1-1-2014

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Corporate Social Responsibility and Environmental Management
Corp. Soc. Responsib. Environ. Mgmt. **21**, 351–364 (2014)
Published online 28 June 2013 in Wiley Online Library
(wileyonlinelibrary.com) **DOI**: 10.1002/csr.1329

Women on Boards: Do They Affect Sustainability Reporting?

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ABSTRACT
Sustainable reports are the basic tool used to reflect and communicate stakeholder dialogue. Therefore, sustainability reporting has become a key element for strategic management. Companies' strategies are defined and developed by their boards of directors. This study explores the relationship between sustainability reporting and the existence of at least three women on the board of directors. Our results show that in countries with a higher proportion of boards of directors with at least three women, the levels of CSR reporting are higher. We also find that countries with higher gender equality have more companies with boards of directors with at least three women. We control for other variables that affect differences among countries and differences in CSR reporting as found in previous studies: cultural differences, law enforcement, GDP, industry and regulation. Our paper contributes to the literature by studying the relationship between board gender composition and CSR reporting. Copyright © 2013 John Wiley & Sons, Ltd and ERP Environment.

Received 18 February 2012; revised 28 February 2013; accepted 11 March 2013
Keywords: gender; corporate social responsibility; board diversity; Hofstede's model; sustainability CSR reporting

Introduction

CORPORATE SOCIAL RESPONSIBILITY (CSR) HAS DEVELOPED THROUGHOUT THE LAST FEW DECADES, WITH THE GREAT majority of firms in Europe and the USA finding sustainability important for their future (Giddings *et al*., 2002). CSR focuses on how business can satisfy its value creation mission, an economic value, while also creating social and environmental value.

Since Bowen (1953) proposed the first definition of CSR until today, CSR has evolved and increased its importance. Currently, CSR is a key issue in management strategy, affecting the competitiveness of companies (Kytle and Ruggie, 2005; Martinuzzi *et al*., 2010), and is becoming an important tool to enhance stakeholders' confidence (Post *et al*., 2002). This effect has further extended to public institutions as well (Albreda *et al*., 2007; Steurer, 2010). The reason for the development of CSR can be linked to the increase in global and civil pressure (Lee, 2011; Sprengel and Busch, 2011). Adding to this shareholders' requirement, during the last decade, the European Commission proposed what is known as the 'Europe 2020 strategy' (European Commission, 2010). This new model of business is based on sustainable growth (Martinuzzi *et al*., 2010).

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The literature has dealt extensively with the effect that certain entrepreneurial variables have on CSR. Thus, the influence of size, industry, performance, and stakeholder pressure on sustainability disclosure has been widely approached (Perrini *et al.*, 2007; Gallego-Alvarez, 2008; Lattemann *et al.*, 2009; Broberg *et al.*, 2010; Monteiro and Aibar-Guzmán, 2010; Alali and Romero, 2012; Fernandez-Feijoo *et al.*, 2012). In terms of gender, the literature shows an interesting coincidence in both, the influence of gender equality in CSR and the influence of CSR in gender equality. Authors like Bear *et al.* (2010); De-Luis *et al.* (2010), and Marshall (2007), look at firm-women leadership, while others, as Goodman (2009), and Grosser and Moon (2005a, 2005b) offer a general analysis of the relationship between gender and CSR. Gender is usually considered a demographic variable used to explain CSR attitudes, but the focus is not specifically directed towards this variable. The literature has shown that women usually have a higher perception of risks and have been socialized to care for the needs of others, representing these qualities a closer feeling towards CSR (Ciocirlan and Pettersson, 2012). It has also been recognized that women have a more sustainable conscience in their private sphere (Hunter *et al.*, 2004) that can be easily projected to their public activity (Bernardi and Threadgill, 2010). In order to understand the effect women have on boards, it is important to consider not only the presence, but also its number. The existence of a critical mass of three has been identified in the literature. Fewer women in groups outnumbered by men, might have a token effect and no influence in the group (Konrad *et al.*, 2008; Torchia *et al.*, 2011).Given that the analysis of the relationship between board gender composition and CSR needs further explanation, this paper fills the gap by looking into one of the most visible aspects of CSR: the disclosure of sustainable information. This is a new approach because we give to the variable gender the prominence of the research, and we also consider the effect of gender in the group by considering the critical mass of three.

Thus, this paper extends the existing literature on CSR by looking at differences in reporting produced by including women on the board of directors. Other contribution to literature is the novel methodology for the empirical approach, focussed on countries and combining several primary sources. We collect data on the female board membership levels from *The Women on Boards Report* released by Governance Metrics International (GMI). We complement the data with *The Global Gender Gap Report*, issued by the World Economic Forum (Hausmann *et al.*, 2007). To assess CSR disclosure, we work with the KPMG *International Survey of Corporate Social Responsibility Reporting*. This study examines CSR reporting practices of the global fortune 250 (G250) plus the 100 largest companies (N100) by revenue in 22 countries (around 2400 companies). We include other variables that may affect the relationship between CSR disclosure and board gender composition, such as economic and cultural variables.

The remainder of this paper has been organized as follows. We first look at the relevant literature on CSR disclosure, gender, and the effect of economic and cultural variables in cross-cultural analysis. Next, we present our sources and continue with the hypothesis development. We then outline the methodology and discuss our results. Finally, we offer conclusions based on our research, present the limitations of the paper and suggest future research.

Literature Review

CSR Disclosure

The level of CSR disclosure changes along countries and industries. In some countries like Australia, Japan, and the UK, there are rules requiring disclosure (Dagiliene, 2010). In other countries, companies report on a voluntary basis. Although regulation changes disclosure when it asks for information companies are not willing to disclose voluntarily, the level of adoption of rules depends on the role of enforcement in the society (La Porta *et al.*, 1998, 2006; Ioannou and Serafeim, 2011). Companies in countries with low levels of enforcement, for example, will be slower in adopting a rule they do not support, than companies in more punitive countries.

Other variables found to affect disclosure are cultural characteristics and industry. The first affects the behaviour of their constituents including their understanding of CSR (Steurer *et al.*, 2005; Scholtens and Dam, 2007; Orij, 2010; Vachon, 2010). The second effect is produced because some industries considered riskier to the environment like oil or chemicals, disclose more than companies in other industries (Perrini *et al.*, 2007; Lattemann *et al.*, 2009;

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Broberg *et al.*, 2010; Monteiro and Aibar-Guzmán, 2010; Alali and Romero, 2012; Fernandez-Feijoo *et al.*, 2012). This difference in disclosure is explained by Bouten *et al.* (2011) as a mechanism or a tool companies use to fulfil and discharge social and environmental accountability.

Da Conceição *et al.* (2011) analyze the companies listed in the Sao Paulo stock market and conclude that the economic performance of a firm only has influence on CSR disclosure when industries are regulated.

Gamerschlag *et al.* (2011) construct a CSR disclosure index based on the Global Reporting Initiative (GRI) guidelines. This index is applied to 130 listed German companies. The study finds that CSR disclosure is affected by size and industry, the visibility of the firm, the shareholder structure and the implication of the stakeholders. It also finds that CSR disclosure, especially environmental disclosure, positively affects profitability.

Gender Board Composition

Academic research has approached gender board composition from different perspectives, with different results. Some authors have found positive effects on the companies' performance due to the presence of women on the board of directors (Carpenter, 2002; Joshi and Roh, 2009), while other authors found no gender influence (Ferrier, 2001). Hence, gender effect is a research area that yet has some gaps. Nielsen (2010) highlights the need to develop theoretical and methodological research on the topic, which has been focussed mainly towards behaviour and outcomes.

Within the CSR disclosure framework, the companies' boards play a very important role. They decide the entrepreneurial strategy, including CSR policies. There are differences in the companies' board of director's decisions due to its gender composition. Campbell and Minguez-Vera (2010) found a positive market reaction in the short term, to the announcement of female board appointments. Bernardi *et al.* (2006) and Brammer *et al.* (2009) found that having more women on boards enhances reputation. However, although most of the companies have at least one woman on their board, none of them has a majority of female directors (GMI, 2011). This fact has implications because research found that when the number of women in a group of men is less than three, they do not feel free to give their opinions (Konrad *et al.*, 2008). As Kapotas (2010) assess, the only presence of women on boards does not mean that they have the same quota of power as men do. Singh and Vinnicombe (2004) found that companies with more presence of woman managers and women on the board have higher scores in compliance with corporate governance codes than companies managed by a majority of men. Williams (2003) found that boards with higher number of women engage in charitable giving to a larger extent than boards with less number of women. Bear *et al.* (2010) found that the number of women board members is positively associated with CSR strength ratings. Bernardi (2006) finds that women are more apt to socially desirable responses and more sensitive to ethical issues than men. In fact, Bernardi (2006) concludes that future research has to focus on women sensitive to ethical issues taking into account cultural constructs.

Looking at the gender effect on an entrepreneurial environment, Hersby *et al.* (2009) conclude that women are more inclined to make decisions with a networking focus. Bilimoria (2000) highlights the importance of gender diversity on boards affecting firm reputation, strategic policies, and employee profile. Sealy and Singh (2010) define higher levels of symbolic values (increased optimism, commitment to stay, reduced stereotyping, higher self-ratings, job/career satisfaction) and behavioural values (work identity development construction, provisional selves) in working women, even in societies with prevalent masculine values and behaviours. Hovden *et al.* (2011, p. 415) state that 'symbolic values associated to gender are (re)produced in a hierarchical system through social practices'. Huse (2005), in his board behaviour model, assesses that gender diversity on boards impacts both financial and social board performance. Singh *et al.* (2006) values board gender diversity as positive for investors, as an advantage in a global world where sensitivity is necessary to survive in the long term. Finally, Yeganeh and May (2011) find that country culture has an effect on gender gap.

Bellar *et al.* (2004) assess that the evolution of entrepreneurial women power has evolved glacially slow. It seems that soft legislation is not enough (Joy, 2008; Ross-Smith and Bridge, 2008; Shilton *et al.*, 2010). Only in countries that legislate compulsory women quotas (e.g. Spain or Norway), the long-range goal of board equality is close (De Anca, 2008; Mateos de Cabo *et al.*, 2010; Seierstad and Opsahl, 2011). Nevertheless, Hovden *et al.* (2011) highlight that although there is no gender gap in Norwegian politics, and participation of women in labour is very high, gender imbalance exists in top business positions. This imbalance is even higher than in other countries

DOI: 10.1002/csr

where gender differences are much larger, such as the USA and the UK (Vianello and Moore, 2004). Vinnicombe (2011) expresses optimism since Australia, New Zealand, Finland, France, and the UK are joining Spain and Norway in requiring quotas for women.

Gender Versus CSR disclosure

In the literature reviewed, there are very few references to the relationship between gender and CSR disclosure. 'Gender' is analyzed as a variable to inform about, but not as a research object (Grosser and Moon, 2005b; Vuontisjarvi, 2006). In other words, there is very little research done to study the effect of gender on the level of CSR disclosure or its quality. Furthermore, the 'glass ceiling' effect has to be included in the analysis (Davidson and Cooper, 1992). In terms of board composition, literature confirms that three women are the 'critical mass' without considering them tokens (Konrad *et al.*, 2008; Torchia *et al.*, 2011).

Frias-Aceituno *et al.* (2012) worked with a group of 568 companies from 15 countries, for the period 2008–2010, and they find that board gender diversity, among others, explains disclosure of CSR information. The authors extend their conclusions to all three corporate governance models (Anglo-Saxon, Germanic, and Latin) and reflect on the importance of promoting diversity on the boards to impact positively on the voluntary information disclosed.

Shauki (2011) looks at the perceptions of the stakeholders towards CSR disclosure in Indonesia, finding significance in several variables, including gender. Ciocirlan and Pettersson (2012) analyze the influence of workforce diversity, measured by age, gender, race, and country, on the commitment with climate change. Gender is again used as an explanatory variable. The authors conclude that the presence of women has a positive and significant effect on the climate change commitment. Bernardi and Threadgill (2010) use a sample of Fortune 500 companies, and conclude that companies with a higher proportion of women on their boards of directors are more socially responsible. This attitude is evidenced by the effects on the community in which the companies interact, on monetary contributions and in relationship to the environment. On the contrary, Hsu and Cheng (2012) found no significant influence of gender on willingness to engage in CSR. These authors represent gender with a dichotomist variable that could be biased by the 'critical mass' effect. A similar use of the variable gender (dummy 0–1) is done by Huang (2012), using an international sample of 487 firms, assessing that the CEO's gender might influence the firm's CSR performance. Manner's research (Manner, 2010) assesses this positive relationship measuring CSR performance through the KLD's ratings.

Other Factors Affecting CSR Disclosure

There is a body of literature looking at differences in CSR reporting along countries. Among the few studies that look at cultural differences in CSR, Kim and Kim (2009) use South Korean data to explore the relationship between Hofstede's cultural variables and public relations practitioners' perceptions of CSR. They find that 'individualism was correlated negatively with CSR models, while uncertainty avoidance, collectivism, masculinity, femininity and Confucian dynamism were correlated positively with CSR' (p. 493). Williams and Zinkin (2008) study the relationship between attitudes towards CSR and the Hofstede's model, in terms of consumer punishment of irresponsible social behaviour. They use a sample of nearly 90 000 stakeholders from 28 countries to find evidence that differences in consumer behaviour in different countries are consistent with Hofstede's cultural variables.

Van der Laan Smith *et al.* (2005) use the stakeholder theory to understand differences in CSR disclosure among countries. They compare the 1998 and 1999 annual reports of 32 companies from Denmark and Norway, with the same information of 26 US firms, all of them in the supply industry. Content analysis is the methodology used. They find an effect of cultural factors on the extent and quality of CSR disclosure. Also following the stakeholder theory approach, Orij (2010) states that culture is related to corporate social disclosure levels, after studying a sample of 600 large companies from 22 countries.

Vachon (2010) analyzes national culture and corporate sustainable development practices in 55 countries. He finds empirical evidence linking two of the Hofstede's dimensions, individualism and uncertainty avoidance, to corporate sustainable development practices.

Husted (1999) looks at the impact of national wealth, income distribution, government size, and four cultural variables, on the perceived level of corruption in a country. He finds that corruption is significantly correlated with

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GDP per capita, power distance, masculinity, and uncertainty avoidance. He also finds interaction effects between collectivistic and high power distance countries.

In summary, previous research found that cultural characteristics, economic variables and legal aspects affect how companies report about CSR in different countries. Within companies' characteristics, industry has been identified as the dominant effect on CSR disclosure. Given that CSR disclosure policy is the result of board decisions, literature has also assessed the relationship between gender and board decisions.

Hypotheses Development

Based on the relationships found in the literature reviewed, we expect that in countries with low levels of gender gap, the proportion of boards with at least three women will be higher than in countries with a high gender gap. The first hypothesis is stated as follows:

> H1: *The level of gender gap in a country will positively determine the proportion of companies with at least 3 women on the board of directors.*

Given the discussed benefits of women involvement in CSR, we expect that countries with higher proportion of companies with three or more women on the board will present higher and more transparent levels of CSR reporting than their counterparts with lower proportion of companies with at least 3 female directors. The second hypothesis is stated as follows:

> H2: *Companies in countries with higher proportion of boards of directors with at least 3 women will report higher levels and more transparently on CSR.*

The formulation of our hypothesis can be resumed in Figure 1.

Research Methodology

To test our hypothesis, data are processed initially using principal component analysis. The purpose of this analysis is to identify a smaller number of factors, in this case two variables, to explain most of the variance observed. After testing the normality of the variables, we use linear regression to establish the relationship between the dependent variable and the explanatory variables as presented in the formulation of our hypotheses.

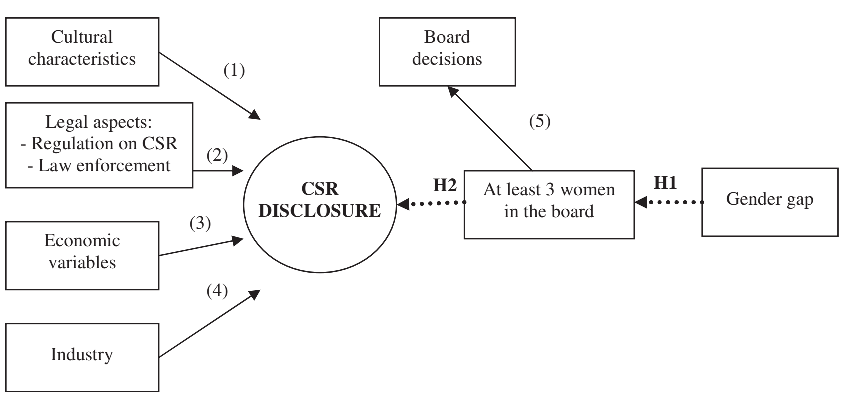

Figure 1. Hypothesis development

Data Collection

We collect data from the Global Gender Gap Report (Hausmann *et al.*, 2007), the *Women on Board's Report 2011* and KPMG's *International Survey of Corporate Social Responsibility Reporting 2008*. We select the 22 countries for which there is information available in the three main sources. We control for other factors affecting disclosure like country culture, enforcement, economic wealth and the existence of mandatory rules (Sanyal, 2005; Yeganeh and May, 2011).

Variable Definition

Dependent Variable

The dependent variable is CSR disclosure. To measure it, we combine the components defined in the KPMG report. KPMG International conducts a survey every three years 'to gain insight into CSR reporting and to contribute to the evolving global dialog on transparency and accountability' (KPMG, 2008, p.2). The last KPMG survey that offers complete and free information, was conducted in 2008, and examines CSR reporting practices of the global fortune 250 (G250) plus the 100 largest companies (N100) by revenue in 22 countries (around 2400 companies). It includes only information available in the public domain at the country and industry levels.

The KPMG survey includes the percentage of companies with the following characteristics:

- Present standalone reports.
- Disclose on CSR strategy.
- Report on supply chain risks.
- Report on carbon footprint.
- Report on business opportunities and financial value of CSR.
- Include Assurance statement (AS).

In order for our measure to represent levels of CSR disclosure, its components have to maintain the same behaviour towards CSR. Hence, all of them are expressed in terms consistent with a better CSR disclosure.

Reporting CSR strategy, supply chain risks, and carbon footprint, as well as the inclusion of AS, indicate higher levels and more transparent disclosure. They can be defined as positive towards CSR disclosure. On the contrary, existence of standalone reports indicates lower levels of quality, since the report states that users prefer the issuance of integrated reports. Similarly, reporting on business opportunities and financial value of CSR is negative towards CSR disclosure, because it does not respond to transparency, but to its financial benefits. In order to correct the direction of these two KPMG variables, we recalculate them so that they are stated as existence of integrated reports and Not-disclosure of business opportunity and financial value of CSR.

Given that the KPMG variables are highly correlated, we apply factor analysis for variable reduction. The resulting two factors represent the level of information disclosed, and its credibility, highlighted with the issuance of AS, as defined by (Dando and Swift, 2003). The results of the factor analysis are presented in Table 1.

	Component	
	1	2
% of Companies with a publicly available corporate responsibility strategy	.891	.065
% of Reports that address supply chain risks	.851	.255
% of Companies that disclose Carbon footprint	.806	.460
% of Reports that include a formal assurance statement	.071	.976
% of Not stand-alone report	-.899	-.160
% of Not disclosure for business opportunity and financial value of CSR	-.909	.128

Table 1. Rotated component matrix of KPMG variables
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

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The existence of two factors, Level of CSR disclosure and Credibility, forces us to reformulate Hypothesis 2. Thus:

H2a: *Companies in countries with higher proportion of boards of directors with at least three women will report higher levels of CSR.*

H2b: *Companies in countries with higher proportion of boards of directors with at least three women will report with higher credibility on CSR.*

Independent Variables

- At least three women on the board of directors

We collect the percentage of companies with at least three women on the board of directors, per country, from the 2011 *Women on Board's Report*, issued by Governance Metrics International. This report includes data from the surveys published since March 2009 to 2011 (2008–2010 data). We collect data from the first study, due to its time proximity to the KPMG survey (2008).

- Gender Gap

The data for the Gender gap were collected from the *Global Gender Gap Report* (GGGR) of the World Economic Forum (Hausmann *et al*., 2007). It covers 128 countries, representing over 90% of the world's population. The reliability of the data is given by the rigorous methodology of the World Economic Forum. The GGGR includes five indexes about global gender inequality. We choose the global gap index because it reports general instead of particular differences like education, empowerment or health. The variable used in this paper represents, for each country, the global situation of gender gap as the proportion of females over males. That means the higher gender gap, the more gender equality for a country.

- Industry variable

Following Campbell (2003), we use the environmental concern criteria to classify industries. The industry variable is defined based on previous studies from Branco and Rodrigues (2008); Campbell (2003); Cho *et al*. (2006); Deegan and Gordon (1996); Monteiro and Aibar-Guzmán (2010); Reverte (2009) and Wilmshurst and Frost (2000). We divide the total industries in two groups, depending on their levels of effect on the environment. The industries classified as more harmful are: Forestry, pulp & paper; Mining; Oil & gas; Utilities; Construction & building materials; Chemicals & synthetics; and Transport. This variable ranges from 0 to 1, representing the proportion of industries in the harmful sectors in each country.

- Mandatory CSR reporting (Regulation)

The level of reporting in different countries is affected by their regulation. This variable adopts a value of 1 if the country has rules requiring mandatory disclosures at the time of the report (2008), 0 otherwise. We include as 'having regulation' only those countries requiring mandatory disclosure of non-accounting information, like gender or racial non-discrimination and emissions.

- Enforcement

Since it is expected that countries with higher levels of enforcement will adopt the rules more easily than those with lower levels, we follow Ioannou and Serafeim (2011) to classify them according to their levels of law enforcement. They form the groups based on La Porta *et al*. (1998, 2006) and Reynolds and Flores (1996), who organize the legal systems with European origins in four legal families. They discuss that the common law system originated in England and spread to other countries through colonialism. Hence, we include in this group (English) the UK, the USA, Australia, Canada, and South Africa. The French code was adopted through occupation by other European countries like Italy, Spain and Portugal, and spread to Latin America. The German civil code influenced countries in the area (Switzerland, the Netherlands, Hungary, and Czech Republic) as well as Japan and South Korea. Finally, we include the Scandinavian countries Denmark, Finland, Norway and Sweden. Thus, the variable values are: 1. English; 2. French; 3. German; and 4. Scandinavian.

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- Cultural factors

Hofstede (1997) and Hofstede and Hofstede (2005) categorized cultural differences into five dimensions of culture:

1. Power distance: the extent to which individuals/employees accept as a norm that power is distributed unequally.
2. Collectivism *vs.* individualism: the importance of the individual compared to the importance of the group.
3. Femininity *vs.* masculinity: social roles of males and females.
4. Uncertainty avoidance: difficulty to confront unexpected situations, the grade of acceptance of uncertainty.
5. Long-term orientation: fostering towards future rewards.

We introduce the four initial dimensions. We do not expect long-term orientation to discriminate, since this dimension is unique to the East Asian countries; and has similar low values (short-term orientation) for the majority of non-East-Asian countries.

We looked for the coherence and consistence of the four Hofstede's dimensions and since Individualism was negatively correlated with the other variables, we used Collectivism instead. Power distance (PD), Collectivism (COL), Masculinity (MAS) and Uncertainty avoidance (UA) were factorized, in order to extract possible correlations and to reduce the number of variables. The results are presented in Table 2. We kept two variables: MAS and the others, PD+COL+UA.

- Economic variable

A connection between wealth and environmental protection was found in literature, with richer countries having higher demands for environmental policies (Vachon, 2010). To control for other correlated affects that might derive from stakeholders in richer countries requiring more CSR disclosures, we include the GDP per capita as a control variable for economic wealth (Yeganeh and May, 2011). The GDP per capita data were obtained from Data Service & Information Statistical Databases, International Statistical Yearbook. We use the GDP per capita data in US dollars adjusted for purchasing power parity (PPP). Due to its wide variation and its possible distorted distribution, we used the natural logarithm of this variable.

- Control variables Has report

This variable indicates the proportion of companies in the country that report on CSR according to the KPMG survey. It is a control to homogenize the sample since the levels of adoption of CSR vary depending on the country.

Theoretical model

Based on the previous definitions, we state two dependent variables that are likely to be explained by a set of independent variables. The development of the hypotheses shapes the following models:

Hypothesis 1. *H1: The level of gender gap in a country will positively determine the proportion of companies with at least 3 women on the board of directors.*

	Factor	
Hofstede's dimensions	1 – PD _ COL _ UA	2 – MAS
Score for Power distance	.909	.211
Score for Colectivism	.921	-.190
Score for Masculinity	.089	.983
Score for Uncertainty avoidance	.884	.305

Table 2. Hofstede's rotated dimension matrix
Extractive method: Main components analysis.
Rotation method: Varimax with Kaiser.

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$$\text{BoardAtLeast\_3Women} = \alpha_0 + \alpha_1\text{GenderGap} + \alpha_2\text{SensitIndust} + \alpha_3\text{Regulation} + \alpha_4\text{Enforcement} + \alpha_5\text{PD\_COL\_UA} + \alpha_6\text{MAS} + \alpha_7\text{LnGDP} + \alpha_8\text{HasReport} + \varepsilon_i$$

Hypothesis 2. *H2a: Companies in countries with higher proportion of boards of directors with at least 3 women will report higher levels of CSR.*

$$\text{LevelDisclosure} = \alpha_0 + \alpha_1\text{BoardAtLeastleast\_3Women} + \alpha_2\text{SensitIndust} + \alpha_3\text{Regulation} + \alpha_4\text{Enforcement} + \alpha_5\text{PD\_COL\_UA} + \alpha_6\text{MAS} + \alpha_7\text{LnGDP} + \alpha_8\text{HasReport} + \varepsilon_i$$

H2b: *Companies in countries with higher proportion of boards of directors with at least 3 women will report with higher credibility on CSR.*

$$\text{Credibility} = \alpha_0 + \alpha_1\text{BoardAtLeast\_3Women} + \alpha_2\text{SensitIndust} + \alpha_3\text{Regulation} + \alpha_4\text{Enforcement} + \alpha_5\text{PD\_COL\_UA} + \alpha_6\text{MAS} + \alpha_7\text{LnGDP} + \alpha_8\text{HasReport} + \varepsilon_i$$

Where, for each country:

BoardAtLeast_3Women	Percentage of companies with at least three women on the board of directors
LevelDisclosure	First component of the KPMG variable factor analysis representing level of information disclosed
Credibility	Second component of the KPMG variable factor analysis representing credibility
GenderGap	Global gender gap index
SensitIndust	Level of harm of the country industries (0 to 1)
Regulation	1 mandatory disclosures and 0 otherwise
Enforcement	1 English; 2 French; 3 German; and 4 Scandinavian.
PD_COL_UA	First component of the Hofstede's model representing country culture
MAS	Second component of the Hofstede's model representing masculinity
LnGDP	Natural logarithm of the Gross Domestic Product (GDP), per capita
HasReport	Proportion of companies that present CSR reports in the country

Results

The relationship among all variables is explored using Pearson correlations, which describes the linear relationship between the variables (Hair *et al.*, 1999). Gender gap has positive and significant correlation with Gender board composition (ρ .731**, sig. .000), which supports There is also a negative and significant correlation between Gender gap and cultural Hofstede's variables (ρ -.710**, sig. .000 and ρ -.477*, sig. .025). Cultural variables are also negatively correlated to Gender board composition, (ρ -.458**, sig. .037 and ρ -.453*, sig. .039). These results indicate that companies in countries with masculine characteristics have fewer women on the board of directors. Law enforcement is negative but lightly correlated with Masculinity (ρ -.493*, sig. .020). Finally, there is correlation between the KPMG variable indicating Level of disclosure and the proportion of companies reporting, which indicates consistency of the data (ρ .921**, sig. .000).

Test of Hypotheses

Hypothesis 1

The result of the linear regression rejects the null hypothesis. Hence, Hypothesis 1 is verified. (Table 3).

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The percentage of companies with at least three women directors can be explained by the Gender gap global score and the existence of CSR regulation.

Hypothesis 2a

Our results (Table 4) support Hypothesis 2a, which states that Companies in countries with higher proportion of boards of directors with at least three women will report higher levels of CSR. Hence, having at least three women on the board of directors improves reporting on CSR. Enforcement and cultural factors other than masculinity also affect the levels of reporting. Contrary to findings in most previous research, companies in sensitive industries report less on CSR than their counterparts in less sensitive industries. This disparity may be explained by the two classifications to what industry data are submitted. The first one is the KPMG survey one, establishing 16 groups, and then our reclassification to determine sensitive industry. In fact, if we change the definition of sensitive industries, limiting it to Forestry, pulp & paper, Mining, Oil & gas, and Utilities, this variable looses its significance in the regression. Besides that, the industry data represents the percentage of firms of each industry in a country; therefore, it is not data at company's level. In addition, this result accords with Branco and Rodrigues (2008), and Monteiro and Aibar-Guzmán (2010). The model has high level of explanation with RSquare = .954.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	−166.501	81.622		−2.040	.064
GenderGap	.030	.011	.958	2.810	.016
Enforcement	.840	3.051	.053	.275	.788
LnGDP	−3.942	6.295	-.112	-.626	.543
SensitIndustry	44.809	34.691	.219	1.292	.221
Hofstede PD_COL_UA	2.282	4.921	.127	.464	.651
Hofstede MAS	1.575	4.135	.093	.381	.710
CSR regulation	−13.074	5.762	-.371	−2.269	.043
KPMG % reporting	-.063	.132	-.081	-.477	.642

Table 3. Regression coefficients for Hypothesis 1
[a] Dependent Variable: BoardAtLeast_3Women
R square .719

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	−4.902	1.407		−3.483	.005
Hofstede PD_COL_UA	.193	.084	.186	2.297	.040
Hofstede MAS	.123	.079	.126	1.563	.144
Enforcement	.216	.072	.235	3.014	.011
LnGDP	.229	.142	.113	1.610	.133
SensitIndustry	−2.169	.865	-.182	−2.508	.027
BoardAtLeast_3Women	.018	.005	.311	3.440	.005
CSR regulation	.217	.138	.106	1.574	.141
KPMG % reporting	.045	.003	.990	14.716	.000

Table 4. Regression coefficients[a] for Hypothesis 2a
[a] Dependent Variable: KPMG Level of Disclosure
R square .954

DOI: 10.1002/csr

Hypothesis 2b

We do not find support for Hypotheses 2b. We only found marginal significance indicating that companies in masculine countries issue less AS than companies in countries with feminine characteristics (Table 5). This is consistent with the finding in Vitell *et al.* (1993); Husted (1999); Swaidan and Hayes (2005); Bernardi (2006) and Scholtens and Dam (2007).

Conclusions

In this study we analyzed whether the inclusion of at least three women on the board of directors affects the levels and credibility of CSR disclosure. We basedour analysis in the 2008 KPMG report of top 250 global companies plus top 100 local companies in 22 countries. We included in the analysis different variables to control for country characteristics, like cultural factors, existence of regulation on CSR disclosures, the level of law enforcement in the country, and the GDP. We also controlled for industry, which is usually considered to affect CSR disclosure. Our results support that in countries with higher proportion of boards of directors with at least three women, the level of CSR reporting (defined based on the KPMG survey) are higher. We did not find evidence of an effect on credibility of the report, by including assurance statements. Our results show that countries with more gender equality have more companies with board of directors with at least three women. Interestingly, we find that Hofstede's cultural variables affect the level of disclosure, except for Masculinity. It seems that including women on the board of directors moderates the masculine cultural characteristics effect.

These results provide evidence on the effect of cultural and social setting on CSR disclosure. Thus, strategies focused on extending CSR should considerer not only the promotion of CSR policies among companies, but also the change on the countries' scene.

Although the data were gathered from publicly available trustable sources, the main limitation of this study is due to the number of observations. We obtained data from the survey KPMG conducted in 2008 which reports only 22 countries. These data were matched with both the countries in the GMI report, which includes data from 23 industrialized and 22 emerging countries, and the countries in the GGG report, that informs on gender inequality in 128 countries. Future research needs to be extended by surveying companies in a larger number of countries. Another interesting addition to the findings would be study the effect of having a woman chair of the board of directors on the levels and credibility of CSR reporting.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	1.921	4.964		.387	.706
Hofstede PD_COL_UA	-.050	.297	-.051	-.169	.869
Hofstede MAS	-.538	.278	-.574	−1.931	.077
Enforcement	-.323	.253	-.369	−1.278	.225
LnGDP	-.170	.502	-.088	-.339	.740
SensitIndustry	1.448	3.051	.127	.475	.644
BoardAtLeast_3Women	-.018	.019	-.318	-.952	.360
CSR regulation	.713	.486	.365	1.467	.168
KPMG % reporting	.001	.011	.017	.067	.947

Table 5. Regression coefficients[a] for Hypothesis 2b

[a]Dependent Variable: KPMG Credibility

R square .376

DOI: 10.1002/csr

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DOI: 10.1002/csr