

THE EFFECT OF NATIONAL CULTURAL DIFFERENCES OF BOARD MEMBERS ON INTEGRATED REPORTING

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Abstract

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This research, based on stakeholder theory and the national cultural dimensions, aims to test the influence of foreigners on board and its size on Integrated Reporting (IR) practices. The analysis is based on a sample of 1,058 European companies from 18 different countries, who adopted or not the IR for the year 2015, and it relies on a Logit. The dependent variable is a dummy (presenting or not the IR) and the independent variables are represented by the board characteristics (foreigners and size). The impact of the critical mass on the presence of foreigners and the cultural dimension on the basis of directors' nationality was tested relying on the masculinity/femininity dimension of Hofstede. Besides, the directors' country of origin was considered, namely if they belong to the major European countries presenting a wider IR diffusion. The relationship between foreigners on board and IR is found to be negative. This means that companies with at least one foreigner are less inclined to adopt IR. The results show that the boards with more of three foreign administrators have a major propensity to adopt the IR. The membership of the directors in countries with a feminist culture also has a positive effect.

Keywords: Stakeholder Theory, Integrated Reporting, Board Diversity, Foreigners, Cultural Dimensions, Logit

1. INTRODUCTION

According to the *International Integrated Reporting Council* - IIRC (2013), IR provides a fuller picture of a company's ability to create value than the traditional reporting model, as it communicates the range of resources and relationships - the financial, manufactured, intellectual, human, social and relationship, and natural capitals - that are used and affected by an organization, and explains how it interacts with them. It thus ensures the connectivity of information needed to assess the organization's strategy and business model over the long term, respond to the legitimate needs and interests of investors and other stakeholders, and allocate capital more efficiently and productively.

Thus, the IR framework calls for a single report giving complete, clear financial and non-financial information to inform stakeholders of company performance and prospects.

This single IR report aims to replace the earlier dominant practice of separating financial and

sustainability information (Lozano & Huisinigh, 2011; Jensen & Berg, 2012; IIRC, 2013; Incollingo & Bianchi, 2016; Montemari & Chiacchi, 2017).

The IIRC (2013) considers that integrating financial and sustainability disclosures will better satisfy investors' need for information by providing a complete picture of a company and its performance. The IIRC (2011) describes an IR as "bringing together material information about an organization's strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates". Combining sustainability and financial information into a single document could overcome a potential disconnect in the way investment professionals handle the two types of information (Arnold et al., 2012) by supporting "integrated thinking" as advocated by the IIRC.

IR's objectives include completeness and reliability in providing all material information, thus going beyond the purely economic and financial dimension traditionally reported in the financial

statements. Eccles and Krzus (2010a) identify two main reasons for companies to implement IR; the first is that IR is a key element for sustainability, by means of a strategy which manages the risks and opportunities of a sustainable society, while the second is that it increases the transparency of corporate disclosure by conveying a simplified message for all stakeholders in the form of just one report.

Eccles and Krzus (2010b) describe four potential benefits of presenting an IR:

- Greater clarity about relationships and commitments;
- Better decisions;
- Deeper engagement with all stakeholders;
- Lower reputational risk. As social responsibility and sustainability have taken on an important role, managing reputational risks and the difficulty of doing so have also increased in importance.

Though IR provides more information than traditional financial reporting, it is currently voluntary. One justification for adopting it comes from *stakeholder theory*, which holds that organizations should create wealth for all stakeholders, rather than creating value only for the shareholders (González Esteban, 2007).

Furthermore, stakeholder theory suggests that diversity in board composition can be seen as a crucial indicator of a firm's CSR and as a sign of a stakeholder-oriented firm.

The board of directors is designated by the shareholders to manage the firm's business (Monks & Minow, 2008), and is thus the primary means of governance. As such, it plays a crucial role in ensuring that management acts in the shareholders' interests (Brennan, 2006). An important part of this monitoring function consists of seeing that management's voluntary disclosures are reliable rather than self-serving (Healy & Palepu, 2001), so the firm will be able over time to establish a sound corporate disclosure system (Qu & Leung, 2006).

However, whether the board can monitor management effectively, and thus determine the quality of voluntary disclosure, also depends on its composition (Mizruchi, 2004; Brick et al., 2006). Board composition can vary in terms of value system, gender, board size, industry background and nationality (Van der Walt et al., 2006; Kang et al., 2007; Alfiero et al., 2017).

In particular, board members' *national diversity* and *national culture* can influence the board's financial reporting choices (Hope, 2003).

Although various studies propose measures of national culture (House et al., 2004), Hofstede's cultural dimensions (1980, 1983, 2001) are the constructs most widely used by researchers. One of these dimensions is a society's *masculinity/femininity*, which is the degree to which masculine values such as ambition, power, and materialism prevail over feminine values such as quality of life and emphasis on personal relationships.

This study focuses only on the masculinity/femininity dimension, rather than the other aspects of board members' personality and culture for two reasons. First, this cultural dimension has been one of the most important issues in previous research on corporate disclosure (Oriji, 2010; Gallen & Peraita, 2017). Second, national

diversity on the board is believed to be a major factor in the dissemination of IR (Jensen & Berg, 2012). This cultural variable can help make sense of the corporate disclosure decision-making process.

International board composition is rarely investigated, but Heidrick and Struggles (2014) found that the percentage of non-national directors on European boards increased from 11% to 23% between 2007 and 2009, while empirical research shows that the trend towards globalization is expected to increase national diversity.

The association between the proportion of foreign nationals and disclosures in earlier literature raises the issue of cause and effect, which was also considered by Fields and Keys (2003), who investigated the impact of the variety of experience, ideas and innovations brought by individuals on company performance.

Non-national directors are assumed to be from developed countries that devote considerable attention to social and environmental issues. It is thus believed that such directors can transfer this kind of attention to firms in developing countries.

In fact, Ayuso and Argandona (2009) maintain that foreign directors usually play an important role in favouring corporate social reporting strategies.

Khan (2010) found that voluntary social disclosure by Bangladesh banks is significantly linked to the proportion of foreign nationals on the board. Barako and Brown (2008), on the other hand, found a reverse relationship between the proportion of foreign nationals on bank boards and the level of corporate social reporting by Kenyan banks.

Thus, the first research question is the following: Is there a positive relationship between IR and board size (RQ1/H1) and the presence of foreign board members (RQ1/H2)?

The second research question is the following: Is IR adoption affected by the number (critical mass - RQ2/H1) and cultural background (masculinity versus femininity - RQ2/H2) of foreign board members?

Whereas previous research focused on analysing the effects of adopting IR, our study shifts attention further upstream, seeking to determine whether certain board features influence the decision to adopt IR. To the best of our knowledge, it is the first study of its kind and is also original in that the presence of foreigners on the board of directors is analysed from a different perspective and in greater detail than in previous studies. In fact, the ability of foreign board members to influence the adoption of IR in different countries is considered in "cultural" terms, applying *critical mass theory*.

A better understanding of the factors that influence the decision to adopt IR is essential for academics, companies and policy-makers.

In the following pages, we will first review the theoretical background for the study. This will be followed by a presentation of the data, methodology and findings, which will then be discussed and summarized in the conclusion.

2. LITERATURE REVIEW

IR can be considered an evolution of sustainability reporting. It can provide all types of for-profit or non-profit organizations with an opportunity to enhance transparency, governance and decision-making (Eccles & Krzus, 2010a; Adams et al., 2011;

Dumay et al., 2016). Sourcing and later publishing more information has decidedly positive effects on decision-making processes in a company, as well as with investors and all stakeholders in general. It should provide a more concise, balanced picture of the company's performance (Eccles & Krzus, 2010b).

The IR framework was created to build legitimacy and trust among a set of stakeholders (Guthrie & Parker, 1990) whose differing cultural conditions give rise to different expectations for corporate behaviour which are shaped by the values, norms and practices reigning in their specific society (Carroll, 1979; Bustamante, 2011; Akhtaruddin & Rouf, 2012). The framework thus reflects the emergence of different business practices for information disclosure (Fernández-Feijoo et al., 2011; Horrach & Salvá, 2011).

However, there is little academic literature on the subject, and empirical research is still minimal. One of the most significant supporters of IR is Eccles, who analysed the issue in 2010. His basic idea is that this new information tool could promote a change in company culture. This idea has been investigated in studies of the similarities and differences between companies that draw up sustainability reports and those that publish IRs (Jensen & Berg, 2012).

In 2013, Owen looked into the origins and later developments of IR, while other scholars (e.g., Cheng et al., 2014) analysed key issues of the IIRC's Consultation Draft of the Framework. Flower (2015) is one of the framework's harshest critics, arguing that the IIRC erred in placing no obligation on firms to report harm inflicted on outside entities unless there is a subsequent impact on the firm. IR has also been criticized by Brown and Dillard (2014), who maintain that it is limited or biased.

In a thorough and very interesting review, De Villiers et al. (2014) 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. An interesting study carried out in the Netherlands (Van Bommel, 2014) found that the IR tool was able to enhance different values. Haller and van Staden (2014) emphasized the importance of giving information concerning the value created by the company and how it is distributed among all stakeholders.

The factors which can affect IR practices have also been investigated. Frias-Aceituno et al. (2013) reported on the influence of the legal system and board composition, while García-Sánchez et al. (2013) see culture as a fundamental factor.

D'Este et al. (2012) carried out an interesting study of the IR choices made by groups associated with specific geographical areas, finding that firms with stronger local roots were more likely to have higher levels of disclosure.

All these studies are informed by *stakeholder theory*, which holds that a focus on the concerns of stakeholders, who generally include all those who have interests in the organization, is necessary in order to be competitive (Roy & Goll, 2014). The theory is widely used to explain companies' response to stakeholders' information requirements (Van Der Laan Smith et al., 2005; Chen & Roberts,

2010) and how this creates value for them (Freeman, 1984), and IR is part of the dialog between firms and their stakeholders (Gray et al., 1995). Moreover, the theory links the existence of different stakeholders who have different perspectives on optimal company performance (Deegan, 2002).

The relationship between corporations and their stakeholders was investigated by Van der Laan Smith et al. (2005), who found that factors from stakeholder theory are also applicable in explaining the IR differences between firms from different countries. Similarly, Van der Laan Smith et al. (2010) argue that stakeholders' beliefs influence firms' sustainability reporting practices.

The new form of managerial understanding embodied in stakeholder theory hinges on the fact that the shareholders' needs are met by satisfying the needs of the other stakeholders (Jones, 1995; Foster & Jonker, 2005; Hawkins, 2006; Jamali, 2008; Freeman et al., 2010) and not only by maximizing profits and value for the shareholders. The firm's general commitment should also consider values held by other stakeholders (Longo et al., 2005), and includes social and environmental sustainability. Other scholars such as Donaldson and Preston (1995) and Jones (1995) also found management support for this central tenet of stakeholder theory, viz., the need to satisfy a wider set of parties, not simply the shareholders. That integrity and ethics are beneficial for everyone involved in the relationship between companies and stakeholders is an opinion shared by Vasconcelos et al. (2012).

The cross-national features of IR practices and individuals' reactions to them introduce a cultural dimension affecting stakeholders' needs. Hofstede's *national cultural dimensions model* (1980, 1983 and 2001) helps provide an understanding of the influence of different social norms, beliefs and cultural settings on stakeholders' expectations (Cormier et al., 2005). Hofstede's original idea (1980) was to use four specific cultural features to systematically identify similarities and differences among countries: individualism versus collectivism, masculinity versus femininity, tolerance versus aversion to uncertainty, and power distance.

Hofstede (1980, 1983, 2001) and, later, Minkov (2007), treat culture as a group-level construct, applying it to groups such as nations or corporations. Scholars such as Gray (1988) and Radebaugh (2014) have investigated the impact of national cultural dimensions on accounting practices, while others have considered cultural influences on particular types of report (Langlois & Schlegelmich, 1990; Salter & Niswander, 1995; Neu et al., 1998; Adams & Kuasirikun, 2000; Fernández-Feijoo et al., 2011) or on CSR disclosure practices (Van der Laan Smith et al., 2005; Orij, 2010).

The present study considers only one of Hofstede's dimensions, that of *masculinity/femininity*. This is because of the masculine orientation towards quantitatively and economically measurable success and the feminine focus on the more qualitative aspects of life. Thus, firms that value collectivism, tolerance and eschewing gender discrimination will be more committed to governance, sustainability and transparency. In other words, they will be more likely to adopt IR and enhanced disclosure.

Accordingly, the study considered the national cultural systems, with special reference to their masculinity/femininity dimension, because of its effect on the basic values held by the public and firms (Vitell et al., 2003) and its major impact on the ethics of decision-making processes (Singhapakdi et al., 1994; Su, 2006). It also influences organizational structure and performance by encouraging the adoption of sustainable entrepreneurial behaviour (Richardson & Boyd, 2005).

An extensive literature has addressed the relationship between disclosure practices and corporate governance structures, the board of directors in particular (Healy and Palepu, 2001; Adams, 2002; Eng & Mak, 2003; Ricart et al., 2005; Allegrini & Greco, 2013; Samaha et al., 2012; Samaha et al., 2015; Allini et al., 2016). The board safeguards stakeholder interests and prevents opportunistic behaviour by management through its oversight of corporate disclosure (Lev, 1992; Richardson and Welker, 2001). In this connection, Jensen and Meckling (1976) argue that the relationship between a firm's disclosure practices and its internal control systems may be either complementary or substitutive. If the relationship is complementary, it can be expected that effective corporate governance will strengthen the firm's internal control, and fuller disclosure will reduce opportunistic behaviour and information asymmetries. If the relationship is substitutive, disclosure will be more limited, as the internal control mechanisms are regarded as reliable and there is thus strong corporate governance.

As regards board diversity, stakeholder theory sees managers as agents of multiple stakeholders, rather than shareholders alone, and considers diversity to be an important indicator of a firm's CSR and a sign that it is stakeholder-oriented. Greater diversity on the board allows more open governance processes that ensure that stakeholder interests are attended to. Management must balance a variety of different stakeholder interests, as maximizing profit is not the only corporate objective (Hill & Jones, 1992; Ibrahim & Angelidis, 1994; Näsi, 1995; Carroll & Buchholtz, 1996; Clarkson, 1998; Macey, 1998; Jensen, 2000; Oakley, 2000; Hillman et al., 2002; Freeman et al., 2010; Shehata, 2013).

Based on the theoretical framework, we will investigate the assumption that:

- there is a strong relationship between board size and the adoption of IR ($RQ1/H1$);
- there is a complementary relationship between having foreign board members and the incentive for a firm to provide voluntary disclosure through IR ($RQ1/H2$);
- there is a relationship between the number of foreign board members (critical mass) and IR adoptions ($RQ2/H1$);
- there is a connection between cultural background (masculinity versus femininity) of foreign board members and IR adoptions ($RQ2/H2$).

2.1. Foreigners

Board diversity is generally measured in terms of the members' range of characteristics, skills and backgrounds (Robinson & Dechant, 1997). Studies addressing diversity commonly focus on directors'

gender and nationality (Gul & Leung, 2004; Van der Zahn, 2006; Prado-Lorenzo & García-Sánchez, 2010).

Though international board composition (national diversity) is rarely used as a variable in scholarly investigations, Heidrick and Struggles (2014) report that the percentage of foreign board members in Europe increased from 11% to 23% from 2007 to 2009, while according to empirical research, national diversity is expected to increase as a result of globalization.

Having foreign nationals on the board has been found to be associated with more extensive disclosure. This raises the issue of cause and effect, where Fields and Keys (2003) found that company performance is affected when individuals bring a variety of experiences, ideas and innovations to a company.

Where foreign directors serve on the board of firms in developing countries, they can contribute the greater attention to social and environmental typical of their countries of origin.

Accordingly, Ayuso and Argandoña (2009) argue that foreign directors have an important role in promoting corporate social reporting strategies.

Likewise, Khan (2010) found that the proportion of foreign nationals on a board is positively related to voluntary social disclosure by Bangladesh banks. Conversely, Barako and Brown (2008) found that the proportion of foreign nationals on Kenyan bank boards is not significantly associated with the banks' level of corporate social reporting

In this connection, a complicating factor in investigating the impact of subgroups ("foreigners on the board", in this case), arises from *critical mass theory* (Konrad et al., 2008), which holds that this impact becomes significant only upon reaching a certain threshold, i.e., a critical mass (Kramer et al., 2006). Failing to reach critical mass can result in tokenism (Kanter, 1977), as occurs when companies appoint a few foreign directors to the board merely to satisfy outside expectations (Torchia et al., 2011). The dominant group considers the tokens as stereotypes representing an entire demographic group. Consequently, research into the link between foreign directors and performance should distinguish between boards with one foreigner and boards that have reached a certain threshold.

2.2. Board size

The board of directors' most important functions are to ratify and monitor management decisions (Fama & Jensen, 1983). Gandia (2008) argues that larger boards are better able to perform these functions, so that management will be more transparent and disclose more information. Larger boards bring a wider range of experience and opinions to the firm (Adams et al., 2005), which increases their capacity to monitor and improves disclosure practices. This is borne out by empirical evidence presented by Cheng and Courtenay (2006) which indicates that voluntary disclosure increases with board size. Here, it should be noted that the corporate governance code for publicly listed firms in Jordan recommends that boards in the industrial and services sectors consist of more than five but

fewer than fifteen members and that boards in the insurance sector consist of no fewer than seven members (Sartawi et al., 2014).

Some scholars, however, maintain that large boards have more severe agency problems, making their monitoring processes less effective (Yermack, 1996; Eisenberg et al., 1998; De Andrés et al., 2005). Gallego-Alvarez et al. (2011), on the other hand, believe that a large board is necessary, in that it provides the experience and diversity required to deal with complex supervisory functions and ensure that the information (including financial information) provided is accurate. Accordingly, a large board provides better monitoring and results in fuller disclosure.

Empirical evidence is also contradictory regarding the relationship between the size of the board and information disclosure. Prado-Lorenzo and García-Sánchez (2010) observed a negative relationship, whereas Pearce and Zahra (1992), Dalton et al. (1999), Larmou and Vafeas (2010) and Izzo and Fiori (2016) observed a positive relationship.

Board size has been linked to the adoption of integrated reporting (Rodríguez-Ariza et al., 2011) since IR calls for input from directors with the variety of viewpoints and expertise that is more likely to be found in larger boards.

In addition, large boards can bring a wider range of perspectives to bear on the decisions made on behalf of investors (Schweiger et al., 1986; Eisenhardt & Bourgeois, 1988; Kostyuk et al., 2006; Sakawa & Watanabel, 2007; Wang et al., 2009).

2.3. Control variables

This paper uses variables that have been shown to influence disclosure in governance studies. They include whether a company is listed on the stock market, corporate size, leverage, growth opportunities and profitability. Since being listed on the stock market encourages firms to make the financial, social and environmental disclosures which they believe the market demands, it is likely to improve the quality of investors' decisions by reducing informational uncertainty (Ullmann, 1985). Being cross-listed can also affect the extent of disclosure, as firms traded on more than one exchange will often prepare their domestic accounts in compliance with certain aspects of foreign regulation. They will thus voluntarily increase their level of disclosure if the foreign stock market requirements are greater than those of their own domestic exchange. This has been demonstrated empirically by Cooke (1989), as well as by Singhvi and Desai (1971), Choi (1973) and Spero (1980), while Firth (1979) reported that listed corporations in the UK disclosed far more information than their unlisted counterparts.

Corporate size is represented by the logarithm of total assets. A positive relation between corporate size and the volume of voluntarily disclosed data has been reported in the literature, e.g., by Da Silva Monteiro and Aibar-Guzmán (2010) and Sotorrió and Fernández-Sánchez (2010). Some scholars have found that this relation is valid only up to a certain

size (Pirchegger & Wagenhofer, 1999), while others do not find a statistically significant relationship (Khanna et al., 2004; Ortiz & Clavel, 2006).

To represent leverage, this study relies on the debt-equity ratio as suggested by Ahmed and Courtis (1999), whose meta-analysis of 29 disclosure studies found it to be one of the main predictors of disclosure levels in corporate annual reports.

To represent growth opportunities, the study relies on the firms' sales growth to account for two-year differences caused by high information asymmetry and office costs (Smith & Watts, 1992; Gaver & Gaver, 1993) between growing and non-growing companies that usually release less information.

Profitability is represented by return on assets (ROA). Although some research suggests that profitability has a positive influence on voluntary disclosure levels, most studies carried out to date found no statistically significant relationship between the two (Larrán & Giner, 2002; Giner et al., 2003; Marston & Polei, 2004; Prencipe, 2004).

3. RESEARCH METHODOLOGY AND SAMPLE

3.1. Sample and data

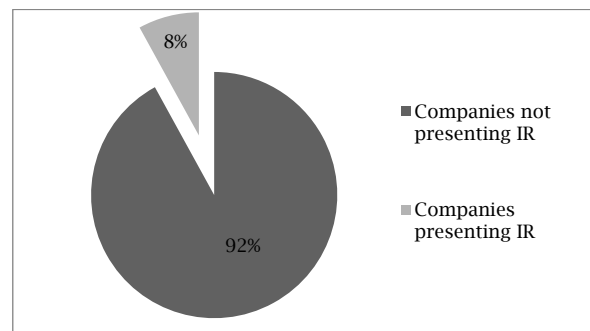
To answer our RQs, companies that adopted IR (n = 79) for 2015 according to the IIRC guidelines were selected from among 1,058 European companies from 18 different countries on the 2015 IIRC website.

The comparison sample was created by applying a stratification sampling procedure based on turnover, sector, and country characteristics of the "population" of companies that adopted IR for 2015.

The *Amadeus* database and corporate websites were used to verify and double-check whether the content of disclosure tools was comparable to IR, regardless of the name actually assigned to the reports.

A total of 979 companies did not adopt IR (see Figure 1).

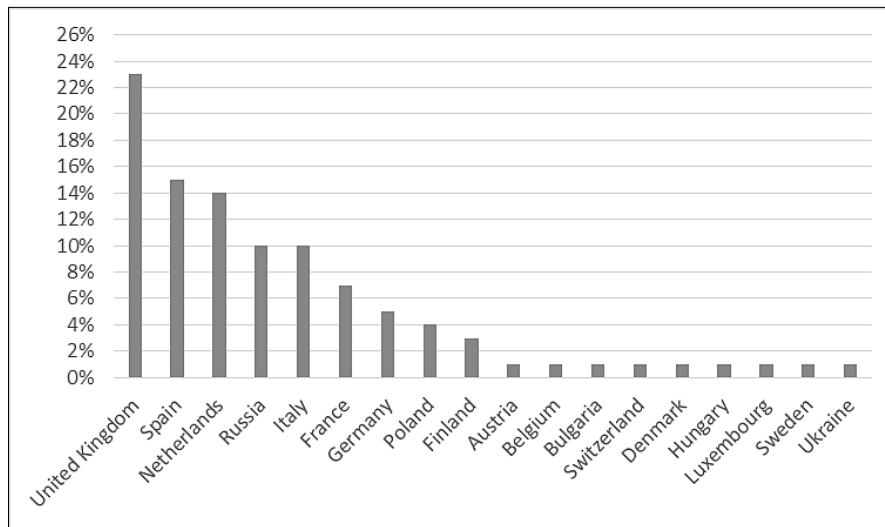
Figure 1. Sample breakdown



Source: Authors' calculations

The highest IR adoption rates were in the United Kingdom, Spain, Netherlands and Russia (see Figure 2).

Figure 2. Country breakdown of the dataset sample for companies adopting IR



Source: Authors' calculations

Unlisted companies accounted for 66.76% of the sample, with around 6% of them adopting IR as their disclosure document.

3.2. Research methodology

Because the dependent variable is binary (equal to 1 if the company adopts IR, 0 if it does not), logistic regression (Logit) (Borooah, 2001; Bajari et al., 2009) was used to test the study's hypotheses.

3.3. Model and data processing for RQ1

To answer RQ1, we used the independent variables (board size and foreigners) and five control variables (listed, size, leverage, sales growth and profitability) (Gujarati & Porter, 2003).

Dependent variable:
 IR: 1 = the company adopts IR; 0 = the company does not adopt IR
Independent variables:
 BOARD SIZE: Number of directors on the board
 FOREIGNERS: Percentage of foreigners on the board
Control variables:
 LISTED: 1 = listed company; 0 = unlisted company
 SIZE: Logarithm of total assets 2015
 LEVERAGE: liabilities considered (total assets - equity)/equity
 SALES GROWTH: in absolute value (2015 total sales - 2014 total sales /2014 total sales)
 PROFITABILITY: ROA (Return on Assets)
 The logit regression equation was as follows:

$$IR = \beta_0 + \beta_1 \text{ Board Size} + \beta_2 \% \text{ Foreigners} + \beta_3 \text{ Listed} + \beta_4 \text{ Size} + \beta_5 \text{ Leverage} + \beta_6 \text{ Sales Growth} + \beta_7 \text{ ROA} + \mu \quad (1)$$

The IR dependent variable was computed in terms of event probability:

$$\text{Probability} = \text{Log} (P/(1-P)) = \beta_0 + \beta_1 \text{ Board Size} + \beta_2 \% \text{ Foreigners} + \beta_3 \text{ Listed} + \beta_4 \text{ Size} + \beta_5 \text{ Leverage} + \beta_6 \text{ Sales Growth} + \beta_7 \text{ ROA} + \mu \quad (2)$$

Tables 1 and 2 show summary statistics for board composition for companies that adopt and who do not adopt IR.

As can be seen from Table 1, board size in

companies adopting IR ranges from 1 to 35 directors, with an average of approximately 11.62 directors. Overall, foreigner directors make up 13.90% of the total directors.

Table 1. Summary statistics for companies adopting IR

COMPANIES ADOPTING IR					
Board features	No.	Min.	Max.	Average	Standard Deviation
Board Size	79	1	35	11.62	8.52
% Foreigners	79	0	100	13.90	22.36
Listed	79	0	1	0.43	0.50
Size	79	2.70	9.64	6.28	1.32
Leverage	79	0.12	76.26	7.01	15.68
Sales Growth	79	-0.38	70.71	0.98	7.95
ROA	79	-34.01	51.12	6.64	11.42
Listed	34				
Unlisted	45				

Source: Authors' calculations

As shown in Table 2, board size in companies that do not adopt IR ranges from 1 to 57 directors, with an average of approximately 10.65 directors.

Overall, foreigner directors make up 16.29% of the total directors.

Table 2. Summary statistics for companies not adopting IR

COMPANIES NOT ADOPTING IR					
Board features	No.	Min.	Max.	Average	Standard Deviation
Board Size	979	1	57	10,65	8.88
% Foreigners	979	0	100	16,29	24.47
Listed	979	0	1	0.33	0.470
Size	979	2.52	11.65	6.73	0.77
Leverage	979	0	105.49	7.47	12.97
Sales Growth	979	-0.99	475.58	11.44	33.22
ROA	979	-77.47	91.58	4.72	10.80
Listed	321				
Unlisted	658				

Source: Authors' calculations

Table 3. Summary statistics for the whole sample

SUMMARY (average values)	COMPANIES ADOPTING IR	COMPANIES NOT ADOPTING IR	WHOLE SAMPLE
Board Size	11.62	10.65	10.72
% Foreigners	13.90	16.29	16.11
Listed	0.43	0.33	0.34
Size	6.28	6.73	6.70
Leverage	7.01	7.47	7.44
Sales Growth	0.98	11.44	10.67
ROA	6.64	4.72	4.86

Source: Authors' calculations

3.4. Model and data processing for RQ2

For RQ2, we selected companies with at least one foreign director, obtaining a set of 506 firms, 40 of which adopt IR.

Dependent variable:

IR: 1 = the company adopts IR; 0 = the company does not adopt IR

Independent variables:

CRITICAL MASS: 1 = the company has more than three foreign directors; 0 = the company has fewer than three foreign directors

COUNTRY CULTURE: 3 = the majority of foreign directors are from feminine countries; 2 = the majority of foreign directors come from masculine

countries; 1 = no prevalence

HIGH ADOPTION RATE: 1 = at least one foreign director comes from the United Kingdom, Spain, Netherlands and Russia; 0 = director(s) from other countries

Control variables:

LISTED: 1 = listed company; 0 = unlisted company

SIZE: Logarithm of total assets 2015

LEVERAGE: liabilities considered (total assets - equity/equity)

SALES GROWTH: in absolute value (2015 total sales - 2014 total sales /2014 total sales)

PROFITABILITY: ROA (Return on Assets)

The logit regression equation was as follows:

$$IR = \beta_0 + \beta_1 \text{ Critical Mass} + \beta_2 \text{ Country culture} + \beta_3 \text{ High adoption rate} + \beta_4 \text{ Listed} + \beta_5 \text{ Size} + \beta_6 \text{ Leverage} + \beta_7 \text{ Sales Growth} + \beta_8 \text{ ROA} + \mu \quad (3)$$

The IR dependent variable was computed in terms of event probability:

$$\text{Probability} = \text{Log} (P/(1-P)) = \beta_0 + \beta_1 \text{ Critical Mass} + \beta_2 \text{ Country culture} + \beta_3 \text{ High adoption rate} + \beta_4 \text{ Listed} + \beta_5 \text{ Size} + \beta_6 \text{ Leverage} + \beta_7 \text{ Sales Growth} + \beta_8 \text{ ROA} + \mu \quad (4)$$

Tables 4 and 5 show summary statistics for board composition for companies with at least one foreign director that adopt and who do not adopt IR.

Overall, there are 506 companies with at least one foreign director, 266 of which have more than three foreign directors.

Table 4. Summary statistics for companies adopting IR

COMPANIES ADOPTING IR					
	No.	Min.	Max.	Average	Standard Deviation
Critical Mass	40	0	1	0.68	0.474
Country Culture	40	1	3	2.53	0.679
High adoption rate	40	0	1	0.73	0.452
Listed	40	0	1	0.45	0.504
Size	40	4.63	9.64	6.89	1.020
Leverage	40	0.20	49.21	3.167	7.703
Sales Growth	40	-0.37	0.22	0.017	0.148
ROA	40	-11.21	51.12	6.64	7.802
Listed	18				
Unlisted	22				

Source: Authors' calculations

Table 5. Summary statistics for companies not adopting IR

COMPANIES NOT ADOPTING IR					
	No.	Min.	Max.	Average	Standard Deviation
Critical Mass	466	0	1	0.24	0.425
Country Culture	466	1	3	2.05	0.554
High adoption rate	466	0	1	0.26	0.439
Listed	466	0	1	0.42	0.495
Size	466	3.31	11.65	6.92	0.719
Leverage	466	0.04	94.58	7.26	12.88
Sales Growth	466	-0.63	475.58	1.21	22.09
ROA	466	-34.75	91.58	4.99	9.416
Listed	198				
Unlisted	268				

Source: Authors' calculations

Table 6. Summary statistics for the whole sample

SUMMARY (average values)	COMPANIES ADOPTING IR	COMPANIES NOT ADOPTING IR	WHOLE SAMPLE
Critical Mass	0.68	0.24	0.27
Country Culture	2.53	2.05	2.09
High adoption rate	0.73	0.26	0.30
Listed	0.45	0.42	0.43
Size	6.89	6.92	6.92
Leverage	3.17	7.26	6.93
Sales Growth	0.02	1.21	1.12
ROA	6.64	4.99	5.21

Source: Authors' calculations

4. RESULTS AND DISCUSSION

The results of the research are substantially in line with the theoretical framework presented in section 2 (Frias-Aceituno et al., 2013; García-Sánchez et al., 2013; Samaha et al., 2015; Allini et al., 2016; Izzo & Fiori, 2016).

4.1. Findings for RQ1

Bivariate analysis was used to assess the correlation between independent variables, giving a maximum Spearman correlation coefficient (r) of 0.314.

Coefficients are significant at different confidence levels.

The model's Cox-Snell R-square is 0.031. On the other hand, the Chi-square test is statistically significant ($\chi^2 = 33.29$, $p = 0.000$), meaning that the model explains nearly 99% of the variation in sampled firms' voluntary disclosure. As the variance inflation factors for all variables are between 1.007 and 1.219, it can be concluded that the model is not affected by multicollinearity problems.

The most significant variables are: Size and listed.

Bivariate correlations for the variables used in the model are summarized in Table 7.

Table 7. Bivariate correlations

	REPORT	1	2	3	4	5	6	7
1	Board Size	.029						
2	% Foreigners	-.026	.088 ^{**}					
3	Listed	.057	.399 ^{**}	.054				
4	Corporate Size	-.142 ^{**}	.314 ^{**}	.167 ^{**}	.245 ^{**}			
5	Leverage	-.009	-.130 ^{**}	.034	-.171 ^{**}	-.019		
6	Sales Growth	-.009	-.036	-.018	-.023	-.042	.033	
7	ROA	.046	.033	-.005	.029	-.027	-.071 [*]	-.017

Note: ** Correlation is significant at level 0.01 (two-tailed)

* Correlation is significant at level 0.05 (two-tailed)

Source: Authors' calculations

As Table 8 shows, the size of the board of directors is positively related to IR adoption ($\beta_1 = .023$), indicating that the board's monitoring capacity increases along with the number of

directors on it, and disclosure levels grow. Thus, Hypothesis 1 (RQ1) is supported.

Table 8 also shows that the coefficient of % Foreigners is negative and insignificant ($\beta_2 = -.001$). Thus, Hypothesis 2 (RQ1) is not supported.

Table 8. Logistic regression results (Logit)

	B	S.E.	Wald	df	Sign.	Exp(B)
Board Size	0.023	0.014	2.598	1	0.107	1.023
% Foreigners	-0.001	0.005	0.045	1	0.832	0.999
Listed	0.670	0.270	6.160	1	0.013	1.954
Corporate Size	-0.725	0.136	28.537	1	0.000	0.484
Leverage	0.000	0.001	0.043	1	0.836	1.000
Sales Growth	0.000	0.002	0.034	1	0.854	1.000
ROA	0.011	0.009	1.597	1	0.206	1.011
Constant	1.662	0.807	4.241	1	0.039	5.272

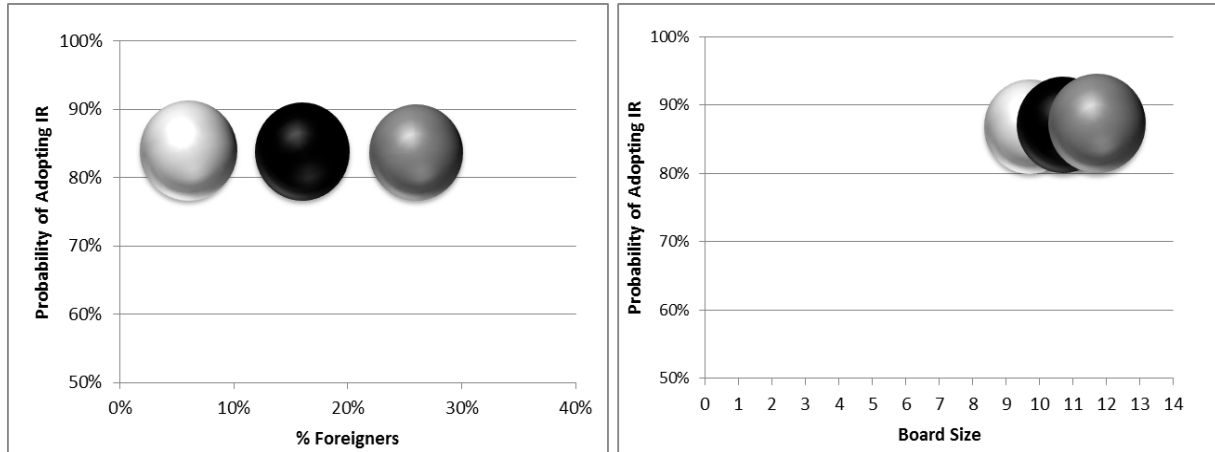
Source: Authors' calculations

Logit results were then transformed in probability terms. In other words, the probability of adopting IR compared to the average value was calculated for each independent variable, and variations were then determined in terms of

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

For each variable, Figure 3 shows the variation in the probability of adopting IR as board characteristics vary.

Figure 3. Probability of adopting IR versus independent variables



Legend: Black: average value; Grey: increase compared the average value; Light Grey: decrease compared the average value.
Source: Authors' calculations.

These results show that companies with a larger board of directors are 1.023 times more likely to adopt IR than companies with a smaller board, $\text{Exp}(B) = 1.023$. Boards with ten members have a likelihood of 86.90% of adopting IR as the firm's disclosure tool, while one additional board member increases the likelihood by 0.52%.

Adding foreigners to the board decreases the probability that a company will adopt IR (odds ratio = 0.999). Companies, where 16% of the board are foreigners, record an 83.83% probability of adopting IR, and this decreases by 0.27% following a 10% rise in the number of foreign board members.

4.2. Findings for RQ2

Here again, bivariate analysis was used to assess the

correlation between independent variables, giving a maximum Spearman correlation coefficient (r) of 0.275. Coefficients are significant at different confidence levels.

The model's Cox-Snell R-square is 0.142. On the other hand, the Chi-square test is ($\text{Chi}^2 = 77.61, p = 0.000$), meaning that the model explains nearly 99% of the variation in sampled firms' voluntary disclosure. As the variance inflation factors for all variables are between 1.012 and 1.128, it can be concluded that the model is not affected by multicollinearity problems.

The most significant variables are Critical Mass and High Adoption Rate.

Bivariate correlations for the variables used in the model are summarized in Table 9.

Table 9. Bivariate correlations

	REPORT	1	2	3	4	5	6	7	8
1	Critical Mass	.267**							
2	Country Culture	.221**	.206**						
3	High Adoption Rate	.275**	.267**	.162**					
4	Listed	0.014	-0.004	-0.008	-0.027				
5	Size	-0.012	.134**	.105*	0.054	-0.053			
6	Leverage	-0.016	-0.028	-0.008	0.066	-0.041	0.01		
7	Sales Growth	-0.015	-0.028	-0.006	0.067	-0.036	-0.059	-0.002	
8	ROA	0.079	0.017	0.006	0.041	0.013	-0.048	-0.073	-0.006

** Correlation is significant at level 0.01 (two-tailed)

* Correlation is significant at level 0.05 (two-tailed)

Source: Authors' calculations

Table 10 shows a positive relationship between Critical Mass and IR adoption ($\beta_1 = 1.441$).

This means that boards with more than three foreign directors are more likely to adopt IR. Thus, *Hypothesis 1 (RQ2) is supported.*

Table 10 also shows a positive relationship with the dependent variable Country Culture ($\beta_2 = 1.220$). In countries with a feminine culture,

there is a greater tendency to use this disclosure tool. Thus, *Hypothesis 2 (RQ2) is supported.*

The high adoption rate is also positively related ($\beta_3 = 1.597$), meaning that firms with directors from countries showing the highest IR adoption rates in Europe in 2015 are more likely to use this type of reporting.

Table 10. Logistic regression results (Logit)

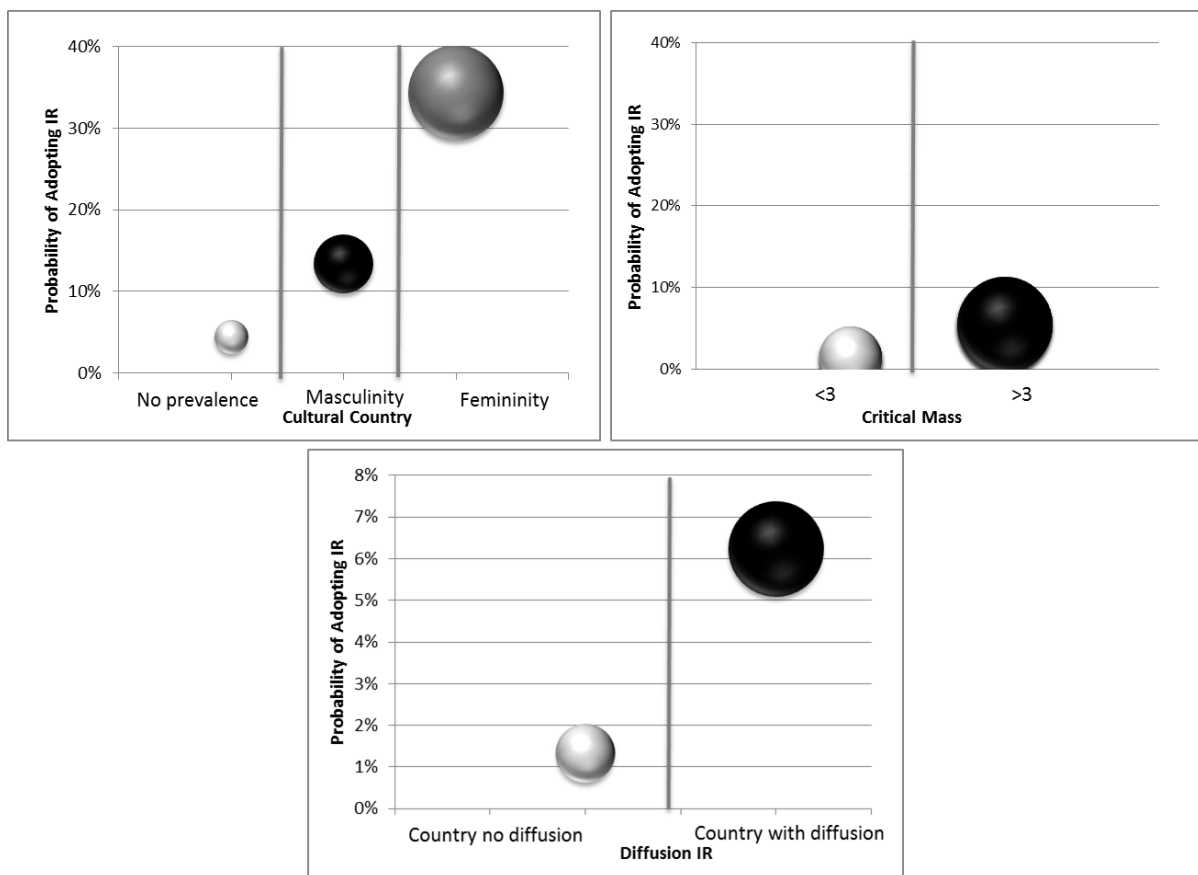
	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sign.</i>	<i>Exp(B)</i>
Critical Mass	1.441	0.396	13.255	1	0.000	4.224
Country Culture	1.220	0.344	12.559	1	0.000	3.386
High Adoption Rate	1.597	0.397	16.203	1	0.000	4.936
Listed	0.115	0.378	0.093	1	0.760	1.122
Size	-0.329	0.237	1.932	1	0.165	0.719
Leverage	-0.056	0.037	2.383	1	0.123	0.945
Sales Growth	-1.234	1.092	1.278	1	0.258	0.291
ROA	0.026	0.016	2.592	1	0.107	1.026
Constant	-4.309	1.810	5.671	1	0.017	0.013

Source: Authors' calculations

Logit results were then transformed into probability terms. In other words, the probability of adopting IR compared to the average value was calculated for each independent variable, and variations were then determined in terms of

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

For each variable, the graphs below show the variation in the probability of adopting IR as board characteristics vary.

Figure 4. Probability of adopting IR versus independent variables

Source: Authors' calculations

These results show that companies with more than three foreign directors are 4 times more likely to adopt IR than companies with fewer foreign directors, $Exp(B) = 4.22$.

The model indicates that when directors come from countries with a feminine culture, the probability of adopting IR is 3.39 higher $Exp(B) = 3.38$. These companies have 34% probability of adopting IR. The probability that companies will adopt IR is 4.9 times higher when directors come from countries with high adoption rates (United Kingdom, Spain, Netherlands and Russia), $Exp(B) = 4.94$.

5. CONCLUSIONS

A deeper understanding of the factors influencing the decision to adopt IR is essential for academics, companies and – especially – policy-makers, considering that this kind of disclosure supports integrated thinking and improves the quality of information available to the providers of financial capital.

This study offers new insight into the relationship between board diversity, in terms of nationality, and the decision to adopt IR, which is an efficient means of communicating with stakeholders

and measuring a company's social sustainability and economic growth in the medium and long-term.

The study examined 1,058 European companies from different countries appearing on the IIRC website in 2015.

The results indicated a positive relationship between adopting IR and the size of the board of directors and a negative link with the percentage of foreign board members.

To better understand this negative relationship, other factors that influence nationality diversity were introduced.

Among these factors, it was found that having a critical mass of foreign board members influences a firm's decision to adopt IR, as do having directors from countries with high IR adoption rates and feminine cultures.

Some limitations of this research are represented by:

- 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.

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