THE ROLE OF THE BOARD IN ACHIEVING INTEGRATED FINANCIAL AND SUSTAINABILITY REPORTING

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Área temática: H) Responsabilidad Social Corporativa

Palabras Clave: corporate governance, board of directors, voluntary information, corporate social responsibility reporting, integrated reporting
EL PAPEL DEL CONSEJO DE ADMINISTRACIÓN SOBRE EL PROCESO DE
ELABORACIÓN DE UN INFORME FINANCIERO Y DE SOSTENIBILIDAD INTEGRADO

Resumen

La complejidad del mundo empresarial ha provocado que las empresas elaboren diversos estados informativos encaminados a complementar los tradicionales estados financieros. Sin embargo, la información contenida en cada uno de estos documentos está fragmentada entre sí, pudiendo generar confusión en los usuarios, si bien diversas compañías líderes han comenzado a elaborar un informe integrado en el que sintetizan de manera coherente y conexa la información relativa a la estrategia de la empresa, gobernanza, resultados y previsiones de manera que refleje el contexto comercial, social y ambiental en el que opera.

El objetivo del presente trabajo es evidenciar la influencia que determinadas características del Consejo de Administración tienen en el grado de integración de la información de las principales multinacionales de quince países durante el periodo 2008-2010. Los resultados obtenidos evidencian que las oportunidades de crecimiento, el tamaño de la empresa y el de los órganos de gestión, así como la diversidad de género son los factores más relevantes en la divulgación holística, confirmando su efecto para cada los modelos de gobierno corporativo, anglosajón, germánico y latino.

Palabras Clave: Gobierno corporativo, Consejo de Administración, información voluntaria, Informe de Responsabilidad Social, Informe integrado.

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Abstract

The complexity of the business world has led companies to produce different types of financial report, in order to complement the information traditionally provided. However, the information contained in each such report tends to be presented quite separately from that in the others, and this may lead to confusion among users. Therefore, several major companies have introduced an integrated reporting system, which coherently summarises the information available on a firm’s strategy, governance, performance and prospects, and at the same time reflects the commercial, social and environmental context within which it operates.

The aim of this paper is to demonstrate the influence played by certain features of the Board of Directors in the degree of information integration presented by leading non-financial multinational firms. Specifically, we examined 568 companies from 15 countries, for the period 2008-2010. The results obtained show that growth opportunities, the size of a company and its management bodies, together with gender diversity, are the most important factors in the integrated dissemination of information. This effect has been confirmed for the Anglo-Saxon, Germanic and Latin models of corporate governance.

Key Words: corporate governance, board of directors, voluntary information, corporate social responsibility reporting, integrated reporting
1. INTRODUCTION

The interest aroused by large companies, due to their considerable assets and turnover, in an environment characterised by significant social inequalities, coupled with the environmental, labour and ethical issues that sometimes arise in the course of their activities, has generated a significant increase in the number of documents or information reports disclosed, whether mandatory or voluntary.

Thus, the annual financial statements reporting the economic and financial situation of the business are accompanied by complementary reports, on issues such as corporate governance, corporate social responsibility and intellectual capital. All of these publications are intended to demonstrate to society as a whole and to stakeholders in particular the appropriateness of the company’s corporate behaviour, regarding economic, social and environmental aspects. However, these documents are drafted individually, and so the information provided might overlap; moreover, there could be a lack of coherence in the contents of the various reports generated, which would hamper the decision taking process.

In view of these questions, some leading companies have begun to integrate all their information statements into a single document, in the form of integrated reporting, thus providing, in a composite, organised and cohesive form, information on the company’s strategy, corporate governance, performance and prospects, in such a way as to reflect the commercial, social and environmental context in which it operates. In the words of Eccles and Krzus (2010), the latter constitutes integrated reporting for a sustainable strategy, in which a clear and concise statement is provided of how the organisation operates and how it creates and maintains value (International Integrated Reporting Committee, IIRC, 2011).

In this new vision of business affairs, the Board should focus on achieving a balance between meeting the interests of its stakeholders (Shankman, 1999; Ingley and Van der Walt, 2004) and being accountable to them (Solomon, 2007, p. 14), which would represent an expansion of the Director’s fiduciary duties (Ingley, 2008, p. 20). In addition, authors such as Kostant (1999), Healy (2003) and Perrini (2006) advocate the active participation of directors in the firm’s communication with its stakeholders.

In this respect, Hill and Jones (1992) defined the stakeholder-agency theory, incorporating aspects of agency theory, stewardship theory and resource-skills theory. In their approach, a firm is considered as a nexus of contracts, but in contrast to agency theory, these contracts incorporate, either explicitly or implicitly, the relationships with all stakeholders, while recognising differences in power among them.

Agency theory assumes a difference between the utility functions of the principal and those of the agent. According to the stakeholder-agency theory, on the other hand, the directors, the only group maintaining contractual relationships with other stakeholders and one, moreover, that has direct control over the decision-taking apparatus of the business, may perform a divergent utility function from that of the other stakeholders, who would assume the role of principal.

To limit these differences, the stakeholder-agency considers the Board of Directors to be an inspecting body that is responsible for supervising and controlling the actions of managers. Therefore, assimilating this standpoint with the understanding of agency theory with respect to financial reporting as a control mechanism serving to harmonise the interests of managers and shareholders (Healy et al., 1999; Hermanson, 2000, Bushman and Smith, 2001; Healy and Palepu, 2001, Brennan and Solomon, 2008), by extension, CSR information would perform the same role for the agency relationship between Board directors and other stakeholders (Gray et al., 1987, 1996, Rasche and Esser, 2006; Unerman et al., 2007, Prado et al., 2009a), Prado and Garcia, 2010), thus achieving comprehensive accountability via the integrated report.
Moreover, both theoretically and empirically, there is widespread debate about the effects of the size and activity of the Board on the compilation and disclosure of information as an extension of the supervision process.

Controversy also exists regarding the relationship or otherwise between the independence of this body and the disclosure of information. Some studies have observed a direct relationship between the presence of non-executive directors and the volume of information published (Cheng and Courtenay, 2006; Prado et al., 2009b), while others report an inverse relationship (Haniffa and Cooke, 2005; Prado-Lorenzo and García-Sánchez, 2010) or none at all (García-Sánchez et al., 2011).

The analysis of diversity, on the other hand, has mainly focused on the presence of foreigners within the group of majority shareholders, and studies have highlighted their impact on the volume of company information published (Andrews et al., 1989; Guthrie and Parker, 1990). However, little research has been undertaken to determine the influence of Board participation by women in the dissemination of such information.

Taking into account the above considerations, the aim of this paper is to analyse the relationship between certain characteristics of the Board of Directors and the breadth, coherence and connectivity of integration of the business information disclosed. This holistic information on business conduct makes available to different users a body of ordered and coordinated data on management, remuneration and sustainability, thus favouring a multi-criteria evaluation of the company in question.

We analysed a sample of 568 non-financial multinational companies from 15 countries, for the years 2008-2010. Our analysis of these companies’ accountability is based on an encoding of the disclosure of economic, social and environmental information, and its coherent consolidation into a single document, termed the integrated report. The characteristics of corporate governance analysed are company size, independence and level of activity, and the diversity of its Board of Directors. In addition, the analysis takes into account other features of the firm that might account for the level of company information revealed, namely return on investment and growth opportunities.

The methodology employed in this analysis is based on testing for dependence in panel data models. This approach represents an advance on previous results that only focused on annual information, such as transversal analysis, which might be severely affected by the period of time selected and thus subject to bias effects. Moreover, our econometric method incorporates unobservable heterogeneity, by incorporating individual characteristics of the firm in the inter-country sample.

The results obtained show that the level of transparency and integration of corporate information is a priority for larger companies and for those with greater opportunities for growth. This process is also affected by the characteristics of the Board; in this respect, size and greater gender diversity are the most influential factors in the Board’s decision to expand and enhance processes of accountability. The role played by these factors in holistic accountability is independent of the historical and cultural features defining corporate governance systems in the countries examined.

2. THE ROLE OF THE BOARD OF DIRECTORS IN RESPONSE TO CHANGING INFORMATION DEMANDS

The disclosure of information, whether mandatory and voluntary, is common practice among commercial firms, in order to mitigate agency costs and political costs and to reduce information asymmetries. More specifically, in recent decades and due to the increasing complexity of the business world, new reporting obligations have been created, via a mosaic of laws, regulations, standards, codes, guidelines and stock-market listing requirements. This has led to an increase in the amount of information provided, to more complex financial reports and management comments and to a greater dissemination of information on
governance, remuneration and sustainability (International Integrated Reporting Committee, IIRC, 2011).

The integrated report presents various well-known benefits. The information thus provided is more consistent with investors’ needs; more accurate non-financial information is available to data suppliers; key stakeholders may have greater confidence in the information; better resource allocation decisions can be made, including cost reduction or improved risk management; there is a better identification of opportunities; there is a greater commitment to investors and other stakeholders, including current and future employees, which contributes to attracting and retaining skills; risks to the company’s reputation are reduced; capital costs are lower, and access to capital is facilitated. All of these consequences arise from increased public awareness, the development of a common language and the fact of enhanced collaboration between different functional areas within the organisation (IIRC, 2011).

The Board of Directors, as the firm’s governing body, is responsible for safeguarding the interests of the different stakeholders, among other means, through the dissemination of information, in order to reduce information-related problems and to prevent opportunistic behaviour (Lev, 1992; Richardson and Welter, 2001).

Jensen and Meckling (1976) proposed a framework for analysis in which a complementary or substitutive link was established between companies’ information disclosure practices and their internal mechanisms of corporate governance. The complementary relationship, in theory, is based on the assumption that effective corporate governance strengthens a company’s internal control, and thus more information is disclosed in order to reduce the problems arising from opportunistic behaviour and from the existence of asymmetric information. In a substitutive relation, the strength of corporate governance would prevent or reduce the disclosure of information to investors, as a result of the security and reliability of internal control mechanisms.

Empirical evidence remains inconclusive regarding the type of link between the two instruments of control, although as observed by Hill (1999), neither of them, individually, is a panacea, and thus the complementary effect of each one is required. Accordingly, in the present paper we assume a complementary relationship between the strength of the Board of Directors – related to its size, independence and degree of activity, and the diversity of its members (Beasley, 1996; Hang et al., 2007) – and holistic corporate transparency, as expressed via the preparation and dissemination of an integrated report.

2.1. Size of the Board of Directors

It is widely believed that large company Boards are subject to more severe agency problems, and therefore monitoring processes are less optimal (Yermack, 1996; Eisenberg et al., 1998; Andres et al., 2005). Moreover, such companies are less willing to disclose information on corporate actions, either due to the absence of suitable control mechanisms or to the wish to conceal bad (or non-ideal) news from their shareholders (Gallego-Álvarez et al., 2009).

According to García-Sánchez et al. (2011), the complexity of management control and of ensuring the accuracy of the information (including financial information) provided, requires the presence of a considerable number of directors, with the experience and diversity required to successfully perform these supervisory functions. In this sense, better monitoring would result in the disclosure of larger volumes of information about the company.

Empirical evidence is contradictory regarding the relation between the size of the Board and information disclosure. In this respect, Prado-Lorenzo and García-Sancho (2010) observed a negative relationship, but Karamanou & Vafeas (2005) and Cheng & Courtenay (2006) reported no such relation.
In agreement with Pearce & Zahra (1992) and Dalton et al. (1999), we believe that the presence of a greater number of directors has a positive effect on the breadth and integration of corporate information provided, because an integrated report requires the input of directors with different types of expertise, in accounting and finance, sustainability, etc. And the presence of such a variety of expert viewpoints is more common in larger Boards. Therefore, we propose the following hypothesis:

**Hypothesis 1:** There is a positive relation between the size of the Board and the production of an integrated company report

The variable used to represent Board size corresponds to the number of its directors.

### 2.2. Independence of the Board of Directors

An independent Board is considered an essential mechanism to control the actions of managers and to ensure shareholders’ goals are accomplished (Fama and Jensen, 1983; Agrawal and Knoeber, 1996). The independence of the Board is often related to the presence of non-executive directors.

External or non-executive Board members often have a greater interest in ensuring proper conduct by the firm and the fulfilment of its objectives (García-Sánchez et al., 2011). The reason for this is that such members are expected to apply greater objectivity and independence in their management and analysis of company behaviour than is the case of the executive directors (Prado et al., 2009a, Prado-Lorenzo and García-Sánchez, 2010). This promotes the increased quality and quantity of information disclosed, as it directly impacts on external directors’ experience and reputation (Fama and Jensen, 1983). Additionally, because their actions are less affected by the actions of competitors than are executive directors (Prado-Lorenzo and Garcia-Sanchez, 2010), they are more receptive to new information demands (García-Sánchez et al., 2011).

The findings of previous studies are inconclusive as to the type of relation existent between disclosure and the presence of independent directors. Forker (1992), Ho and Wong (2001), Eng and Mak (2003), Haniffa and Cooke (2005), Lim et al. (2007) and Prado-Lorenzo and Garcia-Sanchez (2010) all obtained a negative relation, but other studies have found it to be positive (Chen and Jaggi, 2000; Karamanou and Vafeas, 2005; Cheng and Courtenay, 2006; Willekens et al., 2005; Prado et al., 2009b) or not significant (García-Sánchez et al., 2011). Taking into account these divergent views, and the arguments of theory, we propose the following hypothesis:

**Hypothesis 2:** There is a positive relationship between the independence of the Board of Directors and the production of integrated reporting

As a proxy variable for Board independence, we used the percentage of non-executive directors. This variable has been used in virtually all previous studies on corporate governance (Andres et al., 2005).

### 2.3. Activity of the Board

Regarding the possible effects of the level of activity by the Board of Directors on corporate transparency, there are two opposing positions. On the one hand, it has been argued that the fact of frequent meetings of the Board of Directors may be a sign of its non-efficacy, or that the directors are exceeding their functions, and thus adversely affecting business performance (Vafeas, 1999). On the other, authors such as Lipton and Lorsch (1992) hold that an active Board is a more effective one because the frequency of its meetings enables
members to better supervise the running of the company, and leads them to show greater interest in disclosing information and thus keep stakeholders informed of their efforts.

Focusing on the relationship between the degree of Board activity and the dissemination of information, several studies have confirmed that Boards which meet more frequently perform their supervisory functions more effectively, while corporate earnings are less manipulated (Xie et al., 2003) and there are fewer problems of asymmetric information in the quarterly earnings announcements (Kanagaretnam et al., 2007). Other studies, such as Karamanou and Vafeas (2005), have concluded there is no relation between the activity of the Board and the quality of financial information disclosed.

In line with the above considerations regarding Board size, in this paper we assume there is a need for frequent Board meetings in order to oversee the integration of a broad and varied body of information. Therefore, the following hypothesis is proposed:

**Hypothesis 3:** There is a positive relationship between the activity of the Board and the practice of integrated reporting.

As a proxy for the level of activity of the Board of Directors, we selected the number of meetings held during each financial year.

### 2.4. Diversity

The diversity of the Board of Directors, defined as the disparity of the characteristics presented by its members, is a factor that promotes problem solving, increases leadership effectiveness and more effectively facilitates global relationships (Robinson and Dechant, 1997). In general, studies including this feature have focused on the nationality and gender of directors (Prado-Lorenzo and García-Sanchez, 2010).

It is generally recognised that the presence of foreigners on the Board may influence (in varying ways) business behaviour and the practices of corporate information disclosure, depending on the cultural characteristics of each Board member’s country. Studies by Andrews et al. (1989) and Guthrie and Parker (1990) concluded that the presence of foreigners within the group of majority shareholders does affect the volume of corporate social information published. On the other hand, Archel (2003), in a study of Spanish companies, found no such relation. Haniffa and Cooke (2005), focusing on a very specific case, the situation in Malaysia, used ethnicity as a proxy for diversity and concluded that the percentage of native Board members had a significant positive relation with the volume of information disclosed, and that the presence of foreign investors was not statistically significant.

In relation to gender diversity, several authors have argued that the presence of women at senior management level positively influences company behaviour, because these Board members incorporate the roles of wife and mother into their professional environment (Betz et al., 1989), applying ethical frameworks and criteria that differ from those commonly used by men (Harris, 1989), while presenting more philanthropic interests and concerns (Ibrahim and Angelidis, 1991). These new behaviour patterns are often associated with greater information transparency, especially regarding sustainability issues (Barako and Brown, 2008; Prado-Lorenzo and García-Sanchez, 2010).

Accordingly, we considered it useful to verify compliance with the following hypothesis:

**Hypothesis 4:** There is a positive relation between the diversity of Board members and integrated reporting.

To test this hypothesis, we used two numeric variables representing the percentage of foreigners and of women on the Board of Directors.
3. Methodology

3.1. Study population and samples used

As our study population, we selected the 2000 largest international companies, according to the Forbes Global 2000 list. From this list, we then eliminated the companies belonging to the financial and insurance sectors, due to the existence of significant differences in the evaluation of their assets and in their corporate structures.

The period analysed was 2008-2010. These years were chosen because few companies provided the necessary data for previous years. Corporate governance and financial data were obtained from the Compustat database. The final sample of companies analysed corresponded to 15 countries, as shown in Table 1, and consisted of 1575 observations from 568 companies. The most numerous contributions were from the USA, with 52.7% of the units, followed by the UK, with 10.1%.

<table>
<thead>
<tr>
<th>Country</th>
<th>Absolute</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>Canada</td>
<td>98</td>
<td>5.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>12</td>
<td>0.7</td>
</tr>
<tr>
<td>Finland</td>
<td>33</td>
<td>1.9</td>
</tr>
<tr>
<td>France</td>
<td>72</td>
<td>4.2</td>
</tr>
<tr>
<td>Germany</td>
<td>74</td>
<td>4.3</td>
</tr>
<tr>
<td>Ireland</td>
<td>5</td>
<td>0.3</td>
</tr>
<tr>
<td>Italy</td>
<td>59</td>
<td>3.4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>30</td>
<td>1.8</td>
</tr>
<tr>
<td>Norway</td>
<td>18</td>
<td>1.1</td>
</tr>
<tr>
<td>Spain</td>
<td>50</td>
<td>2.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>44</td>
<td>2.6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>7</td>
<td>0.4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>172</td>
<td>10.1</td>
</tr>
<tr>
<td>United States</td>
<td>898</td>
<td>52.7</td>
</tr>
</tbody>
</table>

The observations are grouped into 23 activity sectors, as in the Forbes list, with values ranging from the 4 firms described as Trading Companies (0.26%) to the 159 Utilities companies (9.3%) and the 145 classed as Oil & Gas Operations (8.5%), as shown in Table 2.

<table>
<thead>
<tr>
<th>Activity Sector</th>
<th>Absolute</th>
<th>Relative (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defence</td>
<td>43</td>
<td>2.5</td>
</tr>
</tbody>
</table>
9

| Business Services & Supplies   | 70 | 4.1 |
| Capital Goods                  | 67 | 3.9 |
| Chemicals                     | 51 | 3.0 |
| Conglomerates                  | 46 | 2.7 |
| Construction                   | 69 | 4.0 |
| Consumer Durables              | 55 | 3.2 |
| Drugs & Biotechnology          | 64 | 3.8 |
| Food. Drink & Tobacco          | 139| 8.2 |
| Health Care Equipment & Services | 71 | 4.2 |
| Hotels. Restaurants & Leisure  | 29 | 1.7 |
| Household & Personal Products  | 51 | 3.0 |
| Materials                      | 100| 5.9 |
| Media                          | 67 | 3.9 |
| Oil & Gas Operations           | 145| 8.5 |
| Retailing                      | 100| 5.9 |
| Semiconductors                 | 40 | 2.3 |
| Software & Services            | 42 | 2.5 |
| Technology Hardware & Equipment| 51 | 3.0 |
| Telecommunications Services    | 59 | 3.5 |
| Trading Companies              | 4  | 0.2 |
| Transportation                 | 51 | 3.0 |
| Utilities                      | 159| 9.3 |

### 3.2. Dependent variable

In virtually all previous studies, the dependent variable representing information disclosure practice has been obtained by analysing the information content of the reports published. This method consists in defining and grouping information into homogeneous data items.

Thus, the dependent variable $Report (R)$ is numerical, taking the value 0 if the company only issues a financial statement, the value 1 if it also elaborates a corporate social responsibility report and the value 2 if it prepares an integrated report. An integrated report is defined as one based on financial and management commentary, governance and remuneration information and sustainability reporting, in a way that reflects their interdependence.

Table 3 provides the summary statistics (mean and standard deviation) for the dependent variable. 56.5% of the sample only disclose financial information, in the form of a financial statement (value 0). 33.1% issue a sustainability report, complementing the information given in the financial statement (value 1). Only 2.8% integrate all the corresponding information documents.

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**Table 3. Business information practices**
3.3. Control variables

To counter the possibility of bias in our results, the analysis includes several control variables representing corporate size, profitability, growth opportunities and industry sector.

**Corporate size**

In accordance with agency theory, or under the assumption of the greater visibility of large corporations in markets and in society in general, most previous studies have reported a positive relation between corporate size and the volume of information voluntarily disclosed on web pages (Craven and Marston, 1999; Oyelere et al., 2003; Marston and Polei, 2004; Giner et al., 2003; Bonsón and Escobar, 2004; Gul and Leung, 2004; Prencipe, 2004). In addition, although with less unanimity, studies have qualified this direct relation, noting that it only applies up to a certain level of company size (Pirchegger and Wagenhofer, 1999), while some studies have found no statistically significant relationship (Khanna et al., 2004; Ortiz and Clavel, 2006).

To represent company size, the variable chosen was that of the logarithm of total assets.

**Profitability**

The relation between profitability and the voluntary disclosure of information is complex. Although leading theories in this respect suggest it is positive, most studies have failed to detect a statistically significant relationship between the degree of voluntary disclosure and the level of profitability (Larrán and Giner, 2002; Oyelere et al., 2003; Giner et al., 2003; Marston and Polei, 2004; Prencipe, 2004).

To represent profitability, the variable chosen was that of return on assets, measured at 31 December for each year studied.

**Growth opportunities**

Growth opportunities are measured by the market to book (Mtb) ratio. Companies with higher Mtb values are expected to disclose greater volumes of information, in order to reduce information asymmetry problems (Larrán and García-Meca, 2004). However, other studies do not seem to validate this assumption (Debreceny et al., 2002; Larrán and Giner, 2002), and it is necessary to verify the behaviour of this variable.

**Industry sector**

The industry sector is a variable that has often been used to account for the volume of company information reported. Nevertheless, and on the contrary to the case of company size, previous studies do not all support this assumption. According to some studies, the industry sector variable is related to the amount of voluntary information disclosed (Oyelere
et al., 2003; Gul and Leung, 2004; Bonsón and Escobar, 2004), especially in the case of information technology or high growth industries (Xiao et al., 2004), but other studies have found no statistically significant relationship (Giner, 1997; Craven and Marston, 1999; Larrán and Giner, 2002; Giner et al., 2003), reporting that forming part of a particular industry is irrelevant to the greater or lesser amount of information voluntarily disclosed.

To analyse this effect, we employed the Forbes business sector classification, with 23 dummy variables representing the different areas of economic activity.

3.4. Method

Our econometric model is based on dependence techniques for panel data, and is designed to predict the impact made by a set of independent or explanatory variables, considered simultaneously, on business information disclosure practices.

The use of panel data enables us to assess the performance over time of companies in the sample, by analysing observations of the same companies corresponding to several consecutive years. In contrast to using time series or cross-sectional data, this methodology makes it possible to capture unobservable heterogeneity or differences among individuals, potentially correlated with the explanatory variables (also termed individual specific effects). These are invariant over time and directly influence the decisions taken by the companies analysed (for example, entrepreneurial talent, managing with a more favourable attitude toward corporate transparency, etc.). Moreover, consideration of the temporal dimension of the data enriches the study, particularly in periods of great change. In this regard, panel data enable us to control the year-on-year effects on corporate transparency.

In this study, the dependent variable takes values ranging from 0 to 2, and so the panel data methodology used must be appropriate for variables presenting double censored characteristics. Therefore, the analysis technique is based on a Tobit regression that, in contrast to linear models, allows us to take particular consideration of the extremes of the rating scale (0 and 2), censoring at 0 those companies expressing the lowest preference for disclosing corporate information over and above the legal minimum, and at 2 for those opting to supply integrated information. In this sense, by means of the maximum likelihood method, Tobit models provide efficient, consistent estimates of the coefficients, because the likelihood function being maximised integrates information from both censored and uncensored observations.

The basic Tobit method is determined by the following equation:

\[ y_{it}^* = \beta x_{it} + e_{it}, \]

\[ y_{it} = 0 \quad \text{if} \quad y_{it}^* < 0 \]

\[ e_{it} \sim N(0, \sigma^2) \]

\[ y_{it} = y_{it}^* \quad \text{if} \quad y_{it}^* > 0 \]

where \( y_{it}^* \) is a latent variable, from which we can determine whether an observation belongs to the levels of transparency; \( \beta \) is the vector of the parameters to be estimated, and \( x_{it} \) is the vector of independent variables in the model.

Since the model is nonlinear, the coefficients obtained cannot be interpreted in terms of marginal effects, but must be interpreted as meaning that a change in \( x_{it} \) affects the significance of the sustainability information disclosed, or otherwise in terms of the likelihood of a company preparing a financial statement.

By means of the random effects estimator, Tobit regression controls individual heterogeneity, by recognising that the companies are observed at different times. Specifically, the random error term \( (e_{it}) \) is broken down into two parts: the combined effect \( (\mu_{it}) \), which varies from individual to individual and between time periods, and the individual effect \( (\tau_{it}) \), which is characteristic of the company. The latter is invariant over time and can be interpreted as the set of factors not included in the regression, and which are firm-specific (Greene, 1999).
Application of this formulation to the analysis model we propose is reflected in the following equation:

\[
\text{REPORT}_i = \beta_0 + \beta_1 \text{SizeBoard}_i + \beta_2 \text{ExtDirect}_i + \beta_3 \text{ActBoard}_i + \beta_4 \text{Foreign}_i + \beta_5 \text{Women}_i + \beta_6 \text{SIZE} + \beta_7 \text{ROA}_i + \beta_8 \text{Mtb}_i + \sum_{i=9}^{31} \beta_i \text{Industry}_i + \sum_{i=32}^{34} \beta_i \text{Year}_i + \mu_i \tag{1}
\]

where

\text{REPORT} is a numerical variable representing the level of corporate transparency;
\text{SizeBoard} is the number of Board members for company \( i \), as a proxy for the size of that Board;
\text{ExtDirect} is the percentage of external Board members;
\text{ActBoard} is the number of Board meetings;
\text{Foreign} is the percentage of foreign Board members;
\text{Women} is the percentage of women Board members;
\text{SIZE} is a numerical control variable representing company size, as the logarithm of total assets;
\text{ROA} is a numerical control variable representing business profitability, as returns on total assets;
\text{Mtb} is a numerical control variable representing opportunities for business growth, as the market to book ratio;
\text{Industry} are dummy control variables, representing the 23 business activity sectors examined;
\text{Year} are dummy control variables, representing the 3 financial years examined.

4. RESULTS

4.1. Descriptive analysis

Table 4 summarises the descriptive statistics (mean and standard deviation) for the numerical independent and control variables and the absolute and relative frequencies of the binary variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{SizeBoard}</td>
<td>11.19</td>
<td>2.934</td>
</tr>
<tr>
<td>\text{ExtDirect}</td>
<td>.7866</td>
<td>.15844</td>
</tr>
<tr>
<td>\text{ActBoard}</td>
<td>8.55</td>
<td>3.441</td>
</tr>
<tr>
<td>\text{Foreign}</td>
<td>.1391</td>
<td>.21296</td>
</tr>
<tr>
<td>\text{Women}</td>
<td>.0935</td>
<td>.12786</td>
</tr>
<tr>
<td>\text{Size}</td>
<td>16.1921</td>
<td>1.12636</td>
</tr>
<tr>
<td>\text{ROA}</td>
<td>.0650</td>
<td>.12605</td>
</tr>
<tr>
<td>\text{Mtb}</td>
<td>1.3621</td>
<td>2.42178</td>
</tr>
</tbody>
</table>
Table 5 shows the bivariate correlations for the variables proposed for analysis. Although the coefficients are significant at different levels of confidence, the values are not very high. In relation to the dependent variable REPORT, the most significant explanatory factors are, in this order, corporate size, Board diversity and Board size.

<table>
<thead>
<tr>
<th>REPORT</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>SizeBoard</td>
<td>.166**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ExtDirect</td>
<td>.062*</td>
<td>-.145**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ActBoard</td>
<td>.023</td>
<td>-.087**</td>
<td>.134**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>.157**</td>
<td>-.028</td>
<td>-.169**</td>
<td>.008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>.174**</td>
<td>-.110**</td>
<td>.113**</td>
<td>.105**</td>
<td>.412**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>.221**</td>
<td>.417**</td>
<td>.064*</td>
<td>.095**</td>
<td>.098**</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>.036</td>
<td>-.065*</td>
<td>.006</td>
<td>-.052*</td>
<td>.041</td>
<td>.24</td>
<td>-.160**</td>
</tr>
<tr>
<td>Mtb</td>
<td>-.001</td>
<td>-.116**</td>
<td>.005</td>
<td>-.068**</td>
<td>-.020</td>
<td>.015</td>
<td>-.399**</td>
</tr>
</tbody>
</table>

** p-value < 0.01    * p-value < 0.05

SizeBoard is the number of members of the Board for company i, as a proxy for the size of that Board; ExtDirect is the percentage of external Board members sitting on the Board; ActBoard is the number of meetings of the Board; Foreign is the percentage of foreign Board members; Women is the percentage of women Board members; SIZE represents company size, measured by the logarithm of total assets; ROA represents corporate profitability, measured by return on total assets; Mtb represents opportunities for business growth, measured by the market to book value ratio for each company.

Table 6 summarises the results of the nonparametric tests, showing significant differences in reporting practices for virtually all of the explanatory variables considered, with the exception of Board activity and corporate profitability.

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SizeBoard</td>
<td>60.969</td>
<td>.000</td>
</tr>
<tr>
<td>ExtDirect</td>
<td>10.147</td>
<td>.006</td>
</tr>
<tr>
<td>ActBoard</td>
<td>2.365</td>
<td>.307</td>
</tr>
<tr>
<td>Foreign</td>
<td>62.070</td>
<td>.000</td>
</tr>
<tr>
<td>Women</td>
<td>63.959</td>
<td>.000</td>
</tr>
<tr>
<td>SIZE</td>
<td>80.259</td>
<td>.000</td>
</tr>
<tr>
<td>ROA</td>
<td>.867</td>
<td>.648</td>
</tr>
<tr>
<td>Mtb</td>
<td>9.049</td>
<td>.011</td>
</tr>
</tbody>
</table>

SizeBoard is the number of Board members for company i, as a proxy for Board size; ExtDirect is the percentage of external Board members;
**ActBoard** is the number of Board meetings;  
**Foreign** is the percentage of foreign Board members;  
**Women** is the percentage of women Board members;  
**SIZE** represents company size, measured by the logarithm of total assets.  
**ROA** represents corporate profitability, measured by return on total assets.  
**Mt** represents opportunities for business growth, measured by the market to book value ratio.

### 4.2. Model of dependence

Table 7 summarises the results for the proposed Tobit model of dependence. Of the five variables proposed to test our four hypotheses, two are significant for a confidence level of 99%, namely **SizeBoard** and **Women**. For the same level of confidence, two of the three control variables are also statistically significant: **Size** and **Mt**.

|                      | Coeff   | Std.Error | Z      | P>|z|  |
|----------------------|---------|-----------|--------|----------|
| **SizeBoard**        | 0.0257658 | 0.006222 | 4.14   | 0.0000   |
| **ExtDirect**        | 0.1584532 | 0.1008865 | 1.57   | 0.1160   |
| **ActBoard**         | -0.0015969 | 0.0035446 | -0.45  | 0.6520   |
| **Foreign**          | 0.101585  | 0.0822632 | 1.23   | 0.2170   |
| **Women**            | 0.5621978 | 0.1532417 | 3.67   | 0.0000   |
| **SIZE**             | 0.0680169 | 0.0171229 | 3.97   | 0.0000   |
| **ROA**              | 0.0016298 | 0.0848654 | 0.02   | 0.9850   |
| **Mt**               | 0.0148369 | 0.0049016 | 3.03   | 0.0020   |
| _cons                | -1.178896 | 0.2706662 | -4.36  | 0.0000   |

/sigma_u = 0.4253912 0.0149737 28.41 0.0000  
/sigma_e = 0.2984851 0.0068036 43.87 0.0000  

rho = 0.6700869 0.0196846  

Log likelihood = -874.1535  
Wald chi-square = 72.66  
p-value = 0.0000  

The model includes dummy variables representing the business activity sector and the time period.  
**SizeBoard** is the number of Board members for company i, as a proxy for the Board size;  
**ExtDirect** is the percentage of external Board members;  
**ActBoard** is the number of Board meetings;  
**Foreign** is the percentage of foreign Board members;  
**Women** is the percentage of women Board members;
SIZE represents company size, measured by the logarithm of total assets; ROA represents corporate profitability, measured by return on total assets; Mtb represents opportunities for business growth, measured by the market to book value ratio.

Of the independent variables, SizeBoard, representing the size of the Board of Directors, has a positive effect (coeff = 0.0257658, p-value = 0.0000) on the dependent variable REPORT. These results support hypothesis H1.

The variables ExtDirect and ActBoard, representing Board independence and level of activity, have a positive and negative effect, respectively (coeff = 0.1584532 and -0.0015969), on the dependent variable, although in neither case is their impact statistically significant (p-value = 0.1160 and 0.6520, respectively). These results lead us to reject hypotheses H2 and H3.

The variable Women, representing gender diversity, has a positive effect (coeff = 0.5621978, p-value = 0.0000) on the level of integration of business information disclosure. Because one of the variables proposed to test the role of diversity in corporate transparency, Foreign, presents a non-statistically significant positive effect (coeff = 0.101585, p-value = 0.2170), hypothesis H4 can only be partially accepted.

The control variables, Size and Mtb, representing firm size and growth opportunities, have a significant positive effect on the variable REPORT (coeff = 0.0680169, p-value = 0.0000 and coeff = 0.0148369, p-value = 0.0020, respectively). By contrast, economic profitability, ROA, also has a direct effect, but it is not econometrically important (coeff = 0.0016298, p-value = 0.9850).

The index of elasticity was calculated to determine which institutional factors are the most efficient drivers of integrated information disclosure. This index, computed as ?(y)/?(lnx) describes the explanatory power of each corporate factor; the larger its value, the more this factor facilitates the integration of corporate information.

Table 8 shows that the most important factor is company size (coeff = 2.688345), followed by Board size (0.7076063), gender diversity (0.1262447) and growth opportunities (0.0493652).

| Variable   | ey/ex   | Std. Err. | z     | P>|z| |
|------------|---------|-----------|-------|-----|
| SIZE       | 2.688345| .68136    | 3.95  | 0.000 |
| SizeBoard  | .7076063| .17409    | 4.06  | 0.000 |
| Women      | .1262447| .03483    | 3.62  | 0.000 |
| Mtb        | .0493652| .0164     | 3.01  | 0.003 |

Size represents company size, measured by the logarithm of total assets.
SizeBoard is the number of Board members for company i, as a proxy for the size of that Board;
Women is the percentage of women Board members;
Mtb represents opportunities for business growth, measured by the market to book value ratio.

4.3. Robust analysis
According to various authors, there are striking differences between countries as regards their corporate governance systems, for diverse reasons including the legal system currently applicable, the characteristics of their capital markets, their culture, history and form of industrial organisation. All these factors could cause control mechanisms to function differently (Lopez-de-Foronda et al., 2007), thus affecting the quality of business performance information made available (García-Meca and Sánchez-Ballesta, 2008).

Therefore, in order to determine whether the results obtained in our joint analysis can be extrapolated to the types of corporate governance found internationally, the above-described model was applied to the three systems corresponding to our sample countries: Anglo-Saxon, Germanic and Latin (Weimer and Pape, 1999).

The results shown in Table 9 reflect the considerable similarity in the roles played by corporate governance characteristics in the integration of business information, in all three systems, with the exception of the size of the Board of Directors, a factor that has no statistically significant impact in the Germanic model.

<table>
<thead>
<tr>
<th></th>
<th>Anglo-Saxon</th>
<th>Germanic</th>
<th>Latin</th>
</tr>
</thead>
<tbody>
<tr>
<td>SizeBoard</td>
<td>.0229629</td>
<td>.0074727</td>
<td>.307 0.002</td>
</tr>
<tr>
<td>ExtDirect</td>
<td>.1680966</td>
<td>.1618129</td>
<td>1.04 0.299</td>
</tr>
<tr>
<td>ActBoard</td>
<td>-.0029179</td>
<td>.0036085</td>
<td>-.01 0.419</td>
</tr>
<tr>
<td>Foreign</td>
<td>.0961732</td>
<td>.0857704</td>
<td>1.12 0.262</td>
</tr>
<tr>
<td>Women</td>
<td>.2207906</td>
<td>.104217</td>
<td>2.12 0.034</td>
</tr>
<tr>
<td>SIZE</td>
<td>.0451729</td>
<td>.0177628</td>
<td>2.54 0.011</td>
</tr>
<tr>
<td>ROA</td>
<td>-.0689536</td>
<td>.0777309</td>
<td>-0.89 0.375</td>
</tr>
<tr>
<td>Mtb</td>
<td>.0140421</td>
<td>.0044764</td>
<td>3.14 0.002</td>
</tr>
<tr>
<td>_cons</td>
<td>-.8636724</td>
<td>.2823566</td>
<td>-3.06 0.002</td>
</tr>
</tbody>
</table>

The model includes dummy variables representing the business activity sector and the time period. SizeBoard is the number of Board members for company i, as a proxy for the size of that Board; ExtDirect is the percentage of external Board members; ActBoard is the number of meetings of the Board; Foreign is the percentage of foreign Board members; Women is the percentage of women Board members; SIZE represents company size, measured by the logarithm of total assets; ROA represents corporate profitability, measured by return on total asset; Mtb represents opportunities for business growth, measured by the market to book value ratio.
5. DISCUSSION

The results obtained show that larger Boards, containing directors with greater experience and a broader diversity of backgrounds, positively promote the integration of the various reports made by their companies, whether mandatory or voluntary.

Joint analysis of the size and activity of the Board shows that the integration of corporate information benefits from the existence of a large Board, whose directors have varied skills and experience. This facilitates the monitoring of information and reduces the need for meetings to discuss this question.

On the other hand, greater independence of the Board does not seem to favour the integration of corporate information (a process that would benefit decision-making by stakeholders). These results are in line with the evidence reported by Prado-Lorenzo and García-Sanchez (2010). However, they contradict the effect observed in other studies for the amount of financial information disseminated (Chen and Jaggi, 2000; Willekens et al., 2005), the quality level of the information (Karamanou and Vafeas, 2005) and the dissemination of voluntary information, whether general (Cheng and Courtenay, 2006) or specific to CSR (Barako and Brown, 2008; Prado et al., 2009b), as well as the adoption of codes of ethics (García-Sánchez et al., 2008; Rodríguez Domínguez et al., 2009).

The indeterminate results obtained with respect to the impact of the presence of external directors in the Board, regarding the publication of the information analysed, may result from ignorance of the costs to the owners of voluntary integration. This behaviour pattern was observed by Prado-Lorenzo and García-Sanchez (2010) in the case of information on greenhouse gases. If a firm published holistic information, this would provide users with more data on governance, remuneration and sustainability and thus reflect the viability and sustainability of the company. If this information disclosure were prejudicial to shareholders, external members of the Board might oppose it, in accordance with their obligation to protect shareholders’ interests.

The lack of interest shown by external directors in the integration of corporate information is overcome when there are women on the Board. Their presence favours problem-solving, enhances leadership effectiveness and promotes global relations in a more efficient manner (Robinson and Dechant, 1997) because women are less economically and self-interest oriented than are men (Ibrahim and Angelidis, 1991). The positive effect of gender diversity on the integration of corporate information is similar to that obtained for sustainability reporting by Barako and Brown (2008) and Prado-Lorenzo and García-Sánchez (2010).

Regarding the variable SIZE, and in accordance with many previous studies (Craven and Marston, 1999; Oyelere et al., 2003; Marston and Polei, 2004; Giner et al., 2003; Bonsón and Escobar, 2004; Gul and Leung, 2004; Prencipe, 2004), we recorded a positive relation between corporate size and the integration of corporate information.

With regard to growth opportunities, the positive impact of this factor on the integration of information is contrary to that observed by Debreceny et al. (2002) and Larrán and Giner (2002). The fact that large companies with significant growth opportunities are the most likely to develop these new models of accountability suggests they may be demanded by investors or politicians in order to make decisions related to business expansion.

Finally, despite the consistency of the arguments of the theories of information disclosure, in our results the level of profitability had no statistically significant effect, which is in agreement with the findings of Oyelere et al. (2003).

6. CONCLUSIONS

The complexity of the business world has led to growing demands being made of companies regarding the information provided on their financial performance, management, corporate governance and sustainability record. In response, some leading companies have begun to
publish integrated reporting, in the form of a document providing a coherent summary of this information, thus facilitating decision-taking by different stakeholders.

This paper examines the role played by diverse characteristics defining the Board of Directors, with respect to the voluntarily development of this new type of business document. We do so by analysing a non-balanced sample of 568 international companies, for the years 2008-2010.

The results obtained show that larger companies tend to implement broader, more objective and more comparable information practices, because this added dimension enables them to generate added value and an enhanced social and environmental impact. Furthermore, they have greater resources with which to compile the information.

Greater Board size and diversity, rather than increasing friction and communication problems among Board members, actually has a positive influence on the integration of corporate information. In this sense, a greater breadth of knowledge and opinions enables a range of information documents to be supervised, and this in turn supports the decision-making processes of a larger group of users.

The increased utility and coherence of the information contained in integrated reports means that companies which produce them and which enjoy growth opportunities make use of this form of publication as a mechanism for accountability to facilitate the opening up of new markets.

The above conclusions are confirmed for all three corporate governance models: Anglo-Saxon, Germanic and Latin.

REFERENCES


effect’, *Corporate Social Responsibility and Environmental Management*, 16 (2), 94-107.


