





Article

# Gender Diversity on the Board and Firms' Corporate Social Responsibility

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**Abstract:** Corporate Social Responsibility (CSR) has progressively assumed a strategic role in corporate business. In this sense, the board of directors (Board) assumes a preponderant role, since they make decisions about business strategy. One considerably debated characteristic of Board diversity is gender, since women differ from men in terms of personality, communication style, and values. Therefore, this study analyzes the relationship between CSR and gender diversity on Boards, in a sample of European public firms. Results indicate that firms with a higher percentage of women in the Board have higher CSR practices, suggesting that the presence of women can play an important role in terms of CSR decisions, contributing to more social and sustainable firms. Results also suggest that management teams with a higher female percentage associate with better CSR scores, and firms that exhibit both a higher percentage of women on the Board and on the management team improve CSR scores. From an ethical perspective, more socially responsible firms present more trustworthy financial information, and more sustainable economic performance, which decreases risk assessment from their business partners and remaining stakeholders. Thus, results may be of interest to different stakeholders, such as policymakers, investors, and business partners, in order to increase firms' involvement in CSR.



**Citation:** Gaio, Cristina, and Tiago Cruz Gonçalves. 2022. Gender Diversity on the Board and Firms' Corporate Social Responsibility. *International Journal of Financial Studies* 10: 15. <https://doi.org/10.3390/ijfs10010015>

Academic Editor: Mara Madaleno

Received: 31 December 2021

Accepted: 15 February 2022

Published: 18 February 2022

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**Keywords:** board of directors; corporate social responsibility; Europe; gender diversity

## 1. Introduction

Corporate Social Responsibility (CSR) has progressively assumed a strategic role in corporate business. A socially responsible company more easily obtains the trust of its employees, consumers, and citizens; therefore, relying on a sustainable business basis and top management is especially focused on this issue (Orlitzky et al. 2003; Blomgren 2011; Ducassy 2013; Michelon et al. 2013; Madime and Gonçalves 2022). In fact, companies have increasingly committed themselves to CSR practices, and environmental management, solidarity, customer loyalty, and business ethics have gained prominence, leading to competitive advantages (López et al. 2007; Gonçalves et al. 2020).

Thus, to date, most studies have focused on shedding light on why firms commit to CSR, and provide evidence that there are two major types of possible motives: extrinsic (economic) and intrinsic (ethical and altruistic) (Atmeh et al. 2020).

The board of directors (Board) is seen as the main group responsible for CSR policies (Krüger 2009), due to their role in the decision-making process. Considering that the diversity of the members of the Board is represented by their different characteristics, specificities, and competences, and that these individual differences may impact the quality of the decision-making process and its effectiveness (Van der Walt and Ingley 2003; Carter et al. 2010), a better understanding of the relationship between Board characteristics and CSR is needed.

We aim at understanding whether the presence of women directors, as well as women managers, are related to CSR, since the literature has suggested that women bring valued

contributions to companies, due to their cognitive characteristics, attributes, and values (Williams 2003; Bernardi et al. 2006; Konrad and Kramer 2006; Brammer et al. 2009; Dunn 2010; Sealy and Singh 2010). Indeed, women are more than twice as likely to hold a PhD compared to men, are considered more influential by communities (Hillman et al. 2002), create a good working environment, and are more communicative and more concerned to the needs of a large portion of stakeholders (Bernardi et al. 2006; Konrad and Kramer 2006).

Although both concepts are gaining increasing attention in the literature, studies about the relationship between CSR and gender diversity are still inconclusive and scarce, thus requiring further research (Barako and Brown 2008; Khan 2010; Fernandez-Feijoo et al. 2012; Zhang 2012). Therefore, the aim of this study is to analyze the influence that the presence of women on the Board and in management positions has on CSR. For this purpose, a sample comprising 268 listed European companies, belonging to 11 countries and 9 industries, is used, for the time period from 2013 to 2019.

We contribute to the literature on CSR by studying the association between gender diversity in Boards and management teams and CSR in different countries and industries. Most of the previous studies focus on only one country (Galbreath 2011; Zhang 2012; Nwude and Nwude 2021) or on a single industry (Bear et al. 2010; De Cabo et al. 2012; Nwude and Nwude 2021). We also contribute to the literature on the relationship between non-financial reporting and gender diversity, since CSR reporting is an important stream of non-financial reporting, and women can play an important role not only on the quality of financial reporting (Bozzolan et al. 2015; Gonçalves et al. 2019), but also on non-financial reporting. Finally, we analyze the cumulative effect of women both on Boards and on the management team, which has scarce evidence in the extant literature.

Results suggest that the presence of women on the Board has a positive influence on CSR, meaning that the higher the percentage of female members on the Board, the more socially responsible companies are. We also find that management teams with higher female percentage associate with better CSR scores. Results also suggest that larger companies and companies with lower financial leverage are more socially responsible, which is in line with previous research (Donnelly and Mulcahy 2008; Prior et al. 2008; Bernardi and Threadgill 2010; Boulouta 2013). In addition, we find that firms that exhibit both a higher percentage of women on the Board and on the management team improve CSR scores.

This study is organized into five sections. Section 2 presents the literature review and the development of the research hypotheses. Section 3 presents the empirical design. Section 4 presents and discusses the results, and Section 5 concludes.

## 2. Literature Review

### 2.1. Corporate Social Responsibility

In addition to brand reputation, business success is strictly dependent on quality, environmental management, customer loyalty, and business ethics, concepts that, by being integrated, lead to the adoption of sustainable development policies and competitive advantages (López et al. 2007).

Regarding sustainable development policies, Carroll and Shabana (2010) state that the most used concept, both by the literature and companies, is “Corporate Social Responsibility”, a concept related to three strands that impact business management: economic, social, and environmental. According to Carroll (1979, p. 500), “The social responsibility of business encompasses the economic, legal, ethical, and discretionary [philanthropic] expectations that society has of organizations at a given point in time”. This definition is generally accepted in the contemporary literature.

Two main factors have contributed to the rising importance of CSR: the increasing concern on sustainability, and the stakeholder approach of business, where companies’ goal is not only to generate profit for its shareholders, but also to meet the needs of its stakeholders and the environment (Freeman 2004). This stakeholder approach provides companies with a comprehensive view of society and the environment. Indeed, companies are an integral part of society, and should conduct their operations in a way that does not

harm the welfare of society, and does not devastate natural resources that could jeopardize the future of both society and the planet (Benn and Kramar 2011; Gonçalves et al. 2021b).

As a consequence, stakeholders have exerted constant pressure for companies to disclose information about their environmental and social concerns (McWilliams et al. 2006). Indeed, CSR has been increasingly assumed as a strategic policy with important competitive advantages for companies in terms of risk management, cost reduction, access to capital, customer relations, employee management, and the ability to innovate. A socially responsible company more easily earns the trust of its employees, consumers, and citizens by building a sustainable business foundation. In turn, greater trust helps establish an enabling environment for companies to grow and invest in innovation. This whole framework has led to several studies on the relationship between CSR and financial performance, but, despite the remarkable strategic benefits for the entity, results are still inconclusive (Orlitzky et al. 2003; Blomgren 2011; Ducassy 2013; Michelon et al. 2013; Atmeh et al. 2020; Boukattaya and Omri 2021; Gonçalves et al. 2021a).

Additionally, international organizations, such as the European Commission (EC), began to see CSR as a means to address and regulate the organizational challenges that were unfolding, which naturally resulted in greater recognition of the concept (Agudelo et al. 2019). Thus, according to the EC, CSR can be defined as the responsibility of companies for their impact on society and the environment, also considering human rights and consumer concerns, and collaboration with stakeholders. The European Union (EU) aims to promote CSR reporting for companies, enhancing the EU's sustainable development and the incorporation of CSR as a competitive factor. Additionally, the disclosure of non-financial information is regulated by Directive 2014/95/EU of 22 October 2014, which is mandatory for public interest companies, and aims to ensure a sufficient level of comparability on the social impact of organizations, as well as the disclosure of relevant information to stakeholders.

## 2.2. Gender Diversity on the Board

Board diversity encompasses cognitive and demographic parameters, and, according to Campbell and Vera (2010), can be measured through factors such as gender, age, nationality, ethnic origin, educational level, and professional experience.

The pressure to increase the presence of women directors has been a systematic global issue, and the initiatives that have been taken point out that the presence of women on the Board can affect management policies significantly (Adams and Ferreira 2009). However, it is still a reality that women are not offered the same type of opportunities compared to men, such as career growth, compensation, or training (Oakley 2000), and, despite having higher academic qualifications, they occupy much fewer senior positions compared to men (Singh et al. 2008).

In order to minimize gender inequality in top management positions in listed European companies, the EC in 2012 presented a proposal to increase women's representation on Boards to 40% by 2020, through the introduction of so-called gender quotas. However, France was the only country to exceed the 40% target. According to the EC, in 2019, 73.3% of Board positions were held by men in listed European companies, and only one in ten companies had a woman in the position of Chief Executive Officer or Board Chair.

Women and men are naturally different. Konrad et al. (2000) characterize the male self-schema by aspects such as wealth creation, leadership, aggressiveness, independence, goals, and exhibitionism. In turn, the female gender is characterized by commitment, care, respect for others, submissiveness, and their role linked to housework. However, the characteristics and aspects traditionally linked to women have been changing over the years, such as academic training. Additionally, the literature in the social and economic sciences recognizes that there are dissimilarities associated with gender, specifically in terms of trust and risk aversion (Heminway 2007). Male managers tend to look more to aspects related to economic power, security, and goal achievement, whereas women are more universalistic, condescending, and compassionate (Adams and Funk 2012).

According to Hillman et al. (2002), women in Boards are more than twice as likely as men to have a PhD. In addition, they are also more likely to have a technical education that is not related to management areas, thus bringing different and more diversified perspectives to management than men. Also, women are considered more influential by their communities than men (Hillman et al. 2002), and, according to Daily and Dalton (2003), the increase in the number of women on Boards leads to a more effective decision-making process, as they offer a greater variety of perspectives, and, as a consequence, stimulate communication among members. Rosener (2003) further points out that in companies with more women on Boards, the level of governance is usually higher than in companies with few or no women. Moreover, higher levels of symbolic values are also attributed to women, such as being more optimistic, having a commitment to stay, stereotype reduction, and job satisfaction, as well as higher levels of behavioral values, i.e., building work identity (Sealy and Singh 2010).

From an outside perspective, in general, the presence of women in Boards is seen positively since there has been a positive short-term market stimulus to the announcement of female nominations to sit on Boards (Campbell and Vera 2010), and has increased the reputational level of companies (Bernardi et al. 2006; Brammer et al. 2009). From an economic perspective, it is claimed that women increase shareholder value. Indeed, women are more predisposed than men to identify ethical judgmental issues (Smith et al. 2001), and certain shareholders believe that Boards with a greater number of women provide greater security to their investments, avoiding legal nonconformities, and preventing corporate corruption and fraud (Flynn and Adams 2004). Finally, from a moral level, the presence of women in Boards is seen as a matter of social justice (Huse 2009).

### 2.3. Relationship between Corporate Social Responsibility and Gender Diversity

CSR reporting increases corporate accountability to various stakeholders, and, with accountability being an integral part of corporate governance (Donnelly and Mulcahy 2008), Boards may play an important role on driving CSR policies. The role of the Board is, therefore, understood as a flow of decisions taken that lead to actions designed to create socially favorable outcomes in line with the interest of society and the company itself (Hung 2011).

According to the literature, resource dependency theory and agency theory provide the general theoretical basis on how Board diversity and composition may affect CSR (Bear et al. 2010). Based on the resource dependency theory, firms operate in a broad environment where they need to acquire and exchange certain resources for their survival, ultimately creating a dependency network among themselves and with other external units. Thus, greater diversity in the Board expands the existing networks and contacts within it, leading firms to establish networks and links more easily with each other (Hillman et al. 2009). According to this theory, the resources that are made available by gender diversity leads the company to be more responsive to its environment, leading to CSR-related issues being more thoughtful and better answered (Boyd 1990).

In turn, agency theory provides the basis for the Board to oversee management on behalf of shareholders, since Boards represent the most important means of internal control to bridge the gap with shareholder interests. For this oversight function to be feasible, there must be a diverse mix of experiences and capabilities to assess and make strategic decisions (Hillman and Dalziel 2003). Therefore, increasing gender diversity, i.e., including more women on Boards, could be a mechanism to improve oversight and control, and also to increase the capacity to evaluate business strategies.

Park et al. (2012) suggest that women are more ecologically aware than men, and, according to Wehrmeyer and McNeil (2000), have a more protective attitude towards the environment and the consequences that come from its exploitation. Ciocirlan and Pettersson (2012) also highlight that in companies where the presence of women is stronger, there is a higher attention to climate change. In the same line of thought, Braun (2010) also studied environmental commitment, and concluded that women show stronger environmental



attitudes and commitment to green entrepreneurship programs than men, and are more involved in environmentally friendly issues.

The literature on the relationship between Board diversity and CSR based on gender is still scarce. Although prior studies generally suggest that there is a positive relationship between the presence of women in Boards and CSR performance (Williams 2003; Webb 2004; Krüger 2009; Bear et al. 2010; Bernardi and Threadgill 2010; Post et al. 2011; Zhang 2012; Setó-Pamies 2015), some provide evidence of a negative or even no relationship (Hayes 2001). The literature on the relationship between gender diversity in management positions and CSR is even more scarce, providing some evidence of a positive relationship with women attributing more importance and commitment to social responsibility policies (Barako and Brown 2008; Bear et al. 2010; Khan 2010; Fernandez-Feijoo et al. 2012).

Post et al. (2011) argue that Boards with three or more women positively impact environmental CSR practices, produce more integrated reports, have a higher level of disclosure about CSR strategies, and include information that is considered reliable. In addition, when there is a higher predominance of women in Boards, companies have a more pro-social corporate behavior, making a greater number of donations, charitable projects/contributions, and cultural activities (Kabongo et al. 2013; Vilké et al. 2014), and pay more attention to community, employee, and environmental stakeholders (Krüger 2009). In fact, Bernardi et al. (2006) find that companies with Boards that have a higher percentage of women members are more likely to appear on Fortune's "Best Companies to Work For" list, as well as Ethisphere's "Most Ethical Companies" list.

Bernardi and Threadgill (2010) studied the relationship between women in management positions and CSR. They found that a greater diversity of employees brings richer ideas and contributions, which, consequently, leads to more relevant, concise, and worked-out final decisions. Results also suggest a positive relationship between the percentage of women in top management positions and companies' social policies, such as charitable donations, community projects, and recognition of employee benefits.

Setó-Pamies (2015) also concludes that there is a positive influence, i.e., women's capabilities give companies a greater opportunity to properly manage their CSR practices, and these, consequently, support strategic decision-making. Similarly, Bear et al. (2010) report that CSR scores are higher when there is a higher number of women in top positions or on the Board, mainly due to women's increased sensitivity in decision-making, and the participatory decision-making styles that women bring to Board. Ibrahim and Angelidis (1991) further reveal that women are less concerned, relative to men, with issues related to economic performance, and favor matters related to discretionary issues of corporate responsibility. In addition, women generally occupy and have more in-depth knowledge about so-called "soft" management positions, i.e., areas related to human resources, marketing, CSR, among others (Zelechowski and Bilimoria 2006), and perceive CSR issues differently than men.

However, previous studies also show that when there is a woman in a team of men, she does not feel comfortable expressing her opinions; however, if there are at least three women in the team, the gender barrier falls, and they feel free to express their ideas (Konrad et al. 2008). Moreover, it seems that women are subjected to discrimination or stereotypes that inhibit their abilities to fully contribute to business strategy (Galbreath 2011), and may therefore limit sustainable results. There are also authors such as Powell (1990) who argue that women in top positions tend to reject female stereotypes, and may be more likely to have more similar behaviors and leadership styles to men, shaping their behavior accordingly. Also, some believe that gender alone is unlikely to have an effect on leadership effectiveness, finding no differences in effectiveness between male and female members of senior positions (Eagly et al. 1995). Similarly, Hayes (2001) suggests that there are no differences in decisions made between men and women regarding policies on the environment, although most empirical evidence shows that women are usually more concerned about ecological issues than men. Williams (2003) also found no relationship

between the presence of women on the Board and the number of charitable donations, particularly for educational purposes.

Finally, [Nielsen and Huse \(2010\)](#) conclude that the presence of women on Boards increases Board effectiveness through reducing the level of conflict, and ensuring high quality of Board development activities, but this is not about gender per se, but about the career path that women have, and despite evidence indicating that gender has a positive relationship with CSR decision-making, further research is needed.

In sum, although research linking gender and CSR disclosure is still scarce and presents mixed evidence, results seem to indicate a positive relationship, with women attributing more importance and commitment to social responsibility policies. Therefore, based on the resource dependence theory, agency theory, and prior literature, we formulate the following hypotheses:

**Hypothesis 1 (H1).** *The presence of women on the board of directors has a positive influence on corporate social responsibility.*

**Hypothesis 2 (H2).** *The presence of women in management positions has a positive influence on corporate social responsibility.*

### 3. Empirical Design

#### 3.1. Data and Sample

The financial data were collected from the Thomson Reuters Eikon database, as well as information on the gender variables. The initial sample consists of European listed companies that have CSR scores available between 2013 and 2019, in order to avoid potential effects of the 2008 crisis and the epidemiological crisis of COVID-19.

Financial sector institutions and public sector institutions were excluded from the sample as a result of their specific characteristics that could give rise to biases in the results. As such, our initial sample comprises 588 firms. In addition, firms with a lack of information, and countries and sectors with less than six firm-year observations ([Arun et al. 2015](#); [Gonçalves et al. 2019](#)), as well as firms with negative equity, were also excluded. Finally, in order to eliminate the potential effects of outliers, we winsorize all variables at the 1st and 99th percentiles. The final sample consists of 268 firms, from 11 European countries and 9 industries, corresponding to a total of 1750 firm-year observations.

Tables 1 and 2 present the composition of the sample by country and industry, respectively. France and Germany are the most representative countries, with 24.86% and 22.40% of the total firm-observations, respectively. Industries are classified according to the NACE, Rev. 2: Statistical Classification of Economic Activities in the European Community nomenclature. The industry with the most firms in the sample is Manufacturing, with 47.60% of the total firm-observations.

**Table 1.** Sample composition by country.

Country	Obs.	(%)
Austria	88	5.03%
Belgium	114	6.51%
Finland	155	8.86%
France	435	24.86%
Germany	392	22.40%
Greece	59	3.37%
Italy	123	7.03%
Luxembourg	41	2.34%
Netherlands	142	8.11%
Portugal	42	2.40%
Spain	159	9.09%
Total	1750	100%

**Table 2.** Sample composition by industry.

	Industry	Obs.	(%)
B.	Mining and quarrying	47	2.69%
C.	Manufacturing	833	47.60%
D.	Electricity, gas, steam, and air conditioning supply	132	7.54%
F.	Construction	123	7.03%
G.	Wholesale and retail trade; repair of motor vehicles and motorcycles	133	7.60%
H.	Transportation and storage	97	5.54%
J.	Information and communication	237	13.54%
L.	Real estate activities	91	5.20%
M.	Professional, scientific, and technical activities	57	3.26%
<b>Total</b>		1750	100%

Classification according to the NACE, Rev2 nomenclature.

### 3.2. Corporate Social Responsibility and Gender Variables

Most of the literature measures the level of CSR through unique indicators that mostly address environmental, social, and corporate governance (ESG) issues. The Refinitiv Eikon database is one of the most widely used and comprehensive on ESG scores (Kyaw et al. 2017). Its ESG\_score results from the combination of several categories, namely: resource use; emissions; innovation; workforce; human rights; community; product responsibility; management level; shareholders; and CSR strategy. In order to measure company performance, a percentile ranking is assigned to each company according to its performance in a certain category, compared to the performance of other companies in that same category. The score is converted to a gradual scale from D– to A+, depending on a certain value range.

In addition to the ESG\_score category, there are two other categories: Controversy\_score and Combined\_score. The Controversy\_score is a measure calculated based on controversies related to the company, such as being involved in some scandal, polemic process (e.g., lawsuit), or negative event that ends up publicly exposing the company through global media. A low Controversy\_score thus reflects a higher number of controversial cases involving the company. The method of calculating the score is the same as that of the ESG\_score. In turn, the Combined\_score is the result of the calculation of the two previous scores, and is therefore a score that reflects environmental, social, and corporate governance information, refined by the controversies reported by the media. The Combined\_score is obtained by calculating the arithmetic average between the ESG score and the Controversy score, except that when the Controversy\_score is higher than the ESG\_score, or even higher than 0.5, the Combined\_score value equals the ESG\_score value.

To study the influence of women on CSR, two gender variables, commonly used in the literature (Williams 2003; Bernardi and Threadgill 2010; Galbreath 2011; Boulouta 2013; Setó-Pamies 2015), are used: Women Managers (WM) and Board Gender Diversity (BGD). WM is the percentage of women managers, calculated by the proportion of women managers over the total number of managers. This variable includes top, senior, middle, and junior management. BGD is the percentage of women on Boards, calculated by the proportion of women directors over total directors.

### 3.3. Empirical Model

In order to determine the relationship between CSR and the presence of women directors and managers, the following models were developed based on the study by Setó-Pamies (2015), among others, complemented by the risk variable used by Boulouta (2013) to control for financial risk effects:

$$\text{ESG\_Score}_{i,t} \text{ or } \text{Combined\_Score}_{i,t} = \beta_0 + \beta_1 \text{BGD}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{ROE}_{i,t} + \beta_4 \text{RISK}_{i,t} + \beta_5 \text{SECTOR}_i + \sum \text{YEAR}_t + \varepsilon_{i,t} \quad (1)$$

$$\text{ESG\_Score}_{i,t} \text{ or } \text{Combined\_Score}_{i,t} = \beta_0 + \beta_1 \text{WM}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{ROE}_{i,t} + \beta_4 \text{RISK}_{i,t} + \beta_5 \text{SECTOR}_i + \sum \text{YEAR}_t + \varepsilon_{i,t} \quad (2)$$

$$\text{ESG\_Score}_{i,t} \text{ or } \text{Combined\_Score}_{i,t} = \beta_0 + \beta_1 \text{WOMEN}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{ROE}_{i,t} + \beta_4 \text{RISK}_{i,t} + \beta_5 \text{SECTOR}_i + \sum \text{YEAR}_t + \varepsilon_{i,t} \quad (3)$$

where BGD and WM are women in the Board and women in management positions, respectively, as described before. WOMEN is the interaction of BGD and WM, and evaluates the combined effect of female participation both on the Board and management team. Studies that examine the determinants of CSR most often control for firm size, industry, financial performance, and risk (Boulouta 2013). The variable SIZE represents the size of the firm, measured by the natural logarithm of total assets. Profitability is measured by ROE (return on equity), measured as the ratio of net income to Equity. The variable RISK is also included, to control for financial leverage, and is measured by the ratio of long-term debt to total assets.

The variable SECTOR, a dummy variable, is added to control for different industry characteristics. Cho and Patten (2007) argue that firms that belong to environmentally sensitive industries are more likely to have higher environmental performance and environmental disclosure than those that do not. Examples of such industries are forestry, metals, coal, oil, gas, chemicals, and electricity, i.e., according to the NACE Rev. 2. nomenclature, those in sectors A, B, C, and D. Finally, CSR scores may change over time, and, therefore, the variable YEAR is a control variable that represents the period of reporting (Bozzolan et al. 2015).

In order to control for heteroscedasticity and autocorrelation, the models were estimated using pooled regression with robust standard errors clustered at the firm, industry, country, and year level, accounting for potential fixed effects.

#### 4. Empirical Results and Discussion

##### 4.1. Descriptive Statistics

Table 3 presents the descriptive statistics of the variables. The mean values of ESG\_Score and Combined\_Score are 0.6299 and 0.5975, respectively, which suggests relatively good performance, and an above average degree of transparency. On average, firms have 49.3% of women on Boards and 25.6% of women in management positions. With regard to the control variables, it can be seen that the companies included in the sample have, on average, a ROE of 8.9% and a risk of 20.4%.

**Table 3.** Descriptive statistics.

Variable	Obs.	Mean	Median	Standard Deviation	First Quartile	Third Quartile	Minimum	Maximum
ESG_Score	1750	0.6299	0.6607	0.1716	0.5174	0.7619	0.1203	0.9111
Combined_Score	1750	0.5975	0.6165	0.1645	0.4829	0.7277	0.1203	0.9111
BGD	1750	0.4934	0.4711	0.2729	0.2634	0.7315	0.0266	0.9875
WM	1260	0.2561	0.23	0.1305	0.1610	0.3170	0	0.77
SIZE	1750	22.923	22.756	1.3628	21.9802	23.8384	18.5779	26.8505
ROE	1750	0.0896	0.1084	0.2404	0.0511	0.1635	−3.3381	3.5401
RISK	1750	0.2046	0.1838	0.1296	0.1135	0.2834	0	0.6308

ESG\_Score is the environmental, social, and corporate governance score extracted from the Refinitiv Eikon database; Combined\_Score is the ESG\_Score refined by the controversies extracted from the Refinitiv Eikon database; BGD is the percentage of women on the Board; WM is the percentage of women managers; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets.

Table 4 presents Pearson correlation matrix results. As expected, CSR measures are significantly and highly correlated with each other, since Combined\_Score results from the weighting between ESG\_Score and Controversies\_Score. The BGD variable is positively and significantly correlated with both CRS measures, indicating that companies with better CSR scores are more likely to have a higher percentage of women on their Boards. In general, there is a statistically significant correlation among the independent variables, although not very high.



**Table 4.** Pearson correlation matrix.

	ESG_Score	Combined_Score	BGD	WM	SIZE	ROE	RISK
ESG_Score	1						
Combined_Score	0.8631 ***	1					
BGD	0.1647 ***	0.1399 ***	1				
WM	−0.0336	0.0270	0.0291	1			
SIZE	0.5619 ***	0.3426 ***	0.0759 ***	−0.1282 ***	1		
ROE	0.0472 **	0.0603 ***	0.0467 **	0.0913 ***	0.0431 *	1	
RISK	−0.0251	−0.0124	0.0085	−0.0024	0.1062 ***	0.0016	1

ESG\_Score is the environmental, social, and corporate governance score extracted from the Refinitiv Eikon database; Combined\_Score is the ESG\_Score refined by the controversies extracted from the Refinitiv Eikon database; BGD is the percentage of women on the Board; WM is the percentage of women managers; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets. \*, \*\*, \*\*\* represent the significance level of 10%, 5%, and 1%, respectively.

To additionally check for multicollinearity issues, variance inflation factors were calculated for the independent variables (results not tabulated). We find that average VIF is 1.01, with a maximum of 1.02 (SIZE). Since the values are lower than 10, the possibility of multicollinearity is rejected, that is, the independent variables are not strongly related to each other, and therefore all independent variables were included in the models.

#### 4.2. Regression Results

Tables 5 and 6 present the results of the regressions estimated when considering ESG\_Score and Combined\_Score as dependent variables, respectively.

**Table 5.** Relation between CSR and gender—ESG\_Score.

Variables	(1)	(2)	(3)
Constant	−1.005 *** (−8.12)	−0.6736 *** (−7.23)	−0.6807 *** (−7.08)
BGD	0.0767 *** (4.22)	−	−
WM	−	0.0447 * (2.12)	−
WOMEN	−	−	0.1146 ** (2.61)
SIZE	0.0706 *** (13.43)	0.0584 *** (13.96)	0.0585 *** (13.84)
ROE	0.0125 (0.72)	−0.0366 (−1.77)	−0.0382 (−1.93)
RISK	−0.1134 ** (−2.83)	−0.0769 * (−2.05)	−0.0745 (−1.84)
Observations	1750	1260	1260
Adjusted R <sup>2</sup>	0.3382	0.2930	0.2985
F-test	222.97	131.43	134.93
p-value	0.0000	0.0000	0.0000

BGD is the percentage of women on the Board; WM is the percentage of women managers; WOMEN is the product of WM and BGD; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets. \*, \*\*, \*\*\* represent the significance level of 10%, 5%, and 1%, respectively.

Both tables show a positive coefficient of the BGD variable (columns 1), suggesting that firms with a higher percentage of women on the Board have higher CSR scores, even when the company is involved in controversial cases, which validates hypothesis H1. These results are in line with prior studies (Williams 2003; Webb 2004; Krüger 2009; Bear et al. 2010; Bernardi and Threadgill 2010; Zhang 2012; Setó-Pamies 2015), which state that companies with more women on their Boards are more socially responsible.

There may be several reasons for this positive relationship, such as women are more ecologically aware and protective of the environment than men (Wehrmeyer and McNeil 2000; Braun 2010; Ciocirlan and Pettersson 2012; Park et al. 2012), exhibit more pro-social business behavior (Kabongo et al. 2013; Williams 2003; Vilkè et al. 2014), promote ethical conduct (Smith et al. 2001; Flynn and Adams 2004), and enhance relationships and trust with stakeholders (Konrad and Kramer 2006).

**Table 6.** Relation between CSR and gender—Combined\_Score.

Variables	(1)	(2)	(3)
Constant	−0.3593 (−1.77)	0.0776 (0.43)	0.0823 (0.44)
BGD	0.0679 *** (5.51)	-	-
WM	-	0.0632 *** (3.84)	-
WOMEN	-	-	0.1077 ** (2.64)
SIZE	0.0407 *** (4.58)	0.0234 *** (3.29)	0.0232 ** (2.87)
ROE	0.0277 (1.41)	−0.0231 (−1.18)	−0.0234 (−1.30)
RISK	−0.0624 (−1.38)	−0.009 (−0.22)	−0.0066 (−0.16)
Observations	1750	1260	1260
Adjusted R <sup>2</sup>	0.1325	0.0471	0.0502
F-test	67.76	16.54	17.64
p-value	0.0000	0.0000	0.0000

BGD is the percentage of women on the Board; WM is the percentage of women managers; WOMEN is the product of WM and BGD; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets. \*\* and \*\*\* represent the significance level of 5% and 1%, respectively.

In terms of the WM variable (columns 2), we do find a statistically significant association with both CRS scores. The higher the percentage of women on management teams, the higher the CSR scores, as hypothesized in H2. Finally, when we consider the two gender measures together (columns 3), measured by the product of both gender percentages, we find a positive and statistically significant relationship between WOMEN and both CSR variables. Therefore, we can conclude that the presence of women in company management and on the Board influences CSR performance. This result allows to control for potential “gender washing” or even simple gender quotas on Boards imposed by regulation.

Regarding the control variables, the variable SIZE is positive and statistically significant in all regressions, which indicates that larger companies identify and disclose a greater number of CSR-related issues, which is in line with previous studies (Donnelly and Mulcahy 2008; Prior et al. 2008; Bernardi and Threadgill 2010). The variable RISK has a negative and statistically coefficient in Table 5, suggesting that the higher the firm’s risk, the lower the disclosure in terms of CSR. This result is consistent with Boulouta’s (2013) findings. A reason for this variable being not significant in Table 6 may be related to the fact that Combined\_Score considers controversies and negative events related to the company.

The extant literature has pointed to potential issues due to endogeneity and reverse causality (Boubaker et al. 2017, 2020). We address these issues by performing a panel data analysis (using firm and year-fixed effects, in line with the results of the Hausman test, which rejected random effects). Table 7 presents the results for a fixed effects panel data model of the three independent variables of interest.

We also estimate an Arellano–Bond dynamic panel model, with a two-lagged difference for ESG\_score, and changes in the independent instruments. Results are presented on Table 8. We find a significant two-lagged ESG impact, and a robust significant impact of WOMEN on firms’ CSR.

**Table 7.** Relation between CSR and gender—ESG\_Score (*Panel Data Fixed Effects*).

Variables	(1)	(2)	(3)
Constant	−1.9611 *** (−10.43)	−2.2098 *** (−8.50)	−2.1325 *** (−8.12)
BGD	0.0545 *** (5.25)	-	-
WM	-	0.2033 *** (3.62)	-
WOMEN	-	-	0.0828 ** (2.21)
SIZE	0.1128 *** (13.61)	0.1238 *** (10.98)	0.1223 *** (10.72)
ROE	0.0049 (0.53)	−0.0201 (−1.56)	−0.0202 (−1.57)
RISK	−0.1113 *** (−2.86)	−0.1823 *** (−4.04)	−0.1856 *** (−4.10)
Observations	1750	1260	1260

BGD is the percentage of women on the Board; WM is the percentage of women managers; WOMEN is the product of WM and BGD; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets. \*\* and \*\*\* represent the significance level of 5% and 1%, respectively.

**Table 8.** Relation between CSR and gender—ESG\_Score (*Arellano–Bond GMM dynamic Panel Data*).

Variables	(1)	(2)	(3)
Constant	−0.4396 (−1.24)	0.4353 (0.85)	0.4420 (0.88)
L1.ESG_Score	0.5612 *** (7.59)	0.6259 *** (7.84)	0.6072 *** (8.04)
L2.ESG_Score	0.1935 *** (4.71)	0.1595 *** (3.76)	0.1525 *** (3.61)
BGD	0.0505 *** (3.87)	-	-
WM	-	0.0788 (0.98)	-
WOMEN	-	-	0.1128 *** (2.70)
SIZE	0.0251 (1.53)	−0.0129 (−0.55)	−0.0123 (−0.53)
ROE	−0.0064 (−0.39)	0.0042 (0.39)	0.0028 (0.26)
RISK	0.0870 * (1.66)	0.0562 (0.88)	0.0563 (0.92)
Observations	1173	818	818
Wald Chi2	203.07	173.25	188.55
(p-value)	(0.0000)	(0.0000)	(0.0000)
AR(1)	−4.9177	−5.311	−5.2891
(p-value)	(0.0000)	(0.0000)	(0.0000)
AR(2)	0.3139	−0.7519	−0.6442
(p-value)	(0.7536)	(0.4521)	(0.5195)
Sargan	21.3084	19.5038	20.2576
(p-value)	(0.0016)	(0.0034)	(0.0025)

BGD is the percentage of women on the Board; WM is the percentage of women managers; WOMEN is the product of WM and BGD; SIZE is the natural log of total assets; ROE is the ratio of net income to equity; and RISK is the ratio of long-term debt to total assets. \* and \*\*\* represent the significance level of 10% and 1%, respectively.

Results remained similar across different econometric specifications, and controlling for endogeneity or reverse causality on CSR performance and gender diversity. Overall, on average, one standard deviation on the combined percentage of women on firms' Board or management team associates with an increase in CSR performance of around 10%.

Our findings show that CSR performance significantly improves with gender diversity both in terms of the Board and the management team. These results point to a significant need for the consideration of regulation and investment criteria that create incentives for more gender diversity. Policymakers should design regulation requiring wider gender diversity. Similarly, investors can include a risk discount when valuing alternative investments as far as gender diversity differs across financial assets.

## 5. Conclusions

The debate on the impact of gender diversity and CSR practices on business performance and reporting has been growing in the literature, as well as in society as a whole. CSR has progressively assumed a strategic role in corporate business. In this sense, the board of directors assumes a preponderant role, since they make decisions about business strategy. A socially responsible company more easily obtains the trust of its employees, consumers, and citizens, relying, therefore, on a sustainable business basis, and top management is especially focused on this issue (Orlitzky et al. 2003; Blomgren 2011; Ducassy 2013; Michelon et al. 2013).

One considerably debated characteristic of Board diversity is gender, as women differ from men in terms of personality, communication style, and values. However, little is known about the relationship between gender diversity and CSR practices and performance. This research aims to analyze the relationship between CSR and gender diversity on Boards, as well as in management positions, by considering a sample of European listed companies. We also test the combined effect of gender diversity on Boards and management teams.

We find a positive relation between the presence of women on the Boards and both CSR scores, meaning that the higher the percentage of female members on the Boards, the higher the CSR scores. Thus, we may conclude that companies with more women directors are more socially responsible, and that women on Boards play an important role on CSR practices, even when some of these companies are involved in controversial processes, such as a financial scandal or lawsuits publicly exposed by the media. The results are consistent with those obtained in most previous research (Williams 2003; Webb 2004; Krüger 2009; Bear et al. 2010; Bernardi and Threadgill 2010; Ciocirlan and Pettersson 2012; Zhang 2012; Setó-Pamies 2015). It seems that women are more ecologically aware and protective of the environment than men, and exhibit more pro-social business behavior.

We also find that the presence of women managers does influence CSR, despite the percentage of women managers still being very low: in our sample, this was only 26%, and as such, they do not feel comfortable expressing their opinions and decisions because they are the minority (Konrad et al. 2008). Additionally, even if they feel free to express their opinions, these may be devalued by men, due to the permanency of stereotypes (Galbreath 2011). In line with the former, we test and find a stronger impact on CSR performance of a higher combination of women both on Boards and management teams within the firm. On average, one standard deviation of the combined percentage of women on the Board and management increases CSR scores by more than 10%.

These results are robust across different econometric estimations, using panel data and dynamic GMM, which provides mitigation of potential endogeneity or reverse causality affecting previous results.

This study presents some limitations. First, the study uses global CSR scores from a database that, although highly used in the literature, are not free of subjectivity. Second, due to a lack of information, we had to reduce the number of firm-observations significantly. Thirdly, we were restricted to summary measures of gender diversity in Boards and management teams. Further research should include a more thorough analysis of the impact of gender on multiple corporate governance mechanisms, as well as testing the

critical mass hypothesis. It would also be interesting to study how the impact of gender diversity on corporate social responsibility can be affected considering different degrees of information asymmetry and agency costs.

Our study has theoretical and practical implications. We contribute to the literature on corporate social responsibility, gender diversity, and non-financial reporting by studying the relationship between CSR practices and disclosures, and the presence of women directors and women managers, in a sample with different countries and industries.

From a strategic and an ethical perspective, this study provides valuable insights. Indeed, companies that have a particular interest in being seen as socially responsible, namely those belonging to more sensitive sectors of activity (forestry, metals, extraction, chemicals, electricity, etc.), should incorporate female members in their Boards. Moreover, complementing financial reporting with non-financial information draws the attention of regulators and shareholders, as it gives the company a communicative, transparent, and ethical image, enhancing the company's competitive position and legitimacy in society (Porter and Kramer 2006). This research can also be useful for NGOs, that is, in their partnerships with companies, they should consider the enhancement of CSR in an "ethical" way, and, as such, pay attention to the gender diversity present in the Board.

Moreover, more socially responsible firms present more trustworthy financial information, and more sustainable economic performance, which decreases risk assessment from their business partners and remaining stakeholders. In view of the increasing pressure to raise the number of women directors, as well as the changing demographics of the workplace in general, results may be of interest to different stakeholders, such as policymakers, investors, and business partners, in order to increase firms' involvement in Corporate Social Responsibility.

**Author Contributions:** Both authors designed the research, analyzed data, wrote and revised the manuscript. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by Fundação para a Ciência e Tecnologia, grant number UIDB/04521/2020.

**Data Availability Statement:** No new data were created or analyzed. Data sharing is not applicable to this manuscript.

**Conflicts of Interest:** The authors declare no conflict of interest.

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