

## Article

# Board Diversity and ESG Performance: Evidence from the Italian Banking Sector

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**Abstract:** This study examines the influence of the diversity of the board of directors (BoD) and the environmental, social and governance (ESG) performance of 105 Italian banks during the period 2017–2021. Our analysis investigates board diversity in terms of board attributes (board size, board age, board gender diversity, board independence and CSR (corporate social responsibility/sustainability committee) and measures ESG dimensions by using the ESG score provided by the Refinitiv database hosted by Thomson Reuters. The main empirical results reveal that the board size, board independence and the presence of a CSR/sustainability committee positively influence a bank's ESG performance while no significant relationship between board average age and ESG performance is found. Additionally, the relationship between gender-balanced boards and ESG performance is positive but the impact of female directors on ESG performance is non-linear when a critical mass of women is reached. This paper comprises an in-depth inspection of the corporate governance (CG) in banks, since in Italy there is limited literature concerning diversity in BoDs despite the relevance of the topic. This study is the first that examines the impact of specific CG characteristics (board diversity) on ESG performance in the Italian banking sector, to date. The investigation is highly relevant to managers and investors considering ESG issues in their decision-making process. In addition, findings have implications for both regulators and practitioners, suggesting that policymakers and managers should pay more attention to corporate governance aspects to enhance ESG performance.

**Keywords:** board of directors; ESG performance; corporate governance; board diversity; ESG; Italian banking sector



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## 1. Introduction

In recent years, financial markets and public authorities have paid increasing attention to sustainable finance and, in particular, environmental, social and governance (ESG) performance, which is progressively relevant for banks and financial institutions. ESG issues are not just an ethical question, but they will soon enough turn into an economic question, because they have a direct and deep influence on financial stability in the economy [1–5]. ESG is an important factor in a corporate strategy for competitive advantages, innovation and opportunities and has become a crucial variable of management capability. It is increasingly important that boards of directors (BoDs) are knowledgeable on ESG to face long-term sustainability risks and to incorporate them into the strategy and the business model. A business's success fundamentally depends on the BoD [6] because directors are responsible for focusing on corporate responsibility and business ethics, improving company culture, supervising the achievement of strategic goals, and approving the system of corporate governance (CG) [7–9]. In this sense, the BoD plays a fundamental role in including sustainability in their business strategy and in aligning the interests of the company and the shareholders towards ESG performance [10–12]. In fact, the characteristics and the composition of the BoD are crucial in defining strategic decision making concerning ESG dimensions and socially responsible behaviors [13–18].

In this regard, we investigated how CG characteristics (board diversity) are correlated to ESG performance. The purpose of this study is to answer the following research question: what is the relation, if any, between board diversity and ESG performance? In doing so, this paper encompasses the traditional research on CG and offers a primary snapshot of the potential relationship between board diversity and ESG performance in 105 Italian banks, through a panel-data regression analysis of the sample over a five-year period (2017–2021).

In the banking sector, there is a developing interest in considering ESG, but the literature concerning the influence of CG on ESG dimensions is still quite small. Our paper fills this gap in the literature by inspecting how board diversity affects the ESG performance of banks to assess the influence of CG recommendations in the banking sector. More specifically, in line with the existing literature [15–21], our analysis examines board size, board age, board gender diversity, board independence and CSR (corporate social responsibility)/sustainability committees, as important variables that impact the ESG score across a sample of Italian banks. The main empirical results confirm that the board size, board independence and the presence of a CSR/sustainability committee positively influence a bank's ESG performance, while no significant relationship between board average age and ESG performance is found. Additionally, the relationship between gender-balanced boards and ESG performance is positive but the influence of female directors on ESG performance is non-linear when a critical mass of women is reached.

This paper contributes to banking literature in many ways. Firstly, existing literature on the relation between board diversity and ESG performance mainly focuses on non-financial firms, while this study concentrates specifically on the banking sector. Moreover, prior literature investigating the relationship between CG variables and sustainability in banking sector is pioneering but limited and principally examines ESG disclosure (not ESG performance) Secondly, studies analyzing this topic in the banking sector are recent but few, to the best of our knowledge [12–23]. Further, we contribute to the literature on ESG in the Italian context because this study is the first that investigates the relationship between CG variables and ESG dimensions by means of the ESG score provided by the Refinitiv database hosted by Thomson Reuters.

The remainder of the paper is organized as follows. Section 2 presents the literature review and the research hypotheses. Section 3 describes the sample, the variables and the methodology used in estimating the econometric model. Section 4 shows and discusses the empirical results and finally Section 5 describes the conclusions, limitations and implications of the study for future research.

## 2. Literature Review

One of the key variables of the CG system is the BoD [10]. Since the assignment of the BoD is to guarantee the integration of the business with its external environment [24], the ESG score expresses the board's responsibility to business, environment and society. Hence, how the structure of the board affects ESG dimensions is of interest to researchers and practitioners. Different studies have investigated the relationship between CG and sustainability performance [12,25] and there has been a growing interest in the impact of board composition on CSR [26–28]. Nevertheless, little is known about how board diversity affects ESG performance [19,29,30]. Moreover, the number of studies examining the relationship between the bank's board structure (i.e., the board's characteristics and composition) and ESG performance is still limited in the European banking sector [12,22,31].

In the literature, the variables most widely used to investigate the impact of CG on ESG dimensions are: the board size, the board age, board gender diversity (share of women on the board of directors), board independence (share of independent directors on the board) and the existence of a CSR/sustainability committee [32]. We developed our hypotheses for each of these board characteristics in the sub-sections below.

### 2.1. Board Size

In bank-CG literature, board size has frequently been investigated as to its correlation with bank performance and recently also with ESG dimensions [33]. Prior literature has focused on the relation between board size and ESG disclosure [34,35]. For example, in a meta-analysis specifically focused on ESG reporting, Lagasio and Cucari [36] verified that an increasing number of directors in the board is positively related to the voluntary disclosure of ESG. Additionally, Esa and Ghazali [37] demonstrated a positive impact of board size on the amount of CSR disclosure in Malaysian government-linked companies. However, Giannarakis [32] did not find a statistically significant effect of board size on ESG disclosure in a sample of US companies from the Fortune 500 list.

Generally, in accordance with the view of the resource-dependence theory, a large number of board members is an indicator of diversity because it equips the board with further expertise and different perspectives of management [38]. On the one hand, in line with a legitimation perspective, small boards might provide a low grade of diversity in gender, expertise, education and stakeholder representation. They are characterized by high levels of commitment, but they entail high responsibilities and workload for the directors, who therefore might less successfully carry out their oversight role [35]. According to Husted and de Sousa-Filho [39], the opinion that many board members offer different points of view to management is more acceptable than the view that many directors on board have difficulty in making decisions. In this sense, having many board members favors a breadth of sustainability practices and diversification in ESG expertise in the board.

Our assumption agrees with the results of prior literature that show a positive effect of board size on the extent of sustainability practices [35,40–42]. In previous banking literature, Birindelli et al. [12] also indicated that a bank's board size positively impacts the ESG performance in American and European banking sectors. In line with the resource-dependence theory, we postulate a positive relationship between board size and ESG performance in Italian banking sector. Thus, we hypothesize:

**H1.** *There is a positive relationship between board size and ESG performance.*

### 2.2. Board Age

The age of directors is a board characteristic that has drawn the attention of researchers in previous literature. Board age is one of the most observable diversity attributes because it expresses the influence of different generations, and therefore of different values, motivational goals, culture, habits and experiences on the decision-making approach assumed by the directors. Resource-dependence theory favors heterogeneous structures of boards over homogeneous ones because differences in the age of board members can be beneficial for building future planning and business success [43]. Different age clusters in a board can also be favorable for the understanding of ESG issues and the improvement of ESG attitudes. Few studies exist on the relationship between board age and CSR disclosure and there is limited empirical evidence proving that diversity in the age of directors can involve better corporate performance [44]. Giannarakis [32] explored the relationship between the average age of the board and CSR disclosure, demonstrating that there is no significant correlation between these two variables. Similarly, Cucari et al. [31] confirmed no significant relationships between the average age of the BoD and ESG disclosure.

Since the increase in the average age indicates a homogeneous board structure, according to the resource dependence theory, we theorize:

**H2.** *There is a negative relationship between board age and ESG performance.*

### 2.3. Board Gender Diversity

Board gender diversity is an important aspect of CG in inducing ESG performance [33]. In fact, some explanations about the relationship between female directors on boards and ESG activities are related to the various features of the women themselves according to

resource-dependence theory [45]. Women appear to be more sensitive toward sustainability initiatives [12,46] than men because of female psychological traits (i.e., helpfulness, sensitivity, etc.), educational backgrounds, psychological characteristics and professional experience [47,48].

Skilled women may be more expert than men about ESG issues [33,49,50] but in this regard the evidence of prior studies are mixed [51]. Some researchers examined the effect of board gender diversity on the ESG performance of firms, and they found both a positive and a negative impact [31,39,52,53]. For example, McGuinness et al. [54] demonstrated that the presence of female directors fosters CSR performance. On the contrary, Manita et al. [48] attested no significant relations between female members of the BoD and ESG disclosure. Birindelli et al. [12] demonstrated that the relation between the ratio of women on a board and ESG disclosure in the banking system is an inverted U-shape. Although prior literature on board gender diversity and ESG performance is limited in the context of banks and the empirical results are varied, the research expectations are positive and in line with the view of the resource-dependence theory. Hence, we postulate a hypothesis as follows:

**H3a.** *There is a positive relationship between board gender diversity and ESG performance.*

Based on the critical mass theory, the presence of many female directors on the board can shape a firm's sensitivity towards social and environmental issues. However, prior studies found conflicting results because of the existence of a non-linear correlation between board gender diversity and sustainability performance [55–57]. For example, Deschênes [58] verified a negative relationship between sustainability practices and the presence of female directors on board; Kiliç et al. [59] and Glass et al. [60] identified a low statistically significant positive effect, while Khan [61] and Alazzani et al. [62] found no significant correlations.

The presence of a non-linear relationship signifies that a number of at least three women on the board is needed to significantly influence the board activity and to substantially change the decision-making process of the directors within the board [55]. Hence, board gender diversity leads to a firm's positive social and environmental performance only when at least one significant threshold (a critical mass) of female directors on the board is reached [63,64]. For example, Cabeza-García et al. [65] found that a critical mass of at least three female directors on the board stimulates more CSR disclosure. In line with this evidence, Manita et al. [48] showed that the relation between board gender diversity and ESG disclosure is not statistically significant below a threshold of three female directors.

In line with the critical mass theory, we advance the following hypothesis:

**H3b.** *There is a positive relationship between a critical mass of women on the board of directors and ESG performance.*

#### 2.4. Board Independence

Board independence is the variable most frequently used by researchers to study the features of the board since it is a key characteristic in evaluating the tendency of firms' strategic policies towards stakeholders' interests and expectations [30,66]. In line with the stakeholder theory, the attendance of independent directors on a board encourages management activities to protect stakeholders and to reduce the conflicts of interest between them [67]. According to agency theory, independent directors enable an effective oversight of a board's activity as they are able to make more objective appraisals of management performance. In this regard, numerous studies [8,35] have evidenced that independent directors are more inclined to reveal ESG disclosure, reducing the asymmetric information problem. Moreover, many authors have suggested that boards are highly engaged in CSR reporting and investments when independent directors encourage the implementation of sustainable initiatives [34,68].

In prior literature, most studies concerning the influence of board independence on CSR disclosure confirmed a positive relationship [69–71], while other previous studies

found that the attendance of non-executive and independent directors on boards impacts social and environmental disclosure negatively [72,73]. Similarly, Husted and de Sousa-Filho [39] verified the positive effect of independent directors on ESG performance, while Ortiz-de-Mandojana et al. [27] suggested that independent directors foster the development of a firm's environmental sustainability under certain conditions. However, further studies have documented no statistically significant correlation between the share of independent directors on a board and sustainability practices [74].

Regarding the banking sector, prior studies have reported strong and inconsistent empirical evidence about the impact of board independence on CSR performance. For example, positive evidence is shown by Barako and Brown [75], Jizi et al. [35] and Kiliç et al. [59], while no significant relation is found by Hossain and Reaz [76]. On the contrary, Birindelli et al. [12] verified a negative and significant relationship between the proportion of independent directors and the CSR scores of the banks. As most of prior literature has proved that the independent-director ratio is positively related with ESG scores, we hypothesize:

**H4.** *There is a positive relationship between board independence and ESG performance.*

### 2.5. CSR/Sustainability Committee

The presence of a CSR/sustainability committee in the board of directors indicates the board's commitment towards sustainability practices [77]. A board including a committee specially focused on sustainability issues proves the interest of the directors in enhancing the implementation of socially responsible activities and sustainable policies [78]. In this regard, the establishment of a CSR/sustainability committee is an important means to maximize opportunities for the sustainable development of a company. Through a CSR/sustainability committee, a board can develop and realize sustainability projects, improving the involvement and the awareness of shareholders about the company's ethical culture. In recent years, banks especially have increasingly established a CSR/sustainability committee to implement sustainability initiatives, demonstrating an intention to make sustainability one of the key core business strategies.

According to stakeholder theory, sustainability committees usually support the BoD in handling the company's CSR activities and in monitoring sustainability risks [79]. In line with this perspective, many authors found that the presence of a CSR/sustainability committee is positively related with the extent of sustainability disclosure [78,80]. For example, Amran et al. [81] proved that a CSR/sustainability committee improves sustainability reporting. Similarly, Cucari et al. [31] showed that the presence of a CSR committee increases the ESG disclosure score delivered by the Bloomberg database. Finally, Spitzbeck [82] confirmed that a CSR committee favors the achievement of high ranks of CSR performance. On the contrary, few studies document a negative correlation between CSR/sustainability committee and CSR performance [14].

Based on the literature review, we postulate the following hypothesis:

**H5.** *There is a positive relationship between the establishment of a CSR/sustainability committee and ESG performance.*

## 3. Methodology and Analysis

### 3.1. Sampling and Data Collection

This paper investigates in depth the relation between board diversity and ESG dimensions in Italy. The Italian banking sector comprises credit cooperatives, state-owned banks and private banks. They can be large or small, regional and national banks; in some cases, they are structured as joint-stock companies (sometimes also listed). We constrain our sample to banks located in Italy and operating in the corporate form of a joint stock company. The selection procedure resulted in a sample of 105 Italian banks that are all geographically localized and active in Italy as stated by the Bankit bulletin statistics updated to 31 December 2021.

Our initial dataset of banks had to fulfill the following criteria:

- are Italian banks (either state-owned or private);
- are structured as joint-stock companies;
- are active during the period 2017–2021;
- have not been turned off or merged with other banks during the selected period;
- are not Italian branches of foreign banks.

From the total population of 456 Italian banks, we excluded any banks that did not satisfy the mentioned criteria [83]. Therefore, we got to our sample by considering banks with five consecutive years of ESG performance data collected from the Refinitiv (also called Refinitiv Eikon, hosted by Thomson Reuters) database. From data availability, the final sample to be examined includes 105 Italian banks and consists of 630 bank-year observations from 2017 to 2021.

This dataset offers three main advantages for the investigation of the relationship between board diversity and ESG dimensions. Firstly, the study is not influenced by specific regulations because the selected banks are mostly subjected to analogous regulatory and governance backgrounds. Secondly, our sample is homogenous and large, since the selected banks carry out comparable activities within the same regulatory environment supervised by the Bank of Italy and the European Central Bank. The banks of the sample are medium and large and they are predominantly engaged in similar investment, commercial and corporate banking activities. Thirdly, all the banks are characterized by a complex management structure and similar business models.

The data on ESG performance were collected from the Refinitiv database as it is the main international databank and comprises one of the most complete ESG databases, counting more than 450 different ESG metrics available. This dataset has a strong and clear procedure for the availability of ESG data on its official website and it is frequently used by researchers. Especially, the Refinitiv database was applied in prior studies concerning the banking sector [84–88].

### 3.2. Dependent Variable

ESG\_perf reflects the bank's weighted average of ESG scores and ESG controversies (extracted from global media sources) to offer a complete assessment of the corporate conduct and sustainability impact. Following prior literature [88], we applied the ESG score by Refinitiv as a proxy for measuring the ESG performance of Italian banks. The overall ESG score is stated as percentage ranging from 0 to 100 percent. The dependent variable ESG\_perf is measured using three ESG pillars (the environmental pillar (ENV), the social pillar (SOC) and the governance pillar (GOV)) [89]. Their combined indicator (ESG\_perf) is a comprehensive scoring of ESG performance according to previous banking studies [84–91]. A pillar is the weighted average of ten correlated dimensions, while each ESG dimension is composed by individual elements. The Refinitiv database comprised a score for each ESG dimension. ESG data applied in this study are presented in Table 1. The following discussion describes the dimensions relating the ESG pillars in Refinitiv database, all of them being relevant to this study.

**Table 1.** Definition of ESG indicators.

ESG Performance, ESG Pillars and ESG Dimensions (Source: Refinitiv)		
Variable	Description Measure	ESG Predictor
ESG performance (ESG_perf)	Weighted average of the ESG scores and ESG controversies (captured from global media sources)	It is a combined indicator of ESG pillars (i.e., the environmental pillar (ENV), the social pillar (SOC), the governance pillar (GOV)), discounted for ESG controversies.
ESG Pillar	Description Measure	ESG Dimensions
Environmental (ENV)	Environmental performance measures a company's capacity to reduce environmental emissions, to efficiently use natural resources in the production processes and to support the research and development of eco-efficient products and services.	It is based on three dimensions: ENV_Ru (Resource use efficiency), ENV_Em (Emission and waste reduction), ENV_In (Environmental innovation) ENV_Ru = bank's efficiency in reducing the use of materials, energy or water and capacity to find more eco-efficient solutions for the business processes ENV_Em = bank's commitment and effectiveness in reducing environmental emissions and waste in operational activities ENV_In = bank's capacity to reduce the environmental burdens and costs for its clients and to create new opportunities for eco-designed products and services
Social (SOC)	Social performance measures a company's capacity to generate trust and loyalty in its workforce, to respect the fundamental conventions of human rights, to be a good citizen, to protect public health, to respect business ethics and to create value-added products and services.	It is based on four dimensions: SOC_Wf (Workforce), SOC_Hr (Human rights), SOC_Com (Community), SOC_Prd (Product responsibility) SOC_Wf = bank's effectiveness towards job satisfaction, safe and healthy workplace, while developing both equal and diversity opportunity SOC_Hr = bank's effectiveness in respecting fundamental human rights conventions SOC_Com = bank's commitment to being a good citizen, respecting business ethics and protecting public health SOC_Prd = bank's capacity to offer high quality products and services, regarding the customers' health and safety, data privacy and integrity
Governance (GOV)	Corporate governance performance measures a company's capacity to act in the best interest of its shareholders through company management systems and processes (structure and functions of the board of directors, compensation policy, etc.).	It combines three dimensions: GOV_Mo (Management and oversight), GOV_Shr (Shareholders rights), GOV_Csr (CSR strategy) GOV_Mo = bank's commitment and effectiveness in following corporate governance principles GOV_Shr = bank's effectiveness in treating its shareholders in an equal manner GOV_Csr = bank's way of incorporating social and environmental dimensions in its decision-making processes

Refinitiv database contains 34 indicators relating to the environmental pillar score (ENV) and clustered in three dimensions: resource-use efficiency (ENV\_Ru), emission and waste reduction (ENV\_Em) and environmental innovation (ENV\_In). Env\_Ru comprises the following elements: energy and water efficiency policies, environmental management systems, renewable-energy-use ratio, supply chain management and monitoring and green buildings. Env\_Em refers to emission policies and targets, total CO<sub>2</sub> emissions, e-waste reduction, waste management, environmental restoration, climate-change opportunities and staff transportation impact reduction. Env\_In groups the data related to environmental products, clean energy products, environmental project financing and environmental assets under management.

The Refinitiv Eikon dataset comprises 40 indicators referring to the social pillar score (SOC) and clustered in four dimensions: workforce (Soc\_Wf); human rights (Soc\_Hr); community (Soc\_Com) and product responsibility (Soc\_Prd). Soc\_Wf comprises data on training and development policy, health and safety policy, equivalent opportunities, diversity, flexible working hours and turnover of employees and salary gaps. Soc\_Hr includes data on human rights, freedom of association and child labor. Soc\_Com contains data on anti-money laundering, bribery, fair competition, business ethics (comprehensively regulated by the European Banking Authority in the banking sector), community lending and community involvement. Finally, Soc\_Prd covers indicators on customer satisfac-

tion, quality management systems and data-privacy policies (part of the General Data Protection Regulation).

The governance pillar (GOV) embraces three dimensions: management and oversight (Gov\_Mo), stakeholder rights (Gov\_Shr) and CSR strategy (Gov\_Csr). GOV\_Mo identifies an aggregate score of corporate board characteristics. In this regard, it compiles data related to corporate boards (structure policy, functions, size, attendance, affiliations, average tenure, non-executive and independent members, cultural and gender diversity, background and skills), compensation (the compensation committee and its independence, sustainability incentives, shareholders' approval of stock compensation plans, policy improvement tools), CEO–chairperson separation, the nomination committee and its independence, remuneration packages depending on the stakeholders' return, the succession plan, the audit committee independence and external consultants. GOV\_Shr includes data on specific policies and equal shareholders' rights, shareholders' vote on executive pay, voting-cap percentage, veto power or golden shares, director-election majority requirement, anti-takeover devices, auditor tenure and non-audit-to-audit fees ratio. Gov\_Csr is an aggregate score which contemplates CSR sustainability reporting, CSR sustainability committee and stakeholder engagement.

### 3.3. Independent Variables

We used four independent variables to measure data related to CG. In line with prior research and theories concerning board diversity and ESG issues in banking sector, the independent variables included in the econometric model are the number of directors on the bank's board (B\_size), the average age of the board (B\_age), the percentage of female directors sitting on the board (B\_gend), the critical mass of women on the BoD (B\_mgend), the portion of independent members on the board (B\_ind) and the establishment of a CSR/sustainability committee (CSR\_com). In this model, B\_mgend is a dummy variable coded as 1 if there are more than three females on the board, and 0 otherwise; CSR\_com is a dummy variable that is equal to 1 if the bank has a committee and 0 otherwise [12,31,92]. Definitions and formulas of the variables are presented in Table 2.

### 3.4. Control Variables

To elude model misspecification, we control for additional variables that could impact the ESG score. Hence, we included four control variables in the study due to their substantial effect on the ESG performance of banks according to prior studies [39,51,87,93]. In line with existing literature on ESG [16,41,74], we recognize the subsequent most broadly inspected bank-specific control variables: bank size (Size), return on equity (Roe) and bank leverage (Lev). Bank size (Size) is calculated as the natural logarithm of total assets [94,95]. In previous banking studies, some authors reported that large banks simply access cheaper resources and raise more capital because they are more expanded across different segments and more scrutinized by the community and the media. Consequently, large banks access more capital to invest in CSR activities [16,80]. We also considered Roe as an indicator of bank profitability [96,97] and Lev measured by Tier 1 Capital to total assets [33,96,98].

Finally, we comprised one country-specific control variable: GDP growth (Gdp). We used a macroeconomic specification as a control variable to face endogeneity issues that often appear in economics-based sustainable research reports in the form of simultaneity, reverse causality and correlated variables [99,100]. In line with previous literature focused on the banking sector [101–104], we utilized Gdp as representative variable of macroeconomic dynamics.

The description of all control variables is presented in Table 2. To get some viewpoints on the existing literature regarding the relation between board diversity and ESG performance, we also summarize the most significant prior studies on this topic carried out to date as presented in Table 2.



**Table 2.** Explanation of variables.

Variable	Description Measure	Reference	Expected Effect on ESG Performance
<b>Dependent Variable</b>			
ESG variable (source: Refinitiv) ESG performance (ESG_perf)	Comprehensive scoring of the environment, social and governance performance by the weighted average of the ESG scores and ESG controversies (captured from global media sources) (see Table 1)		
<b>Independent variables</b>			
Board diversity variables			
Board size (B_size) *	Total number of directors on the bank's board	Said et al. (2009) [92], Amran et al. (2014) [81], Laksmana (2008) [42]	Positive
Board age (B_age)	Board average age (the time-varying age in years of directors in board)	Giannarakis (2014) [32]; Cucari et al. (2018) [31]	No effects
Board gender diversity (B_gend)	Percentage of women on the board of directors (number of female directors divided by total number of board members)	Adams and Ferreira (2009) [55], Glabreath (2016) [57], Amran et al. (2014) [81], Cordeiro et al. (2020) [97], Husted and Sousa-Filho (2019) [39], Cucari et al. (2018) [31], Rao & Tilt (2016) [20,30], Barako and Brown (2008) [75], Rupley et al. (2012) [56]	Non-linear
Board mass of gender diversity (B_mgend)	Dummy variable that takes value 1 if the bank's board has at least three women, 0 otherwise	Fernandez-Feijoo et al. (2014) Amar et al. (2017) [64], Shoham et al. (2017) [63]	Positive
Board independence (B_ind)	Percentage of independent directors on the bank's board	Ahmed et al. (2006) [69], Chau and Gray (2010) [68], Rao and Tilt (2016, 2016) [20,30]	Positive/Negative
CSR/sustainability committee (CSR_com)	Dummy variable equal to 1 if the bank has a CSR committee, 0 otherwise	Hussain et al. (2018) [77], Liao et al. (2015) [78]	Positive
<b>Control variables</b>			
Bank size (SIZE) *	Natural logarithm of total assets of the bank (Euro)	Setó-Pamies (2015) [16], Helfaya and Moussa (2017) [80]	Positive
Return on equity (ROE)	Net income divided by the value of total shareholders' equity	Setó-Pamies (2015) [16], Helfaya and Moussa (2017) [80]	Positive/Negative
Leverage (LEV)	The ratio of Tier 1 capital to Total Assets (proxy for the Basel 3 Leverage ratio)	Helfaya and Moussa (2017) [80]	Positive
GDP per capita (GDP) *	Gross Domestic Product (GDP) per capita	Fernandez-Feijoo et al. (2014) [98], Hu and Scholtens (2014) [99]	Positive/Negative

\* Natural logarithmic transformations of the numerical (non index) variables.

### 3.5. Model Specifications

To check the research assumptions, we applied a linear regression model by means of the Ordinary Least Squares (OLS) method owing to its general quality of minimized bias and variance [103]. First, we analyzed the relationships between the variables of the model for the same year of observation. The model is estimated as follows.

$$ESG\_perf_{i,t} = \alpha_0 + \beta Board\ diversity\ variables_{i,t} + \gamma Control\ variables_{i,t} + \varepsilon_{i,t} \quad (1)$$

where  $i$  refers to the bank;  $t$  refers to the year and  $\varepsilon_{i,t}$  is the stochastic error term. Board diversity is expressed by the above-defined alternative board variables: Board size (B\_size), Board age (B\_age); Board gender diversity (B\_gend), Board mass of gender diversity (B\_mgend), Board independence (B\_ind) and CSR/sustainability committee (CSR\_com). In order to measure the effect of board diversity on ESG performance, we also controlled for some variables that could theoretically influence a bank's ESG appetite (control variables $_{i,t}$ ). The complete list of all variables is presented in Table 2.

To capture the influence of board diversity on ESG performance with the time for the effects to appear and to reduce endogeneity problems, we correlate board variables of any year with the ESG proxies of the two subsequent years. We used one- and two-year

lag because the effect of board-diversity variables on the ESG performance score can take time to be effectively assimilated into a bank's ESG performance. Hence, the explanatory variables are lagged by one and two years.

The models are presented as follows.

$$ESG\_perf_{i,t+1} = \alpha_0 + \beta Board\ diversity\ variables_{i,t} + \gamma Control\ variables_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$ESG\_perf_{i,t+2} = \alpha_0 + \beta Board\ diversity\ variables_{i,t} + \gamma Control\ variables_{i,t} + \varepsilon_{i,t} \quad (3)$$

In accordance with Baltagi [104], we applied panel data which give less collinearity and more variability among the variables. We controlled for individual heterogeneity by a fixed effects estimate with standard errors grouped at the bank level. The selection of a fixed effects model rather than a random effects one was tested by means of the Hausman test run on all specifications [104]. We also applied the Breusch–Pagan test to verify the residual heteroscedasticity. We eliminated the firm-level heterogeneity using the cross-sectional mean deviation data [103]. Assumed the dynamic character of our model, least squares estimation methods would have generated inconsistent evaluations and would have been biased. Hence, we used techniques for dynamic panel estimation that are able to deal with the biases of the estimations. To manage issues linked to endogeneity, the identification of exogenous changes in board characteristics from mandatory executive retirements is made by using difference-in-difference estimation techniques as in Berger et al. [105].

#### 4. Results

This section examines the influence of board diversity on ESG performance. First, we present descriptive statistics and correlations. We then analyze the main estimation results, and lastly, we examine some robustness checks.

##### 4.1. Descriptive Statistics and Correlations

The descriptive statistics of the main variables for the entire sample are offered in Table 3.

**Table 3.** Descriptive statistics of the variables. Panel data for the period 2017–2021.

	Min	Max	Mean	Median	Std. Dev.
<b>Dependent variables</b>					
ESG performance (ESG_perf)	30.1724	89.4331	61.3475	61.3648	13.3737
<b>Independent variables</b>					
Board size (B_size)	23	7	14.2502	14.0643	4.6772
Board age (B_age)	52.4460	65.4062	58.4244	58.4008	2.4344
Board gender diversity (B_gend)	0	0.4266	0.3245	0.1024	0.3979
Board mass of gender diversity (B_mgend)	0	1	0.3152	0.3798	0.3057
Board independence (B_ind)	0	1	0.6083	0.6164	0.2743
CSR/sustainability committee (CSR_com)	0	1	0.5842	0.5997	0.4978
<b>Control variables</b>					
Bank size (Size)	6.8632	9.4307	7.8264	7.8026	0.6544
Return on equity (Roe)	−2.7790	0.7185	0.0414	0.0679	0.2041
Leverage (Lev)	0.0174	0.2127	0.0748	0.0852	0.0454
GDP per capita (Gdp)	−12.5152	9.5074	0.0829	0.1593	3.6764

The average value of ESG\_perf of the banks examined is 61.3648 with a maximum equal to 89.4331. This score reveals that, for the period 2017–2021, the sustainability performance of the banks is very acceptable by the standards of the score definition. The Italian banks maintain a good ESG performance, although they also have a high number of ESG controversies, as the average ESG controversy score is 42.84%. The B\_ind reaches a satisfactory average value (0.6083) and the maximum value is 1. In contrast, the average

attendance of women on boards (B\_gend) is still low, since in some banks the BoD does not include any women (the minimal value is equal to 0). On average, 32.4% of directors on Italian banks' boards are women. Table 3 also displays that 31% of the banks have at least three females on the BoD on average. Additionally, bank-specific control variables are shown in Table 3. Mean leverage of bank (Lev), bank size (Size) and return on assets (Roe) are 0.0748, 7.8264 and 0.0414, respectively.

We have calculated the Pearson correlations to test for multicollinearity among continuous variables [106]. Table 4, below, presents the correlation coefficients of the variables included in the regression model.

**Table 4.** Pearson correlations.

Variables	ESG_perf	B_size	B_age	B_gend	B_mgend	B_ind	CSR_com	Size	Roe	Lev	Gdp	VIF
ESG_perf	1.0000	0.1770 **	0.1967	0.5692 ***	0.4754 ***	0.0896	0.6677 ***	0.7570 ***	0.0882	−0.2247 ***	0.2126 ***	1.27
B_size		1.0000	0.0589	−0.1376	0.3082 ***	−0.3744 ***	0.1716 ***	0.2613 ***	0.0044	−0.2232 ***	−0.4296 ***	1.15
B_age			1.0000	−0.0775	−0.1879	0.2865	0.0622	0.3554	0.0443	−0.0557	−0.2487	1.43
B_gend				1.0000	0.7345 ***	0.1285 **	0.3356 ***	0.4730 ***	0.1411 **	−0.1514 ***	0.1312 **	1.64
B_mgend					1.0000	0.0226	0.3122 ***	0.3989 ***	0.0886	−0.1920 ***	−0.0766	1.33
B_ind						1.0000	0.0177	0.1107	0.1312 **	0.3654 ***	0.4565 ***	1.35
CSR_com							1.0000	0.4348 ***	−0.0766	−0.3332 ***	−0.1627 ***	2.54
Size								1.0000	0.0265	−0.2645 ***	−0.0775	2.42
Roe									1.0000	0.1960 ***	0.1825	2.27
Lev										1.0000	0.1762 ***	1.09
Gdp											1.0000	1.69

\*\*, and \*\*\* denotes level of significance at the 0.10, 0.05 and 0.01 levels, respectively.

The correlation matrix (Table 4) exposes significant relationships between the main variables of the study. ESG\_perf is found to be positively related with B\_age, B\_size, CSR\_com and Size. More specifically, the results confirm that the highest correlation is between ESG\_perf and B\_size, while the correlation between ESG\_perf and Gdp is the lowest. Besides, B\_gend highlights a positive correlation with ESG\_perf ( $p < 0.05$ ). These relationships demonstrate that the banks most engaged in ESG issues have more female directors in their BoD and often they establish a committee specially focused on sustainability. B\_gend is positively associated with both Size and Roe, suggesting that Italian banks with more women on the BoD are larger and more profitable than gender-balanced banks. Similarly, B\_ind is positively associated with a bank's economic performance (Roe).

The matrix (Table 4) displays that the correlations between the variables are not strong. The variance-inflation factors (VIF-test) reveal that multicollinearity is not a severe issue, since it is found well below the critical value. The correlation coefficients of variables are less than the threshold level of 0.90, demonstrating an insignificant multicollinearity among the variables of the model [106]. The correlation coefficients indicate that the employed model is very satisfactory, as there is not a high correlation between each of the variables even at its maximum degree.

#### 4.2. Regression Findings

We performed estimates by employing six bank-board variables and we looked at the effects of these explanatory variables on the ESG performance of the Italian banks. The results of Equations (1)–(3) are displayed in Table 5.

**Table 5.** Panel regression results for predictors with robust standard errors.

	Model 1 ESG_Perf Coeff. (p-Value) No Lag	Model 2 ESG_Perf Coeff. (p-Value) One-Year Lag	Model 3 ESG_Perf Coeff. (p-Value) Two-Year Lag
B_size	0.0775 (0.0396)	0.0546 ** (0.03689)	0.0664 ** (0.0355)
B_age	0.0132 (0.0178)	0.0135 (0.0166)	0.0125 (0.0163)
B_gend	0.1776 * (0.0899)	0.2890 ** (0.1402)	0.4467 ** (0.1844)
B_mgend	−0.2187 * (0.1624)	−0.3155 * (0.1624)	0.6934 * (0.3627)
B_ind	0.0552 * (0.0308)	0.0591 ** (0.0297)	0.0623 ** (0.0305)
CSR_com	0.0337 * (0.0232)	0.0388 * (0.0222)	0.0367 * (0.0236)
Size	0.0174 *** (0.0056)	0.0145 *** (0.0064)	0.0165 *** (0.0045)
Roe	0.0145 ** (0.0065)	0.0147 ** (0.0058)	0.0155 ** (0.0052)
Lev	−0.3904 (0.7492)	−0.4075 * (0.7534)	−0.3332 * (0.7421)
Gdp	0.0154 (0.1612)	0.0010 (0.1382)	0.0056 (0.1476)
RegressionF	18.72 ***	15.89 ***	17.23 ***
R2 within	0.4313	0.2367	0.1264
R2 between	0.5707	0.4988	0.0130
R2 overall	0.4597	0.3703	0.0016
Wald $\chi^2$	79.10 **	-	-
Hausman $\chi^2$	23.66	29.99 *	37.70
Fixed/Random effects	Fixed	Fixed	Fixed

$n = 105$  (number of Italian banks).  $\Sigma_i T_i \cdot N = 630$  (number of bank-year observations). The robust standard errors of the estimated coefficients reported in parentheses are clustered at the bank level. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 5. Discussion

Empirical results verify that the B\_size, B\_ind and the presence of a CSR\_com positively influence ESG performance of Italian banks in line with the resource-dependence theory and previous literature proving the positive effect of these board characteristics on CSR activities [12,35,59,82]. Nevertheless, no significant relationship between B\_age and ESG\_perf is found, as confirmed by Giannarakis [32] and Cucari et al. [31]. The study also contributes to the literature on gender diversity and ESG by revealing a non-linear correlation between female directors on the board (B\_gend) and ESG\_perf, validating that only a gender-balanced BoD positively impacts a bank's ESG performance. Our empirical findings show that gender diversity positively influences ESG performance only up to a definite threshold of female directors on the board, in line with prior literature [107].

Our results highlight that board diversity influences ESG data in all the models (no lag, one-year lag and two-year lag). One-year and two-year lag results are similar to same-year results. In particular, we found a positive relationship between B\_size and ESG score, confirming H1. In models 2 and 3, empirical results are significant and consistent with correlation data ( $p < 0.05$ ). The econometric models demonstrate that larger banks' boards lead to a better ESG performance. This result corroborates most of the prior literature in the banking sector [12,23,108]. It is more likely that large boards include directors having ESG expertise and a great interest in sustainability culture. Furthermore, large boards realize oversight activities more successfully, inspire a broader vision of strategic goals and, from this perspective, they also encourage management to develop sustainability performance.

In line with prior literature [12,23,109,110], our results show no significant relationship between B\_age and ESG\_perf. Hence, the findings demonstrate that banks with a better ESG performance do not inevitably have an older board. In this regard, the board should consist of directors with a balance of expertise, skills and diversity, regardless of age, who jointly possess the essential qualifications adequate to the size, complexity and risk profile of the bank.

Table 5 shows a statistically significant and positive influence of B\_gend on ESG\_perf of Italian banks in all the models. In particular, B\_gend is a positive predictor at a significance level of 0.1 in model 1 and at a significance level of 0.5 in models 2 and 3. According to the critical mass theory, we also include in the models the predictor B\_mgend. The equations

of the regression models suggest that once the board of directors achieves a critical mass of three women, a larger proportion of women has a negligible impact on ESG score [111]. Hence, in any specification, the results do not corroborate Hypothesis 3, which expects that a critical mass of female directors on board affects the bank's ESG performance positively (critical mass theory). In particular, the relationship between female directors on a board and the extent of a bank's ESG performance is an inverted U-shape function, because when a critical mass of women is reached, the parabola moves into a downward phase. This result is confirmed by the quadratic term of  $B\_gend$  (data non-tabulated for brevity) which accounts for probable non-linearities and endogenously limits the threshold of female directors. Hence, the growing number of women on BoDs does not imply a positive effect on the enhancement of ESG performance beyond the cited threshold. The findings demonstrate that only gender-balanced boards positively influence the ESG performance of banks. The results from the regression models also support the resource-dependence theory [47,48], by suggesting that female directors' intellectual and relational traits are critical resources for banks to achieve a valuable ESG performance.

Findings indicate that board independence ( $B\_ind$ ) positively impacts  $ESG\_perf$ . The coefficient regarding  $B\_ind$  is positive and statistically significant in all the models, in contrast with prior studies [27,66,68,108]. Regardless, empirical evidence supports the idea that independent members of the BoD promote both stakeholders and shareholders' interests related to ESG matters. In this regard, having many independent directors on a bank's board expands expertise, experience and reputation as crucial factors of a bank's sustainability performance.

In our analysis, the establishment of a CSR/sustainability committee ( $CSR\_com$ ) is positively correlated ( $p < 0.1$ ) with  $ESG\_perf$  in all the models. Based on our investigation, the presence of such committee demonstrates a bank's CSR commitment towards stakeholders and its aim to consider sustainability a key strategic issue within the governance system. These findings are in line with previous empirical evidence, according to which a board with a CSR/sustainability committee is appraised to be more environmentally and socially receptive [78]. In accordance with the stakeholder theory, these results confirm that a CSR committee supports banks to construct reliability for sustainability topics and to improve the legitimacy of stakeholders in this specific topic, since the members of such committees have skills, experience and knowledge focused on CSR issues [81].

Most prior studies have confirmed resource-dependence and stakeholder theories as conceptual frameworks explaining the relationship between board diversity and CSR [20,30]. The interaction of these aforementioned theories suggests that a diversified board is more likely to identify different stakeholders' attitudes towards CSR. Our results are in accordance with the pillars of these theories.

Finally, Table 5 illustrates data of the control variables. In line with several prior studies, the findings highlight that both bank size ( $Size$ ) and economic performance ( $Roe$ ) have a positive and statistically significant effect on  $ESG\_perf$ , at 0.01 and 0.5, respectively. Hence, empirical evidence reveals that high sustainability performance is mostly achieved by large and more profitable banks [108,112], because they have extensive resources and workforces to capitalize ESG activities. On the contrary, in models 2 and 3, a bank's  $Lev$  is negatively related with  $ESG\_perf$ ; thus, banks having high leverage show low ESG performance. The findings regarding the variable  $Lev$  are consistent with previous literature [33,51,52].

To verify the robustness of the empirical results, we conducted a robustness test. We ascertained that the correlation between board diversity and  $ESG\_perf$  is not influenced by the consequences of the market capitalization. We re-estimated the main models considering two clusters of banks by incorporating in the investigation the classification between listed and not-listed banks in the econometric models. The estimations of the additional regressions confirm the evidence of our main analysis. Regression results for not-listed banks confirm that  $ESG\_perf$  is statistically positively related with  $B\_size$ ,  $B\_ind$  and  $CSR\_com$ . The average age of directors ( $B\_age$ ) remains not significant, while the relationship between female directors and  $ESG\_perf$  is non-linear. Regardless, the less considerable results for the

listed banks can be attributed to the small number of observations on which the panel-data estimations were run. The datasets of the robustness test for ESG\_perf estimations are not presented in tabular form in the interests of saving space and facilitating the readability of this paper.

## 6. Conclusions and Future Research

The aim of this paper is to investigate how the variables of CG influence the ESG performance of Italian banks. We studied several features of the banks' BoDs to understand which CG characteristics can best improve the ESG performance of banks. Based on previous research proving that directors on boards play a crucial oversighting role in financial institutions, this study explores the relationship between diversity on BoDs and ESG dimensions in the Italian banking sector for the period 2017–2021.

An in-depth understanding of these relations is an important subject to further develop for the assessment of the key role of CG recommendations in the banking sector. ESG activities are now becoming a central performance benchmark for stakeholders (particularly for investors) and the integration of ESG dimensions in financial reporting is likely the best means to raise the market share of socially responsible bank commitments. Considering the growing attention of institutional stakeholders in ESG activities, an ideal ranking of ESG performance scores will possibly lead banks to grow their reputation, market appeal and economic performance [80,113–117]. From the theoretical perspective (i.e., agency theory, legitimacy theory and stakeholder theory) the commitment of the bank to sustainable practices extends to meet the shareholders and stakeholders' expectations, conforming to the worldview shared by the community at large. Thus, board diversity is an important aspect of CG in positing a broader ESG framework, which can create long-term values for the growth of a bank.

The study contributes to the academic literature in many ways. The current literature on this topic primarily focuses on non-financial companies, while this study only concentrates on the banking industry. Moreover, current studies analyzing the relationship between CG variables and sustainability in the banking sector are new but limited and mainly deal with the ESG disclosure (not with ESG performance) [12,22,23]. Further, this study advances the literature on ESG in the Italian banking sector [118]. Firstly, the results represent the first empirical evidence of the relationship between board diversity and ESG performance in such a context. Secondly, the paper is the first that investigates the relationship between CG variables and ESG dimensions by means of the ESG scores provided by Refinitiv. Thirdly, in the Italian banking sector, board diversity has not yet been inspected to ascertain how a critical mass of women on BoDs determines ESG dimensions. Hence, the paper attempts to fill this gap in the literature by verifying how, if at all, ESG performance is influenced by a threshold of female directors on board.

This paper has some implications, mainly for managers, investors and regulators. From a managerial perspective, the study suggests that CEOs and managers should pay more attention to CG aspects to enhance ESG performance. Since large boards positively achieve high levels of ESG performance, bank managers should engage both male and female directors to enlarge board size while ensuring the establishment of a gender-balanced board. Furthermore, the study also advises the importance of a CSR/sustainability committee as a strategic tool to demonstrate a bank's real commitment towards sustainability.

This study has some limitations. First, the empirical investigation relies on the hypothesis that ESG dimensions overall are an effective proxy of a bank's sustainability performance. It would be stimulating to investigate the effects of board-diversity variables on ESG dimensions by adopting other measures of ESG performance. Future research could use a larger sample of financial institutions and an extensive range of time to inspect how ESG performance is affected by the characteristics and the composition of the BoD. However, to date, the availability of datasets remains a concern for these investigations. Nevertheless, the limitations of this study offer opportunities for further research. First, we have studied some board characteristics (i.e., the percentage of female directors,

CSR/sustainability committee, independent directors, board size and board average age) while future studies could focus on other diversity attitudes and critical resources that board members hold (e.g., the nationality, background, experience and skills of directors), in line with resource-dependence theory. Secondly, since we used data covering only one developed country, our investigation could be extended to emerging economies. Hence, future research should also focus on developing countries or design a comparative analysis across countries to assess ESG performance.

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