


Article

How Is Environmental Proactivity Accomplished? Drivers and Barriers in Firms' Pro-Environmental Change Process

Jesús Valero-Gil ^{1,*} , Pilar Rivera-Torres ² and Conchita Garcés-Ayerbe ³

¹ Department of Management and CIRCE Institute, University of Zaragoza, 50005 Zaragoza, Spain

² Department of Marketing, University of Zaragoza, 50005 Zaragoza, Spain; privera@unizar.es

³ Department of Management, University of Zaragoza, 50005 Zaragoza, Spain; cgarcés@unizar.es

* Correspondence: jvalero@unizar.es

Received: 29 June 2017; Accepted: 26 July 2017; Published: 29 July 2017

Abstract: The contaminating effects of economic activity and the scarcity of natural resources has led firms to a situation in which corporate strategy has been compromised by environmental issues. The objective of this paper is to analyse some of the factors determining the pro-environmental change process by considering the drivers encouraging firms to progress in environmental protection and the barriers that curb this progress. Using a structural equation model implemented on a sample of 303 firms, our results confirm a direct and positive effect of stakeholder pressure and of the expectations of obtaining competitive advantages from the pro-environmental change process. The results also confirmed the indirect effect of stakeholder pressure on pro-environmental change through managers' expectations of obtaining competitive advantages, which play a mediating role in the firm's response. Although managers interpret the barriers we have studied as obstacles to adopting environmental protection measures, they do not prevent any firm from reaching advanced levels of pro-environmental change.

Keywords: stakeholder pressure; barriers; expectations of competitive advantages; pro-environmental change; environmental proactivity; manager's perception

1. Introduction

The environmental affinity of the consumer society of the twenty-first century is changing and progressing vertiginously. This fact, together with the situation of environmental saturation affecting our planet, has led to changes in companies' behaviour. Organisations have changed and adapted their strategies to make them more environmentally friendly by minimising their environmental impacts and use of resources. However, which specific factors have made them undertake this pro-environmental change process?

Specialised literature in environmental management has found that environmental factors have often become fully integrated in corporate strategy. The 1990s saw the origins of the natural resource-based view [1] and the consolidation of the bases for the knowledge of the economic benefits of environmental proactivity in companies [2,3]. Only some firms' environmental strategy levels are proactive, however, since other firms' levels remain reactive by merely complying with the most immediate environmental requirements. The reasons for this diversity in firms' strategic environmental behaviour continue to be a subject of interest in the academic literature. There are several studies that have listed, classified, and analysed important drivers that can help businesses progress towards advanced or proactive strategies of environmental behaviour [4,5]. This trend includes the line of research that has put forward stakeholder pressure as one of the main drivers of environmental proactivity [6–8]. Others have analysed how the company's manager's expectations

of obtaining competitive advantages influence attitudes to the environment [9–15], but only a few, such as Garcés-Ayerbe et al. [16] or Schaltenbrand et al. [17], have considered managers as recipients that interpret and analyse stakeholder pressures based on their expectations of obtaining competitive advantages. It is precisely this area of knowledge that our research intends to examine. Consequently, this study aims to focus on the direct influence on pro-environmental change of stakeholder pressure and the expectations of obtaining advantages. In addition, it also aims to analyse how managers' interpretation of pro-environmental change as an opportunity to obtain competitive advantages has an effect that conditions the response to stakeholder pressure.

Discovering the effects of these determinants on pro-environmental change is not the only objective of this study. These factors acting as drivers of pro-environmental change are usually accompanied by barriers or obstacles that can hinder or prevent progress towards strategic positions that are more environmentally proactive. The perspective of barriers to environmental progress in firms has been analysed by authors such as ([18–24], among others); however, an overall approach integrating both drivers and barriers has been less studied. Consequently, this study aims to analyse both the drivers and barriers determining firms' pro-environmental behaviour.

To sum up, the purpose of this study is to analyse which factors act as drivers pushing the firm towards pro-environmental change and to complete this model with the study of some barriers that curb the process. In other words, we intend to analyse how different factor types determine the adoption of proactive environmental strategies and their positive or negative influence on the pro-environmental change process. The main contributions of this work to the literature are: (i) the specification of a joint model to analyse drivers and obstacles simultaneously in the pro-environmental change process; (ii) the study of a stakeholder pressure model that considers managers' expectations of obtaining a competitive advantages as a mediating factor when responding to this pressure.

Our research is structured into four additional sections. The second presents a theoretical framework based on the literature that studies the drivers and barriers determining the pro-environmental change process in firms. The next section presents the empirical analysis for the hypothesis test. The study provides relevant results that are presented in the last discussion and conclusions section.

2. Theoretical Framework

2.1. Pro-Environmental Change

As anticipated, environmental aspects have become part of firms' strategic management process. Pioneering authors, such as Porter [25], Hart [26], and Aragón-Correa [27] established the bases for studying the environmental position in corporate strategy. The study of environmental strategy begins by focusing on a term coined as 'environmental proactivity'.

Since then, the literature on environmental management has analysed how companies evolve in their strategic environmental position to levels of 'environmental proactivity'. This advanced status is understood as following a strategy whereby the firm incorporates measures to reduce and control its environmental impact; these measures go further than those required by legislation, public pressure and institutionalised standards in industry [27–29]. Scientific research on this aspect has resulted in a wealth of studies proposing several classifications of firms' strategic positions on the environment. Although there are several proposals (including from two or three up to five categories or patterns of environmental behaviour), all share a similar structure that considers from the least advanced (passive or reactive) strategies to more proactive environmental strategies [7,30–32]. Pioneering studies, such as those by Hunt and Auster [33], Roome [34], Henriques and Sadorsky [35], and Buysse and Verbeke [8], have already proposed strategic classifications that vary from passive or inactive positions, include prevention, defence and/or accommodation and end in behaviour patterns associated with proactivity and environmental leadership. Although this is not of interest for this

paper, pro-environmental behaviour has also been studied at an employee level [36–38]. This trend includes arguments pertaining to several external factors that influence the behaviour of a firm's workers, who, ultimately, also participate in the firm's behaviour [36].

Based on the lines of research established by previous analysed literature this study uses the term pro-environmental change to refer to any modification the company makes in its production cycle and/or its structure to reduce its environmental impact. This decrease in impact can involve pollution prevention and control, a significant decrease in the use of resources, or changes in operation or management procedures, among other possibilities. The empirical definition of this variable is based on the work of Garcés-Ayerbe et al. [39], which considers the scope or diversity in the adoption of these types of measures and the extent to which they are adopted.

2.2. Drivers of Pro-Environmental Change

As in other spheres of corporate decision-making, the adoption of more advanced or proactive environmental strategies could be determined by a series of factors that foster or, in contrast, hinder the adoption of measures to improve environmental performance. The drivers or fostering factors of environmental proactivity are diverse. Some of the most prominent in the literature are stakeholder pressure, certain favourable firm's intrinsic characteristics and certain favourable external or environmental factors [4]. These groups of factors also each contain a good set of specific determinants that have been previously analysed by the literature. In recent years, alongside studies analysing stakeholder requirements and environmental pressure, papers focusing on the organisation's external or internal aspects and its economic and financial characteristics have proliferated [11,40,41]. The scope of our study cannot analyse all the drivers of a firm's environmental position. Instead we aim to further the study of some of them: stakeholder pressure and managerial expectations of obtaining competitive advantages with pro-environmental change.

2.2.1. Stakeholder Pressure

The term 'stakeholder' refers to a group or individual that can affect or be affected by compliance with a firm's objectives [42]. Therefore, it refers to all groups or individuals directly or indirectly related to the company, and specifically to the bidirectional decision-making process. As decisions concerning environmental issues are crucial in this bidirectional decision-making process, these aspects should be considered within stakeholder theory [1,6]. In accordance with this theory, the company's decision-makers can promote the adoption of more proactive or advanced strategic environmental positions to meet stakeholder requirements and expectations [4,16]. Although there is a long list of environmental practices that a firm can adopt to improve its environmental performance, stakeholders can have a positive influence on the firm adopting them, irrespective of the type or form of these measures [43,44]. As an example of this, several authors have defended the importance of stakeholders as a determining factor in environmental strategy, specifically progress towards a higher level of proactivity [4,6,8,29,35,45], among others). Research into stakeholders is becoming more abundant and it continues to position and study them as an important factor in determining environmental strategy [7,10,13,16].

There are several stakeholder types that, according to the literature, influence how firms address environmental protection. Taking as a basis the classifications made by Fineman and Clarke [6], Henriques and Sadorsky [35], Buysse and Verbeke [8], and Murillo-Luna et al. [7], we can find several stakeholders, such as regulators and other internal and external stakeholders. In addition, in the latter two groups we can distinguish between main and secondary stakeholders. Regulators refer to any level that can use regulations to force or foster the establishment of any environmental measures in the firm. Internal stakeholders refer to any group of agents with a contractual relationship with the company, for example employees, shareholders or clients (main) and providers or suppliers (secondary). Lastly, external stakeholders include agents with non-contractual relationships with the company, for example, the community or society (main) and the media and competitors (secondary).

Concerning regulators, Porter's hypothesis already posited that regulatory pressure could lead to important competitive benefits for the company as it fosters strategic environmental improvements through innovation [2,3]. The Porter hypothesis has been revisited to establish that the type of regulation is relevant to the manner of environmental strategy development [46]. Command-and-control policies, such as pollution standards, are mainly related to the generation of reactive strategies [18,47–49]. However voluntary or market-based instruments, such as tradable emission permits, are able to generate more proactive behaviours, thus improving regulation effects in the firm [46,50,51]. This is because compliance flexibility is greater in this type of instrument compared with command-and-control regulations [51,52]. Firms' environmental strategy does not only respond to the pressure of environmental regulation, but also to a far larger group of stakeholders that includes clients, employees, suppliers, nearby communities, the media, financial institutions, insurers, and so on [16]. The idea that the pressure exerted by these stakeholders conditions firms' environmental behaviour is widely agreed in the literature [6,8,16]. These ideas led to the following hypothesis:

Hypothesis 1 (H1). *Stakeholder pressure positively influences the level of pro-environmental change in the firm.*

2.2.2. The Role of the Manager's Expectations

The support and involvement of the company's management team is essential for developing proactive environmental strategies [4]. Top management's role in this process is especially relevant since their overall view enables them to detect possible environmental opportunities [13]. Recognising this importance, several authors have considered managerial support as one of the determinants of environmental proactivity ([13,29,31,33,53–57], among others). These authors have analysed how company managers can allocate resources and collaborate to further efforts to reduce their environmental impact. A firm's managers' perceptions and mental interpretations largely determine how it responds to its natural environment [58]. Gonzalez-Benito and Gonzalez-Benito [4] also propose a more ambitious perspective by establishing that the management's beliefs, expectations and perceptions can influence their own opinion on the pro-environmental change process.

Another viewpoint is that managers have become the focal point of external pressures because their perceptions determine which stakeholders are worth considering above others [6,59,60]. Consequently, it is important to understand how stakeholder pressure is interpreted individually when managerial action is analysed in terms of green investments. Following the approach of Fineman and Clarke [6], who pioneeringly proposed that company managers play a major role in the process of responding to stakeholders' environmental pressures, there are some authors who have addressed the role of managers in this process. Thus, some authors [55,61,62] consider that the implementation of certain environmental strategies depends on whether the managers perceive environmental pressures as opportunities or as threats. Thus, more recently, Garcés-Ayerbe et al. [16] suggest that this is explained by managers' cognitive perspectives. Proactive strategies will probably be adopted more often when managers view them as an opportunity. However, if managers interpret these aspects as mostly insignificant facts, or even as threats, passive or reactive strategies are the likely outcome.

In contrast, Schaltenbrand et al. [17] propose that the way managers react to stakeholder pressure follows a selective perception. Managers design and configure environmental practices based on the strength of the main stakeholder pressure on the company [43]. Finally, the effect of the pressures will vary in importance depending on the managers' objective conditions, such as their level of previous experience [17], or subjective characteristics, such as their personal values [63] or their personal level of environmental awareness [64,65]. Przychodzen et al. [66] have recently empirically demonstrated that among managers the environmental decision-making process is more strongly motivated by subjective characteristics, with objective factors playing only a supportive role.

Consequently, it is reasonable to assume that perspectives of improving competitiveness are highly relevant when transforming stakeholder pressures into specific company actions [9]. When managers

view pro-environmental change as a possible generator of competitive advantages as they expect to cut costs, improve productivity, boost or consolidate market position, strengthen corporate image or differentiate their company's products, stakeholder pressure will be far more effective and promote a higher level of this change. Based on these arguments the following hypotheses are proposed:

Hypothesis 2 (H2). *The manager's expectations of obtaining associated competitive advantages have a positive influence on the firm's level of pro-environmental change.*

Hypothesis 3 (H3). *The manager's expectations of obtaining associated competitive advantages mediate the influence of stakeholder pressure on the firm's level of pro-environmental change.*

2.3. Barriers to Pro-Environmental Change

Although the perspective of barriers or obstacles to pro-environmental change has been studied far less by the environmental management literature [20], it seems logical to analyse them together with the drivers or factors promoting this change. One of the first studies that focused on discovering the barriers firms come up against in change processes towards more environmentally-friendly positions was conducted by Post and Altman [24]. Their work highlighted a catalogue of difficulties or barriers that industrial firms faced when they tried to improve their environmental performance. The barriers included those specific to each industry, which are similar for all the firms in the same industry, and those specific to each organisation. This classification was established later in the literature through the distinction between the firm's internal and external barriers [18–23]. Internal barriers are directly and specifically related to the firm and can be controlled by allocating the necessary resources. External barriers cannot be controlled directly by the firm and they make it difficult to implement environmental strategies in all the firms in the industry [23].

As shown in Table 1, some of the internal barriers to pro-environmental change most considered in the literature are the lack of financial resources to implement environmental protection measures, organisational difficulties in integrating them in the firm's production cycle and/or structure, the lack of specific knowledge on measures and processes to change and establish, and the lack of commitment and attitude shown by the firm's employees, including its management team (see [18–20,24,67]).

Table 1. Factors associated with the main internal barriers in the literature.

Internal Barrier Type	Associated Factors	Authors
Lack of economic resources	Lack of financing	[18,20,21,23,68–80]
	Prioritisation of other investments	
	Presence of sunk costs	
Organisational difficulty	Complexity of the production system	[20,68,72,81]
	Aversion to change	
	Excessive organisational complexity	
	Static organisational culture	
Lack of knowledge and internal resources	Lack of knowledge of measures	[20,23,68,73,75,78]
	HR with no specialised training	
	Lack of knowledge of process & advantages	
Lack of employee commitment	Lack of management team's commitment	[1,18–20,24,73,74,76,78,82]
	Lack of environmental responsibility	
	Lack of motivation	
	Lack of leadership in management team	

External barriers are related to the environment and they are usually associated with a lack of accessible and affordable infrastructures, technologies, and information to make headway in the pro-environmental change process and a rigid, complex, and changing regulatory pressure [18].

These barriers highlight that flexible regulations are preferable as they enable the development of the technological and environmental services sector and the adaptation of companies to changing environments. In contrast, although the regulation has been viewed as a driver, when it is excessively rigid and suffocates firms with inordinate complexity and bureaucratic processes, it entails many difficulties [18,19,21,22,24,71,74,77,79,80,83]. Lastly, the lack of technological development and available information in some industrial contexts is highly risky and makes it difficult for companies interested in implementing environmentally-responsible processes [18,19,24,70,73,74,79,82,84]. The last hypotheses in our paper are based on the arguments we have reviewed:

Hypothesis 4a (H4a). *Internal barriers have a negative influence on the level of pro-environmental change in the company.*

Hypothesis 4b (H4b). *External barriers have a negative influence on the level of pro-environmental change in the company.*

3. Empirical Study

3.1. Sample

The analysed population comprises firms in Aragon (Spain) with at least five employees operating in sectors that often use technologies in their production process classified as best available techniques defined by the European Commission's Joint Research Centre. This condition was chosen to channel the study towards firms with more environmental impact within the studied business fabric as these firms are more likely to apply pro-environmental change processes. The questionnaire was targeted at environmental managers within the firms or their director, if no such managers existed. The prior literature was used to design a questionnaire that can measure the pro-environmental change process within the firm in the last two years and drivers and barriers in that process. The questionnaire was validated by a panel of experts.

A total of 2996 surveys were sent by email in June 2013. The surveys were sent out again three months later and the response process was monitored by telephone. Finally, a sample of 303 observations was obtained, which indicates a response rate of 10.11%. This is similar to the rate obtained in other previous studies on the issue.

3.2. Variables

3.2.1. Pro-Environmental Change Stage

To measure pro-environmental change, we selected 12 indicators referring to specific pro-environmental change practices performed by companies in the last three years in four general areas: processes, products, management and the supply chain. The time reference of the last three years was used to try to ascertain change in each of these four dimensions towards more environmentally-advanced positions. These 12 indicators were measured using Likert scales from 0–10. The use of Likert scales as a measurement method is very common in the reviewed empirical literature that conducts surveys to obtain information (e.g., [17,43,44]). The authors in that literature mostly use Likert scales based on five or seven categories of intensity. However, 11-point scales (e.g., [85–87]) or scales with even more points (e.g., [20]), have often been used recently to seek a higher degree of variability in the answers and validity in the empirical results. In addition, in the Spanish context, the use of a scale with rating points from 0 to 10 is more usual (for example school and university grades, academic marks, social surveys, film or book ratings, etc.). Respondents expressed their opinion on each of the statements they were given (Appendix A). In this case, the value 0 referred to non-application of the individual measure detailed in the statement and 10 to the maximum application of the individual measure. Two indices for each of these individual indicators were calculated: one on scope (if the individual measure was implemented or not, 1 versus 0) and the other on intensity

in the described action (score using a scale of 0–10). Two indices were also calculated for each of the four general indicators for pro-environmental practices in process, products, management, and distribution channels: one on scope (how many of the three individual measures were adopted in the specific area using a scale of 0 to 3) and the other on intensity in the described general action (score using the average value in scales of 0 to 10 of each of the three individual measures considered in the area).

A group cluster analysis was performed after obtaining these indices. Following the methodological purpose of Garcés-Ayerbe et al. [39], this analysis included the level of application (intensity) and the level of the extent (scope) of the pro-environmental change measures applied by companies in their production cycles. The variable resulting from the cluster analysis enables us to classify companies into four groups. Each group corresponds to a stage in the pro-environmental change process. We start with group 1, where there is virtually no evidence of applying measures (very low values in scope and intensity) and go up to group 4, where very high values of average intensity and of scope in applying the measures were observed. Groups 2 and 3 obtained intermediate positions with more intensity and scope in the latter.

3.2.2. Antecedents of Pro-Environmental Change

Three types of pro-environmental change antecedents were operationalized in this study, two driver types and one barrier type. The drivers considered include stakeholder pressure and managers' expectations of perceived competitive advantages (Table 2).

Table 2. Antecedents of the pro-environmental change stage.

	\bar{X}	SD	λ	A
Stakeholder Pressure				
Stakeholder pressure	4.24	3.08	0.84	0.65
Intention to comply with current regulations	6.90	2.83	0.84	
Manager's Perception of Competitive Advantages				
Expectation of cost saving	6.74	2.96	0.73	0.78
Expectation of improving productivity/profitability	6.46	3.07	0.82	
Expectation of improving/consolidating market position	6.02	3.19	0.86	
Expectation of improving corporate image	6.79	2.93	0.82	
Expectation of product differentiation	6.14	3.38	0.87	
Internal Barriers				
Lack of financial resources	6.60	2.96	0.81	0.62
Organisational difficulties and/or difficulties with employees	4.15	2.99	0.81	
External Barriers				
Regulatory complexity	5.13	3.00	0.91	0.78
Lack of information on measures to adopt	5.21	2.93	0.91	

Note: Kaiser-Meyer-Olkin KMO Tests > 0.6 and Bartlett's test of sphericity significant at 0% in all cases.

Two indicators in the questionnaire were considered to measure stakeholder pressure: stakeholder pressure, in general, and regulatory pressure, in particular. Five indicators were selected to measure managers' perception of the possibility of obtaining competitive advantages with pro-environmental change. These indicators refer to the fact that managers' perception of obtaining or improving their competitive advantages in costs or differentiation had helped pro-environmental change measures be adopted within the company. The perception of barriers to pro-environmental change is based on four indicators. These indicators refer to whether the manager had perceived the existence of internal or external barriers that would have curbed the company's wishes to implement pro-environmental change measures. Each is measured using a Likert 0–10 scale, which respondents used to express their

opinion on the sections in the questionnaire. In each case, the value 0 referred to non-relevance of the aspect considered in the statement given in the questionnaire and 10 to maximum relevance of this aspect.

The three-dimensional structure of these 11 variables was analysed. We obtained evidence of each antecedent being one-dimensional (Table 2), indicating that stakeholder pressure and expectations of competitive advantages perceived by the managers, as well as the barriers, should be considered as independent variables.

3.2.3. Barriers of Pro-Environmental Change

Barriers that have curbed pro-environmental change were measured by four items (Table 2). These items referred to whether internal or external barriers that would have curbed the company's wishes to implement pro-environmental change measures had been perceived. Prior studies that had analysed barriers in environmental issues within firms were considered for these indicators (see the specific section within the theoretical framework).

3.3. Analysis

A simultaneous equation model between the cluster groups, the drivers, and barriers of pro-environmental change was estimated and assessed to test the theoretical model and attain the objectives of our study. The methodological approximation is specified in structural equation models. This statistical approach enables us to obtain, test, and estimate structural models on the basis of robust statistics with missing data and non-normality [88–91]. In addition, this method allows for robust testing of the mediation effects purposed in H3, decomposing between total, direct, and indirect mediation effects [92]. In this research we used the delta method to compute the standard errors of the indirect effects [89,92]. The estimation method is the full information maximum likelihood (FIML) and the program used is MPLUS (Version 8, Muthén & Muthén, Los Angeles, CA, USA) [89].

4. Results

For the purposes of contrasting the above-described hypotheses, a simultaneous equation model was estimated with two degrees of freedom, using the cluster groups generated as a dependent variable. The model's goodness-of-fit statistics enabled us not to reject the relationship structure between the variables. Consequently, the individual significance of the estimated parameters was analysed (Table 3).

Table 3. Results of the structural models.

	Stakeholder Pressure	Manager's Perception of Competitive Advantages	Internal Barriers	External Barriers	R ²
<i>Direct Effects</i>					
Manager's Perception of Competitive Advantages	0.497 *** (0.052)				0.247
Pro-environmental Change Stage	0.215 ** (0.069)	0.421 *** (0.064)	0.024 (0.071)	−0.054 (0.070)	0.313
<i>Total Indirect Effects</i>					
Pro-environmental Change Stage	0.209 *** (0.042)				
<i>Total Effects</i>					
Pro-environmental Change Stage	0.424 *** (0.060)				

Note: Goodness-of-fit indices: $\chi^2(1) = 2.983$ (p -value = 0.22); Root Mean Square Error of Approximation (RMSEA) = 0.047; Standardized Root Mean Square Residual (SRMR) = 0.031; Comparative Fit Index (CFI) = 0.992. Standard errors between brackets. ** Significant at 0.001; *** Significant at 0.000.

A general overview of the model diagram with the results of the structural models is shown in Figure 1. Firstly, the coefficient measuring the direct effect of stakeholder pressure in the pro-environmental change level is positive and significant (0.215, p -value < 0.001), so we cannot

reject H1. H2 cannot be rejected either since the coefficient relating the perception of competitive advantages with pro-environmental change is positive and significant (0.421, p -value < 0.000). If we consider the indirect effects of stakeholder pressure on the level of pro-environmental change, through managers' perception of obtaining competitive advantages, the coefficient is also significant and positive (0.209, p -value < 0.000). This result is also in line with our theoretical proposal, which means we cannot reject our mediation hypothesis contained in H3. Lastly, the coefficient showing the effect of external barriers on the level of pro-environmental change is negative, but not significant (-0.054 , p -value > 0.005); in the case of internal barriers the coefficient is also not significant (0.024, p -value > 0.005); therefore, we are forced to reject H4a and H4b in this study.

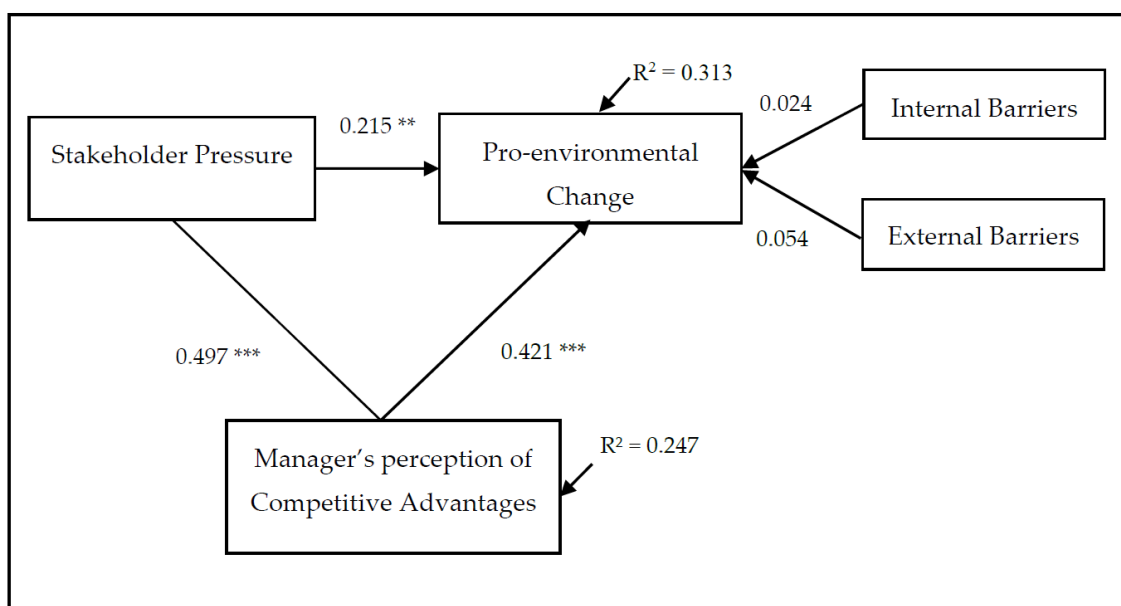


Figure 1. Model diagram with the results of the structural models. Note: ** Significant at 0.001; *** Significant at 0.000.

5. Discussion and Conclusions

The way firms impact on their natural environment is changing to respond to the way in which stakeholder requirements are also changing. Pressure from regulators and other stakeholders directly or indirectly related to firms has conditioned the environmental strategy of firms and improved their environmental performance. Managers have also realised that this improvement can be accompanied by a better economic performance. The expectations of this win-win situation is an additional incentive to make headway in the pro-environmental change process. However, attaining advanced or proactive positions in the pro-environmental change process is not without difficulties and problems that can curb their implementation or slow down their development. In this study, we offer empirical evidence that furthers our knowledge of firms' environmental behaviour by means of an integrated analysis of some of their determinants. Our objective with this study was to analyse some of the main drivers fostering pro-environmental change within firms, and also some of the main barriers that curb this process. The overall aim is to integrate these drivers with the effect of the manager's expectations of competitive advantages arising from pro-environmental change.

In general, our results confirm the ideas previously established in the literature. However, we have obtained some results that allow us to advance in the state of knowledge on the topic and are worthy of discussion. As was to be expected, and consistent with the previous literature (e.g., [4,7,8]), stakeholders exert direct pressure that has a positive influence on environmental decisions and their level of productivity. Our results confirm, therefore, that pro-environmental change is preceded and promoted

by external and internal stimuli, namely pressure from regulators and other stakeholders. Furthermore, consistent with the approaches of selective perception [17] and cognitive perception [16], our results show that the perception of managers receiving these pressures conditions the proactive level of the response. They can interpret external demands and pressures as opportunities depending on the expectations of obtaining competitive advantages, which they associate with the measures to be implemented. This interpretation, therefore, determines the response to stakeholders. Consistent with this consideration, our results confirm that there is an indirect effect of stakeholder pressure on the level of pro-environmental change through managers' perceptions of the economic benefit of these changes. In other words, pressure is more likely to transform into measures to improve the environment when these measures are interpreted as an opportunity to improve the firm's competitive position. Lastly, although managers recognised both internal and external barriers as associated with the pro-environmental change process, the results on whether these barriers prevent or slow development towards advanced environmental positions was not conclusive. The managers of the firms we analysed detected barriers, as previously highlighted by other authors (e.g., [20,24]). However, these barriers are overcome and do not effectively hinder pro-environmental change.

Based on the results of this research, the pro-environmental change process is guided by a decision-making process in which several factors are considered. This process can change and adapt to a series of factors that include stakeholder pressure, economic expectations arising from the measures to be applied, and barriers the firm comes across as it transitions towards a pro-environmental status. Our results help us to further the knowledge of the factors influencing environmental progress in firms, thus covering research gaps that have not yet been explored in depth and highlighting the role of management interpretations of environmental issues. The results we have obtained are useful for business management practitioners as they clarify some of the main factors determining environmental proactivity. The firm should understand the importance of stakeholders as environmental change forcers. When environmental pressures are high, the response process can be facilitated by managers studying and understanding any possible associated competitive advantages since this can act as an incentive. The results of this research are of interest for managers that perceive barriers and obstacles associated with the pro-environmental change process as it highlights that most companies overcome these barriers. As seen, although the barriers are detectable, they cannot offer an effective consequence in the pro-environmental change process. Therefore, firms interested in starting or advancing in the pro-environmental change process should pay more attention to possible advantages and less to associated difficulties. Policy-makers can also benefit from the contributions made by this study. They are responsible for seeking and fostering situations in which companies can improve their environmental strategy and thus control and reduce their impact on the natural environment. Our model shows the importance of creating win-win situations in firms so that managers have a positive opinion of pro-environmental change and stakeholder pressure throughout the firm is far more effective. They should adjust their environmental policies to show the opportunities of pro-environmental strategies and to put managers in the spotlight. If policy-makers can disseminate the advantages of pro-environmental change among managers (using successful case studies from other firms, for example), a new situation can be generated. This situation can satisfy all parties involved in the process, since the firm and its managers can improve the firm's competitive and environmental position and policy-makers can control and improve the environmental saturation scheme.

Despite its contributions and interesting results, our work has some limitations, although these pave the way for future lines of research. Firstly, the data supporting our work come from a geographically limited area and they are perceptual data that are not devoid of subjectivity since they were obtained using a questionnaire. Secondly, more detail in defining and studying the items on pressure exerted by various stakeholder types would have enabled us to determine how managers' responses differ for each of them. Undoubtedly, these lines of research will be followed by new studies since pro-environmental change is a subject of great interest in firms in the twenty-first century.

Acknowledgments: This work was supported by the Spanish Ministry of Economy, Industry, and Competitiveness under grant nos. ECO2013-45599-R, ECO2013-48496-C4-3-R, and ECO2016-77843-P; and Gobierno de Aragón—Fondo Europeo de Desarrollo Regional under CREVALOR and “Socioeconomía de la energía y la sostenibilidad—S128” research groups.

Author Contributions: All the authors collaborated in the development of all the parts of this work and in the paper elaboration with similar levels of effort. Specifically, Jesús Valero-Gil has focused on the theoretical background of the study and in the data collection. Pilar Rivera-Torres performed the empirical study, applied the method and carried out the data analysis. Conchita Garcés-Ayerbe contributed interpreting the results and developing the discussion and conclusions of the paper.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Indicators of pro-environmental change.

Pro-Environmental Change to What Extent in the Last Three Years ^a	
PRC	Pro-environmental practices in processes:
Prc_1	Have you installed new low-consumption (water, materials, power, heating, etc.) or low-environmental-impact equipment/devices/machinery?
Prc_2	Have you changed procedures or operative methods to reduce consumption of resources and/or energy or reduce the environmental impact?
Prc_3	Have you applied new measures to correct generated pollutants (waste purifiers, processors or recycling, filters, storage systems, etc.)?
PRD	Pro-environmental practices in products:
Prd_1	Have you changed the design of products or components to reduce the use of materials and resources and/or replace them with other less-polluting materials and resources (eco-design)?
Prd_2	Have you changed the design of your products to facilitate their recycling or reutilisation?
Prd_3	Have you considered new environmental criteria in the design and/or manufacture of containers, packaging, etc. (eco-design)?
MAN	Pro-environmental practices in management:
Man_1	Have you spent new resources on training/increasing awareness of employees in relation to environmental issues and/or innovation?
Man_2	Have you re-designed job descriptions to improve the company’s environmental impact?
Man_3	Have you appointed people to be responsible for environmental affairs in the company?
SDCH	Pro-environmental practices in the supply and distribution channels:
Sdch_1	Have you adopted new measures in stock supply and management systems aimed at improving the company’s environmental impact?
Sdch_2	Have you adopted new measures in distribution and marketing systems aimed at improving the company’s environmental impact?
Sdch_3	Have you changed product labelling/instructions to reflect environmental aspects or inform consumers about appropriate waste disposal methods?

^a Likert scale from 0 to 10.

References

- Hart, S.L. A natural-resource-based view of the firm. *Acad. Manag. Rev.* **1995**, *20*, 986–1014.
- Porter, M.E.; van der Linde, C. Toward a new conception of the environment-competitiveness relationship. *J. Econ. Perspect.* **1995**, *9*, 97–118. [[CrossRef](#)]
- Porter, M.E.; van der Linde, C. Green and competitive: Ending the stalemate. *Harv. Bus. Rev.* **1995**, *73*, 120–134.
- González-Benito, J.; González-Benito, O. A review of determinant factors of environmental proactivity. *Bus. Strategy Environ.* **2006**, *15*, 87–102. [[CrossRef](#)]

5. Lozano, R. A Holistic Perspective on Corporate Sustainability Drivers. *Corp. Soc. Responsib. Environ. Manag.* **2015**, *22*, 32–44. [[CrossRef](#)]
6. Fineman, S.; Clarke, K. Green stakeholders: Industry interpretations and response. *J. Manag. Stud.* **1996**, *33*, 715–730. [[CrossRef](#)]
7. Murillo-Luna, J.L.; Garcés-Ayerbe, C.; Rivera-Torres, P. Why do patterns of environmental response differ? A stakeholders' pressure approach. *Strateg. Manag. J.* **2008**, *29*, 1225–1240. [[CrossRef](#)]
8. Buysse, K.; Verbeke, A. Proactive environmental strategies: A stakeholder management perspective. *Strateg. Manag. J.* **2003**, *24*, 453–470. [[CrossRef](#)]
9. Bansal, P.; Roth, K. Why companies go green: A model of ecological responsiveness. *Acad. Manag. J.* **2000**, *43*, 717–736. [[CrossRef](#)]
10. Del Río González, P. The empirical analysis of the determinants for environmental technological change: A research agenda. *Ecol. Econ.* **2009**, *68*, 861–878. [[CrossRef](#)]
11. Horbach, J. Determinants of environmental innovation—New evidence from German panel data sources. *Res. Policy* **2008**, *37*, 163–173. [[CrossRef](#)]
12. Kivimaa, P. The determinants of environmental innovation: The impacts of environmental policies on the Nordic pulp, paper and packaging industries. *Eur. Environ.* **2007**, *17*, 92–105. [[CrossRef](#)]
13. Oluwole Akadiri, P.; Olaniran Fadiya, O. Empirical analysis of the determinants of environmentally sustainable practices in the UK construction industry. *Constr. Innov.* **2013**, *13*, 352–373. [[CrossRef](#)]
14. Lin, C.-Y.; Ho, Y.-H. Determinants of Green Practice Adoption for Logistics Companies in China. *J. Bus. Ethics* **2011**, *98*, 67–83. [[CrossRef](#)]
15. Del Río González, P. Analysing the factors influencing clean technology adoption: A study of the Spanish pulp and paper industry. *Bus. Strategy Environ.* **2005**, *14*, 20–37. [[CrossRef](#)]
16. Garcés-Ayerbe, C.; Rivera-Torres, P.; Murillo-Luna, J.L. Stakeholder pressure and environmental proactivity: Moderating effect of competitive advantage expectations. *Manag. Decis.* **2012**, *50*, 189–206. [[CrossRef](#)]
17. Schaltenbrand, B.; Foerstl, K.; Azadegan, A.; Lindeman, K. See What We Want to See? The Effects of Managerial Experience on Corporate Green Investments. *J. Bus. Ethics* **2016**. [[CrossRef](#)]
18. Murillo-Luna, J.L.; Garcés-Ayerbe, C.; Rivera-Torres, P. What Prevents Firms from Advancing in their Environmental Strategy? *Int. Adv. Econ. Res.* **2007**, *13*, 35–46. [[CrossRef](#)]
19. Hillary, R. Environmental management systems and the smaller enterprise. *J. Clean. Prod.* **2004**, *12*, 561–569. [[CrossRef](#)]
20. Delgado-Ceballos, J.; Aragón-Correa, J.A.; Ortiz-de-Mandojana, N.; Rueda-Manzanares, A. The Effect of Internal Barriers on the Connection Between Stakeholder Integration and Proactive Environmental Strategies. *J. Bus. Ethics* **2011**, *107*, 281–293. [[CrossRef](#)]
21. Shi, H.; Peng, S.Z.; Liu, Y.; Zhong, P. Barriers to the implementation of cleaner production in Chinese SMEs: Government, industry and expert stakeholders' perspectives. *J. Clean. Prod.* **2008**, *16*, 842–852. [[CrossRef](#)]
22. Chan, E.S.W. Barriers to EMS in the hotel industry. *Int. J. Hosp. Manag.* **2008**, *27*, 187–196. [[CrossRef](#)]
23. Murillo-Luna, J.L.; Garcés-Ayerbe, C.; Rivera-Torres, P. Barriers to the adoption of proactive environmental strategies. *J. Clean. Prod.* **2011**, *19*, 1417–1425. [[CrossRef](#)]
24. Post, J.E.; Altman, B.W. Managing the environmental change process: Barriers and opportunities. *J. Organ. Chang. Manag.* **1994**, *7*, 64–81. [[CrossRef](#)]
25. Porter, M.E. America's Green Strategy. *Sci. Am.* **1991**, *264*, 168. [[CrossRef](#)]
26. Hart, S.L. Beyond Greening: Strategies for a sustainable world. *Harv. Bus. Rev.* **1997**, *75*, 66–76.
27. Aragón-Correa, J.A. Strategic proactivity and firm approach to the natural environment. *Acad. Manag. J.* **1998**, *41*, 556–567. [[CrossRef](#)]
28. Sharma, S.; Vredenburg, H. Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strateg. Manag. J.* **1998**, *19*, 729–753. [[CrossRef](#)]
29. Berry, M.A.; Rondinelli, D.A. Proactive corporate environmental management: A new industrial revolution. *Acad. Manag. Perspect.* **1998**, *12*, 38–50. [[CrossRef](#)]
30. Carmona-Moreno, E.; Céspedes-Lorente, J.; de Burgos-Jiménez, J. Environmental strategies in Spanish hotels: Contextual factors and performance. *Serv. Ind. J.* **2004**, *24*, 101–130. [[CrossRef](#)]
31. González-Benito, J.; González-Benito, O. Environmental proactivity and business performance: An empirical analysis. *Omega* **2005**, *33*, 1–15. [[CrossRef](#)]

32. Schaefer, A.; Harvey, B. Stage models of corporate “greening”: A critical evaluation. *Bus. Strategy Environ.* **1998**, *7*, 109–123. [[CrossRef](#)]
33. Hunt, C.; Auster, E. Proactive Environmental Management: Avoiding the Toxic Trap. *MIT Sloan Manag. Rev.* **1990**, *31*, 7–18.
34. Roome, N. Developing environmental management strategies. *Bus. Strategy Environ.* **1992**, *1*, 11–24. [[CrossRef](#)]
35. Henriques, I.; Sadorsky, P. The relationship between environmental commitment and managerial perceptions of stakeholder importance. *Acad. Manag. J.* **1999**, *42*, 87–99. [[CrossRef](#)]
36. Blok, V.; Wesselink, R.; Studynka, O.; Kemp, R. Encouraging sustainability in the workplace: A survey on the pro-environmental behaviour of university employees. *J. Clean. Prod.* **2015**, *106*, 55–67. [[CrossRef](#)]
37. Lu, H.; Liu, X.; Chen, H.; Long, R.; Yue, T. Who contributed to “corporation green” in China? A view of public- and private-sphere pro-environmental behavior among employees. *Resour. Conserv. Recycl.* **2017**, *120*, 166–175. [[CrossRef](#)]
38. Dumitru, A.; de Gregorio, E.; Bonnes, M.; Bonaiuto, M.; Carrus, G.; Garcia-Mira, R.; Maricchiolo, F. Low carbon energy behaviors in the workplace: A qualitative study in Italy and Spain. *Energy Res. Soc. Sci.* **2016**, *13*, 49–59. [[CrossRef](#)]
39. Garcés-Ayerbe, C.; Scarpellini, S.; Valero-Gil, J.; Rivera-Torres, P. Proactive environmental strategy development: From laggard to eco-innovative firms. *J. Organ. Chang. Manag.* **2016**, *29*, 1118–1134. [[CrossRef](#)]
40. Artiach, T.; Lee, D.; Nelson, D.; Walker, J. The determinants of corporate sustainability performance. *Account. Financ.* **2010**, *50*, 31–51. [[CrossRef](#)]
41. Clarkson, P.M.; Li, Y.; Richardson, G.D.; Vasvari, F.P. Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *J. Account. Public Policy* **2011**, *30*, 122–144. [[CrossRef](#)]
42. Freeman, R. *Strategic Management: A Stakeholders Approach*; Pitman-Bal.: Boston, MA, USA, 1984.
43. Ferrón Vilchez, V.; Darnall, N.; Aragón-Correa, J.A. Stakeholder influences on the design of firms’ environmental practices. *J. Clean. Prod.* **2017**, *142*, 3370–3381. [[CrossRef](#)]
44. Darnall, N.; Henriques, I.; Sadorsky, P. Adopting Proactive Environmental Strategy: The Influence of Stakeholders and Firm Size. *J. Manag. Stud.* **2010**, *47*, 1072–1094. [[CrossRef](#)]
45. Winsemius, P.; Guntram, U. Responding to the environmental challenge. *Bus. Horiz.* **1992**, *35*, 12–20. [[CrossRef](#)]
46. Ramanathan, R.; Black, A.; Nath, P.; Muyldermans, L. Impact of environmental regulations on innovation and performance in the UK industrial sector. *Manag. Decis.* **2010**, *48*, 1493–1513. [[CrossRef](#)]
47. Hojnik, J.; Ruzzier, M. The driving forces of process eco-innovation and its impact on performance: Insights from Slovenia. *J. Clean. Prod.* **2016**, *133*, 812–825. [[CrossRef](#)]
48. Horbach, J.; Rammer, C.; Rennings, K. Determinants of eco-innovations by type of environmental impact—The role of regulatory push/pull, technology push and market pull. *Ecol. Econ.* **2012**, *78*, 112–122. [[CrossRef](#)]
49. Cañón-De-Francia, J.; Garcés-Ayerbe, C.; Ramírez-Alesón, M. Analysis of the effectiveness of the first European Pollutant Emission Register (EPER). *Ecol. Econ.* **2007**, *67*, 83–92. [[CrossRef](#)]
50. Junquera, B.; Del Brío, J. Preventive Command and Control Regulation: A Case Analysis. *Sustainability* **2016**, *8*, 99. [[CrossRef](#)]
51. Testa, F.; Styles, D.; Iraldo, F. Case study evidence that direct regulation remains the main driver of industrial pollution avoidance and may benefit operational efficiency. *J. Clean. Prod.* **2012**, *21*, 1–10. [[CrossRef](#)]
52. Ambec, S.; Lanoie, P. Does It Pay to be Green? A Systematic Overview. *Acad. Manag. Perspect.* **2008**, *22*, 45–62. [[CrossRef](#)]
53. Ervin, D.; Wu, J.; Khanna, M.; Jones, C.; Wirkkala, T. Motivations and barriers to corporate environmental management. *Bus. Strategy Environ.* **2013**, *22*, 390–409. [[CrossRef](#)]
54. Lee, S.Y.; Rhee, S.-K. The change in corporate environmental strategies: A longitudinal empirical study. *Manag. Decis.* **2007**, *45*, 196–216. [[CrossRef](#)]
55. Sharma, S. Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Acad. Manag. J.* **2000**, *43*, 681–697. [[CrossRef](#)]
56. Vastag, G.; Kerekes, S.; Rondinelli, D.A. Evaluation of corporate environmental management approaches: A framework and application. *Int. J. Prod. Econ.* **1996**, *43*, 193–211. [[CrossRef](#)]

57. Weng, M.-H.; Lin, C.-Y. Determinants of green innovation adoption for small and medium-size enterprises (SMES). *Afr. J. Bus. Manag.* **2011**, *5*, 9154–9163. [[CrossRef](#)]
58. Basu, K.; Palazzo, G. Corporate Social Responsibility: A Process Model of Sensemaking. *Acad. Manag. Rev.* **2008**, *33*, 122–136. [[CrossRef](#)]
59. Donaldson, T.; Preston, L.E. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Acad. Manag. Rev.* **1995**, *20*, 65–91.
60. Mitchell, R.K.; Agle, B.R.; Wood, D.J. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *Source Acad. Manag. Rev.* **1997**, *22*, 853–886.
61. Aragón-Correa, J.A.; Sharma, S. A contingent resource-based view of proactive corporate environmental strategy. *Acad. Manag. Rev.* **2003**, *28*, 71–88. [[CrossRef](#)]
62. Del Brío, J.Á.; Junquera, B. Influence of the perception of the external environmental pressures on obtaining the ISO 14001 standard in Spanish industrial companies. *Int. J. Prod. Res.* **2003**, *41*, 337–348. [[CrossRef](#)]
63. Hemingway, C.A.; MacLagan, P.W. Managers' personal values as drivers of corporate social responsibility. *J. Bus. Ethics* **2004**, *50*, 33–44. [[CrossRef](#)]
64. Zhang, B.; Wang, Z.; Lai, K. Mediating effect of managers' environmental concern: Bridge between external pressures and firms' practices of energy conservation in China. *J. Environ. Psychol.* **2015**, *43*, 203–215. [[CrossRef](#)]
65. Bansal, P. From Issues to Actions: The Importance of Individual Concerns and Organizational Values in Responding to Natural Environmental Issues. *Organ. Sci.* **2003**, *14*, 510–527. [[CrossRef](#)]
66. Przychodzen, J.; Gómez-Bezares, F.; Przychodzen, W.; Larreina, M. ESG Issues among Fund Managers—Factors and Motives. *Sustainability* **2016**, *8*. [[CrossRef](#)]
67. Dahlmann, F.; Brammer, S.; Millington, A. Barriers to Proactive Environmental Management in the United Kingdom: Implications for Business and Public Policy. *J. Gen. Manag.* **2008**, *33*, 1–20. [[CrossRef](#)]
68. Alemagi, D.; Oben, P.M.; Ertel, J. Implementing environmental management systems in industries along the Atlantic coast of Cameroon: Drivers, benefits and barriers. *Corp. Soc. Responsib. Environ. Manag.* **2006**, *13*, 221–232. [[CrossRef](#)]
69. Naranjo-Gil, D.; Hartmann, F.; Maas, V.S. Top Management Team Heterogeneity, Strategic Change and Operational Performance. *Br. J. Manag.* **2008**, *19*, 222–234. [[CrossRef](#)]
70. Dou, Y.; Sarkis, J. A multiple stakeholder perspective on barriers to implementing China RoHS regulations. *Resour. Conserv. Recycl.* **2013**, *81*, 92–104. [[CrossRef](#)]
71. Massoud, M.A.; Fayad, R.; El-Fadel, M.; Kamleh, R. Drivers, barriers and incentives to implementing environmental management systems in the food industry: A case of Lebanon. *J. Clean. Prod.* **2010**, *18*, 200–209. [[CrossRef](#)]
72. Matus, K.J.M.; Clark, W.C.; Anastas, P.T.; Zimmerman, J.B. Barriers to the implementation of green chemistry in the United States. *Environ. Sci. Technol.* **2012**, *46*, 10892–10899. [[CrossRef](#)] [[PubMed](#)]
73. McEwen, T. An examination of the barriers that impact the implementation of environmental sustainability practices in small businesses. *J. Bus. Entrep.* **2013**, *25*, 117–140.
74. Moors, E.H.M.; Mulder, K.F.; Vergragt, P.J. Towards cleaner production: Barriers and strategies in the base metals producing industry. *J. Clean. Prod.* **2005**, *13*, 657–668. [[CrossRef](#)]
75. Pinget, A.; Bocquet, R.; Irege, C. Barriers to Environmental Innovation in SMEs: Empirical Evidence from French Firms. *Conf. Int. Manag. Strat. XXIII* **2015**, *18*, 132–155. [[CrossRef](#)]
76. Pinzone, M.; Lettieri, E.; Masella, C. Proactive Environmental Strategies in Healthcare Organisations: Drivers and Barriers in Italy. *J. Bus. Ethics* **2015**, *131*, 183–197. [[CrossRef](#)]
77. Walker, H.; Di Sisto, L.; McBain, D. Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *J. Purch. Supply Manag.* **2008**, *14*, 69–85. [[CrossRef](#)]
78. Zhu, Q.; Geng, Y. Drivers and barriers of extended supply chain practices for energy saving and emission reduction among Chinese manufacturers. *J. Clean. Prod.* **2013**, *40*, 6–12. [[CrossRef](#)]
79. Zilahy, G. Organisational factors determining the implementation of cleaner production measures in the corporate sector. *J. Clean. Prod.* **2004**, *12*, 311–319. [[CrossRef](#)]
80. Zutshi, A.; Sohal, A. Environmental management system adoption by Australasian organisations: Part 1: Reasons, benefits and impediments. *Technovation* **2004**, *24*, 335–357. [[CrossRef](#)]
81. Liu, Y. Barriers to the adoption of low carbon production: A multiple-case study of Chinese industrial firms. *Energy Policy* **2014**, *67*, 412–421. [[CrossRef](#)]

82. Setthasakko, W. Barriers to implementing corporate environmental responsibility in Thailand: A qualitative approach. *Int. J. Organ. Anal.* **2009**, *17*, 169–183. [[CrossRef](#)]
83. Matus, K.J.M.; Xiao, X.; Zimmerman, J.B. Green chemistry and green engineering in China: Drivers, policies and barriers to innovation. *J. Clean. Prod.* **2012**, *32*, 193–203. [[CrossRef](#)]
84. Van Hemel, C.; Cramer, J. Barriers and stimuli for ecodesign in SMEs. *J. Clean. Prod.* **2002**, *10*, 439–453. [[CrossRef](#)]
85. Valor, C.; Carrero, I.; Redondo, R. The Influence of Knowledge and Motivation on Sustainable Label Use. *J. Agric. Environ. Ethics* **2014**, *27*, 591–607. [[CrossRef](#)]
86. Rorie, M. An integrated theory of corporate environmental compliance and overcompliance. *Crime Law Soc. Chang.* **2015**, *64*, 65–101. [[CrossRef](#)]
87. Lee, W.E.; Sweeney, J.T. Use of Discretionary Environmental Accounting Narratives to Influence Stakeholders: The Case of Jurors' Award Assessments. *J. Bus. Ethics* **2015**, *129*, 673–688. [[CrossRef](#)]
88. Satorra, A.; Bentler, P.M. Corrections to test statistics and standard errors in covariance structure analysis. In *Latent Variables Analysis: Applications to Developmental Research*; von Eye, A., Clogg, C.C., Eds.; Sage Publications, Inc.: Thousand Oaks, CA, USA, 1994; pp. 399–419.
89. Muthén, L.K.; Muthén, B.O. *Mplus User's Guide*, 7th ed.; Muthén & Muthén: Los Angeles, CA, USA.
90. Satorra, A.; Bentler, P.M. A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika* **2001**, *66*, 507–514. [[CrossRef](#)]
91. Bentler, P.M. *EQS Structural Equations Program Manual*; Multivariate Software Inc.: Encino, CA, USA, 2006.
92. Bollen, K.A. Total, Direct, and Indirect Effects in Structural Equation Models. *Sociol. Methodol.* **1987**, *17*, 37–69. [[CrossRef](#)]



© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).