objective was twofold. On the one hand, we wanted to offer a representation of all the economic sectors (primary, secondary and tertiary); on the other hand, we wanted to assess firms which generated different degrees of impact on the natural environment through comparative case studies. They allow for cross-site comparison and make it possible for the researcher to see idiosyncratic aspects of any one site in perspective.

To achieve these aims, we selected sectors 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 it can be inferred that firms' responses to environment-related opportunities and threats will vary too. In fact, a number of studies which relate the firm's environmental attitude to the type of activity it develops reveal a stronger environmental commitment on the part of the firms which find themselves in those sectors with the most serious pollution-related problems (Berrone and Gomez-Mejia 2009). The least polluting firms, by contrast, suffer less pressure, since the main environmental protection measures have basically been focused on industrial activities with a direct, visible impact on the environment (Bowen, 2000) Thus, some sectors are heavily involved, others moderately so, but many have ignored the natural environment. Following Hutchinson's categories, we identified damaging, dirty and dangerous sectors and wasteful and polluting sectors. As we also wanted to offer a representation of all the economic sectors (primary, secondary and tertiary), we finally mixed our objectives and selected within damaging, dirty and dangerous sectors: agriculture, plastics, transport and industrial waste management; and within

wasteful and polluting sectors: new technologies, tourism and textiles. Then we classified these sectors into economic industries (primary, secondary and tertiary) and we selected eight cases belonging to them. Primary sector: COATO (food and agriculture). Secondary sector: Enplater (plastics), Aznar Textil (textiles) and Construcciones DECO (construction). Tertiary or service sector: FutureSpace (new technologies), Transportes DAVI (transport), Corona del Mar (tourism) and Cartera Ambiental (industrial waste management). All firms that participated in the qualitative study consented to being identified as participants.

During the data collection exploratory phase, in-depth interviews were carried out with the firms' environmental managers. The interviews were recorded and lasted approximately four hours each.¹ During each interview, leads to managerial knowledge about environmental strategies and practices were identified. Given the qualitative nature of most of the data sought, data triangulation was important to increase construct validity and substantiate findings and the subsequent propositions (Denzin 1978). Three data collection techniques were combined: a) carrying out personal interviews and questionnaires among environmental managers; b) direct observation (visit to the facilities and contacts with employees); and c) access to internal and external documents. The public documents requested from firms are: the public EMAS statement (for the EU's Eco Management and Audit Scheme) or any other type of environmental report, the annual report, the manual of good environmental practices and the internal information bulletins which keep the employees informed about environmental actions undertaken by the organisation. During the multiple case study development stage, permanent contact was kept with the environmental managers of the different enterprises in order to solve possible information gaps or dubious interpretations.

The issue of internal validity was handled by conducting multiple iterations and follow-ups during the analyses. The problem of reliability was addressed through the drawing up of detailed case study protocols and by following the required documentation and transcription standards. To test the credibility of our data interpretation, the analysis was subjected to member checks. The emerging insights were regularly checked with informants who were asked for their feedback, sometimes in a second interview, when some aspect was not clear. In addition, the member checks supervised the findings discussed below, helping to establish their dependability and confirmability.

Data analysis

The extended case method (Burewyo 1991) was adopted as a guide to data analysis. This methodological approach uses empirical data gathered through case studies to reconceptualise and extend theory. The extended case method consists of two „running exchanges“: between literature review and data analysis; and between data analysis and data collection, represented as follows: literature review ↔ data analysis ↔ data collection.

Quantitative study

Sample and data collection

Law 16/2002 of July 1 concerning Integrated Pollution Prevention and Control (IPPC) was taken as a reference to find a population that was representative of the most heavily polluting sectors, as a result of which a new sector or group which included the set of firms affected by this law was created, which belong to the primary and secondary sectors. Within the tertiary sector, the tourism subsector, and more specifically the hotel subsector, was selected as the focus of our study because of the relevance that this activity has for Spain's socioeconomic structure.

¹ We must point out that this paper forms part of a larger study in which other issues related to environmental management have been dealt with.

The data to test the propositions were collected using a mail survey (Appendix A) among the managers of 3,900 three-, four- and five-star hotels and 4,187 Spanish firms affected by the IPPC law. Responses were received from 239 hotels and 208 organisations affected by the IPPC law. For the purpose of detecting possible problems related to non-response error or bias, a comparison between early respondents and late respondents was drawn within each population (Armstrong and Overton 1977). The data obtained were divided into thirds – again within each population – according to the number of working days elapsed between the initial mailing to the firm and the reception of the questionnaire. The 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, non-response bias does not appear to be a problem in our study.

Data analysis

A seven-step process (Hair *et al.* 1999) was followed in order to model structural equations. The first 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 been already developed in advance. After that, the path diagram was turned into a set of structural relations. The next phase was devoted to choosing the type of input matrix and to estimating the proposed model. The LISREL 8.5 program was used to that end. Maximum likelihood (ML) with robust estimators (Satorra and Bentler 1994) was also adopted 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. Our input matrix for the use of that method was the asymptotic variance-covariance matrix.

Results and discussion

Qualitative study

The most relevant findings of the qualitative study about the level of influence exerted by the different stakeholders, the type of internal and external communication and the degree of collaboration existing within these groups and the firm are described below.

In general, the deterioration of the natural environment during the last few years has favoured the emergence of various groups that are putting pressure on firms to make their activity compatible with the protection of the environment and the suitable management of natural resources.

Our study suggests that influence is far from absolute: in part it is possessed by stakeholders, in part it is vested by the organisations involved in learning or *stakeholder* engagement, and in part it is determined by the ambitions of organisations and the type of learning and relationships they have with other groups. Moreover, it has been verified that the level of influence exerted by these groups varies according to their importance, relevance or priority for the firm they are related to. It must be highlighted in this respect that the primary and secondary sectors tend to show a stronger involvement on the part of the supplier than the tertiary sector. The manager of Aznar Textil provides the following examples:

AZNAR TEXTIL: „Our environmental objectives require the involvement of our suppliers. For example, when we thought about reducing the generation of paper and cardboard by 1%, yarn providers had to remove cardboard boxes from packaging. Achieving this goal was quite complicated, since it meant changing their production systems.“

Moreover, the customer was the agent most involved in the service sector. Corona del Mar, for example, has questionnaires which involve the customer in their decision making about potential measures to be adopted in the hotel. Additionally, if there is a shadow of a doubt about the possibility

that these environmental practices might diminish the service offered to this group, they are eliminated.

CORONA DEL MAR: „We came back to jam/marmalade sachets, which we had replaced by product in bulk, because the customer used the dish to take it, which eventually meant that they used more dishes, which in turn implied more washing and therefore, a higher consumption of water and detergent. All this demonstrates the need for a change in the customer’s perception.“

This supplier-customer orientation seems logical if we take into account that proactive firms try to extend their environmental policy to the complete life cycle of their products and services. In the case of the primary and secondary sectors, the process includes the entry of raw materials, their transformation into product and their later distribution. For this reason, the involvement of suppliers (to a greater extent) and of the customer is a constant in the process of adoption of environmental practices. The life cycle of firms operating in the service sector is shorter and mainly oriented toward the end consumer. Even shorter is the cycle for Cartera Ambiental, which acts as a centre for transference to industrial waste managers.

Internal communication within the firm is mainly possible through training courses, meetings, manuals and suggestion boxes. All firms invest in the training and education of their employees as well as of the top and middle management. The largest part of this flow of environmental information takes place thanks to the introduction of an environmental management system in the firm which focuses above all on the earlier stages of the process. Once the system is implemented and certified, disparate behaviours can be observed in firms. It can be said in this respect that the most polluting firms in the primary and secondary sectors – with the exception of Construcciones DECO – as well as Cartera Ambiental, have been characterised by the ongoing organisation of environmental training and information courses for their employees at all levels with the aim of annually adjusting the knowledge of their operating staff to the changes in the productive process resulting from the integration of new environmental improvements. However, firms with a high staff turnover rate, such as Construcciones DECO, FutureSpace, Transportes Daví and Corona del Mar, have opted for the incorporation of a section dedicated to quality and the environment in the Welcome Manual that is handed to new employees or for the preparation of Manuals of Good Practices that can help disseminate their environmental philosophy among employees, while environmental training efforts focus on the middle and top management levels.

The link observed regarding the transmission of information about the environmental findings obtained during the year, the environmental objectives set or the way to achieve them is rather similar. Once again, a greater flow of information, as well as collaboration in environmental tasks, can be identified in those sectors with higher labour stability, which tend to coincide with the most heavily polluting ones. Nevertheless, this variable does not seem to carry enough weight to justify the degree of participation of the employee in aspects associated with the provision of new environmental ideas or suggestions. This type of involvement would actually be related to the incentive offered by the firm. In fact, although all the firms have established channels of communication with their employees for this purpose, the suggestion box being the most popular, only the channels developed by COATO and ENPLATER have ultimately proved effective. Curiously enough, these two firms are the only two which 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 acknowledgements and different types of awards.

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 gratitude.”

External communication is essentially developed via environmental reports. These are seen by some authors as the first step toward the incorporation of environmental commitment into their business agenda (Hutchinson 1992). Moreover, practically all firms have taken part in sessions organised by various institutions providing their experience in environmental matters. Only two firms, Aznar Textil and Transportes Daví, have declined to participate in this type of encounters and when they were asked why, their answer was: „it is a business policy” or „we would lose a lot of time”. Other means of communication utilised by firms have been visiting the premises of various groups (schools, colleges, universities, housewives’ associations, etc.); appearing in the press, particularly in the various specialised trade magazines; or running awareness campaigns among the local population. The last action does relate directly to the environmental risk that the activity developed by Cartera Ambiental might entail for the Ajalvir municipality. These aspects show the relationship between the firm and the stakeholders as essentially a „good thing”, and it is associated with „good practice” focused on cooperation, networking and sharing experience and ideas (Tomlinson 2005).

It must be made clear that gaining a brand image, removing potential environmental problems before society, ensuring the loyalty of current customers and attracting new ones, as well as having a greater licence to innovate and greater credibility when it comes to socialising and presenting their points of view to all the interested parties, have been the main reasons encouraging firms to transmit information outwards. As already anticipated by Thomas (1992), external communication is simply the means chosen by the firms for stakeholders to be able to identify the extent to which the organisations have assumed the environmental responsibility for the impact caused by their products and productive processes.

To conclude this section, the findings obtained during this qualitative phase suggest, as Polonsky *et al.* (1998) had already pointed out, that the agents most directly related to the firm are the ones which acquire the greatest significance. Our research goes further because we have found that there are some differences in the significance of stakeholders by sectors. Specifically, we have found that although the importance of customers and competitors is a constant in all firms, the relevance of suppliers is only highlighted in the primary and secondary sectors. It can similarly be observed that employees are less important in the service sector. This may be due to the high staff turnover rate characteristic of these firms which hinders this group’s involvement and commitment toward the environment.

In short, it can be verified that the consideration, the analysis and the importance assigned by firms to stakeholders is going to influence the managerial perception of the environment, to which must be added that this influence will be of different magnitude depending on the sector in which the activity is developed, greater in the primary and secondary sectors and smaller in the tertiary sector. These findings lead to establishing the following propositions:

Proposition 1. The increased influence of stakeholders on the firm has positive effects on the perception of managers about the environment as a competitive opportunity.

Proposition 2. Stakeholders exert a stronger influence on the perception of managers about the environment as a competitive opportunity in the primary and secondary sectors than in the tertiary sector.

Quantitative study

Structural equations model

Measurement model

LISREL 8.5 was used (1) to evaluate concept reliability, convergent and discriminant validity; (2) to perform a confirmatory factor analysis meant to verify the validity of the causal concept configuration (dimensionality) proposed; and (3) to test the propositions formulated (Jöreskog and Sorbom 1993).

The study started from the assumption that the measurement model for stakeholders is represented by a first-order factor. However, this model provides no good fits in any of the sectors considered, which is why a decision was made to perform an exploratory factor analysis (EFA) using the SPSS statistical program, which revealed the existence of two factors. The correlations matrix, Bartlett's test of sphericity and the sample adequacy measure, calculated globally with the Kaiser-Meyer-Olkin statistic, were used in order to verify the suitability of such an analysis. Factor estimates as well as the assessment of the overall fit were carried out using the principal components analysis, which was suitable to summarise the original information in factors for prospective purposes. The percentage variance criterion was applied to the calculation of the number of factors to be extracted, since this permits obtaining a cumulative percentage of the total variance extracted. Finally, the orthogonal rotation by means of the varimax method was used for the interpretation of factors. Table 1 shows the findings obtained after carrying out the EFA.

Table 1 Exploratory factor analysis of stakeholders

	STAKEHOLDERS	ROTATED FACTOR LOADINGS	FACTOR	EIGENVALUE	% CUMULATIVE VARIANCE
HOTELS	Stake4	0.858	F2 (alpha = 0.886)	2.418	47.203
	Stake5	0.896			
	Stake6	0.826			
HOTELS	Stake1	0.873	F1 (alpha = 0.610)	1.013	76.889
	Stake2	0.729			
	$\alpha = 0.820$ KMO = 0.784				
IPPC LAW	Stake4	0.536	F2 (alpha = 0.780)	2.363	47.264
	Stake5	0.863			
	Stake6	0.852			
IPPC LAW	Stake1	0.810	F1 (alpha = 0.794)	1.159	70.448
	Stake2	0.816			
	$\alpha = 0.871$ KMO = 0.715				

Extraction method: Principal components analysis.

Rotation method: Varimax normalization with Kaiser.

The number of factors to be extracted in both sectors suggests a solution with two factors; they show a total variance above 60% which seems a satisfactory solution. One of them is formed by the variables stake1 and stake2, which refer to the level of pressure exerted by stakeholders. The second factor includes the variables stake4, stake5 y stake6, linked to the degree of collaboration existing between the firm and these groups. Regarding the variable "perception of managers about the environment", it is considered a first-order factor.

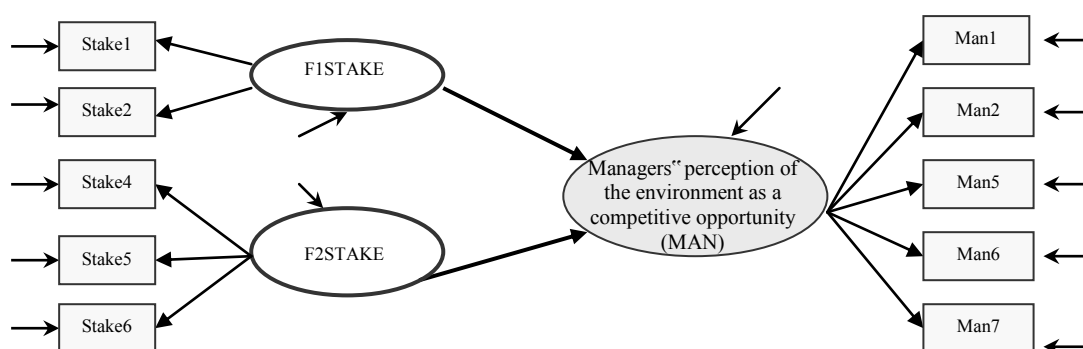
After identifying the first-order factors in the measurement models, a confirmatory factor analysis (CFA) was performed in order to assess scale dimensionality, reliability and validity. The findings indicated that the scales were unidimensional, representing a single factor for each set of cogeneric items (Anderson and Gerbing 1988). The measurement model itself provides evidence of convergent and discriminant validity, assuming that it is found to be 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%. 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 0.90 or above. The standardised root mean square residual (SRMR) should be less than 0.05, and the root mean square error of approximation (RMSEA) should be less than 0.08 (Jöreskog and Sorbom 1993). The chi-square statistic was significant in all cases, and the fit indices approached the preferred threshold of 0.90. Discriminant validity is also supported. On the other hand, the measurement model had three scale concepts with composite reliability > 0.608 and single reliability > 0.4; thus, reliability is supported. There appears to be no risk that the relationships were inflated because one person provided information for all the concepts. In short, the measurement model showed reliable measurements of the latent concepts, convergence between the measures of each concept and divergence between concepts.

Structural model

We added the observed independent variable (managerial perception) and the dependent variables (F1stakeholders and F2stakeholders) to the revised measurement model so as to create the full structural model using LISREL 8.5 (Figure 1).

Figure 1 Path diagram



The full structural model produced a strong data fit. The chi-square was significant ($\chi^2 = 24.97$, $df = 22$, $p = 0.299$ in the hotel sector, and $\chi^2 = 25.46$, $df = 24$, $p = 0.381$ in the group of firms affected by the IPPC law), and the fit indices were substantially above the preferred 0.90 threshold.

The estimated standardised path coefficients between endogenous and exogenous variables are illustrated in Table 2.

Table 2 Relationships between endogenous and exogenous variables

	F1STAKE → MAN	F2STAKE → MAN	Reliability of structural equations (R^2)
HOTELS	-0.50 $t = -2.44$	Ns	0.132
IPPC LAW	0.25 $t = 3.32$	0.48 $t = 5.41$	0.383

NOTE: ns = not significant at the 0.05 level. T values above 2.576 are significant at the 0.001 level

The impact of F2STAKE on the perception of managers about the environment is positive in both sectors, though only significant in the group of firms affected by the IPPC law (coefficient = 0.26, $t=1.60$ in the tourism accommodation sector). However, the effect of F1stake varies depending on the sector analysed. The effect is negative and significant in the hotel sector but positive and significant in the group of complexes affected by the IPPC law. It can be inferred from these findings that proposition 1 formulated in the qualitative research phase is confirmed in the first case but not in the second.

On the other hand, the R^2 coefficient, similar to the regression determination coefficient, has a value of 0.132 in the hotel sector and 0.383 in the group of firms affected by the IPPC law. This means that the F1stake and F2stake factors account for 13.2% and 38.3% respectively of the variance in the perception of managers about the environment. These data reveal two things. First, that the weight assigned by managers to the variable stakeholders when they value the environment as a competitive opportunity is higher in the group of firms affected by the IPPC law than in the hotel sector and, therefore, proposition 2 is confirmed. Second, that there are other variables which have not been taken into account in this relationship and which can also influence this perception. Among these variables pressures stand out associated with environmental regulations, uncertainty and sector barriers, all of them mentioned in the literature.

Discussion

The findings drawn from the quantitative research indicate that, from the contingent point of view, the different types of sectors affect the impact that stakeholders have on the organisation. In the tourism accommodation sector, stakeholders' pressure has a significant negative effect on the managerial perception of the environment as a competitive opportunity. The degree of collaboration on environmental issues is not significant. Guests and tour operators are the most influential pressure groups inside a hotel (Ayuso 2006). Nevertheless, tourists do not discriminate between hotels according to environmental practices, but depend on the quality of the service offered to such an extent that some authors argue that the implementation of certain environmental practices has as its aim to „disguise“ a cost-saving policy (Font and Tribe 2001). Tour operators only show an interest in environmental issues when they work with guests from Central and Northern Europe (Ayuso 2006), and most of the tourists in Spain are British and Spanish. This low valuation can make managers reach the conclusion that meeting the demands of their stakeholders will most probably reduce their competitiveness levels with respect to other hotels, which, in the absence of environmental practices, can offer their services at a more competitive price to a guest who is not very aware of these issues at present. Moreover, previous interviews and observations made in our study show that the participation of guests in environmental issues is low. It basically consists of completing questionnaires. Tourists have quite often hindered the adoption of new environmental practices since they believed that those practices might reduce the service quality delivered by the hotel (Claver *et al.* 2007). Decision-making and development processes require stakeholders' involvement at all planning levels (Sharma and Henriques 2005). Hence tourists, residents and professionals should count on an interpretative service based on environmental education. This measure could raise the quality of the experience and help them develop greater awareness of the conservation and protection of resources (Tsaour *et al.* 2006). For example, Ayuso (2006) observes that employees generally respond with higher motivation to environmental practices after an education and training period.

In the group of firms affected by the IPPC law, the pressure and collaboration of stakeholders have a positive effect on the managerial interpretation of the environment as a competitive opportunity. There is a high risk of accidents and catastrophes in this sector, and so the fines and sanctions imposed by government can be very severe. Additionally, customers and suppliers are much more aware and demand minimum environmental efficiency criteria in order to establish contractual relationships with firms. Also to be taken into account is strong pressure from certain environmental groups that turn public opinion against the most heavily polluting firms and favour intervention by the authorities. Due to all these aspects, the natural environment represents a way of enhancing the brand image and securing the loyalty of current customers while simultaneously attracting new ones. In short, just as

Kassinis and Vafeas (2006) point out in their study, it can be observed that the capacity of stakeholders to put pressure on and influence managers so that they value the natural environment as a competitive opportunity is greater in areas where the levels of industrial activity and environmental pollution are higher. Findings also indicate that managers give importance to an intrinsic commitment approach to relationships with their stakeholders because 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). Stakeholders can bring new ideas and knowledge that are likely to favour an anticipatory, proactive and innovative attitude within the firm. Thus, firms with managers who view a wide variety of their stakeholders as important are more likely to consider the development of proactive environmental strategies than those who focus on narrow sets (Buysse and Verbeke 2003).

To sum up, we may emphasise the following ideas. Stakeholders have different roles in the level of environmental responsibility adopted by the firm depending on the sector studied. In general, stakeholders are one of the sources of expectations about what constitutes desirable and undesirable competitive opportunities. Stakeholders assess how well firms have met expectations and/or how firms' behaviours have affected the groups and organisations in their natural environment. Finally, stakeholders' collaboration is likely to favour an anticipatory, proactive and innovative attitude within the firm.

Conclusions

A mixed-method research design with two phases – qualitative and quantitative – has been used to develop this research work, which benefited from the integration of these two approaches. Regarding two main characteristics of mixed methods research (implementation of data collection and priority), the present study has used a sequential design, and the qualitative and quantitative parts have the same status.

Apart from these two characteristics, we would like to point out two additional aspects related to mixed methods research. First, with regard to mixed methods purposes, Greene, Caracelli and Graham (1989) pointed out five main purposes: triangulation (seeking corroboration or convergence of the findings from the quantitative and qualitative parts), complementarity (seeking elaboration, illustration, enhancement, and clarification of the results from one method with the findings from the other method), development (when the researcher uses the results from one method to help develop or inform the use of the other method), initiation (discovering paradoxes and contradictions that lead to the research questions being reframed), and expansion (seeking to extend the breadth and range of inquiry by using different methods for different inquiry components). The main purpose of our mixed methods study is development, because we have used the results from the qualitative part to help develop the quantitative phase. In addition, complementarity has also been achieved, because the qualitative part helped clarify the quantitative results.

Second, an important attribute of mixed methods studies is the issue of integration. Creswell and Plano Clark (2007) pointed out that there are three main ways of integrating or mixing the quantitative and qualitative data: merging or converging the two datasets by actually bringing them together; connecting the two datasets by having one build on the other, or embedding one dataset within the other so that one type of data provides a supportive role for the other dataset. In our study, the way of integrating and mixing has been connecting the two datasets.

Regarding the topic analysed in this mixed methods study, during the qualitative phase a multiple case study was used to analyse the similarities and discrepancies existing in the link between stakeholders and the managerial perception of the environment. The information collection instrument used later in the quantitative phase has additionally been improved. The findings obtained in the exploratory phase allowed the formulation of two propositions associated with the level of influence that stakeholders

can exert on the perception of managers about the environment as a competitive opportunity according to the sector considered.

During the quantitative phase, a structural equations model was applied to 239 hotels and 208 firms affected by the IPPC law in Spain with the aim of integrating a number of different and interdependent multiple regression equations simultaneously. The findings of this second phase suggest that stakeholders influence the managerial perception of the environment as a competitive opportunity to a different extent depending on the sector analysed, the influence being stronger in the group of firms affected by the IPPC law. In the tourism accommodation sector, managers value the pressure exerted by stakeholders negatively. That does not happen in the group of firms affected by the IPPC law, where the risk of accidents or catastrophes is much higher. As for the degree of collaboration between stakeholders and the firm, it was positive in both sectors, though only significant in the sector formed by organisations affected by the IPPC law. It can additionally be stated that the level of collaboration was higher with suppliers in the primary and secondary sectors, whereas in the service sector, customer participation prevailed.

At this point, it is of interest to emphasise that it can prove useful to managers that firms belonging to the primary, secondary and tertiary sectors were analysed in the qualitative phase and that a comparative study was performed of the hotel sector and the group of firms affected by the IPPC law. They can take the findings presented in this paper as a reference to determine the priority, relevance and importance of stakeholders within the set of external contingencies that the firms they work for must face in order to develop their environmental strategies, depending on the sector they belong to.

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 paper relies heavily on self-reported measurements provided by firm managers, future research works could add to confidence in the results reported here, replicating this study with more direct objective measurements of the theoretical constructs. Third, we have used findings from the prior qualitative phase to interpret findings of the quantitative phase. In order to interpret the quantitative findings in more detail, it would be interesting to do another subsequent qualitative phase where we will focus our research specifically on the findings of the quantitative phase. Fourth, it would be worth establishing new causal relationships between some of the factors identified in the study, e.g. environmental legislation, legitimisation, uncertainty, resources, managerial perception and competitive advantage. Fifth, there are significant differences in environmental 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. Finally, our findings are possibly limited to the sectors analysed 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.

References

- Anderson, J. & Gerbing, D. 1988, „Structural equation modeling in practice: a review and recommended two-step approach“, *Psychological Bulletin*, Vol. 119, pp. 411-423.
- Armstrong, J. & Overton, S. 1997, „Estimating nonresponse bias in mail surveys“, *Journal of Marketing Research*, Vol. 14, No. 3, pp. 396-402.

Ayuso, S. 2006, „Adoption of voluntary environmental tools for sustainable tourism: analysing the experience of Spanish hotels“, *Corporate Social Responsibility and Environmental Management*, Vol. 13, pp. 207-220.

Berrone, P. & Gomez-Mejia, L. 2009, „Environmental performance and executive compensation: an integrated agency-institutional perspective“, *Academy of Management Journal*, Vol. 52, No. 1, pp. 103-126.

Bollen, K. 1989, *Structural equations with latent variables*, John Wiley & Sons, New York.

Bowen, F. 2000, „Environmental visibility: a trigger of green organisational response?“, *Business Strategy and the Environment*, Vol. 9, pp. 92-107.

Brunnermeier, S. & Levinson, A. 2004 „Examining the evidence on environmental regulations and industry location“, *Journal of Environment and Development*, Vol. 13, pp. 6-41.

Burewoy, M. 1991, „Reconstructing social theories“, in *Ethnography unbound*, M. Burawoy (ed), University of California Press, Berkeley.

Buysse, K. & Verbeke, A. 2003, „Proactive environmental strategies: a stakeholder management perspective“, *Strategic Management Journal*, Vol. 24, pp. 453-470.

Castelo, M. & Lima, L. 2006, „Corporate social responsibility and resource-based perspectives“, *Journal of Business Ethics*, Vol. 69, pp. 111-132.

Céspedes-Lorente, J., Burgos-Jiménez, J. & Álvarez-Gil, M. 2003, „Stakeholders“ environmental influence. An empirical analysis in the Spanish hotel industry“, *Scandinavian Journal of Management*, Vol. 19, pp. 333-358.

Chatterji, D. 1995, „Achieving leadership in environmental R & D“, *Research & Technology Management*, March-April, pp. 37-42.

Claver, E., López, M., Molina, J. & Tari, J. 2007. „Environmental management and firm performance: a case study“, *Journal of Environmental Management*, Vol. 84, pp. 606-619.

Creswell, J. & Plano-Clark, V. 2007, *Designing and conducting mixed methods research*, Sage, Thousand Oaks.

Denzin, N. 1978, *The research act*, McGraw-Hill, New York.

Font, X. & Tribe, J. 2001, „Promoting green tourism: the future of environmental awards“, *International Journal of Tourism Research*, Vol. 3, pp. 9-21.

Greene, J., Caracelli, V. & Graham, W. 1989, „Toward a conceptual framework for mixed-method evaluation designs“, *Educational Evaluation and Policy Analysis*, Vol. 11, pp. 255-274.

Hair, J., Anderson, R., Tatham, R. & Black, W. 1999, *Multivariate data analysis*, Prentice Hall, New Jersey.

Hutchinson, C. 1992, „Environmental issues: the challenge for the chief executive“, *Long Range Planning*, Vol. 25, pp. 50-59.

Hutchinson, C. 1996, „Integrating environment policy with business strategy“, *Long Range Planning*, Vol. 29, pp. 11-23.

Jöreskog, K. & Sorbom, D. 1993, *LISREL 8: Structural equation modeling with the SIMPLIS command language*, Scientific Software International, Chicago.

Kassinis, G. & Vafeas, N. 2006, „Stakeholder pressures and environmental performance“, *Academy of Management Journal*, Vol. 49, pp. 145-159.

Klassen, R. & Angell, L. 1998, „An international comparison of environmental management in operations: the impact of manufacturing flexibility in the US and Germany“, *Journal of Operations Management*, Vol. 16, pp. 177-194.

Madsen, H. & Ulhoi, J. 2001, „Integrating environmental and stakeholder management“, *Business Strategy and the Environment*, Vol. 10, pp. 77-88.

Miles, M. & Huberman, M. 1994, *Qualitative Data analysis. An expanded sourcebook*, Sage, Beverly Hills.

Morse, J. 1991, „Approaches to qualitative-quantitative methodological triangulation“, *Nursing Research*, Vol. 40, pp. 120-123.

Nijkamp, P., Rodenburg, C. & Verhoef, E. 1999, „The adoption and diffusion of environmental friendly technologies among firms“, *International Journal of Technology Management*, Vol. 17, pp. 421-437.

Polonsky, M., Rosenberger III, P. & Ottman, J. 1998, „Developing green products: learning from stakeholders“, *Asia Pacific Journal of Marketing and Logistics*, Vol. 10, pp. 22-43.

Roome, N. & Wijen, F. 2006 „Stakeholder power and organizational learning in corporate environmental management“, *Organization Studies*, Vol. 27, pp. 235-263.

Satorra, A. & Bentler, P. 1994, „Corrections to test statistics and standard errors in covariance structure analysis“, *Latent variables analysis. Applications for development research*, A. Von Eye & C. Clogg (eds.), Sage, Thousand Oaks.

Sharma, S. & Henriques, I. 2005, „Stakeholder influences on sustainability practices in the Canadian forest products industry“, *Strategic Management Journal*, Vol. 26, pp. 159-180.

Shen, T. 1995, *Industrial pollution prevention*, Springer-Verlag, Berlin.

Strauss, A. & Corbin, J. 1990, *Basics of qualitative research: grounded theory procedures and techniques*, Sage, Newbury Park.

Tashakkori, A. & Teddlie, C. (eds.) 2003, *Handbook of mixed methods in social & behavioral research*, Sage, Thousand Oaks.

Thomas, L. 1992, „The business community and the environment: an important partnership“, *Business Horizons*, March-April, pp. 21-24.

Tomlinson, F. 2005, „Idealistic and pragmatic versions of the discourse of partnership“, *Organization Studies*, Vol. 26, pp. 1169-1188.

Tsaur, S-H., Lin, Y-C. & Lin, J-H. 2006, „Evaluating ecotourism sustainability from the integrated perspective of resource, community and tourism“, *Tourism Management*, Vol. 27, pp. 640-653.

Zutshi, A. & Sohal, A. 2003, „Stakeholder involvement in the EMS adoption process“, *Business Process Management Journal*, Vol. 9, pp.133-148.

Appendix A: Items used to operationalise constructs in the quantitative phase

The items with (*) have been deleted following the advice of experts that revised the initial survey. The items with (**) have been deleted in the confirmatory factor analysis.

None of the items have been deleted in the analysis of measurement model in the structural equations model.

Stakeholders

stake1: Threaten to fine the firm if the latter does not protect the environment.

stake2: Promise rewards if the firm improves its environmental behaviour.

stake3: Remind the firm of its moral duties to protect the environment. **

stake4: Provide their perspective about how to solve the firm's environmental problems successfully.

stake5: Provide new ideas to improve environmental and management practices.

stake6: Cooperate with the firm through forums created to share their expectations and values with the aim of understanding them and reaching an agreement.

Managerial perceptions

man1: Environmental initiatives slow down growth.

man2: The environment represents an opportunity for the firm.

man3: The environment entails an additional cost. *

man4: Reasonable environmental management is not an option, but a necessity. *

man5: Firms can only attend to environmental issues during periods of economic prosperity, as they do not generate profit for the organisation.

man6: The solution to technological problems depends on new technologies, not on the actions that firms may perform.

man7: The concern for the environment is a passing fad.