

BOARD CONFIGURATION AND IR ADOPTION. EMPIRICAL EVIDENCE FROM EUROPEAN COMPANIES

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Abstract

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Over the last few years, companies are increasingly international, and a growing number of stakeholders is affected by the sustainability aspects of business, resulting in significant changes in how corporate information is both perceived and published.

This scenario has led to many company Boards of Directors (BoD) voluntarily adopting a new communication tool, known as Integrated Reporting, (IR) which is a single disclosure document that satisfies stakeholders' increasing need for information.

This study wants to contribute to existing literature on the relationship between corporate governance and IR, investigating if board configuration (size, gender, and average age) influences its adoption.

The analysis relies on a sample of 1,047 companies from 18 European countries for the year 2015. These results show a positive relationship between the decision to adopt IR and board size and female board members, whereas the older board members have a negative effect on it.

Our findings present implications both from the theoretical and practical point of view. On a theoretical level, the research confirms that board diversity needs to be analysed more in detail, because of its contribution to company's transparency. Moreover, the results provide to standard setters and regulators a useful insight of the important distinction among various board members' features.

Keywords: Disclosure, Integrated Reporting, Corporate Governance, Board Composition

1. INTRODUCTION

Firms are obliged to disclose certain information in their annual reports in accordance with laws, regulations, and adopted accounting standards (Cheng and Courtenay, 2006). This is the minimum level of disclosure required by the market so that any possible investor can formally assess the company.

Voluntary disclosure, on the other hand, includes additional information that a company communicates beyond what is legally required (Ariff, 2013). It gives investors a clear idea of a company's

economic viability (Boesso and Kumar, 2007) and reduces the so-called information asymmetry problem (Healy and Palepu, 2001). Disclosure is seen as the best way to communicate with investors (Ho and Wong, 2001) and transparency via disclosure and board monitoring are possible solutions to easing agency and asymmetric communication problems (Baumol and Bowman, 1965; Healy and Palepu, 2001; Quagli, 2004; Corsi *et al.*, 2016).

Nowadays, stakeholders manifest implicit and explicit information needs. Firstly, they need to understand what the new dynamics for value

creation are. Secondly, following the recent financial scandals, they need to be highly aware of the firms' actions to maintain and increase trusting relationship. Eventually, they manifest greater sensitivity to *Corporate Social Responsibility* (CSR) issues. This has led to increased attention on corporate disclosure topics (D'Orio and Lombardo, 2007).

When and if the information is insufficient, investment decisions are taken subjectively instead of objectively and this can lead to market share prices fluctuations. Firms can consequently experience problems getting capital to finance their decisions or may incur a higher cost of capital (Singhvi and Desai, 1971).

Different theories try to explain why a firm should voluntarily disclose information. The *agency theory* argues that firms disclose information voluntarily in order to reduce agency costs and show that they are using company resources in shareholders' best interests (Barako *et al.*, 2006; Arshad *et al.*, 2009). According to the *signaling theory*, the voluntary information helps firms to distinguish their performance from other competitors (Campbell *et al.*, 2001), improve their reputation and attract new investment (Verrecchia, 1983). Furthermore, the *capital need theory*, on the other hand, suggests that more voluntary disclosure helps companies obtain funds at a lower cost (Choi, 1973).

Even though voluntary disclosure is important, management has the final say (Chen and Jaggi, 2001) and it decides which - and how much - information is to be voluntarily disclosed in the firm's annual report (Eng and Mak, 2003). Therefore, the presence of the company BoD is fundamental for monitoring the management's decisions and ensuring that they disclose credible rather than self-serving voluntary information (Healy and Palepu, 2001). This will help the firm build a sound corporate disclosure system in the long term (Qu and Leung, 2006).

A firm's shareholders elect the BoD to govern and manage its business (Monks and Minow, 2008). As a primary corporate governance mechanism, it has an essential role in aligning management's interests with shareholders (Bassen *et al.*, 2006; Brennan, 2006). However, effective monitoring of the board is also determined by its composition (Mizruchi, 2004; Brick *et al.*, 2006) which, in fact, is expected to affect the amount of voluntary disclosure. Board composition can be defined in various ways, including value system, nationality, gender, board size, industry background, etc. (Van der Walt *et al.*, 2006; Kang *et al.*, 2007).

Stakeholders' increasing need for more information has led to companies adopting various accounting methods beyond the traditional financial reporting: reports on management, governance, intellectual capital, and sustainability. On the other hand, providing stakeholders with large quantities of documents does not necessarily mean giving them a complete insight into the company's affairs. So, a single communication tool giving clear financial and nonfinancial information was deemed necessary in order to inform stakeholders on company performance: IR framework.

IR aims to replace the earlier dominant practice of separating financial and sustainability information through publishing a single integrated document (Lozano and Huisingh, 2011; Jensen and Berg, 2012; IIRC, 2013; Incollingo and Bianchi, 2016).

The *International Integrated Reporting Council* (IIRC) believes that integrating financial and sustainability information will better satisfy investors' need for information by providing a complete picture of a company and its performance. The IIRC (2013) describes an IR as «bringing together material information about an organisation's strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates».

This study focuses on the relationship between financial reporting and corporate governance and contributes to enriching studies of factors that could affect a company's choice of IR as a disclosure document. It analyses the relationship between board diversity and the decision to adopt IR. Board diversity represents a significant corporate governance mechanism and, in particular, Ingley and Van der Walt (2003) describe diversity in corporate governance as board composition and the combination of individual members' qualities, characteristics and expertise concerning board decision-making and other processes.

In this study, «board composition» includes board size, gender, and member's age, and our research investigates the effects of these characteristics when considering adopting IR.

Unlike previous studies focused on analysing the effects of adopting IR, our research takes an upstream position checking whether certain board features influence the decision to adopt IR and - to the best of our knowledge - it is the first study of its kind. We believe that a deeper understanding of the factors influencing this decision is essential for academics, companies and - especially - policy-makers.

This paper starts with the theoretical background, then goes on to explain the data, methodology, and results, discussion and conclusions and concludes with limitations and avenues for future research.

2. MAIN THEORETICAL FRAMEWORK

IR can be considered an evolution of the sustainability report. It could represent an opportunity for increased transparency, governance and decision making for every type of profit or non-profit organisation (Eccles and Krzus, 2010; Adams *et al.*, 2011; Carels *et al.*, 2013). Sourcing and then publishing more information has not only decidedly had a positive effects on decision-making processes within a company, but also with investors and all stakeholders in general (Li and Qi, 2008). It should provide a briefer and more coherent, balanced picture of the company's performance (Eccles and Krzus, 2010; Suttipun, 2017).

Academic literature on the subject has little relevance and empiric research is still minimal. One of the most significant supporters of IR is Eccles

who analysed the issue back in 2010. His basic idea is that this new information tool could favour a change in company culture. Such studies have been carried out concerning similarities and differences between companies that draw up sustainability report and those that publish IR (Jensen and Berg, 2012).

In 2013, Owen looked into the origins and developments of IR, whereas other academics (Cheng *et al.*, 2014) critically analysed key issues of the IIRC's Framework Consultation Draft. Flower (2015) is one of the most critical arguing that the IIRC made a mistake in not forcing companies to add the negative impact of outside sources into the IR.

A thorough and very interesting work was done by De Villiers *et al.* (2014) who discussed how reporting can be interpreted and applied in different ways.

Stubbs and Higgins (2012) investigated internal mechanisms adopted in reporting processes in order to determine if IR stimulated better disclosure procedures. Some academics (Brown and Dillard, 2014) criticised IR, maintaining it to be limited or biased. An interesting study carried out in the Netherlands (Van Bommel, 2014) acknowledged that the IR tool was able to enhance different values. Academics Haller and Van Staden (2014) highlighted the importance of giving information concerning the value created by the company and how it is distributed among all the stakeholders.

Studies of factors that can condition IR practices have been carried out. In fact, Frias-Aceituno *et al.* (2013) reported on the influence of the legal system and the composition of the board, while Garcia-Sanchez *et al.* (2013) recognised that culture is a fundamental factor.

D'Este *et al.* (2013) carried out an interesting study about the choices of IR by groups concerning territorial interests. In fact, the research showed a positive relationship as those companies with stronger local roots were more inclined to publish their data.

The information that has to be produced however can be quite a barrier for many organisations. Collecting, processing and publishing this information frequently incur further costs. Companies are also reluctant to publish too much data for fear of giving the competition strategic information (Adams and Simnett, 2011). So, this new tool offers a serious challenge to existing control processes (Adams *et al.*, 2011) and an example is the concept of materiality.

The relationship between corporate governance and the disclosure practice of companies have been widely analysed by the academic literature with particular focus on the corporate governance structure and the BoD's characteristics (Healy and Palepu, 2001; Adams, 2002; Eng and Mak 2003; Ricart *et al.*, 2005; Allegrini and Greco, 2013; Raithatha and Bapat, 2014; Soliman *et al.*, 2014; Samaha *et al.* 2015). The BoD, as the firm's governing body, is responsible for safeguarding the interests of different stakeholders, for example through the dissemination of information, in order to reduce information-related problems and prevent

opportunistic behaviour (Lev, 1992; Richardson and Welker, 2001). Jensen and Meckling (1976) proposed a framework 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, theoretically, is based on the assumption that effective corporate governance strengthens a company's internal control. Thus, more information is disclosed in order to reduce problems arising from opportunistic behaviour and information asymmetries. In a substitutive relation, the strength of corporate governance would prevent or reduce the disclosure of information to investors, as a result of the internal control mechanisms reliability.

Based on the theoretical framework, we assume that there is a strong relationship between some board features and the adoption of IR. In fact, we assume the existence of a complementary relationship between board characteristics (measured by its size, women and average age) and the incentive for a firm to provide voluntary disclosure through IR.

2.1. Board size

Intellectual capital has become a key set of resources for gaining advantage in a business environment that has no geographic boundaries (Lev, 2004). In fact, the *resource dependency theory* argues that larger boards allow firms to bring diverse and vital intellectual resources onto the board as they can make decision-making effective and efficient, either directly or indirectly, as well as meet global challenges (Pfeffer, 1972, 1973; Pfeffer and Salancik, 1978; Kosnik, 1990; Parum, 2005).

Monitoring and controlling management actions are the most important functions of the BoD (Fama and Jensen, 1983). According to Gandia (2008), increasing the number of board members improves the capability of the board in monitoring and controlling management actions. This enhances the transparency and the disclosure of more information by management. Adam *et al.* (2005) argue that larger boards have varied experiences and dispersed opinions. This, in turn, increases their monitoring capacities and enhances the firm's disclosure policies. Empirical evidence reported by Cheng and Courtenay (2006) suggests that larger boards tend to be associated with greater levels of information disclosure. It is worth noting that the corporate governance code for publicly listed firms in Jordan, recommends a board with more than five members and less than fifteen for the industrial and services sectors (*Jordan Securities Commission*, 2009). However, for the insurance sector, the code recommends a board of no less than seven members (*Insurance Regulatory Commission*, 2006).

Large company boards are subject to more severe agency problems, and therefore monitoring processes are less optimal (Yermack, 1996; Eisenberg *et al.*, 1998; De Andrés *et al.*, 2005). According to Gallego-Alvarez *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 regarding the relationship between the size of the board and information disclosure is contradictory. Prado-Lorenzo and Garcia-Sanchez (2010) observed a negative relationship. Pearce and Zahra (1992), Dalton *et al.* (1999), Larmou and Vafeas (2010) and Izzo and Fiori (2016) observed a positive relationship.

A greater number of directors has a positive effect on the breadth and integration of corporate information provided because an IR requires the input of directors with different types of expertise. The occurrence of such a variety of viewpoints is likely to be more common in larger boards.

Board size can add to a diversity of perspectives, offering greater choices of solutions and more decision criteria, in order to achieve the board's goals and objectives on behalf of investors (Schweiger *et al.*, 1986; Eisenhardt and Bourgeois, 1988; Flaherty *et al.*, 2006).

H1: Is there a positive relationship between BoD size and IR?

2.2. Women

The diversity of the BoD is defined as the disparity of the characteristics presented by its members (Robinson and Dechant, 1997). Commonly, studies including this feature have focused on the gender and nationality of directors (Gul *et al.*, 2004; Prado-Lorenzo and Garcia-Sanchez, 2010).

Several authors have argued that the presence of women at senior management level positively influences company behaviour (Betz *et al.*, 2013). These new behaviour patterns are often associated with greater information transparency, especially regarding sustainability issues (Barako and Brown, 2008; Prado-Lorenzo and Garcia-Sanchez, 2010).

Gender diversity is now one of the most challenging research issues as the numbers of women in top management and on corporate boards increase (Singh *et al.*, 2001). Gender diversity may benefit a board's decision-making process. New perspectives and ideas are presented and discussed (Alvarez and McCaffery, 2000). Diversity may also become a competitive advantage because it adds to the board's knowledge base, creativity, and innovation (Watson *et al.*, 1993). Empirical results by Huse and Solberg (2006) suggest that female directors are more interested in meetings than males, so they are more likely to make good decisions. Adams and Ferreira (2009) report that female directors have a strong effect on board input and output. They also have better attendance records than males and are more likely to join monitoring committees.

Adams and Ferreira (2004) suggest that boards with more women directors are held more frequently and they have different board attendance patterns which make diverse boards more effective than homogenous boards. Adams and Ferreira (2004)

argue that «women are intrinsically more «stabilising» than men and Huse and Solberg (2006) concluded that women could contribute to boards by creating alliances, preparing and involving themselves in board matters, attending important decision-making spaces and being visible.

Literature developed around corporate governance aspects suggests that women on boards and committees are more diligent when controlling, transparency and disclosure thus providing a better quality of earnings (Adams and Ferreira, 2009; Srinidhi *et al.*, 2011).

Gibbins *et al.* (1990) argue that board gender diversity may explain firms' disclosure practices in their annual reports.

About gender, a confound investigation factor arises from *critical mass theory* (Konrad *et al.*, 2008). This theory suggests that when a certain threshold (Kramer *et al.*, 2006) is reached (a «critical mass») the impact of a subgroup (such as «women on the board») becomes more noticeable (Pastore and Tommaso, 2016). Kramer *et al.* (2006) argue that «a board with three or more women is more likely to experience the positive effects and contributions to good governance than a board with fewer women». According to Kanter (1977), having only one member of a demographic group can lead to tokenism. Tokens are considered to represent an entire demographic group (women) and are seen by the dominant group (men) as a stereotype. Based on critical mass, research into the relationship between female directors and performance might require a distinction between boards with one woman and boards that have reached a certain threshold. This standardisation counteracts the «tokenism phenomena», which implies that companies only include a few female board positions in order to satisfy external expectations (Torchia *et al.*, 2011).

H2: Is there a positive relationship between the presence of women on BoD and IR?

2.3. Average age

Dahya, Lonie and Power (1996) postulate that board experience will assist in making information more transparent as comparisons can be made based on knowledge of other organisations. Experienced directors are also more likely to have greater incentives to be effective monitors of management to safe-guard their reputation or improve their attractiveness on the labour market (Kaplan and Reishus, 1990). Directors with diverse bases of experience may improve board monitoring and decision making (Useem, 1993; Westphal and Milton, 2000).

Corporate boards monitor management decisions and behaviour and endeavour to add value through aligning management and investors' interests (Fama and Jensen, 1983; Del Brio *et al.*, 2006). Their effectiveness, however, in undertaking this role is influenced by many things including the directors' personal characteristics i.e. gender, age, education and experience (Campbell and Minguez-Vera, 2008; Ahern and Dittmar, 2012). Age represents an individual's experience and risk-taking manner (Herrmann and Datta, 2005), so it can be assumed that as older directors have cumulative

experience, they may have a substantial impact on the firm's performance (Hambrick and Mason, 1984; Reed and Defillippi, 1990). Empirically, existing evidence does not support older directors, but it actually reports that younger directors outperform older ones (Hambrick and Mason, 1984; Sonnenfeld, 2002; Rose, 2005; Nakano and Nguyen, 2011). One possible explanation is that young directors are more open to change (Hambrick and Mason, 1984) and new ideas (Zajac and Westphal, 1996). They are also liable to take risks, are more innovative and more efficient in governance oversight (Grimm and Smith, 1991).

H3: Is there a positive relationship between the increase in average age on BoD and IR?

2.4. Control variables

This paper uses established variables in governance studies that can influence disclosure for companies. They include whether a company is listed on the stock market, activity sector, corporate size, leverage, growth opportunities and profitability. Stock exchange listing influences firms to disclose more diverse information - financial, social and environmental - which is believed to be required by those markets, so it is likely to positively impact the quality of investors' decisions (Ullmann, 1985). Multiple listed corporations raising capital on international markets will have higher levels of disclosure than domestically listed enterprises if overseas stock market requirements are greater than domestic exchanges. In fact, Cooke (1989) found this to be the case, and Singhvi and Desai (1971) and Choi (1973) also found that listing status was a significant explanatory variable.

The activity sector is an additional documented explanatory factor of voluntary disclosure. Indeed, prior literature argues that companies from environmentally sensitive industries disclose more environmental information than less polluting companies, because of their significant impacts on the environment (Pahuja, 2009).

A positive relation between the corporate size and the volume of data deliberately disclosed is reported by some scholars (Da Silva Monteiro and Aibar-Guzmán, 2010; Sotorrio and Fernandez-Sanchez, 2010), while some others have discovered no factually noteworthy relationship (Khanna *et al.*, 2004; Ortiz and Clavel, 2006).

In order to represent the leverage, the study relies on debt-equity ratio as per Ahmed and Courtis (1999).

In order to point out information based on the growth, the study relies on the firms' sales growth (Smith and Watts, 1992; Gaver and Gaver, 1993).

The profitability side is taken into account by including the return on assets variable (Larrán and Giner, 2002; Giner *et al.*, 2003; Marston and Polei, 2004; Prencipe, 2004).

3. RESEARCH METHODOLOGY AND SAMPLE

To test these hypotheses, we have selected a total of 1,047 European companies from 18 different countries, identifying those companies that adopted IR (n=78), following the IIRC standards, for year 2015 and a random sample of companies that did not adopt the IR but only the mandatory financial report, for the same year (see Table 1).

In order to identify companies that adopted IR according to the IIRC standards, we relied on the official list of the IIRC website.

The comparison sample was determined by applying a stratification sampling procedure based on size, sector, and country characteristics of the "population" of the companies that adopt IR for the year 2015.

To build the sample, we have relied on the *Amadeus Database*, verifying and double checking on corporate websites if the kind of disclosure tools utilised, from a content point of view, was comparable to the IR, even when different ways on naming reports were approached.

An analysis of the disclosure tool has been carried out not only by a formal point of view (e.g. various way utilised on naming reports) but also from a substantial perspective.

Table 1. Sample composition

Country	Companies presenting IR	Companies no presenting IR
UK	17	194
Spain	12	138
Netherlands	11	134
Russia	7	104
Italy	7	93
France	5	67
Germany	4	43
Poland	3	23
Finland	3	29
Austria	1	11
Belgium	1	15
Bulgaria	1	15
Switzerland	1	15
Denmark	1	13
Hungary	1	9
Luxembourg	1	13
Sweden	1	23
Ukraine	1	30
Total	78	969

Source: own elaboration.

66.76% of the sample is made up of unlisted companies and around 6% of them adopt IR as their disclosure document.

Because the dependent variable is binary (equal to 1 if the company has developed IR, 0 if the company is not presenting it), this study uses logistic regression (Logit) (Vani Kant, 2001; Bajari *et al.*, 2009) to test its hypotheses. Listed below are the dependent variable (IR), the three independent variables (board size, women and average age) and the six control variables (listed, size, leverage, growth sales, profitability, sector).

Dependent variable:

IR: 1 = the company has developed IR; 0 = the company is not presenting it

Independent variables:

BOARD SIZE: Number of directors on the board
WOMEN: Percentage of women on the board
AVERAGE AGE: Average age of board's members

Control variable:

LISTED: 1 = listed company; 0 = no listed company
SIZE: Log. Total Asset
LEVERAGE: Debts/Equity
SALES GROWTH: Growth measured over at least two

years sales growth
 PROFITABILITY: ROA
 ACTIVITY SECTOR: 10 dummies (Automotive, Business Support Services, Consulting, Electricity, Extraction, Healthcare, Oil, Retail Trade, Telecommunications and Transportation)

Table 2. Summary of independent variables.

<i>Independent Variables</i>	<i>Hypothesis</i>	<i>Expected Sign</i>
Board Size	H1	+
Women	H2	+
Average Age	H3	+

Source: own elaboration.

The Logit equation was as follows:

$$IR = \beta_0 + \beta_1 Board\ Size + \beta_2 \%Women + \beta_3 Average\ Age + \beta_4 Listed + \beta_5 Size + \beta_6 Leverage + \beta_7 Sales\ Growth + \beta_8 ROA + \beta_9 Economic\ Sector + \mu \quad (1)$$

We then transformed the IR dependent variable in terms of probability of the event:

$$Probability = \log(P/(1-P)) = \beta_0 + \beta_1 Board\ Size + \beta_2 \%Women + \beta_3 Average\ Age + \beta_4 Listed + \beta_5 Size + \beta_6 Leverage + \beta_7 Sales\ Growth + \beta_8 ROA + \beta_9 Economic\ Sector + \mu \quad (2)$$

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

Tables 3 show summary statistics for the numerical variables for companies adopting IR, while Table 4 presents the same information for those who do not adopt it.

According to Table 3, the board size in companies with IR ranges between 1 and 35 directors with an average size of approximately 11.76 directors. Overall, female directors make up 20.38% of the total directors. The average age of directors is approximately 55 years old.

Table 3. Summary statistics for companies presenting IR

	<i>Obs.</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Skew.</i>	<i>Kurt.</i>
Board size	78	1	35	11.76	8.496	0.668	-0.168
% Women	78	0	100	20.38	18.39	1.387	3.807
Average age	78	37	69.18	54.93	6.10	-0.212	0.330
Size	78	3.11	9.64	6.33	1.27	-0.618	0.295
Leverage	78	0.12	76.26	7.09	15.76	3.20	9.675
Sales Growth	78	-0.38	70.71	0.99	8	8.80	77.637
ROA	78	-34.01	51.12	6.70	11.47	1.44	7.130

Source: own elaboration

According to Table 4, the board size in companies without IR ranges between 1 and 57 directors with an average size of approximately

10.66 directors. Overall, female directors make up 15.09% of the total directors. The average age of directors is approximately 55 years old.

Table 4. Summary statistics for companies not presenting IR

	<i>Obs.</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Skew.</i>	<i>Kurt.</i>
Board size	969	1	57	10.66	8.87	1.150	1.388
% Women	969	0	100	15.09	17.85	1.720	4.451
Average age	969	30.66	86	55.18	6.22	0.019	1.204
Size	969	2.52	11.65	6.73	0.77	-0.242	5.631
Leverage	969	-4.83	86.12	34.79	31.25	21.88	9.417
Sales Growth	969	-0.99	100.41	11.56	3.34	31.02	124.620
ROA	969	-77.47	91.58	4.63	10.57	1.49	19.562

Source: own elaboration

Table 5. Frequencies and percentages of dummy variables for the whole sample (part 1)

	<i>Dummies Variables</i>	
	Frequency	Valid Percentage
IR		
Sensitive (1)	78	7.4
Non-sensitive (0)	969	92.6
Total	1,047	100
Listed		
Sensitive (1)	351	33.5
Non-sensitive (0)	696	66.5
Total	1,047	100

Table 5. Frequencies and percentages of dummy variables for the whole sample (part 2)

	<i>Dummies Variables</i>	
	Frequency	Valid Percentage
Automotive		
Sensitive (1)	122	11.7
Non-sensitive (0)	925	88.3
Total	1,047	100
Business Support Services		
Sensitive (1)	32	3.1
Non-sensitive (0)	1,015	96.9
Total	1,047	100
Consulting		
Sensitive (1)	162	15.5
Non-sensitive (0)	885	84.5
Total	1,047	100
Electricity		
Sensitive (1)	99	9.5
Non-sensitive (0)	948	90.5
Total	1,047	100
Extraction		
Sensitive (1)	38	3.6
Non-sensitive (0)	1,009	96.4
Total	1,047	100
Healthcare		
Sensitive (1)	7	0.7
Non-sensitive (0)	1,040	99.3
Total	1,047	100
Oil		
Sensitive (1)	54	5.2
Non-sensitive (0)	993	94.8
Total	1,047	100
Retail Trade		
Sensitive (1)	246	23.5
Non-sensitive (0)	801	76.5
Total	1,047	100
Telecommunic.		
Sensitive (1)	247	23.6
Non-sensitive (0)	800	76.4
Total	1,047	100
Transportation		
Sensitive (1)	40	3.8
Non-sensitive (0)	1,007	96.2
Total	1,047	100

Source: own elaboration

4.2. Board composition and IR

The result of the bivariate correlation analysis between independent variables shows that the highest value of the Spearman correlation coefficients (r) is 0.400. The coefficients are significant at different levels of confidence and the values are not very high.

According to Table 7, the model has an R^2 of Cox and Snell is 0.0454. On the other hand, the Chi-square test is found to be statistically significant ($\chi^2=48.13$, $p=0.000$). This means that the model explains almost 99% of the variation in the voluntary disclosure amongst sampled firms. The VIF test suggests that the model does not suffer from any multicollinearity problem where the VIF of all variables ranges between 1.008 and 1.545.

The most significant variables are: % WOMEN and SIZE.

A summary of the results of the correlation analysis performed on the model is presented in Table 6.

Table 7 shows a positive relationship between the BOARD SIZE and the adopting of IR ($\beta_1=.019$). This means that as more directors are added to the board, its monitoring capacity increases and thus more information is disclosed. The relationship is found to be significant ($p=.198$).

Therefore, *Hypothesis 1 is supported*.

Table 7 also shows that the coefficient of % WOMEN is positive as expected ($\beta_2=.018$) and statistically it is significant ($p=.003$).

Thus, *Hypothesis 2 is supported*.

The relationship between directors' AVERAGE AGE and IR is found to be negative and insignificant ($\beta_4=-.012$, $p=.55$), this means that firms with corporate boards made up of younger directors disclose more information and they are more likely to adopt IR.

Thus, *Hypothesis 3 is not supported*.

Table 6. Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	IR	1																		
		0.000																		
2	BOARD SIZE	0.033	1																	
		0.293	0.000																	
3	% WOMEN	0.077*	.179**	1																
		0.012	0.000	0.000																
4	AVERAGE AGE	-0.011	.190**	0.060	1															
		0.728	0.000	0.054	0.000															
5	Listed	0.060	.400**	.103**	.131**	1														
		0.050	0.000	0.001	0.000	0.000														
6	Size	-1.28**	.315**	.127**	.105**	.245**	1													
		0.000	0.000	0.000	0.001	0.000	0.000													
7	Leverage	-0.013	0.010	-0.018	-0.027	-0.035	0.020	1												
		0.686	0.736	0.569	0.376	0.256	0.520	0.000												
8	Sales Growth	-0.009	-0.036	-0.023	0.036	-0.024	-0.042	-0.001	1											
		0.781	0.246	0.452	0.239	0.447	0.171	0.982	0.000											
9	ROA	0.051	0.019	0.010	0.005	0.034	-0.032	-0.063*	-0.017	1										
		0.099	0.537	0.754	0.873	0.271	0.302	0.041	0.580	0.000										
10	Extraction	0.042	.080**	-0.025	0.035	0.057	.092**	-0.010	-0.006	0.036	1									
		0.173	0.010	0.420	0.257	0.066	0.003	0.742	0.848	0.251	0.000									
11	Oil	0.033	0.042	-0.011	0.007	-0.010	-0.028	-0.012	-0.008	0.002	-0.045	1								
		0.293	0.175	0.723	0.814	0.744	0.372	0.710	0.801	0.956	0.143	0.000								
12	Automotive	0.010	-0.037	-0.052	0.010	0.007	-0.011	0.050	-0.012	-0.030	-0.070*	-0.085**	1							
		0.738	0.237	0.091	0.735	0.823	0.729	0.104	0.700	0.336	0.023	0.006	0.000							
13	Electricity	0.033	-0.001	-0.072*	-0.066*	0.006	-0.004	-0.013	-0.011	0.010	-0.063*	-0.075*	-0.117**	1						
		0.292	0.986	0.020	0.032	0.856	0.896	0.665	0.727	0.739	0.042	0.015	0.000	0.000						
14	Retail Trade	-0.063*	-0.067*	-0.014	-0.047	-0.098**	-1.139**	-0.022	-0.015	0.013	-1.108**	-1.129**	-2.01**	-1.179**	1					
		0.042	0.029	0.658	0.131	0.002	0.000	0.483	0.639	0.667	0.000	0.000	0.000	0.000	0.000					
15	Transportation	-0.019	0.055	.077*	0.030	.070*	.069*	-0.008	-0.006	0.059	-0.039	-0.046	-0.072*	-0.064*	-1.110**	1				
		0.548	0.073	0.013	0.330	0.024	0.026	0.793	0.835	0.058	0.211	0.133	0.019	0.037	0.000	0.000				
16	Telecommunic.	0.005	-0.046	-0.007	0.017	-0.051	-0.002	-0.023	0.056	-0.036	-1.108**	-1.130**	-2.02**	-1.180**	-3.08**	-1.111**	1			
		0.868	0.134	0.809	0.592	0.096	0.939	0.459	0.073	0.244	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
17	Consulting	-0.021	.071*	.082**	0.048	.144**	.155**	0.041	-0.014	-0.025	-0.083**	-1.100**	-1.155**	-1.138**	-2.37**	-0.085**	-2.38**	1		
		0.501	0.022	0.008	0.123	0.000	0.000	0.186	0.647	0.415	0.007	0.001	0.000	0.000	0.000	0.000	0.000	0.000		
18	Business Support Services	0.034	-0.013	0.047	-0.028	-0.056	-0.061*	-0.007	-0.006	0.036	-0.034	-0.041	-0.064*	-0.057	-0.098**	-0.035	-0.099**	-0.076*	1	
		0.270	0.674	0.126	0.359	0.072	0.050	0.827	0.848	0.243	0.265	0.181	0.037	0.063	0.001	0.253	0.001	0.014	0.000	
19	Healthcare	0.021	0.024	0.019	0.031	-0.058	-0.067*	-0.012	-0.003	0.010	-0.016	-0.019	-0.030	-0.027	-0.045	-0.016	-0.046	-0.035	-0.015	1
		0.490	0.445	0.543	0.311	0.059	0.030	0.710	0.931	0.740	0.607	0.536	0.335	0.391	0.142	0.597	0.140	0.256	0.638	0.000

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Note: The first number is the correlation coefficient. The second number is the p-value of significance of the correlation coefficient.

Source: own elaboration.

Table 7. Results for the model Logit

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>Gl</i>	<i>Sign.</i>	<i>Exp(B)</i>
Board Size	.019	.015	1.659	1	.198	1.019
% Women	.018	.006	9.032	1	.003	1.018
Average Age	-.012	.021	.343	1	.558	.988
Listed	.724	.281	6.643	1	.010	2.063
Size	-.748	.143	27.313	1	.000	.473
Leverage	.000	.001	.033	1	.855	1.000
Sales Growth	.000	.003	.019	1	.889	1.000
ROA	.013	.009	1.957	1	.162	1.013
Automotive	.112	1.249	.008	1	.929	1.118
Bus. Supp. Serv.	.046	1.318	.001	1	.972	1.047
Consulting	-.269	1.254	.046	1	.830	.764
Electricity	.337	1.252	.072	1	.788	1.400
Extraction	.784	1.306	.361	1	.548	2.191
Oil	.350	1.277	.075	1	.784	1.418
Retail Trade	-.758	1.235	.377	1	.539	.469
Telecommunic.	-.057	1.220	.002	1	.962	.944
Transportation	-.685	1.412	.236	1	.627	.504
Costant	2.277	1.784	1.630	1	.202	9.750

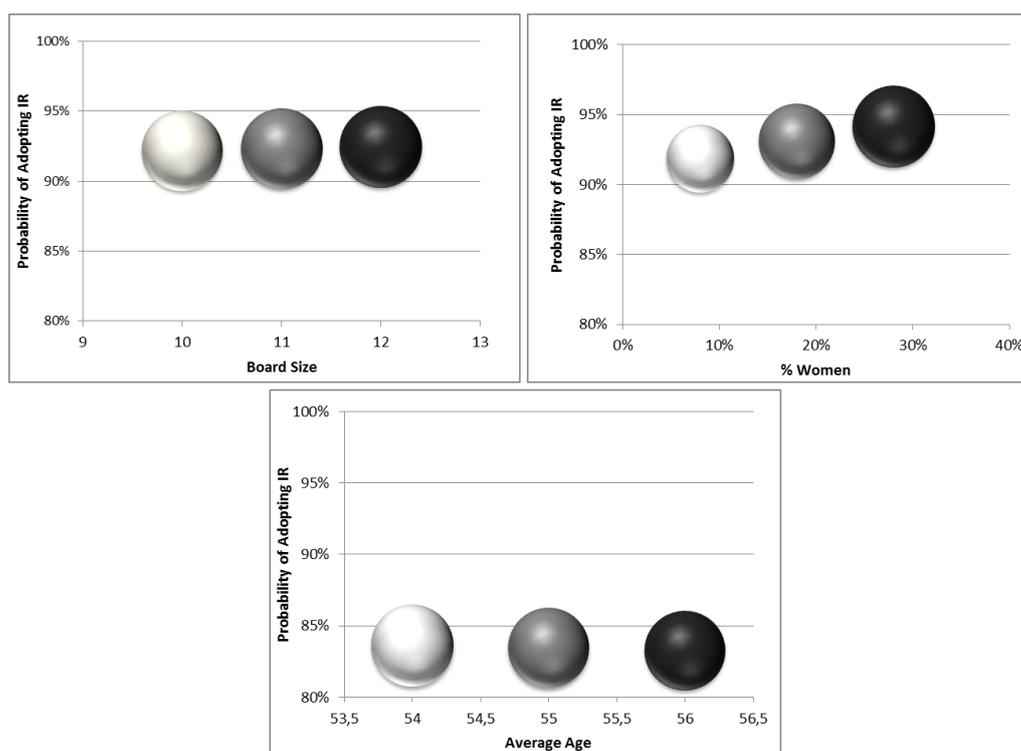
Source: own elaboration.

Data analysis went ahead transforming the Logit results to probability terms. That is, the probability to adopt an IR compared to the average value was calculated for each independent variable and then the variations were determined in terms of

probability following an increase or decrease in the average value of these variables.

The graphs below clearly show - for each variable - the variation of the probability to adopt an IR as board characteristics vary.

Figure 1. Probability of adopting IR compared to independent variables



Source: own elaboration

These results show that companies with a larger BoD are 1.02 times more likely to adopt IR compared to companies with a smaller board, $Exp(B)=1.02$. Those boards with eleven members have a likelihood of 92% to adopt IR as disclosure tool and with one extra board member, the likelihood increases by 0.27%. Adding women to the board results in an increase of the probability of a company adopting IR (odds ratio=1.018, $p<.005$). Companies, where women represent 18% of board members, record a 93.09% probability of adopting IR

and it increases by 2.32% following a 10% rise of female board members. An average age of 55 corresponds to a probability of 83.44% which goes down to 83.27% when the average age is one year older, i.e. 56 years old.

5. CONCLUSIONS AND IMPLICATIONS

Over the last few years, increasing numbers of companies have been giving more attention to

processes that create value. They have voluntarily decided to adopt IR which is an efficient disclosure tool used for communicating with stakeholders as well as being an accounting tool for measuring a company's social sustainability and economic growth in the medium and long-term. IR, then, is a form of communication made up of numbers and qualitative information with the aim of keeping stakeholders up to date. This paper's objective is to analyse how certain characteristics of board composition influence its decision to adopt IR. The study examined 1,047 European companies from different sectors for the year 2015.

The results highlighted a positive relationship between adopting IR and the size of the BoD and female board members. Companies with larger boards are more inclined to adopt this new document because they can count on greater resources for sourcing and publishing this data (Lev, 2004). They are also more likely to publish non-financial data in order to satisfy investors' requests for information (Garcia-Sanchez, 2013).

Promoting gender diversity on the board is likely to impact positively on the voluntary provision of holistic information and thus improve stakeholder engagement. This effect is generalised, whereby reducing the imperative to mandate such disclosure, as well as the influence of legal and cultural systems that characterise the company's country of origin (Fernandez-Reijo *et al.*, 2014).

The research showed a significant relationship

between the average age of the BoD and IR.

Our findings present implications both from the theoretical and practical point of view. On a theoretical level, the study confirms that board diversity needs to be analysed more in detail, because of its contribution to company's transparency. Moreover, the results provide to corporate governance standard setters and regulators a useful insight of the important distinction among various board members' features.

6. LIMITATIONS AND FUTURE AVENUES OF THE RESEARCH

The study has several limitations:

- Other variables capturing different aspects other than corporate governance could be included.
- Different factors, such as strategy decisions, communication policies and regulatory/legal backgrounds, could be considered.
- The analysis could be conducted on a wider sample.

We believe that a deeper understanding of the factors influencing the decision of adopting IR is essential for academics, companies and - especially - policy-makers, considering that this kind of disclosure develops the integrated thinking, improves the quality of information available to the providers of financial capital.

REFERENCES

1. Adams, C. (2015). *Understanding integrated reporting: The concise guide to integrated thinking and the future of corporate reporting*. London, UK: Do Sustainability.
2. Adams, C. A. (2002). Internal organisational factors influencing corporate social and ethical reporting: Beyond current theorising. *Accounting, Auditing & Accountability Journal*, 15(2), 223-250. <https://doi.org/10.1108/09513570210418905>
3. Adams, J. C., King, D., Pendlebury Hook, D., & Wilsdon, J. (2011). *Global research report: Middle East: Exploring the changing landscape of Arabian, Persian and Turkish research*. Leeds, UK: Evidence/Thomson Reuters.
4. Adams, R., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309. <https://doi.org/10.1016/j.jfineco.2008.10.007>
5. Adams, R. B., & Ferreira, D. (2004). *Gender diversity in the boardroom*. (Finance Working Paper, 57). European corporate governance institute.
6. Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of financial studies*, 18(4), 1403-1432. <https://doi.org/10.1093/rfs/hhi030>
7. Adams, S., & Simnett, R. (2011). Integrated reporting: An opportunity for Australia's not for profit sector. *Australian Accounting Review*, 21(3), 292-301. <https://doi.org/10.1111/j.1835-2561.2011.00143.x>
8. Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *The Quarterly Journal of Economics*, 127(1), 137-197. <https://doi.org/10.1093/qje/qjr049>
9. Ahmed, K., & Courtis, J. K. (1999). Associations between corporate characteristics and disclosure levels in annual reports: A meta-analysis. *The British Accounting Review*, 31(1), 35-61. <https://doi.org/10.1006/bare.1998.0082>
10. Allegrini, M., & Greco, G. (2013). Corporate boards, audit committees and voluntary disclosure: Evidence from Italian listed companies. *Journal of Management & Governance*, 17(1), 187-216. <https://doi.org/10.1007/s10997-011-9168-3>
11. Alvarez, R. M., & McCaffery, E. J. (2000). *Is there a gender gap in fiscal political preferences?* (Paper No. 5). USC Law School.
12. Ariff, A. A. (2013). Governance and voluntary disclosure of intangibles. *Corporate Ownership & Control*, 11(1), 600-610. <https://doi.org/10.22495/cocv11i1c6art6>
13. Arshad, R., Atan, R., & Darus, F. (2009). Board structure, institutional pressures and corporate voluntary disclosure. *Corporate Ownership & Control*, 6(3), 360-370. <https://doi.org/10.22495/cocv6i3c3p2>
14. Ayuso, S., & Argandoña, A. (2009). *Responsible corporate governance: Towards a stakeholder board of directors?* (Working Paper WP no 701). IESE Business School, University of Navarra.
15. Bajari, P., Fox, J., & Ryan, S. P. (2009). The random coefficients logit model is identified. *Journal of Econometrics*, 166(2), 204-212. doi:10.1016/j.jeconom.2011.09.002
16. Barako, D. G., & Brown, A. M. (2008). Corporate social reporting and board representation: evidence from the Kenyan banking sector. *Journal of Management & Governance*, 12(4), 309. <https://doi.org/10.1007/s10997-008-9053-x>
17. Barako, D. G., Hancock, P., & Izan, H. Y. (2006). Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review*, 14(2), 107-125. <https://doi.org/10.1007/s10997-006-9053-x>

- doi.org/10.1111/j.1467-8683.2006.00491.x
18. Bassen, A., Kleinschmidt, M., & Zöllner, C. (2006). Corporate governance of German growth companies. Empirical analysis of the corporate governance quality and the structure of supervisory boards of companies listed on TEC-DAX. *Corporate Ownership & Control*, 3(3), 128-137. <https://doi.org/10.22495/cocv3i3p10>
 19. Baumol, W. J., & Bowen, W. G. (1965). On the performing arts: the anatomy of their economic problems. *The American Economic Review*, 55(1/2), 495-502.
 20. Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting review*, 71(4), 443-465.
 21. Berry, W. D., & Feldman, S. (1985). *Multiple regressions in practice*. USA: Sage. <http://dx.doi.org/10.4135/9781412985208>
 22. Betz, M., O'Connell, L., & Shepard, J. M. (2013). Gender differences in proclivity for unethical behavior. *Journal of Business Ethics*, 2, 427-432. https://doi.org/10.1007/978-94-007-4126-3_20
 23. Boesso, G., & Kumar, K. (2007). Drivers of corporate voluntary disclosure: A framework and empirical evidence from Italy and the United States. *Accounting, Auditing & Accountability Journal*, 20(2), 269-296. <https://doi.org/10.1108/09513570710741028>
 24. Brennan, N. (2006). Boards of directors and firm performance: Is there an expectations gap? *Corporate Governance: An International Review*, 14(6), 577-593. <https://doi.org/10.1111/j.1467-8683.2006.00534.x>
 25. Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, 12(3), 403-423. <https://doi.org/10.1016/j.jcorpfin.2005.08.005>
 26. Brown, J., & Dillard, J. (2014). Integrated reporting: On the need for broadening out and opening up. *Accounting, Auditing & Accountability Journal*, 27(7), 1120-1156. <https://doi.org/10.1108/AAAJ-04-2013-1313>
 27. Campbell, D., Shrives, P., & Bohmbach-Saager, H. (2001). Voluntary disclosure of mission statements in corporate annual reports: Signaling what and to whom? *Business and society review*, 106(1), 65-87. <https://doi.org/10.1111/0045-3609.00102>
 28. Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of business ethics*, 83(3), 435-451. <https://doi.org/10.1007/s10551-007-9630-y>
 29. Carels, C., Maroun, W., & Padia, N. (2013). Integrated reporting in the South African mining sector. *Corporate Ownership & Control*, 11(1), 991-1005. <https://doi.org/10.22495/cocv11i1c11p6>
 30. Chen, C. J., & Jaggi, B. (2001). Association between independent non-executive directors, family control and financial disclosures in Hong Kong. *Journal of Accounting and Public policy*, 19(4), 285-310.
 31. Eccles, R. G., Cheng, B., & Saltzman, D. (Eds.). (2010). *The landscape of integrated reporting. Reflections and next steps*. Boston: Harvard Business Review.
 32. Cheng, E. C., & Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. *The international journal of accounting*, 41(3), 262-289. <https://doi.org/10.1016/j.intacc.2006.07.003>
 33. Cheng, M., Green, W., Conradie, P., Konishi, N., & Romi, A. (2014). The international integrated reporting framework: key issues and future research opportunities. *Journal of International Financial Management & Accounting*, 25(1), 90-119. <https://doi.org/10.1111/jifm.12015>
 34. Choi, F. D. (1973). Financial disclosure and entry to the European capital market. *Journal of Accounting Research*, 11(2), 159-175. <https://doi.org/10.2307/2490187>
 35. Churet, C., & Eccles, R. G. (2014). Integrated reporting, quality of management, and financial performance. *Journal of Applied Corporate Finance*, 26(1), 56-64.
 36. Cooke, T. E. (1989). Disclosure in the corporate annual reports of Swedish companies. *Accounting and business research*, 19(74), 113-124. <https://doi.org/10.1080/00014788.1989.9728841>
 37. Cooke, T. E. (1992). The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research*, 22(87), 229-237. <https://doi.org/10.1080/00014788.1992.9729440>
 38. Corsi, K., Magnaghi, E., & Mancini, D. (2016). Tradizione e innovazione della comunicazione non finanziaria: la prontezza delle società quotate all'adozione della direttiva 2014/95/UE. *Pubblicazioni SIDREA*, 3.
 39. D'Este, C., Fellegara, A., Galli, D., & di Piacenza, G. (2013). Livelli di disclosure economico-finanziaria e scelte di integrated reporting nei gruppi a connotazione territoriale. Paper presented at the XXXVI AIDEA Conference. *The Firms Role in Economy. Does a Growth-Oriented Business Model Exist*, 1-26. Retrieved from the World Wide Web: http://www.aidea2013.it/docs/348_aidea2013_eco nomia-aziendale.pdf
 40. D'Orio, G., & Lombardo, R. (2007). Corporate governance and corporate social responsibility in Italy: Advantages and disadvantages of a non-explicitly-existent system. *Corporate Ownership & Control*, 4(4), 36-49. <https://doi.org/10.22495/cocv4i4c4p4>
 41. Da Silva Monteiro, S. M., & Aibar-Guzmán, B. (2010). Determinants of environmental disclosure in the annual reports of large companies operating in Portugal. *Corporate Social Responsibility and Environmental Management*, 17(4), 185-204. <https://doi.org/10.1002/csr.197>
 42. Dahya, J., Lonie, A. A., & Power, D. M. (1996). The case for separating the roles of chairman and CEO: An analysis of stock market and accounting data. *Corporate Governance: An International Review*, 4(2), 71-77. <https://doi.org/10.1111/j.1467-8683.1996.tb00136.x>
 43. Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42(6), 674-686. <https://doi.org/10.2307/256988>
 44. De Andres, P., Azofra, V., & Lopez, F. (2005). Corporate boards in OECD countries: Size, composition, functioning and effectiveness. *Corporate Governance: An International Review*, 13(2), 197-210. <https://doi.org/10.1111/j.1467-8683.2005.00418.x>
 45. De Villiers, C., Rinaldi, L., & Unerman, J. (2014). Integrated Reporting: Insights, gaps and an agenda for future research. *Accounting, Auditing & Accountability Journal*, 27(7), 1042-1067. <https://doi.org/10.1108/AAAJ-06-2014-1736>
 46. Del Brio, E. B., Maia-Ramires, E., & Perote, J. (2006). Corporate governance mechanisms and their impact on firm value. *Corporate Ownership & Control*, 4(1), 25-36. <https://doi.org/10.22495/cocv4i1p2>
 47. Eccles, R. G., & Krzus, M. P. (2010). Integrated

- reporting for a sustainable strategy: One Report has the potential to significantly change how companies operate and investors think, shifting the focus from that of meeting short-term financial goals to developing a long-term business strategy that not only makes a commitment to corporate social responsibility, but also to a sustainable society. *Financial executive*, 26(2), 28-33.
48. Eccles, R. G., & Krzus, M. P. (2010). *One report: Integrated reporting for a sustainable strategy*. USA, Hoboken: John Wiley & Sons. <https://doi.org/10.1002/9781119199960.ch1>
 49. Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of financial economics*, 48(1), 35-54. [https://doi.org/10.1016/S0304-405X\(98\)00003-8](https://doi.org/10.1016/S0304-405X(98)00003-8)
 50. Eisenhardt, K. M., & Bourgeois, L. J. (1988). Politics of strategic decision making in high velocity environments: Towards a midrange theory. *Academy of Management Journal*, 32, 543-577. <https://doi.org/10.2307/256434>
 51. Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. *Journal of accounting and public policy*, 22(4), 325-345. [https://doi.org/10.1016/S0278-4254\(03\)00037-1](https://doi.org/10.1016/S0278-4254(03)00037-1)
 52. Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *The Journal of Law and Economics*, 26(2), 327-349. <https://doi.org/10.1086/467038>
 53. Fernandez-Reijo, B., Romero, S., & Ruiz-Blanco, S. (2014). Women on boards: do they affect sustainability reporting? *Corporate Social Responsibility and Environmental Management*, 21(6), 351-364. <https://doi.org/10.1002/csr.1329>
 54. Fields, M. A., & Keys, P. Y. (2003). The emergence of corporate governance from Wall St. to Main St.: Outside directors, board diversity, earnings management, and managerial incentives to bear risk. *Financial Review*, 38(1), 1-24. <https://doi.org/10.1111/1540-6288.00032>
 55. Firth, M. (1979). The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. *Accounting and Business Research*, 9(36), 273-280. <https://doi.org/10.1080/00014788.1979.9729168>
 56. Flaherty, S., Li, J., & Small, K. (2006). Evidence on board size and information asymmetry: a capital markets perspective. *Corporate Ownership & Control*, 4(2), 248-256.
 57. Flower, J. (2015). The international integrated reporting council: a story of failure. *Critical Perspectives on Accounting*, 27, 1-17. <https://doi.org/10.1016/j.cpa.2014.07.002>
 58. Frias-Aceituno, J. V., Rodriguez-Ariza, L., & Garcia-Sanchez, I. M. (2013). The role of the board in the dissemination of integrated corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 20(4), 219-233. <https://doi.org/10.1002/csr.1294>
 59. Gallego-Alvarez, I., Manuel Prado-Lorenzo, J., & Garcia-Sanchez, I. M. (2011). Corporate social responsibility and innovation: a resource-based theory. *Management Decision*, 49(10), 1709-1727. <https://doi.org/10.1108/00251741111183843>
 60. Gandia, J. L. (2008). Determinants of internet-based corporate governance disclosure by Spanish listed companies. *Online Information Review*, 32(6), 791-817. <https://doi.org/10.1108/14684520810923944>
 61. Garcia-Sanchez, I. M., Rodriguez-Ariza, L., & Frias-Aceituno, J. V. (2013). The cultural system and integrated reporting. *International Business Review*, 22(5), 828-838. <https://doi.org/10.1016/j.ibusrev.2013.01.007>
 62. Gaver, J. J., & Gaver, K. M. (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Accounting and Economics*, 16(1-3), 125-160. [https://doi.org/10.1016/0165-4101\(93\)90007-3](https://doi.org/10.1016/0165-4101(93)90007-3)
 63. Gibbins, M., Richardson, A., & Waterhouse, J. (1990). The management of corporate financial disclosure: opportunism, ritualism, policies, and processes. *Journal of accounting research*, 28(1), 121-143. <https://doi.org/10.2307/2491219>
 64. Giner Inchausti, B., Arce Gisbert, M., Cervera Millán, N., & Ruiz llopis, A. (2003). Incentivos para la divulgación voluntaria de información: evidencia empírica sobre la información segmentada. *Revista Europea de Dirección y Economía de la Empresa*, 12(4), 69-86.
 65. Grimm, C. M., & Smith, K. G. (1991). Research notes and communications management and organizational change: A note on the railroad industry. *Strategic Management Journal*, 12(7), 557-562. <https://doi.org/10.1002/smj.4250120708>
 66. Gujarati, D. N., & Porter, D. C. (2003). *Basic econometrics* (4th ed.). New York: McGraw-Hill.
 67. Gul, F. A., & Leung, S. (2004). Board leadership, outside directors' expertise and voluntary corporate disclosures. *Journal of Accounting and Public Policy*, 23(5), 351-379. <https://doi.org/10.1016/j.jaccpubpol.2004.07.001>
 68. Haller, A., & van Staden, C. (2014). The value added statement—an appropriate instrument for Integrated Reporting. *Accounting, Auditing & Accountability Journal*, 27(7), 1190-1216. <https://doi.org/10.1108/AAAJ-04-2013-1307>
 69. Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206. <https://doi.org/10.2307/258434>
 70. Hassan, A., & Ibrahim, E. (2012). Corporate environmental information disclosure: factors influencing companies' success in attaining environmental awards. *Corporate Social Responsibility and Environmental Management*, 19(1), 32-46. <https://doi.org/10.1002/csr.278>
 71. Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of accounting and economics*, 31(1), 405-440. [https://doi.org/10.1016/S0165-4101\(01\)00018-0](https://doi.org/10.1016/S0165-4101(01)00018-0)
 72. Heidrick & Struggles (2014). Towards dynamic governance 2014. *European Corporate Governance Report*.
 73. Herrmann, P., & Datta, D. K. (2005). Relationships between top management team characteristics and international diversification: An empirical investigation. *British Journal of Management*, 16(1), 69-78. <https://doi.org/10.1111/j.1467-8551.2005.00429.x>
 74. Ho, S. S., & Wong, K. S. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10(2), 139-156. [https://doi.org/10.1016/S1061-9518\(01\)00041-6](https://doi.org/10.1016/S1061-9518(01)00041-6)
 75. Huse, M., & Grethe Solberg, A. (2006). Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards. *Women in Management Review*, 21(2), 113-130. <https://doi.org/10.1108/09649420610650693>
 76. IIRC (2011). *Towards integrated reporting. Communicating value in the 21st Century*. IIRC.

- Retrieved from the World Wide Web: www.theiirc.org.
77. IIRC (2013). *The international <IR> Frameworks*. Retrieved from the World Wide Web: <http://www.theiirc.org>.
 78. Inchausti, B. G. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *European accounting review*, 6(1), 45-68. <https://doi.org/10.1080/096381897336863>
 79. Incollingo, A., & Bianchi, M. (2016). The connectivity of information in integrated reporting. Empirical evidence from international context. *Financial Reporting*, 2. DOI: 10.3280/FR2016-002003
 80. Ingle, C. B., & Van der Walt, N. T. (2003). Board configuration: building better boards. *Corporate Governance: The international journal of business in society*, 3(4), 5-17. <https://doi.org/10.1108/14720700310497078>
 81. Izzo M.F., Fiori G. (2016) The influence of corporate governance on the adoption of the integrated report: A first study on IIRC pilot programme. In Mio C. (ed.), *Integrated reporting* (pp. 155-179). London: Palgrave Macmillan. https://doi.org/10.1057/978-1-137-55149-8_9
 82. Jensen, J. C., & Berg, N. (2012). Determinants of traditional sustainability reporting versus integrated reporting. An institutionalist approach. *Business Strategy and the Environment*, 21(5), 299-316. <https://doi.org/10.1002/bse.740>
 83. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
 84. Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review*, 15(2), 194-207. <https://doi.org/10.1111/j.1467-8683.2007.00554.x>
 85. Kanter, R. M. (1977). *Men and women of the corporation*. New York: Basic Books.
 86. Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*. Retrieved from the World Wide Web: <https://hbr.org>
 87. Kaplan, S. N., & Reishus, D. (1990). Outside directorships and corporate performance. *Journal of Financial Economics*, 27(2), 389-410. [https://doi.org/10.1016/0304-405X\(90\)90061-4](https://doi.org/10.1016/0304-405X(90)90061-4)
 88. Khan, H. U. Z. (2010). The effect of corporate governance elements on corporate social responsibility (CSR) reporting: Empirical evidence from private commercial banks of Bangladesh. *International Journal of Law and Management*, 52(2), 82-109. <https://doi.org/10.1108/17542431011029406>
 89. Khanna, T., Palepu, K. G., & Srinivasan, S. (2004). Disclosure practices of foreign companies interacting with US markets. *Journal of Accounting Research*, 42(2), 475-508. <https://doi.org/10.1111/j.1475-679X.2004.00146.x>
 90. Konrad, A. M., Kramer, V., & Erkut, S. (2008). Critical mass: The impact of three or more women on corporate boards. *Organizational dynamics*, 37(2), 145-164. <https://doi.org/10.1016/j.orgdyn.2008.02.005>
 91. Kosnik, R. D. (1990). Effects of board demography and directors' incentives on corporate greenmail decisions. *Academy of Management journal*, 33(1), 129-150. <https://doi.org/10.2307/256355>
 92. Kramer, V. W., Konrad, A. M., Erkut, S., & Hooper, M. J. (2006). *Critical mass on corporate boards: Why three or more women enhance governance*. Boston: Wellesley Centers for Women.
 93. Larmou, S., & Vafeas, N. (2010). The relation between board size and firm performance in firms with a history of poor operating performance. *Journal of Management & Governance*, 14(1), 61. <https://doi.org/10.1007/s10997-009-9091-z>
 94. Larrán, M., & Giner, B. (2002). The use of the Internet for corporate reporting by Spanish companies. *International Journal of Digital Accounting Research*, 2(1), 53-82. https://doi.org/10.4192/1577-8517-v2_3
 95. Lev, B. (1992). Information disclosure strategy. *California Management Review*, 34(4), 9-32. <https://doi.org/10.2307/41166701>
 96. Lev, B. (2004). Sharpening the intangibles edge. *Harvard business review*, 6, 109-116.
 97. Li, H., & Qi, A. (2008). Impact of corporate governance on voluntary disclosure in Chinese listed companies. *Corporate Ownership & Control*, 5(2), 360-366.
 98. Lim, S., Matolcsy, Z., & Chow, D. (2007). The association between board composition and different types of voluntary disclosure. *European Accounting Review*, 16(3), 555-583. <https://doi.org/10.1080/09638180701507155>
 99. Lozano, R., & Huisingh, D. (2011). Inter-linking issues and dimensions in sustainability reporting. *Journal of Cleaner Production*, 19(2), 99-107. <https://doi.org/10.1016/j.jclepro.2010.01.004>
 100. Marston, C., & Polei, A. (2004). Corporate reporting on the Internet by German companies. *International Journal of Accounting Information Systems*, 5(3), 285-311. <https://doi.org/10.1016/j.accinf.2004.02.009>
 101. Mizuchi, M. S. (2004). Berle and Means revisited: The governance and power of large US corporations. *Theory and Society*, 33(5), 579-617. <https://doi.org/10.1023/B:RYSO.0000045757.93910.ed>
 102. Monks, R. A. G., & Minow, N. (2008). *Corporate governance*. West Sussex, UK: John Wiley.
 103. Nakano, M., & Nguyen, P. (2011). Do older boards affect firm performance? An empirical analysis based on Japanese firms. *Hitotsubashi University*. <https://doi.org/10.2139/ssrn.1879825>
 104. Ortiz, E., & Clavel, J. G. (2006). Índices de revelación de información: Una propuesta de mejora de la metodología. Aplicación a la información sobre recursos humanos incluida en los Informes 20F. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, 35(128), 87-113.
 105. Owen G. (2013). Integrated Reporting: A review of developments and their implications for the accounting curriculum. *Accounting Education: An International Journal*, 22(4), 340-356. <https://doi.org/10.1080/09639284.2013.817798>
 106. Pahuja, S. (2009). Relationship between environmental disclosures and corporate characteristics: A study of large manufacturing companies in India. *Social Responsibility Journal*, 5(2), 227-244. <https://doi.org/10.1108/17471110910964504>
 107. Parum, E. (2005). Does disclosure on corporate governance lead to openness and transparency in how companies are managed? *Corporate Governance: An International Review*, 13(5), 702-709. <https://doi.org/10.1111/j.1467-8683.2005.00461.x>
 108. Pastore, P., & Tommaso, S. (2016). Women on corporate boards. The case of 'gender quotas' in Italy. *Corporate Ownership & Control*, 13(4), 132-155. <https://doi.org/10.22495/cocv13i4p13>
 109. Pearce, J. A., & Zahra, S. A. (1992). Board

- composition from a strategic contingency perspective. *Journal of management studies*, 29(4), 411-438. <https://doi.org/10.1111/j.1467-6486.1992.tb00672.x>
110. Pfeffer, J. & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.
 111. Pfeffer, J. (1972). Size and composition of corporate boards of directors: The organization and its environment. *Administrative Science Quarterly*, 17(2), 218-228. <https://doi.org/10.2307/2393956>
 112. Pfeffer, J. (1973). Size, composition, and function of hospital boards of directors: A study of organization-environment linkage. *Administrative Science Quarterly*, 18(2), 349-364. <https://doi.org/10.2307/2391668>
 113. Prado-Lorenzo, J. M., & Garcia-Sanchez, I. M. (2010). The role of the board of directors in disseminating relevant information on greenhouse gases. *Journal of business ethics*, 97(3), 391-424. <https://doi.org/10.1007/s10551-010-0515-0>
 114. Prado-Lorenzo, J. M., Gallego-Alvarez, I., & Garcia-Sanchez, I. M. (2009). Stakeholder engagement and corporate social responsibility reporting: The ownership structure effect. *Corporate Social Responsibility and Environmental Management*, 16(2), 94-107. <https://doi.org/10.1002/csr.189>
 115. Prencipe, A. (2004). Proprietary costs and determinants of voluntary segment disclosure: evidence from Italian listed companies. *European Accounting Review*, 13(2), 319-340. <https://doi.org/10.1080/0963818042000204742>
 116. Qu, W., & Leung, P. (2006). Cultural impact on Chinese corporate disclosure - a corporate governance perspective. *Managerial Auditing Journal*, 21(3), 241-264. <https://doi.org/10.1108/02686900610652991>
 117. Quagli, A. (2004). *Comunicare il futuro: L'informativa economico-finanziaria di tipo previsionale delle società quotate italiane*. Milano: FrancoAngeli.
 118. Raithatha, M., & Bapat, V. (2014). Impact of corporate governance on financial disclosures: Evidence from India. *Corporate Ownership & Control*, 12(1), 874-889. <https://doi.org/10.22495/cocv12i1c9p10>
 119. Reed, R., & DeFillippi, R. J. (1990). Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of management review*, 15(1), 88-102. <https://doi.org/10.2307/258107>
 120. Rensburg, R., & Botha, E. (2014). Is integrated reporting the silver bullet of financial communication? A stakeholder perspective from South Africa. *Public Relations Review*, 40(2), 144-152. <https://doi.org/10.1016/j.pubrev.2013.11.016>
 121. Ricart, J. E., Rodríguez, M.A., & Sánchez, P. (2005). Sustainability in the boardroom: An empirical examination of Dow Jones Sustainability World Index leaders. *Corporate Governance: the international journal of business in society*, 5(3), 24-41. <https://doi.org/10.1108/14720700510604670>
 122. Richardson, A. J., & Welker, M. (2001). Social disclosure, financial disclosure and the cost of equity capital. *Accounting, organizations and society*, 26(7), 597-616. [https://doi.org/10.1016/S0361-3682\(01\)00025-3](https://doi.org/10.1016/S0361-3682(01)00025-3)
 123. Robinson, G., & Dechant, K. (1997). Building a business case for diversity. *The Academy of Management Executive*, 11(3), 21-31. <https://doi.org/10.5465/AME.1997.9709231661>
 124. Rose, C. (2005). The composition of semi-two-tier corporate boards and firm performance. *Corporate Governance: An International Review*, 13(5), 691-701. <https://doi.org/10.1111/j.1467-8683.2005.00460.x>
 125. Samaha, J., Bauer, P., Cimaroli, S., & Postle, B. R. (2015). Top-down control of the phase of alpha-band oscillations as a mechanism for temporal prediction. *Proceedings of the National Academy of Sciences*, 112(27), 8439-8444. <https://doi.org/10.1073/pnas.1503686112>
 126. Schweiger, D. M., Sandberg, W. R., & Ragan, J. W. (1986). Group approaches for improving strategic decision making: A comparative analysis of dialectical inquiry, devil's advocacy, and consensus. *Academy of management Journal*, 29(1), 51-71. <https://doi.org/10.2307/255859>
 127. Sierra-Garcia, L., Zorio-Grima, A., & Garcia-Benau, M. A. (2015). Stakeholder engagement, corporate social responsibility and integrated reporting: An exploratory study. *Corporate Social Responsibility and Environmental Management*, 22(5), 286-304. <https://doi.org/10.1002/csr.1345>
 128. Singh, V., Vinnicombe, S., & Johnson, P. (2001). Women directors on top UK boards. *Corporate Governance: An International Review*, 9(3), 206-216. <https://doi.org/10.1111/1467-8683.00248>
 129. Singhvi, S. S., & Desai, H. B. (1971). An empirical analysis of the quality of corporate financial disclosure. *The Accounting Review*, 46(1), 129-138.
 130. Smith, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of financial Economics*, 32(3), 263-292. [https://doi.org/10.1016/0304-405X\(92\)90029-W](https://doi.org/10.1016/0304-405X(92)90029-W)
 131. Soliman, M. M., Ragab, A. A., & Eldin, M. B. (2014). Board composition, ownership structure and voluntary disclosure: an empirical study of the listed companies in Egypt. *Corporate Ownership & Control*, 11(2), 415-426. <https://doi.org/10.22495/cocv11i2c4p6>
 132. Sonnenfeld, J. A. (2002). What makes great boards great. *Harvard business review*, 80(9), 106-113.
 133. Sotorrió, L. L., & Sánchez, J. L. F. (2010). Corporate social reporting for different audiences: the case of multinational corporations in Spain. *Corporate Social Responsibility and Environmental Management*, 17(5), 272-283. <https://doi.org/10.1002/csr.215>
 134. Spero, L. L. (1979). *The extent and causes of voluntary disclosure of financial information in three European capital markets: An exploratory study*. University Microfilms.
 135. Srinidhi, B., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. *Contemporary Accounting Research*, 28(5), 1610-1644. <https://doi.org/10.1111/j.1911-3846.2011.01071.x>
 136. Stubbs, W. & Higgins, C. (2012). *Sustainability and Integrated Reporting: A Study of the Inhibitors and Enablers of Integrated Reporting*. Institute of Chartered Accountants in Australia.
 137. Suttipun, M. (2017). The effect of integrated reporting on corporate financial performance: Evidence from Thailand. *Corporate Ownership & Control*, 15(1), 133-142. <https://doi.org/10.22495/cocv15i1art13>
 138. Torchia, M., Calabrò, A., & Huse, M. (2011). Women directors on corporate boards: From tokenism to critical mass. *Journal of Business Ethics*, 102(2), 299-317. <https://doi.org/10.1007/s10551-011-0815-z>
 139. Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. *Academy of management review*, 10(3), 540-557. <https://doi.org/10.5465/AMR.1985.4278989>
 140. Useem, M. (1993). *Executive defense: Shareholder*

- power and corporate reorganization. Harvard University Press.
141. Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of financial economics*, 53(1), 113-142. [https://doi.org/10.1016/S0304-405X\(99\)00018-5](https://doi.org/10.1016/S0304-405X(99)00018-5)
142. Van Bommel, K. (2014). Towards a legitimate compromise? An exploration of integrated reporting in the Netherlands. *Accounting, Auditing & Accountability Journal*, 27(7), 1157-1189. <https://doi.org/10.1108/AAAJ-04-2013-1309>
143. Van der Walt, N., Ingle, C., Shergill, G. S., & Townsend, A. (2006). Board configuration: Are diverse boards better boards? *Corporate Governance: The international journal of business in society*, 6(2), 129-147. <https://doi.org/10.1108/14720700610655141>
144. Vani Kant, B. (2001). *Logit and probit*. USA: Sage Publishing.
145. Verrecchia, R. E. (1983). Discretionary disclosure. *Journal of accounting and economics*, 5, 179-194. [https://doi.org/10.1016/0165-4101\(83\)90011-3](https://doi.org/10.1016/0165-4101(83)90011-3)
146. Watson, W. E., Kumar, K., & Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of management journal*, 36(3), 590-602. <https://doi.org/10.2307/256593>
147. Westphal, J. D., & Milton, L. P. (2000). How experience and network ties affect the influence of demographic minorities on corporate boards. *Administrative Science Quarterly*, 45(2), 366-398. <https://doi.org/10.2307/2667075>
148. Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2), 185-211. [https://doi.org/10.1016/0304-405X\(95\)00844-5](https://doi.org/10.1016/0304-405X(95)00844-5)
149. Zajac, E. J., & Westphal, J. D. (1996). Director reputation, CEO/board power, and the dynamics of board interlocks. *Academy of Management Proceedings*, 1, 254-258. <https://doi.org/10.5465/AMBPP.1996.4980568>