

# The Opinions of European Companies on Corporate Social Responsibility and Its Relation to Innovation

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## Abstract

In recent years there has been greater concern among companies to include responsible practices in their goals. To achieve this aim, companies are beginning to manage economic, social and environmental factors following socially responsible practices. Adopting a strategy of Corporate Social Responsibility (CSR) may influence the different policies implemented by the company, one of which is that regarding innovation. In this study, we analyze the opinions of 95 European companies, 42 of which form part of the Dow Jones Sustainability Index (DJSI) and 53 of which belong to the Dow Jones General Index (DJGI), concerning their CSR policy, the innovation carried out and the relation between the two concepts. Our results show that the DJSI companies, unlike those belonging to the DJGI, consider their CSR strategy to be a key factor in generating competitive advantages and profits. Moreover, the companies surveyed have implemented innovations that are more incremental than radical, and these innovation practices are found to be influenced by CSR strategies.

**Keywords:** *Corporate Social Responsibility, Innovation, Resource and Capabilities Theory, European Companies, Competitive Advantages, Environmental Aspects, Incremental Innovations, Radical Innovations.*

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## 1. Introduction

In the last few decades, the goals that companies set out to achieve have been expanding; the operations carried out may affect part of society such that it

begins to demand practices of corporate social responsibility. As this occurs, companies need to take steps and consider this question in formulating their strategies. Thus, the practices of corporate social responsibility are coming to

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form part of business culture. The criteria of corporate responsibility include economic and environmental elements, together with that of social responsibility (Hedstrom et al., 1998; Bansal, 2005). Therefore, practices related to environmental and social goals are frequently contained in the set of strategies known as the Corporate Social Responsibility (CSR) of companies (Adams & Zutshi, 2004:34; King, 2002).

CSR is a broad concept that includes aspects related to economic, social and environmental spheres (the “triple bottom line”) (Carroll, 1999; Boatright, 1993). The adoption of CSR practices may produce a cultural change among companies. To the extent that they concern, among other aspects, reducing companies’ environmental footprint, as well as improving safety, businesses need to adapt their activities, organizational structures, processes and products to bring them into line with CSR policies, bearing in mind the possible need to implement innovation-based activities (Castelo & Lima, 2006:121; Slowinski et al., 1997). McWilliams & Siegel (2001) established, from a theoretical standpoint, that CSR-oriented differentiation may require investment in research and development. In addition, according to Hart & Milstein (2003), innovation is one of the key factors underlying the achievement of CSR objectives and ensuring a company’s continuity.

In order to make an empirical study of the incidence of CSR practices on companies, we analyzed the opinions of a set of European companies that follow CSR practices, and of others that do not consider them relevant to their strategies, with special regard to the following is-

sues:

- a) their attitude with respect to CSR policies,
- b) the policy developed with regard to innovation, and
- c) the relation between these two aspects.

The aim of this study is to analyze the behaviour of companies concerning these questions, but not the result of such behaviour.

Research into the adoption of CSR practices by European companies is still at an embryonic stage (McWilliams et al., 2006), as the application of CSR policies by these companies, as well as the following of sustainability guidelines, is a relatively recent phenomenon in Europe (Cetindamar & Husoy, 2007). This explains the interest that may be provoked by studies such as the present.

The paper is organized as follows: Section 2 presents the background concerning CSR and innovation in companies, together with the hypotheses that are tested in this study. The following section describes the methodology used, after which Section 4 provides some comments on the results obtained, and finally, Section 5 draws the main conclusions of the study.

## 2. CSR and innovation. Working hypotheses

The consideration of CSR as an element that adds value to companies represents a change of philosophy in the business world. The concept of CSR can be considered from many standpoints, and in this study we examine CSR in the sense of the types of behaviour or ethical practices followed by a company in response to market forces or legal restrictions, and

in consequence with its ethical principles (Carroll, 1999). In our view, business activity involves the performance of a series of processes and we believe companies can consider themselves responsible for the results and impacts derived from their activity (Wartick & Cochran, 1985). This approach is contained in the framework of one of the currents of opinion concerning CSR initiated in the late 1990s, the object of which was to measure the initiatives adopted in this field (Carroll, 1999). Different companies normally define the content of their explicit preferences as regards CSR issues and these preferences will lead to the adoption of specific decisions and actions (Wood, 1991). Thus, we believe that the adoption of CSR policies involves a change of culture and philosophy among companies, as they incorporate ethical criteria into their actions, which affect their code of business practice.

There are a large number of theoretical standpoints from which CSR may be studied (McWilliams et al., 2006); in the present paper, we take as a basic framework the theory of resources and capacities (Wernerfelt, 1984). The resource-based approach has become the predominant paradigm in research into management strategy (Peteraf, 1993). In accordance with this latter perspective, it is perfectly foreseeable that CSR criteria will influence companies' decisions and actions.

According to the resource and capacity-based approach, the earnings of the companies within a given business sector can be accounted for on the basis of the differences in their resource provisions (Barney, 1986a, 1986b, 1991; Peteraf, 1993; Wernerfelt, 1984). Traditionally,

companies have been considered to generate competitive advantages over time on the basis of the good use made of resources when these are valuable, scarce, and impossible to substitute or copy (Barney, 1995:56). For Hoopes et al. (2003:890), inimitability is the most significant characteristic, and for Barney (2001:45), it is the most important contribution of the resource-based approach.

For many people, CSR strategies represent the greatest opportunity currently available to the business world. Opportunities are of various types, and include avoiding the threats to growth posed by operational restrictions, and achieving greater success through new products and new technologies (Hedstrom et al., 1998:5). Costs can be reduced, risks lessened, sales growth promoted or market share increased, by means of product innovation (Hart & Milstein, 2003) and by seeking a client profile with an understanding of CSR objectives (McWilliams & Siegel, 2001). Many of these actions may require innovations. In this respect, we believe that innovation in the business world can be studied from the standpoint of CSR-based practices.

In general, we may say that in Europe, CSR practices are focused on proactive policies related to the environment and human resources (Social Investment Forum, 2003:39). This leads us to consider that the strategies developed by companies will to a large extent be related to the fulfilment of requirements of an environmental nature, such as reducing emissions, obtaining energy savings, producing lower quantities of waste matter and making provisions for its recycling. In addition, it will be necessary to search for other technologies that will

enable companies to reach their CSR goals.

In the light of these considerations, we studied the concern for CSR among companies, their policies on disclosure, and how CSR is put into practice. Thus, we were able to distinguish companies with serious concern for CSR issues from those that did not consider CSR relevant to their strategies. Subsequently, we studied specific aspects, such as the incidence of CSR on the generation of competitive advantages and of company results, together with aspects of particular importance to these companies, with special reference to the question of the environment.

Therefore, the following three hypotheses were proposed:

H<sub>1</sub>. The companies that implement CSR practices are more likely than those that do not to consider CSR strategy to be a key factor in the generation of competitive advantages.

H<sub>2</sub>. The companies that implement CSR practices consider it to have a positive effect on company results.

H<sub>3</sub>. The companies that implement CSR practices consider, unlike those that do not, CSR strategy to involve a consideration of environmental aspects.

Obtaining competitive advantages is related to the use made of resources in which CSR strategies play a relevant role. As remarked above, innovation may be one of the scarce, inimitable resources on which a company relies to achieve these types of advantages.

Technology plays a crucial role in a company's competitiveness, and is one

of the factors that poses greatest difficulty for management. As discussed below, studying technology, from the CSR standpoint, can facilitate its analysis. Innovation is fundamental to value creation, fostering company competitiveness and productivity (Achrol & Kotler, 1999; Badaracco, 1991). Organizations that decide to introduce innovation criteria into some or all aspects of the business increase their opportunities and competitive advantages in the market (Trillo & Pedraza, 2007: 1419).

Innovation can be viewed as a measure of the application of knowledge (Balkin et al., 2000; Díaz et al., 2004; Soo et al., 2002). By means of innovation, it is possible to achieve changes in technology, comprising the materialization of potentially profit-generating ideas in products, processes or services (Muñoz et al., 2007).

Dory (2005) claimed that innovation can be considered an effective exploitation of new ideas, using a foundation of existing knowledge to create new products and services, or to develop existing ones. Innovation requires a social process of knowledge and resource exchange, together with the learning of the necessary competences, derived from interactions with interested parties.

In a similar line, Goh (2005) relates innovation to knowledge, observing that companies must create knowledge, new ideas and good management practices in order to innovate effectively. This author believes it is possible to obtain advantages from innovation in knowledge, but that to do so it is necessary to identify, create and acquire new knowledge on a continual basis, and also to foster an atmosphere of collaboration, both within

the organization and outside it. Companies, as well as gaining knowledge from their own experience, learn constantly from their relations with diverse external sources (Freeman, 1987).

Technological innovations can be classed as either radical or incremental. Radical innovations are those that give rise to products or processes that are not based on prior technological knowledge or on transmitted knowledge (Tushman & Anderson, 1986). Radical innovations generate new knowledge that may favour continual innovation (Knott, 2003). This type of innovation involves a rupture with current technological thinking (Gatignon et al., 2004) and involves a higher degree of uncertainty with respect to the success achieved from the investments made. The goal of incremental innovations is to develop already-existing technologies. Experience with certain technologies leads to a greater capacity for absorption and to greater competitiveness in the use of such technologies, by enabling the organization to elaborate specialized capabilities (Muñoz et al., 2007).

In the present study, we seek to determine whether companies base their present innovations on earlier ones (i.e. incremental innovation) or whether they carry out innovation of a radical type. In addition, we examine the question of whether there are significant differences concerning the type of innovation carried out (incremental or radical) in companies that follow CSR policies, with respect to those that do not consider CSR to be relevant to their strategies. Although a cultural change such as that involved in incorporating CSR policies may require radical innovations, we believe the latter need a longer time frame

in which to be achieved. Faced with a new phenomenon and a cultural change, it is necessary to create a knowledge base enabling the company subsequently to develop an incremental innovation.

The sources of technological knowledge are those data accumulated by companies, which remain within the organization in a more or less stable form, and which have the potential to create value when appropriately exploited and incorporated, more or less immediately, into technologically innovative products and/or processes (Tripsas, 1997; Yli-Renko et al., 2001; Matusik, 2002; Zahra & Nielsen, 2002). Initially, companies will adapt existing processes to the cultural changes, and so we believe that the innovations in this case will mainly be of the incremental type. Therefore, we propose the following hypothesis:

H<sub>4</sub>. Companies that implement CSR practices introduce innovations that are more incremental than radical.

The strategies of CSR can mean that companies evolve from protection-oriented measures to a redesign of their activities, taking into account new technologies (Bansal, 2002). From the standpoint of CSR, the measures adopted may produce changes in processes, such as reducing the environmental impact, increasing safety or enabling the recycling of materials; they may also affect products, for example by improving the quality of the materials employed. Innovation influences the efficient use made of energy, and may reduce the volume of materials consumed (Bansal, 2002:128). Thus, actions taken in accordance with CSR criteria sometimes involve changes in products that may be toxic, in processes, and even, in some cases, may give

rise to a change in the company's activity. Hence, in the longer term, some firms evolve and carry out radical changes, repositioning themselves by the transformation of their activities towards others that reduce their impact on the environment; such is the case, for example, of the companies Dupont and Monsanto.

Traditionally, various types of innovation have been identified: product innovation, process innovation, market innovation, input innovation and organizational innovation (Schumpeter, 1934). However, recent empirical studies normally distinguish two types, those of product and process innovation (Sherman et al., 2000; Chryssochoidis and Wong, 2000; Di Benedetto, 1999). According to Trillo & Pedraza (2007: 1422), product innovation is that which introduces changes at some stage of the production process and commercialization of the product; it may affect the product's design, composition or presentation to the market. On the other hand, process innovation focuses on the way in which the product innovation is perceived and implemented, and influences the stages of product conception, creation, research, development, production and commercialization, as well as the way in which these areas are interrelated. Innovation – especially as it affects products – is recognised as a key element in the process of value creation (Han et al., 1998; Weerawardena, 2003).

In this study, we take it that CSR strategies involve a concern for environmental and social aspects. We set out as one of our goals that of determining whether it is necessary to make an innovation-based effort in relation to such strategies. This would involve investigating

whether concern for CSR by companies influences the innovation they carry out; with this in mind, we analyze the type of innovation in which concern for CSR is materialized. It is also of interest to study the existence of differences with companies that do not share this concern for CSR. Taking these aims into account, we propose the following hypothesis:

H<sub>5</sub>. Companies that implement CSR practices are of the opinion that adopting such practices influences the innovations made.

### 3. Methodology

This study is focused on European firms, where the degree of disclosure of CSR strategies is fairly homogeneous, as companies normally follow standard guidelines and indexes in drawing up their reports (Doh & Guay, 2006).

To test the hypotheses, we drew up a questionnaire of 27 items, grouped into three blocks. The first of these was aimed at revealing the company's attitude toward CSR. The second block was focused on its innovation strategy and practices, and the third one was concerned with the relation between these two concepts. The full questionnaire is provided in Annexe 1. Our intention with this questionnaire was to obtain data on business attitudes towards these aspects. The items in the questionnaire were measured on a 5-point Likert scale (the Likert scale grades replies from 5 (highest) to 1 (lowest)), and the population was comprised of European companies listed on the Dow Jones World Index, specifically the Dow Jones General Index (DJGI)<sup>1</sup> and the Dow Jones Sustainability Index (DJSI), in the under-

standing that among the companies included in these two indexes there exist differences with respect to the observance of CSR practices. The DJSI is calculated from data on firms that participate in the DJGI. The DJSI is made up of firms that are leaders in CSR practices and are among the top 10% of the firms in the DJGI.

The DJSI is a multi-dimensional construct intended to enable the measurement of CSR practices; it is based on economic, social and environmental indicators, and enjoys broad social backing. Although some studies have employed other multi-dimensional measures (McWilliams & Siegel, 2000; Wenzel & Thiewes, 1999; Griffin & Mahon, 1997; Stanwick & Stanwick, 1998), we selected the DJSI because its requirements concerning CSR are more comprehensive<sup>2</sup> than those applied by other indexes of sustainability<sup>3</sup> (SustAinability, 2004) and are similar to those proposed in the CSR guides - the Global Reporting Initiative (GRI) and the Global Compact<sup>4</sup>. The DJSI includes innovation among the parameters considered and it was initiated in 1999, on the basis of firms that had met the requirements of the index during 1998. This index is prior to that of the other

indexes developed in Europe<sup>5</sup> and the DJSI takes into account the adoption of business practices based on CSR as a strategic decision capable of influencing the firm's profitability (Husted and Salazar, 2006).

We sent the questionnaire to all the European companies quoted on the DJSI and DJGI: 113 European companies belonging to the DJSI (these firms follow and disclose CSR practices and observe the economic, environmental and social criteria required by the Sustainable Asset Management Group (SAM)), and 1084 European companies included within the DJGI in the period of our study. These companies are non-financial firms; for the firms belonging to the DJSI we examined the companies that had been included in this index from its constitution.

We sent the questionnaire by e-mail, addressed to the Chair of the Board. The first such mailing took place in October 2006, followed later by a reminder. Reception of replies was closed at the end of March 2007. The CSR outlook of the companies examined is supplemented

<sup>1</sup> This index is now termed the Dow Jones Wilshire Global Index.

<sup>2</sup> The DJSI includes indicators on the following dimensions: corporate governance, investor relations, management, codes of conduct, customer relations, environmental policy and performance, labour practice, human capital development, talent attraction and retention, organizational learning, standards for suppliers, stakeholder engagement, corporate philanthropy and social reporting.

<sup>3</sup> Other indexes that have been created upon criteria of sustainability include the FTSE4Good and the Domini Social Index (KLD). These have been developed by organizations of acknowledged standing and have lent credibility to investment in companies that follow criteria of sustainability. More recent additions include the

ASPI Eurozone Indexes, the Citizens Index and the KLD-Nasdaq Social Index.

<sup>4</sup> Global Reporting Initiative is a "Sustainability Reporting Guideline" for voluntary use by organisations reporting on the economic, environmental and social impacts. Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development. The Global Pact is a UN-sponsored international initiative. It is aimed at encouraging firms to make a voluntary commitment to social responsibility, via the adoption of the Ten Principles based on human, occupational and environmental rights and on the fight against corruption.

<sup>5</sup> Although the companies that comprise the DJSI Stoxx are European, this Index was set up in 2001 and so is not suitable for the purposes of the present study. The FTSE4GOOD database was created in 2002. The Domini Social Index was established in 1990 and is a reference point for investment in sustainability for US companies.

with a review of the information disclosed on the subject of CSR, in the form of CSR reports or the companies' annual reports. The final sample was made up of 95 companies, 42 of which form part of the DJSI, while 53 belong to the DJGI. The response rates were 37% for the DJSI firms and 5% for DJGI firms. The response rate for DJSI was higher than that for the DJGI companies, which could be an indicator of the interest among the former companies in disclosing the effort they make with respect to CSR.

#### 4. Results

The questionnaire results are shown in Table 1, which is divided into three blocks. For each question, we show the mean score and the standard deviation obtained for the two groups of companies studied (DJSI and DJGI). In addition, in order to determine the degree of differentiation in the replies between the two groups of companies, the final column shows the results of the T test.

In this study, we make an initial distinction between companies that belong to the DJSI and those that belong to the DJGI, in the supposition that the two differ with respect to CSR practices. This hypothesis is tested by examination of the questionnaire results and by analysis of the information disclosed by the companies (Annual Report)<sup>6</sup>. As can be seen in Table 1 (Panel A), for the questions related to the company's degree of commitment to CSR (Items 1-

13), there are significant differences,  $p < 0.01$ , between the DJSI and the DJGI companies. The former show a higher degree of agreement with the questions concerning CSR than do the DJGI companies. In the case of the DJGI companies, we observed a higher degree of dispersion among replies than with the DJSI companies, which reflects greater differences of opinion on the question of CSR among DJGI companies than among DJSI companies.

In addition, in order to determine whether the initial classification was appropriate, a cluster analysis was carried out of the companies that had completed the questionnaire, to sort them into homogeneous groups. The K-means non-hierarchical grouping method was applied to the responses to the questions related to CSR. The companies, thus, were sorted into two groups, one comprising the DJSI companies and the other with those belonging to the DJGI. The results of the cluster analysis confirmed the original classification of the companies into two groups – DJSI and DJGI. This classification, therefore, was considered an appropriate one.

It is quite clear that the DJSI companies are concerned about CSR-related issues. These companies consider CSR to be a very important aspect of their activities (item 1). This degree of importance ascribed to CSR by DJSI companies has grown in recent years (item 4); in most cases, it is determined, moreover, by the Board of Directors, which makes it one of the strategic factors on which companies base their actions, which confirms the statement to this effect by Husted and Salazar (2006). Moreover, the DJSI companies consider CSR strategy to be a key factor in generating competitive ad-

<sup>6</sup> In general, the information contained in company reports corresponds to that in the replies received, which leads us to believe that company strategies concerning CSR correspond to their opinions expressed by their key executives.



vantages (Item 2), with a mean score assigned in this respect of 4.64. This opinion is in line with positions defended from a theoretical standpoint (Husted and Salazar, 2006; Adams and Zutshi, 2004; King, 2002). On the contrary, the DJGI companies did not present an agreed opinion on this issue,

with a mean score of 2.9. Therefore, from an empirical standpoint, hypothesis  $H_1$  is confirmed for the companies examined in this study.

In addition, and concerning company management, the DJSI companies believe that the CSR strategy is aimed at

**Table 1. Panel A. Statistics of the questionnaire results concerning CSR**

	DJSI Firms		DJGI Firms		T-test (p-value)
	Mean	Standard Deviation	Mean	Standard Deviation	
CSR					
1. CSR is a very important concern for your company	4.73	0.47	2.85	0.97	0.001**
2. In your company, the CSR strategy is a key factor in generating competitive advantages	4.64	0.67	2.90	1.00	0.000**
3. In your company, the CSR strategy is aimed at creating future business opportunities, such as opening up new market sectors	3.91	0.83	2.85	0.90	0.007**
4. In your company, the importance of CSR has increased in recent years	4.64	0.67	3.38	0.77	0.000**
5. The company follows a policy of disclosure with respect to its CSR practices	4.91	0.30	3.38	0.87	0.000**
6. The edition of CSR Guides has helped determine the aspects of CSR that are disclosed by your company	4.82	0.40	3.23	1.30	0.001**
7. Adoption of the CSR strategy involves taking environmental aspects into consideration.	4.82	0.40	2.77	0.83	0.000**
8. The disclosure of CSR practices in your company is related to the demands of stakeholders (investors, institutions, clients, etc.) in this respect	4.82	0.40	2.54	0.66	0.000**
9. The adoption of CSR practices in your company has a value added effect for stakeholders (profits, remuneration, working environment, product quality, etc.)	4.82	0.40	2.77	1.01	0.000**
10. The CSR strategy depends on or is supervised or drawn up by the Board of Directors	4.64	0.50	2.92	0.95	0.000**
11. The CSR practices in your company are audited / certified / confirmed by external agencies	4.73	0.47	2.31	1.38	0.000**
12. The adoption of CSR practices in your company has a positive effect on the company's short-term results (reductions in costs, increases in sales, etc.)	4.00	0.77	2.15	0.38	0.000**
13. The adoption of CSR practices in your company has a positive effect on the company's long-term results (new market sectors, change of activity, etc.)	4.55	0.69	3.15	1.14	0.002**

\*\*  $p < 0.01$

creating future business opportunities, such as opening up new market sectors (item 3); however, this latter item is given a lower score (mean score 3.91) than the capacity of CSR to generate competitive advantages. Thus, adopting CSR practices does influence the management of these companies, by generating competitive advantages and creating future business opportunities.

The appearance of CSR guidelines has made it possible to establish yardsticks and thus indicators enabling the management and measurement of results. These guidelines also enable companies to systematize the information disclosed so that it is comparable, while at the same time they help bring about standardised CSR measures for use as a management tool. Systematization and the establishing of standards means that practices can be audited or certified externally, a policy that is followed by most of the DJSI companies (items 5 and 6). The disclosure of information can be employed as a political tool to avoid social pressure (Parker, 1986:76).

Unlike the DJSI companies, the DJGI companies do not believe CSR to be very important for their business (item 1, mean score 2.85), although they do state that the importance of CSR has grown in recent years, and are considering following a policy of disclosure with respect to their CSR practices (items 2 and 4, mean score 3.38). It can be said that the motivation among these companies to adopt and disclose CSR practices does not arise from the fact that they consider CSR to be a key factor in generating competitive advantages (item 3, mean score 2.90). Disclosing this information, hence, must be due to some other kind of motivation, such as the requirements

of the capital market on which they are quoted, pressure by stakeholders or the wish to improve the company's reputation.

With respect to the influence of CSR practices on company results (items 12 and 13), the DJSI companies consider that the effect of these practices on their own results will be positive, and this is borne out in the literature (López et al. 2007; Simpson & Kohers, 2002), although the respondents seem to expect these results to be greater in the long term (4.55) than in the short term (4.00). These scores enable us to accept hypothesis H<sub>2</sub>. More immediately, many of the practices related to CSR are aimed at meeting current legal requirements in the environmental field or concern human resources, which may lead to cost reductions by rationalizing the use of resources, or improving technologies and motivating staff, reducing staff turnover or improving their productivity. It seems reasonable that CSR strategies should be more effective in the long term, as their influence may well be on the company as a whole; furthermore, technologies may be developed in accordance with the company goals set out. It might be necessary for a certain period of time to elapse to demonstrate that CSR involves a cultural change that will be gradually be brought about. We believe that CSR policies need time to become consolidated and to begin to produce results (Lee et al., 1996; Brown & Svenson, 1998; Souitaris, 2002).

Although the DJSI companies consider CSR practices to influence company results, they report with greater emphasis (mean score 4.82) that the adoption of CSR practices is related to demands from stakeholders (item 8) and that it

produces added value for them (item 9). The results related to stakeholders (profits, remuneration, working environment or product quality) can be considered short term effects. It is confirmed that companies' decisions to follow CSR practices are motivated by factors of business (Williamson et al., 2006), but they also consider these practices to have greater effects on stakeholders in the short term.

The opinions of the DJGI companies differ significantly from those of the

DJSI ones. For the latter, the adoption of CSR practices constitutes a strategic decision that will influence diverse company policies (innovation, human resources, communication with stakeholders) and will require information to be obtained on these aspects so that they may be appropriately addressed. For the DJGI companies, however, CSR does not comprise a strategic factor in their management, and its effects on company results are not important. It may be said that among the DJGI companies there is growing interest in disclosing informa-

**Table 1. Panel B. Statistics of the survey results concerning innovation.**

	DJSI Firms		DJGI Firms		T-test (p-value)
	Mean	Standard Deviation	Mean	Standard Deviation	
INNOVATION					
14. Your company develops its own technology and does not externalize R+D+I activity	3.85	0.60	4.62	0.77	0.000**
15. Current innovation in your company is grounded upon prior innovation (incremental innovation)	4.64	0.50	3.85	0.55	0.002**
16. The innovation policy in your company is oriented towards inventions (radical innovation)	3.55	0.93	3.15	1.07	0.354
17. In the innovation carried out in your company, environmental aspects are taken into consideration.	4.55	0.38	3.82	0.60	0.000**
18. In your company's innovation policy, emphasis is placed on strengthening the capacity to develop new technological capabilities	4.09	0.70	3.92	1.04	0.654
19. Your company's innovation policies are focused on products	4.73	0.47	4.31	0.85	0.161
20. Your company's innovation policies are focused on processes	4.45	0.93	3.31	0.95	0.007**

\*\* P < 0.01.

tion on CSR practices, even though this disclosure is of a voluntary nature, but both in the reports that are published and in the replies to the questionnaires, the adoption of CSR practices does not seem to be related to business results (items 12 and 13) or to the demands of stakeholders (item 8).

On the other hand, the DJSI companies stated that the adoption of CSR strategies involves the consideration of environmental aspects (item 7). Environmental issues form part of the concept of CSR, together with economic and social aspects (the "triple bottom line"), and so it is to be expected that they should be associated with the company's CSR

strategy. In addition, let us note that although the adoption of CSR practices is a voluntary issue (EC, 2001, 2002; DTI, 2001), companies must observe a series of legal obligations in environmental matters.

The DJGI companies, on the other hand, do not consider environmental issues to be so important with respect to CSR strategies. Moreover, the differences in the responses by the two groups of companies are significant. As we remarked above, innovation policies may respond to many different strategies, and in the case of companies that do not manifest a concern for CSR, they consider that environmental questions are not especially related to the CSR strategy adopted by the company. Therefore, hypothesis  $H_3$  is accepted.

With respect to the questions concerning innovation (Items 14-20. Panel B), the DJSI and the DJGI companies awarded similar average scores and in some items there were no significant differences between the two groups. Specifically, both the DJSI and the DJGI companies agreed in their perception of the radical innovation carried out, in the development of technological competence and in the fact that their innovation is mainly product oriented. In the remaining items in this block of questions, the opinions of the two groups of companies differed significantly.

The DJSI companies implemented innovation that was mainly of an incremental type, and thus hypothesis  $H_4$  is accepted. The companies consider that better results are obtained in areas in which the

**Table 1. Panel C. Statistics of the survey results concerning the relation between CSR and innovation.**

CSR AND INNOVATION					
21. Your company's innovation policies are related to its strategies of sustainability	4.91	0.30	3.00	0.82	0.000**
22. The adoption of CSR criteria has led to a change in the company's policies regarding innovation	4.55	0.52	2.85	0.90	0.000**
23. The adoption of CSR criteria has led to increased expenditure on innovation	4.36	0.50	2.62	0.77	0.000**
24. The adoption of CSR criteria has led to technological changes in its production processes	4.73	0.47	3.08	1.04	0.000**
25. The adoption of CSR criteria has led to technological changes that affect the quality of its products (design, quality, etc.)	4.91	0.30	3.38	0.87	0.000**
26. The adoption of CSR criteria has led to technological changes that affect the range of products that are marketed	4.73	0.65	2.69	0.95	0.000**
27. The adoption of CSR criteria has led to technological variations that represent a radical change in the company's principal activity	1.82	0.60	1.38	0.87	0.178

\*\*  $P < 0.01$ .

appropriate fundamental research has been developed (Clemens & Row, 1991). Furthermore, these companies reinforce their capability to develop new technological competences and present a certain degree of agreement on developing their own technology rather than resorting to the externalization of research, development and innovation. Their innovation practices are related to environmental aspects. These companies develop both product and process-oriented innovation.

The DJGI companies, too, report greater agreement on the implementation of incremental rather than radical innovation. The behaviour of these companies reflects a preference for developing their own technology, rather than externalization, and for reinforcing the development of technological competences to ensure ongoing innovation. Among this group of companies there is a clear predominance of product rather than process-oriented innovation. The most important difference between DJGI and DJSI was found to be the item concerning process-oriented innovation. We might conclude that both groups of companies implement innovation strategies, but that the DJSI companies are more inclined than the DJGI ones to opt for process-oriented innovation. This finding might be due to attempts by these companies to reduce the environmental impact of their activities, a subject on which there is also a considerable degree of difference between the DJSI and the DJGI companies.

Finally, with regard to the relation between the adoption of CSR practices and innovation shown in panel C, we found that the DJSI companies, unlike the DJGI ones, presented a high degree of

agreement about the relation between CSR and companies' policies on innovation. In fact, there are significant differences in the responses of the two groups of companies in question, for all the items listed in Panel C, Table 1, except the last one, according to which the companies in the two groups believe that CSR strategies do not lead to radical changes in the company's main activity. For the DJSI companies, unlike those belonging to the DJGI, the adoption of CSR practices influences the innovation carried out and leads to changes in their policies on innovation. The DJGI companies, we find, do not consider CSR to be a strategic element on the basis of which their policies should be developed, which is consistent with the replies made (items 21-27), which ratify the view that their policies with regard to innovation are not created following CSR criteria.

Nevertheless, the replies to this block of questions are of great interest for the DJSI companies, as they reveal the link between the adoption of CSR practices and the innovation they have carried out (item 21). CSR criteria involve a change in the innovation policies of these companies (item 22). Thus, for the DJSI companies, CSR is a strategic factor that affects their policies on innovation. Moreover, although to a lesser degree (mean score 4.36), it involves increased expenditure on innovation (item 23).

The DJSI companies report that the adoption of CSR practices has not led to radical changes in the activities of the company (item 27). The CSR practices involve the gradual adaptation of existing products and processes. Companies that have adopted CSR criteria report that these have led to changes both in

their products – slightly more in quality (item 25) than in product range (item 26) – and processes (item 24). Therefore, hypothesis H<sub>5</sub> is accepted. According to the information disclosed, the companies are examining how to reduce the environmental impact of their activities, rehabilitate their surroundings or change their processes, but they are not contemplating a change in the basic activity that is carried out. Indeed, changes in activity, such as those put into practice by Dupont and Monsanto, are sporadic and tend to occur in a gradual manner. Therefore, we see that the adoption of CSR practices by companies involves a change of outlook in the use of resources, in this case, those destined to innovation.

## 5. Conclusions

The appearance of a new strategy, such as concern for CSR, requires a study of the factors by means of which it is to be applied. Companies' views in this respect provide an initial approach towards determining the behaviour of companies faced with this new reality. Therefore, in this study, and taking into account the recent adoption of CSR practices by European companies, we have analyzed the opinions of companies that belong to the DJSI, and which thus demonstrate a concern for CSR, on the effects of adopting a CSR strategy, the innovation they have carried out and the relation between the two concepts. These opinions were then compared with those of companies that belong to the DJGI and which do not implement CSR practices; certain significant differences were observed between the two groups of companies.

In general, our study reveals, from an empirical standpoint, that the DJSI companies present a higher degree of agreement on CSR-related topics than do those belonging to the DJGI. The adoption of CSR practices becomes a strategic factor, as can be seen among the DJSI companies, as it affects specific policies, in this case, those concerning innovation. The DJSI firms, taking into account CSR, are of the opinion that this strategy is related to gaining competitive advantages, obtaining results in the short and long term, and satisfying a series of stakeholders' demands. They recognize the capacity of CSR to create value, and that its possibilities for the future are mainly long term, thus assuring the permanence and future development of these companies. Moreover, the adoption of CSR practices requires the consideration of environmental issues, another of the dimensions making up CSR. This perceived importance might be influenced by social pressures and current regulatory measures, although the economic standpoint is also relevant, as CSR may reduce the need for resources or favour the use of less contaminating resources, with positive effects in the short term on the company's image and even perhaps on its profitability.

The CSR strategy influences policies and specific practices, affecting the diverse functional areas of the company and, therefore, the activities it carries out and the processes, products or services offered. The DJSI companies report that their innovation policies are related to CSR, with effects both on their products (quality and range) and on their processes. This fact, therefore, has important implications for the management of the activities of these companies. Moreover, the DJSI companies state that the adop-

tion of CSR criteria leads to greater expenditure on innovation.

The present study has enabled us to analyze the effects of CSR practices on innovation among a group of companies that consider CSR to be a strategic factor for them. Company management is affected by this issue, although it may be necessary for a longer period of time to elapse before we can determine the real effect of the adoption of CSR practices, from an economic-financial and management standpoint.

As concerns the innovation carried out by all the companies in the study, this mainly involves incremental-type innovation, based on prior knowledge. In general, the DJSI and the DJGI companies reported similar views with respect to the questions related to innovation. They were in agreement that innovation-based activities are influenced by environmental aspects and that they are aimed at both products and processes.

This study has enabled us to identify the motivations of the DJSI companies for adopting CSR practices, although it remains unclear exactly why other companies, which do not do so, i.e. the DJGI companies, should take an increasing interest in CSR. It may be because of the demands made by stock markets, or those of stakeholders, or simply a response to trends in the sector in which such companies carry out their activities. With regard to the limitations of our study, these concern especially the use of questionnaires to obtain data on opinions. In addition, we focused on the perception by companies of the aspects in question, and not on the specific policies and practices that were put into practice by following a given business strategy,

or on the results obtained by companies in relation to CSR and innovation.

For future lines of research, we are considering characterizing the innovation carried out by the companies that follow CSR practices and determining whether this generates competitive advantages, taking for this purpose, indicators of business performance.

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## ANNEXE 1

**SURVEY ON CSR AND INNOVATION**

With respect to your company, please quantify the strength of support for each statement, by marking the appropriate column: 5 Strongly support, 4 Support, 3 Neutral, 2 Oppose, 1 Strongly oppose

	1	2	3	4	5
<b>Corporate Social Responsibility (CSR)</b>					
1. CSR is a very important concern for your company.					
2. In your company, CSR strategy is a key factor in generating competitive advantages.					
3. In your company, CSR strategy is aimed at creating future business opportunities, such as opening up new market sectors.					
4. In your company, the importance of CSR has increased in recent years.					
5. The company follows a policy of disclosure with respect to its CSR practices.					
6. The edition of CSR Guides has helped determine the aspects of CSR that are disclosed by your company.					
7. Adoption of the CSR strategy involves taking environmental aspects into consideration.					
8. The disclosure of CSR practices in your company is related to the demands of stakeholders (investors, institutions, clients, etc.) in this respect.					
9. The adoption of CSR practices in your company has a value added effect for stakeholders (profits, remuneration, working environment, product quality, etc.).					
10. The CSR strategy depends on or is supervised or drawn up by the Board of Directors.					
11. The CSR practices in your company are audited / certified / confirmed by external agencies.					
12. The adoption of CSR practices in your company has a positive effect on the company's short-term results (reductions in costs, increases in sales, etc.).					
13. The adoption of CSR practices in your company has a positive effect on the company's long-term results (new market sectors, change of activity, etc.).					
<b>INNOVATION</b>					
14. Your company develops its own technology and does not externalize R+D+I activity.					
15. Current innovation in your company is grounded upon prior innovation (incremental innovation).					
16. The innovation policy in your company is oriented towards inventions (radical innovation).					
17. In the innovation carried out in your company, environmental aspects are taken into consideration.					
18. In your company's innovation policy, emphasis is placed on strengthening the capacity to develop new technological capabilities.					
19. Your company's innovation policies are focused on products.					
20. Your company's innovation policies are focused on processes.					
<b>CSR AND INNOVATION</b>					
21. Your company's innovation policies are related to its strategies of sustainability.					
22. The adoption of CSR criteria has led to a change in the company's policies regarding innovation.					
23. The adoption of CSR criteria has led to increased expenditure on innovation.					
24. The adoption of CSR criteria has led to technological changes in its production processes.					
25. The adoption of CSR criteria has led to technological changes that affect the quality of its products (design, quality, etc.).					
26. The adoption of CSR criteria has led to technological changes that affect the range of products that are marketed.					
27. The adoption of CSR criteria has led to technological variations that represent a radical change in the company's principal activity.					