

O.R. Applications

Evaluating environmental regulation in Spain using process control and preventive techniques

María D. López-Gamero*, Enrique Claver-Cortés, José F. Molina-Azorín

Department of Management, University of Alicante, Campus de San Vicente del Raspeig, Ap. 99, 03080 Alicante, Spain

Received 10 January 2006; accepted 29 January 2008

Available online 7 February 2008

Abstract

Because environmental regulations may be adjusted over time to reflect updated understanding or new circumstances, there may be scope for strategic behaviour too. Regulations affect not only current emission levels, but also the effect on investment in R&D or new plant and equipment and, consequently, on competitive priorities. Although most of the literature devoted to the environmental regulation highlights the effects that legislation has on the adoption of decisions related to the environment as a competitive opportunity, there is actually no strong empirical evidence which supports that argument. This is why the present paper has as its aim to identify (1) how the regulation concerning the natural environment differs across sectors and (2) how it can influence managerial perceptions of the role to be played by the natural environment as a competitive opportunity. The research work has been carried out in two phases. The first phase involved comparative case studies of eight Spanish firms; during the second, the propositions emerging from the first phase were tested through a structural equation model of 239 hotels and 208 firms affected by the IPPC law in Spain. This paper has made a contribution to the existing research literature through the examination of the similarities and differences concerning managerial decision-making in the field of natural environment regulations. Moreover, a contact point between the Porter hypothesis and its criticism is offered. In relation to practical implications, updated information about the European, National and Community environmental legislation is presented that affects firms from eight sectors. In this context, legal environmental requirements are identified so as to make easier the adoption of managerial decisions which guarantee compliance with the law and avoidance of fines.

© 2008 Elsevier B.V. All rights reserved.

Keywords: Environment; Government; Pollution control and prevention; Competitiveness; Multivariate statistics

1. Introduction

Regulations, legislation, and competitive pressures have made organizations more aware of the natural environment (Sarkis, 1998). Being environmentally responsible is no easy task, and the concept of environmentally responsible manufacturing is surrounded by a number of obstacles. Firstly, the confusion over what is meant by being green. Secondly, government environmental standards and requirement are constantly changing, are not well defined and, at times, are in conflict with one other. Thirdly, man-

agers believe that minimal compliance to the regulation is sufficient, since the environment does not have a direct impact on competitive priorities. Finally, managers are unsure how to deal with the obstacles introduced by environmentally responsible manufacturing in an environment of increasing complexity (Handfield et al., 2001).

Because the environmental regulation may be adjusted over time to reflect updated understanding or new circumstances, there may be scope for strategic behaviour. A regulator should anticipate how the regulation will affect not only current emission levels, but also the effect on investment in R&D or new plant and equipment by regulated firms (Wu and Chang, 2003; Cabugueira, 2004). In the long run, the dynamic effects of policy on incentives to innovate may prove more important than the static effects of the

* Corresponding author. Tel./fax: +34 965903606.

E-mail address: md.lopez@ua.es (M.D. López-Gamero).

policy on emissions (Tarui and Polasky, 2005). This involves complying with the regulation and adopting standard industry practices which, according to the institutional theory, would be the results of pressures from industry associations (King and Lenox, 2000), environmental NGOs, government regulators, competitors' actions and other industry stakeholders (Sharma, 2000). One of the criticisms of the command-and-control approach is that it is a blunt instrument. Governments generally employ ambient-, technology- or performance-based standards (Watson and Emery, 2004).

Majumdar and Marcus (2001) suggest that too much legislation is as problematic as too much discretion. An appropriate balance between rules and discretion is thus needed. The aim should be to design laws and rules which offer the actors an effective freedom of choice within a system of constraints. This means more flexible regulation structures called voluntary normative (Cabugueira, 2004): co-regulation processes, in which the firms join the public regulator in the discussion of environmental objectives and in the definition of the instruments which are to be used at the implementation (Buysse and Verbeke, 2003) and self-regulation processes, where firms decide to act on their own regarding the preservation of the environment, establishing the objectives and implementation processes and submitting them both for the commercial approval by the firm and for the institutional approval by the public regulator (Antón et al., 2004).

A voluntary normative represents a consistent pattern of firm actions taken to reduce the environmental impact of operations, not to comply with the environmental regulation or to conform to standard practices. Rather, according to the strategic choice theory, such actions would be the product of a wide range of organisational and managerial choices. Sharma (2000) suggests that, even in a sector subject to strong institutional pressures, managers exercise their strategic choice when they undertake environmental strategies which are linked to managerial interpretations of environmental issues as threats or as opportunities (Sharma and Nguan, 1999; Sharma et al., 1999; Slater and Angel, 2000). These interpretations exert a critical influence on the adoption of pollution prevention activities (Triantis and Otis, 2004). The negative attitudes may create norms that limit environmental management objectives to regulatory compliance. These norms potentially inhibit source reduction activities because the practices involved often exceed the regulatory requirements. If environmental managers assess the norms in their organisations as confined to regulatory compliance, they would be hesitant to pursue source reduction opportunities (Ashford, 1993; Dieleman and De Hoo, 1993). Three attributes help to explain managers' reactions of environmental issues as opportunities or threats: negative or positive emotional associations; loss or gain considerations; and a sense of the issues as controllable or uncontrollable (Sharma, 2000).

The motivations behind this research are two-fold. Firstly, although most of the literature related to the envi-

ronmental regulation highlights its effects on managers' perceptions of the environment as a competitive opportunity, there is no strong empirical evidence which supports that argument. Secondly, within the environmental strategic management area, even less attention has been given to the distinction between the different types of environmental regulation ('command and control' regulation and 'voluntary normative') and their relationship with the strategic decision-making process. This paper has used a mixed-method research design for the purpose of identifying (1) how the regulation related to the natural environment differs across sectors and (2) how it can influence managerial perceptions of the role to be played by the natural environment as a competitive opportunity. A qualitative approach has been applied to answer these questions, because there is an undeniable need for deep understanding and local contextualisation, as well as for the presentation of the points of view of the managers interviewed (Miles and Huberman, 1994). Then, a quantitative study was done in order to confirm the interpretation of qualitative findings and to generalise them to two samples, namely hotel sector and group of firms affected by IPPC law sector.

A contribution has been made to the existing research literature through the examination of the similarities and differences in managers' perceptions about the regulation concerning the natural environment in eight Spanish firms. The proposal of different environmental regulation levels in the sectors is followed by an analysis of the nature, sources, extent and dimensions of the environmental regulatory which are going to impact on managerial perception. Moreover, a contact point between the Porter hypothesis and its criticism is identified when the environmental legislation adopts a preventive approach and the Porter hypothesis is analysed from a dynamic point of view. Finally, something similar can be said about the practical implications. Updated information about European, National and Community environmental legislation which affects firms from eight sectors is presented. In this context, legal environmental requirements are identified that can make it easier for managers to comply with the law and, consequently, to avoid being fined. Possible repercussions of the environmental legislation on firms' activities are shown too.

The paper has been structured as follows. After reviewing the literature dedicated to the environmental regulation and the managerial perception and attitude toward the environment, the IPPC law is introduced. Next, the qualitative and quantitative studies are presented. The paper finishes with some conclusions which will reflect the theoretical, research and managerial implications of this research work.

2. Literature review

A large number of publications have paid attention to the environmental regulation-competitiveness interaction. Some authors suggest that environmental regulations can

Download English Version:

<https://daneshyari.com/en/article/481575>

Download Persian Version:

<https://daneshyari.com/article/481575>

[Daneshyari.com](https://daneshyari.com)