# A Conceptual Model of Industrial Organization's Environmental Behavior

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***Abstract.*** *In spite of a growing body of scientific literature, few authors provided a coherent theoretical model that explains the diversity of strategic environmental choices for organizations in the same environment. The objective of our research is to explore the manner in which institutional pressures, as well as the entrepreneurial orientation of a company, are translated in different strategies by industrial organizations and to identify the factors that form the basis of these responses' diversity. The institutional theory emphasizes the role of social and cultural pressures that an organization faces, influencing organizational practices and structures. Institutional pressures play an important role in explaining the proliferation of environmental preoccupations in companies facing requirements from many stakeholders. The natural resource-based view of the firm accepts the perspective that a firm's valuable resources and capabilities, difficult to imitate, provide the key sources of sustainable competitive advantage. In order to reach our objective, the first step was to develop an integrative framework (based on a comprehensive literature review) representing a contribution to recent debates on the institutional theory, on the resource-based view of the firm and to the literature on the environmental strategies. The second step was to test our model on the textile industry, chosen for the reason it is one of the industrial sectors situated in the center of attention as regards environmental protection activities and it is characterized by increasing demand for products obtained from ethical industrial activities. The model was tested by using quantitative research techniques, more specifically the survey method. We sent a questionnaire to 1000 Romanian textile firms' managers, received 109 answers, then analyzed the data through statistical methods. We found that the interaction between the intensity of institutional pressures (external factors) and the entrepreneurial orientation of executives (internal factors) lead to the adoption of proactive environmental strategies.*

***Keywords:*** *institutional theory; entrepreneurial orientation; environmental investments; strategic management.*

## Introduction

The institutional theory represents the external perspective on the strategic decisions a company takes. DiMaggio and Powell (1983) argue that managerial decisions are strongly influenced by three institutional mechanisms - coercive, mimetic and normative isomorphism - which create and propagate a common set of values, norms, and rules that lead to similar practices and structures in the organizations sharing a common organizational environment.

Institutional pressures play an important role in explaining the proliferation of environmental preoccupations in companies facing requirements from many stakeholders. For example, there are pressures from clients or from investors wishing to invest in industries with a high social responsibility performance. At the same time, a wide range of new etiquettes, certifications, guides of actions and multi-stakeholder initiatives created an infrastructure for corporate social responsibility, putting pressure on companies to approach the societal impacts of their operations. Also, the governments launched numerous policies with the goal to promote social responsibility, from campaigns to increase the awareness and competencies to schemes and stimulating legislation.

As many studies examine the dynamic institutional forces acting in different industries, they still avoid the fundamental question for the strategic management: why organizations in the same environment follow different strategies, despite the isomorphic institutional pressures? In other words, what is the reason for which institutional forces can lead to heterogeneity, rather than homogeneity, in the same industry? Hoffman (2001) argues that as organizations do not simply react to pressures dictated by the

organizational environment, they also do not act completely autonomously, without the influence of external links. The institutional and organizational dynamics are tightly connected.

The *resource-based view of the firm* and its derivations (i.e., NRBV - natural resource-based view of the firm and dynamic capabilities perspective) accepts the perspective that the firm's valuable resources and capabilities, difficult to imitate, provide the key sources of sustainable competitive advantage. In our model, we examine entrepreneurial orientation as an organizational capability that can explain the extent to which a firm adopts a proactive environmental strategy. This concept explains the adoption of proactive environmental strategies from a company's internal perspective (Menguc, Auh, & Ozanne, 2010).

Our goal is to explore the manner in which environmental institutional pressures and the entrepreneurial orientation are translated in different corporate strategies and to identify the fundamental factors determining the diversity of responses; more exactly, to examine the relation between the internal and external factors of influence and the companies' strategic responses.

In order to reach our goal, we developed the first five hypotheses (on the basis of a comprehensive literature review) that were then tested on the textile industry, as the idea that textile firms have a wide range of stakeholders became more and more discussed and accepted. This view is an integrative part of the managerial and operational culture of many firms as the stakeholder model and stakeholder analysis became connected with the organizational performance.

**Hypothesis development**

The responses to these diverse pressures are determined by a wide range of internal and external factors, including expectancies of competitive advantages, the degree of legal coercion, environmental incertitude, the connection with the institutional field and the degree of institutional expectancies (Oliver, 1991). He argues that it is more probable compliance appears when institutional pressures do not threat organizational autonomy. This conclusion can be also found in the literature about social responsibility, where it was argued that environmental pressures from buyers to suppliers can be contra-productive and could generate resistance behaviors at the supplier level.

At a more general level, still, it is expected that the compliance reaction will be dominant for institutional pressures on the environmental activity, whereas only a few companies will try to act supplementary or to avoid requests *(hypothesis 1).*

It is expected that companies perceiving stronger environmental pressures from the stakeholders will look for opportunities *(hypothesis 2).* This hypothesis is situated within the scientific literature framework, for example in concordance with Lee (2011), who argues that there is a higher probability that firms confronting with strong external pressures will adopt a proactive behavior in the respect of environmental protection and with Kasinis and Vafeas (2006) established a positive relationship between the community groups pressures and the environmental performance of firms in polluting USA industries.

The perceived influence of stakeholders is generally expected to influence strategic answers. For example, it is more probable that a manufacturing company very dependent on a single retailer will conform to that stakeholder's requests, compared with a company that sells its products through thousands of retailers. Also, Darnall, Henriques, and Sadorsky (2010) argue that small companies rely more on community support, thus responding to local preoccupations and requests. On the contrary, a company considering certain stakeholders to be of marginal importance will probably adopt resistance strategies because firms can choose strategies in a freer way if they feel less dependent on stakeholders to survive. Thus, we propose *hypothesis 3:* the influence of stakeholders perceived as strong will stimulate opportunity seeking, whereas a weak influence will increase the probability of choosing resistance strategies.

The fact that institutional pressures can be conflicting or inconsistent offers a reason for caution in settling strategic answers (Pedersen & Gwozdz, 2014). For example, a multinational company facing different standards in its origin country and in its host country can choose between different response tactics and strategies. Oliver (1991) presumes that multiple conflicting pressures will tend to inspire non-conforming behaviors. The absence of consensus and common vision in a firm's evolving environment makes it difficult for its compliance with all the requests and could also increase the internal awareness of this issue as well

as of the range of strategic alternatives. These conflicts do not exist only between the stakeholder groups, but also in the interior of these groups. For example, several studies on market segmentation show that there is only one small group of consumers devoted to ethics, whereas the common consumer confers very small importance to environmental issues (Aragon-Correa & Sharma, 2003).

We propose the hypothesis that probably firms will adopt a non-compliance attitude when the stakeholder groups confer different priorities to environmental protection. Also, the probability that non-compliance strategies are adopted is higher when there is no consensus on the importance of environmental protection in the interior of a stakeholder group (consumers, shareholders or employees). In other words, heterogenic institutional pressures will probably generate a heterogeneity of organizational responses *(hypothesis 4).*

When the organization has established an entrepreneurial culture, top management has a higher propensity for risk-taking, for tolerating ambiguity and uncertainty and for involving in high earnings potential, although risky, domains. The predilection of top management to support natural environment issues is higher when the entrepreneurial orientation is omnipresent in the organization (Covin & Slevin, 1991). As a consequence, an entrepreneurial orientation focused on searching for growth and for new risky market opportunities is in concordance with a proactive environmental strategy. Thus, the entrepreneurial orientation of a firm increases the probability that it will adopt a proactive environmental strategy *(hypothesis 5).*

An aggregation of the relations between the institutional pressures a company perceives, its entrepreneurial orientation and its environmental strategic responses is represented by the model in Figure 1.

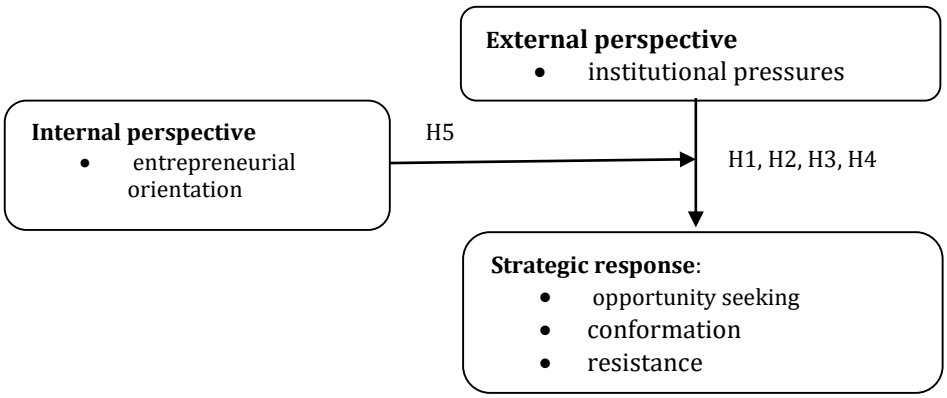


***Figure 1.*** *The conceptual model of corporate environmental behavior*

## Methodology

In order to test our proposed conceptual framework, we used the survey method, carried out on firms in the Romanian textile industry. This industry was chosen because it has high economic importance, it generates important environmental impacts and the companies in this industry are more and more involved in socially and environmentally responsible activities. In addition, there is little research about the strategic integration of environmental activity in this sector, although in the literature appear many references and study cases reflecting practices of social and environmental responsibility of some important companies in this industry.

A five-point Likert scale questionnaire was sent to managers of 1000 Romanian textile firms selected from publicly available databases, sample composed by the method of proportional layered survey and corresponding to the structure of the Romanian textile industry. The response rate was 10.9% and the data analysis is based on the answers received from a sample of 109 firms. A description of the sample of companies included in the research appears in Table 1.

***Table 1.*** *The sample of firms structured by industrial sub-sector*

| | Sub-sector | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | **Apparel** | 56 | 51.4 | 51.4 | 51.4 |
| | **Leather apparel** | 13 | 11.9 | 11.9 | 63.3 |
| | **Spinning mills** | 10 | 9.2 | 9.2 | 72.5 |
| | **Textile finishing** | 9 | 8.3 | 8.3 | 80.7 |
| | **Weaving/knitting** | 21 | 19.3 | 19.3 | 100.0 |
| | **Total** | 109 | 100.0 | 100.0 | |

Data collection was carried out by electronic mail or by direct meetings with firms' representatives. The target group identified for the survey was formed by representatives of top management or, alternatively, by environment/quality/marketing managers.

## Measuring and making the constructs operational

The next constructs were measured in order to test the proposed model:

### *Institutional pressures*

In our survey, the *intensity of institutional pressures* for environmental protection was measured as the average pressure exerted by seven stakeholder groups (clients, owners, suppliers, employees, public authorities, local community, competitors), made operational by the answers to the question: "in what measure the next groups have environmental demands?"(on a scale of 1 = "no demands" to 5 = "very high demands"). The question was repeated for every stakeholder group and an average value was calculated. The total pressure served as a basis for testing hypothesis 2.

For every stakeholder group, the respondents were also asked to indicate the dependence of their company to that stakeholder group, i.e. the *relative importance of the stakeholder* for the company, by answering the next question, repeated for every stakeholder group: "In what measure are the next groups capable to affect the company's activity?" (on a scale of five points, with 1 = "weak influence", to 5 ="very strong influence"). The influence of stakeholders was then measured by the average influence exerted on the company by all stakeholders. If the influence of stakeholders existed, we analyzed the relation between the perceived average influence and the behavior of opportunity seeking (the third hypothesis).

In order to obtain a measure of the *institutional pressures' coherence*, the respondents were asked what was the measure in which environmental requests of every stakeholder were synchronized with other expectancies - for example price or quality (on a scale of 1 to 5, from 1 = "there is no/very little concordance" to 5 = "full concordance"). A total score for *intra-group coherence* was calculated as an average coherence of all stakeholders, with a low value meaning a weak average coherence and a high value - a high average coherence. In order to establish the *inter-group coherence,* we calculated a score reflecting the span from the minimum to the highest value of pressure from stakeholders for a company, by subtracting the minimum perceived pressure from the maximum perceived pressure, along with all stakeholders. Minimum value means more coherent pressures, and a high value of a stronger conflict. We used then this measure of inter and intragroup pressure to test hypothesis 4.

### *Entrepreneurial orientation*

Entrepreneurial orientation is defined as the level at which organizational culture gives proof of an organizational tendency to undertake calculated risks, to act in innovative ways and to be proactive in aspects regarding the natural environment. Thereby, we used a scale with 8 items, and five points (from 1 = "it does not describe our organization" to 5- "it describes in great measure the organization"), adapted from Covin and Slevin (1991) for the specific context of this study. The measure was calculated as an average value of all items' scores. The items composing this construct are:

- A culture that stands on innovation and research-development activities;
- The high rate of new products development;
- An innovative approach for product development;

- Proactive position on the market;
- Aggressive position towards competition;
- A high predilection for risk and for projects that assume high potential profits;
- Market environment that encourages boldness to reach the objectives;
- The firm is the first in its sector to introduce new products and technologies.

***The strategic responses to environmental pressures***

In this paper we are proposing a new scale of strategic responses to institutional pressures, which discriminates between three big groups of reactions:
- Resistance (the attempt to avoid conforming to institutional pressures),
- Compliance (the adaptation to institutional environmental requests) and
- Opportunity seeking (a behavior that exceeds compliance and external expectancies).

The model overdraws previous classifications of strategic answers from institutional theory, which tend to cover only the resistance and compliance strategies. In our study, the corporative answer to environmental pressures reflects the most frequent answer to stakeholders' requests that respondents consider to be relevant. The response strategy was indicated by answering the question: "if there are environmental pressures from stakeholders, what is the typical reaction of the company?". The participants at the study chose one from five possible answers corresponding to the five categories previously described: 1. “we try to exceed current and planned requests”; 2. “we try to anticipate environmental requests and to fulfill them”; 3. “we try to fulfill current environmental requests”; 4. “we try to negotiate a decreased level of environmental requests”; 5. “we try to avoid, as much as possible, environmental pressures”. In order to build a dependent variable regarding strategic responses, we assigned values from 1 to 5 to strategic answers: 1 for those who reject pressures, 2 for negotiators, 3 for conformists, 4 for anticipators and 5 for definers. The descriptive statistical data referring to strategic answers are rendered in Table 2.

**Results**

Table 2 presents the descriptive statistics of the dependent variable *Strategic response*. The results indicate that compliance is the most common response to environmental pressures in the Romanian textile industry. Hypothesis 1: "it is expected that the compliance reaction will be dominant for institutional pressures on the environmental activity, whereas only a few companies will try to act supplementary or to avoid requests" is thus confirmed.

***Table 2.*** *Description of the firms' sample by their strategic responses*

| *Strategic response* | | *Frequency* | *Percent* | *Valid Percent* | *Cumulative Percent* |
|---|---|---|---|---|---|
| Valid | **rejection** | 3 | 2.8 | 2.8 | 2.8 |
| | **negotiation** | 10 | 9.2 | 9.2 | 11.9 |
| | **conformation** | 51 | 46.8 | 46.8 | 58.7 |
| | **anticipation** | 39 | 35.8 | 35.8 | 94.5 |
| | **definition** | 6 | 5.5 | 5.5 | 100.0 |
| | **Total** | 109 | 100.0 | 100.0 | |

In order to test the hypothesis 2, 3, 4 and 5 we used the regression analysis for the relationship between the *Strategic response to environmental pressures from the stakeholders* - which represents the dependent variable - and the independent variables represented by *Strength (or importance) of institutional pressures, Average influence of stakeholders, The homogeneity of the intra- and inter-group pressure, Entrepreneurial orientation*. We performed a stepwise regression analysis by using the SPSS software.

The demarche of regression analysis implies the next steps:
- building the correlation scatter plot;
- approximating, by adjusting the scatter plot, the shape, and direction of the link between the two variables, as the estimation of its intensity, using a correlation coefficient;
- obtaining a regression model, on the basis of the link's shape (ex. linear, exponential, parabolic, etc.), the estimation of the regression equation's parameters and their interpretation, based on their value.

As such, before settling the regression equations, it is necessary to build the correlation graph and to establish the type of relation between each of the analyzed variables. To establish the intensity and direction (positive or negative) of the relations between variables, we used Pearson coefficients, as the variable *The importance of institutional pressures* follows a normal distribution.

The Pearson correlation coefficient (R) assesses the degree of association between two variables measured on the span/report scale. This refers to the concomitant intensity and orientation of variation of a variable's values relative to the other variable, following a linear model. The variation span of the Pearson correlation coefficient is between -1 (perfectly negative correlation) and 1 (perfectly positive correlation). The absence of any relation (correlation) between the variables is illustrated by R =0. A correlation of value 1 indicates a perfect association between two variables. R square shows what percent of the dependent variable is explained by the independent variables. A higher value shows a better model. Table 3 shows the correlation coefficients and the determination coefficients between the independent variables and the dependent variable of our framework.

***Table 3.*** *Correlation coefficients (R) and determination coefficients ($R^2$) between the influence factors and the strategic environmental responses*

| | Strategic response | |
|---|---|---|
| **Correlations** | **R** | **$R^2$** |
| **Intensity of institutional pressures** | .476** | 22.7% |
| **The importance of stakeholders** | .406** | 16.5% |
| **Intra-group coherence** | .450** | 21.9% |
| **Inter-group coherence** | - | No correlation |
| **Entrepreneurial orientation** | .530** | 28.1% |

***- level of trust 99%*

The values of the Pearson coefficient for all the correlations are included in the interval 0.44 - 0.606, showing a strong positive relationship between the analyzed variables, except for the variable *Inter-group coherence*, which is not correlated with the *Strategic response* variable.

The scatter plot diagrams, together with the trend line and the value of R square show the fact that the relation between the independent variables and the dependent variable is a linear one, which justifies the linear regression choice. Figures A1 and A2 in the appendix present the scatter plot diagrams and the trend lines of the relation between the independent variables *Entrepreneurial orientation* and *Intensity of institutional pressures* and the dependent variable *Strategic response*.

On the basis of these trend lines that show linear relations, we used the multiple linear regression procedure in order to establish the influence of independent variables on the dependent variable. The general form of the multiple linear regression equation is:

$$Y = \beta_0+\beta_1 X_1 +\beta_2 X_2 +\beta_3 X_3+\ldots\ldots\beta_k X_k + e$$

In which:

Y - The dependent variable;
X - The independent variable;
$\beta_0$ - the constant value of multiple linear regression equation;
$\beta_k$ - regression coefficients;
e - Residual value.

The interpretation of β coefficients: a coefficient with the value close to 0 means that there is no effect on the strategic answer, a positive value means a positive effect and a negative value a negative effect. For the linear regression procedure, we chose the *stepwise* method, which removes from the model the irrelevant variables, due to multicollinearity problems (the independent variables are correlated between them). In the case of linear regression, the errors must be normally distributed, with 0 average, homoscedastic and uncorrelated. Table 4 presents the coefficients of the regression model, resulted in the stepwise regression analysis performed by SPSS software.

***Table 4.*** *The coefficients of the regression models*

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| 1 (Constant) | 1.726 | .256 | | 6.742 | .000 |
| Entrepreneurial orientation | .513 | .079 | .530 | 6.460 | .000 |
| 2 (Constant) | 1.486 | .256 | | 5.794 | .000 |
| Entrepreneurial orientation | .378 | .087 | .391 | 4.365 | .000 |
| Intensity of Institutional pressures | .234 | .073 | .289 | 3.220 | .002 |

a. Dependent Variable: Strategic response

The resulted model includes a constant value, with a 0 sig. (lower than 0.05) meaning that it is relevant inside the model. The coefficients for the independent variables *Intensity of institutional pressures* and *Entrepreneurial orientation* have a .sig lower than 0.05, which shows that they also are statistically significant. The analysis of errors (residual values), presented in Figure 2, shows the conditions of their normal distribution are fulfilled.

The resulting equation is:
strategic response = 1.486 + 0.234 * intensity of institutional pressures + 0.378 * entrepreneurial orientation (1)

We can conclude that hypothesis 2 and 5 are confirmed, whereas hypothesis 3 and 4 are refuted, meaning that institutional pressures and entrepreneurial orientation have positive influences in choosing a proactive environmental strategy by the Romanian firms in textile industry, while the perceived strong influence of stakeholders and the conflicts between the stakeholders' pressures (intra- and inter-group coherence of pressures) have no impact in this respect (Eq.1).

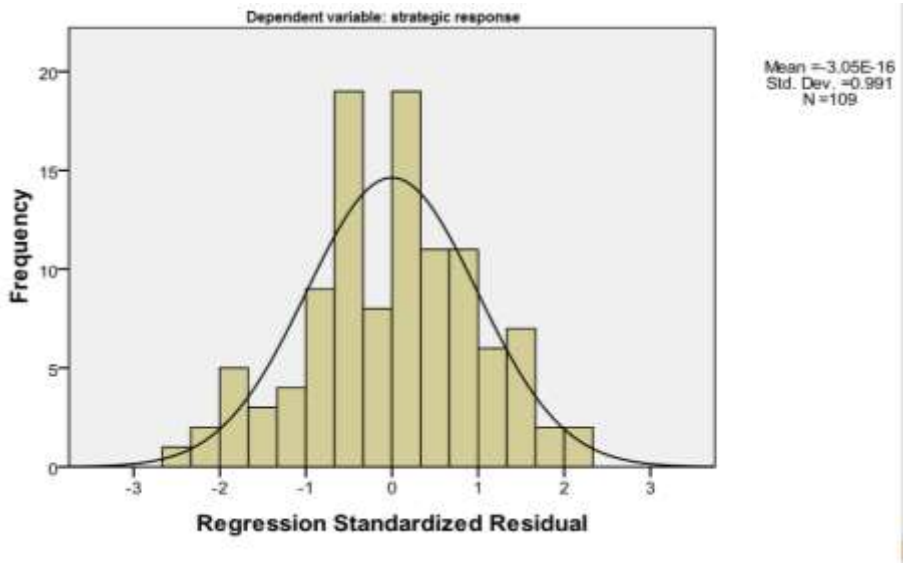


***Figure 2.*** *The histogram of residuals*

## Discussion

Our integrative framework includes a dependent variable and 5 independent variables. We used the stepwise regression method in order to test the hypothesis 2-5 because these hypotheses imply the establishment of the significance for every predictive factor. We obtained a regression model, in which there are several independent variables that significantly correlated with each other.

A stepwise multiple regression decides which independent variables have a low correlation with each other and thereby have the biggest impact on the dependent variable. The model allows the highest value of the determination coefficient ($R^2$) to decide which variables are accepted in the model.

Nevertheless, the excluded independent variables, due to multicollinearity (high correlation between them) problems can be important predictors of the dependent variables. Therefore, a multiple regression model does not detect all the variables that are important influence factors for a dependent variable.

Given the problematic nature of multicollinearity, we used the correlation analysis between the independent and dependent variables, in order to emphasize the influence that all these independent variables could have on the dependent variables, even if they were not included in the regression equation.

The results of this study confirm on one side the institutional theory by giving proof that the compliance strategies are the most common response to the environmental pressures of the stakeholders in the textile industry in Romania, no matter the group (clients, owners, employees, authorities or competitors). Most companies consider strategic environmental response as a compliance aspect rather than a strategic opportunity to differentiate from competitors. Future research should pay attention to the nature of pressures (coercive/non-coercive, direct/indirect, explicit/implicit, positive/negative, etc.) rather than to their origin.

The results of the study (the confirmed hypothesis 2) show also that fact that high environmental pressures in the Romanian textile industry stimulate seeking opportunity behaviors. In other words, results show that some companies use environmental pressures as an opportunity to enhance their environmental performance beyond the compulsory demands of stakeholders. Similar results have obtained Murillo-Luna, Garcés-Ayerbe, and Rivera-Torres (2008), who argue that higher environmental requests tend to conduct to adopting solutions beyond mandatory requests of the authorities, and even beyond market pressures or societal expectancies.

The results also show that environmental pressures that are in opposition or consistent with other claims of inter-group stakeholders do not influence the choice of strategic response and also that the importance of stakeholders for the company does not influence the choice of an opportunity strategy or not. Although the stepwise regression has removed the independent variable *Intra-group coherence* from the model, this is due to multicollinearity problems. The correlation coefficient between the *Intra-group coherence* and the *Strategic response*, however, shows a positive and significant relationship between these two variables. Hypothesis 3 is thus infirmed, whereas hypothesis 4 is partially confirmed.

Hypothesis 5 is also confirmed because the results of the regression analysis show that the entrepreneurial orientation of a company positively influences the adoption of a proactive environmental strategy (Eq.1). Such a strategy requires that firms have a bold attitude, take risks and are the first to introduce innovative products and processes. Aragon-Correa (1998) argued that the type of strategy or position is influenced by the firm's approach to the natural environment in the respect that prospector firms had a higher probability to adopt a proactive strategy. Therefore, we can assert that one of the reasons for which a higher entrepreneurial orientation will probably lead to the adoption of a proactive strategy is the organizational culture and strategic position that both require. From the perspective of the resource-based view, when a firm has more resources and the capability to be entrepreneurial, it is more probable that it will adopt a proactive environmental strategy.

## Conclusions

The contribution of this research consists of investigating the interactive effects between the internal and external perspectives on proactive environmental strategies. As regards to the motivations underlying the adoption of proactive environmental strategies, the research places the resource-based view of the firm in a wider organizational context, which also considers institutional motivations as factors of environmental investments. Although these two perspectives have developed in tandem, the approaches were mainly independent and mutually exclusive. These two perspectives were studied in parallel, without giving attention to the interaction between them in a single model.

Although the integrative conceptual framework developed in this paper has the origin in the resource-based view, it is capable to include also results of the studies based on other research streams and can be also used to offer a new perspective on the pressing questions in the literature about environmental strategies.

The research focuses as well on internal organizational factors that influence the adoption of proactive environmental strategies, thus contributing to research theory about behavioral antecedents of investments in resources and capabilities, by including characteristics of entrepreneurial orientation together with the resource-based view to understand the fundaments of competitive advantage.

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## Appendix
## Scatter-plot diagrams of the relations between the independent and the dependent variables

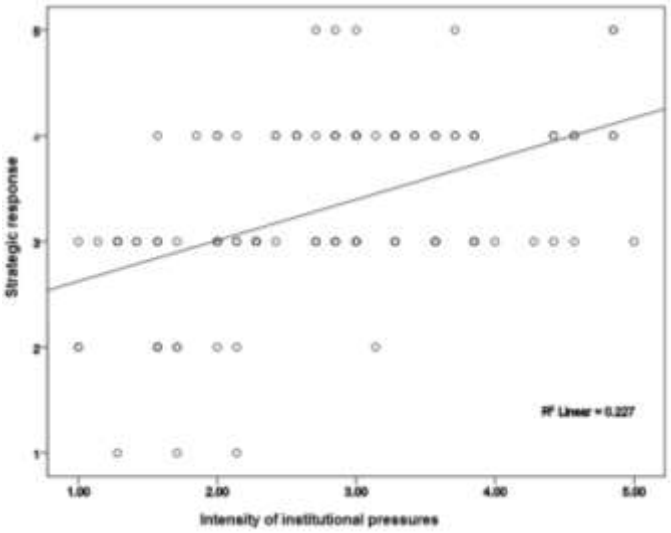


***Figure A1.*** *Scatter-plot diagram of the relation between the Intensity of institutional pressures (independent variable) and the Strategic response (dependent variable)*

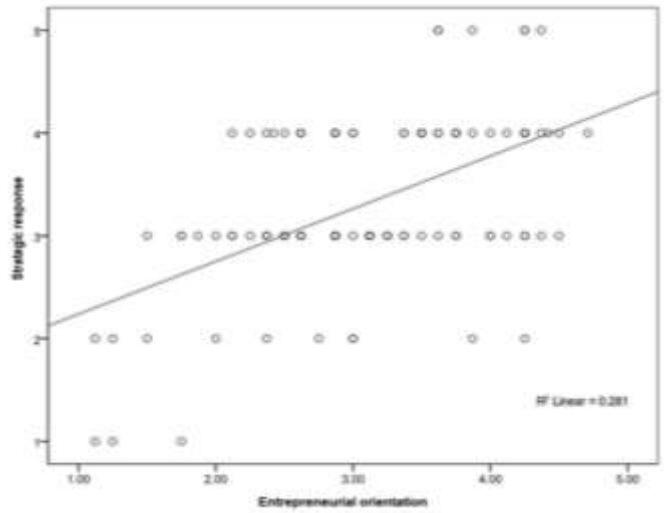


***Figure A2.*** *Scatter-plot diagram of the relation between the Entrepreneurial orientation (independent variable) and the Strategic response (dependent variable)*

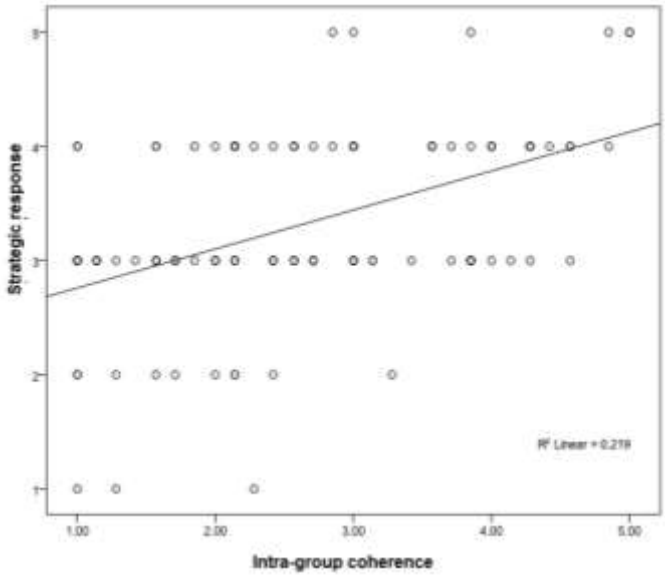


***Figure A3.*** *Scatter-plot diagram of the relation between the Intra-group coherence (independent variable) and the Strategic response (dependent variable)*

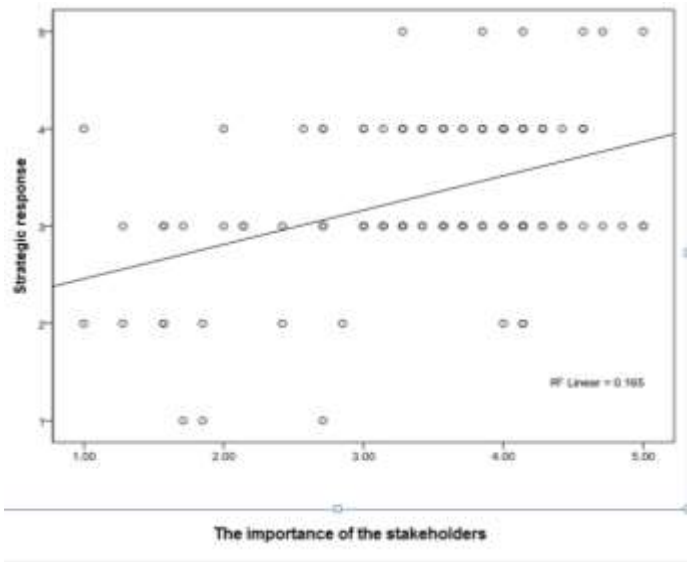


***Figure A4.*** *Scatter-plot diagram of the relation between the Importance of stakeholders (independent variable) and the Strategic response (dependent variable)*

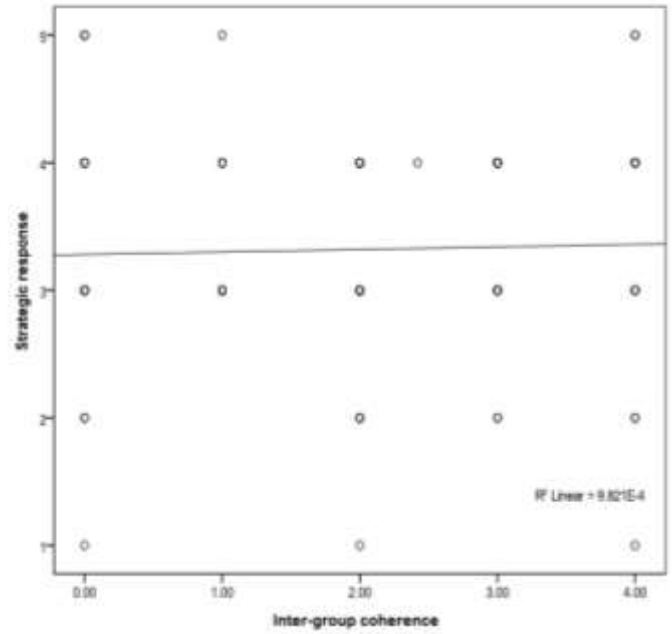


***Figure A5.*** *Scatter-plot diagram of the relation between the Inter-group coherence (independent variable) and the Strategic response (dependent variable)*