

Cultural and gender diversity for ESG performance towards knowledge sharing: empirical evidence from European banks

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Abstract

Purpose – This study aims to investigate the effects of board cultural diversity (BCD) and board gender diversity (BGD) of the board of directors on environmental, social and governance (ESG) performance in the European banking sector using resource-based view (RBV) theory. In addition, this study analyses the linkages between BCD and BGD and knowledge sharing on the board of directors to improve ESG performance.

Design/methodology/approach – This study selected a sample of European-listed banks covering the period 2021. ESG and diversity variables were collected from Refinitiv Eikon and analysed using the ordinary least squares model. This study was conducted in the European context regulated by Directive 95/2014/EU, which requires sustainability disclosure. The original population was represented by 250 banks; after missing data were excluded, the final sample comprised 96 European-listed banks.

Findings – The findings highlight the positive linkages between BGD, BCD and ESG scores in the European banking sector. In addition, the findings highlight that diversity contributes to knowledge sharing by improving ESG performance in a regulated sector. Nonetheless, the combined effect of BGD and BCD negatively impacts ESG performance.

Originality/value – To the best of the authors' knowledge, this is the first study to measure and analyse a regulated sector, such as banking, and the relationship between cultural and gender diversity for sharing knowledge under the RBV theory lens in the ESG framework.

Keywords Gender diversity, Cultural diversity, Knowledge sharing, ESG performance, Bank sector, Resource-based view theory

Paper type Research paper

1. Introduction

The need to steer economies towards sustainable attitudes and practices has been more relevant than ever owing to recent occurrences such as COVID-19 and climate change (Wang *et al.*, 2022a, 2022b). Over the last two decades, the banking sector has paid increasing attention to sustainable performance (Menicucci and Paolucci, 2022).

To translate sustainable practices into durable benefits, organisations are called upon to integrate sustainability into their main strategies and ensure adequate stakeholder awareness of business practices (Zumente and Bistрова, 2021). Hence, it is necessary for businesses to convey externally what they have accomplished over the year, perform stakeholder engagement initiatives and, thus, acknowledge the significance of knowledge-sharing issues (Scuotto *et al.*, 2017). Over the years, firms have voluntarily begun reporting environmental, social and governance (ESG)-related information to gain stakeholders' approval. This knowledge sharing also helps them gain a competitive advantage over their rivals (Della Peruta *et al.*, 2014).

It is crucial that boards of directors (BoDs) manage ESG issues to examine sustainability risks and consider them in strategic planning and decisions. According to [Garcia-Sanchez et al. \(2014\)](#), the success of a business is BoDs-dependent; indeed, directors are due to orient corporate responsibility by improving corporate culture, overseeing the pursuit of strategic goals and approving the corporate governance system ([Aguilera et al., 2006](#); [Jo and Harjoto, 2011](#); [Agyei-Mensah, 2023](#)). Scholars have studied the composition of BoDs to identify the characteristics that can motivate higher or lower financial and sustainable performance ([Bauweraerts et al., 2022](#); [Samara and Yousef, 2023](#); [Prencipe et al., 2023](#)). In this context, the diversity topic is substantial. Likewise, the role of a “diversified board” has been recognised by institutional and technical bodies. The British [Financial Reporting Council \(2014\)](#) stated that the increase in diversity on the board is one of the elements that can better propose a wider debate and ensure appropriate stakeholder engagement ([Financial Reporting Council, 2014](#)). This is crucial in the banking sector because banks are *de facto* public-interest entities and need specific procedures to direct their funds and investments ([Del Giudice et al., 2016](#); [Campanella et al., 2017](#); [Campanella et al., 2020](#)).

In European countries, this sector is engaged in meeting ESG goals, which are an essential requirement of the sustainability reporting directive regarding sustainable investment ([Buallay, 2018](#)). The banking sector is a regulated environment that impacts the BoDs structure, specifically on gender diversity (GD); likewise, other BoDs features, such as culture, are not regulated by the standards, although they have links under the performance lens. Scholars have investigated the relationship between the presence of women on the board and banks’ financial performance ([Reddy and Jadhav, 2019](#); [Andrieş et al., 2020](#); [Galletta et al., 2022](#)). While previous studies have neglected the merger between GD and culture, the effect of GD on European banks’ BoDs has been investigated ([Mateos de Cabo et al., 2012](#)). However, diversity has been analysed as the main variable related to ESG performance mainly in knowledge-sharing issues ([Nguyen et al., 2019](#); [Scuotto et al., 2017](#)), and a gap in the literature remains regarding the impact of women and foreign directors on board behaviour and performance. Some scholars have investigated the single effect of board diversity (gender and nationality) on financial performance in the banking sector without considering either the joint effect of the two diversities or the effect on ESG performance ([García-Meca et al., 2015](#)). In the field of knowledge management (KM), [Paoloni et al. \(2023\)](#) examined board gender diversity (BGD) and found that gender is a substantial factor stimulating corporate social responsibility (CSR) knowledge. The study had substantial implications for the literature because it paved the way for gender, CSR and ESG in knowledge-management research.

Hence, to fill the existing gap and contribute to the imminent literature on exploring ties between gender, CSR and ESG in the knowledge-management research field, this study seeks to measure and analyse the effects of board cultural diversity (BCD) and BGD on ESG performance. Specifically, we hypothesise that a diversified cultural board can positively impact ESG performance, and that GD affects ESG behaviour only when accompanied by cultural diversification. This study investigates ESG behaviour in the function of BCD. It does not address the quality of sustainable reports, even if external reporting highlights the companies’ attitude, transparency and sensitivity towards society and the environment ([Donaldson and Preston, 1995](#); [Buallay, 2020](#); [Raimo et al., 2021](#)). A sample of banks working in European countries who are leaders in sustainable development and regulation was analysed ([Buallay, 2018](#)).

The conceptualisation of this study stresses the original pillars, specifically the relationship between cultural and GD for sharing knowledge, and the findings that highlight the effects of the linkages between cultural and GD on ESG performance in a regulated sector, such as the banking sector ([Della Peruta et al., 2014](#); [Del Giudice et al., 2016](#)). This study makes a substantial contribution to the existing literature. Firstly, it adds new empirical results to the literature on the effects of different types of diversity (BGD and BCD) within financial

institutions at the European level. Secondly, our findings corroborate the view that representative women and different cultural backgrounds, taken separately, are crucial resources for banks to realise higher ESG scores; in contrast, the joint effect of BGD and BCD was found to be negatively related to ESG scores. Thirdly, this study provides important insights for banks and policymakers by demonstrating that gender and cultural differentiation contribute to increasing the level of environmental engagement in the banking sector, thus, contradicting the idea that diversity is only an instrument of social equality. This study also contributes to the current literature by testing [Kanter's \(1977\)](#) theory in the banking sector, in which a group of people performs better when it is not divided between dominants and tokens.

As far as the other parts of the study, Section 2 provides a framework for BCD and BGD in BoDs for the European banking sector to achieve ESG performance. Section 2 also discusses the theoretical underpinnings of our hypotheses. Section 3 introduces the methodology used to conduct the research, the details of the model used in this study and the findings. Section 4 discusses the findings. Section 5 presents the conclusions and future perspectives.

2. Background and hypotheses development

2.1 Theoretical framework

Numerous theories, including trade-off, stakeholder, value creation and resource-based view (RBV), have been used to understand the economic sustainability of ESG investments ([Ademi and Klungseth, 2022](#)). Since our study focuses on ESG as a knowledge resource, the embeddedness of the RBV theory lens has been deciphered to achieve its objective of studying the role of BoDs and BCD in ESG towards knowledge sharing. In contrast to the external environmental model of competitive advantage, the RBV emphasises a firm's internal strengths and shortcomings more than external threats and opportunities ([Lockett et al., 2009](#); [Madhani, 2010](#)).

Using a company's RBV, KM can be leveraged to gain a competitive advantage ([Halawi et al., 2005](#)). Knowledge is essential for an organisation to grow, and it is a fundamental component of fostering innovation and preserving a competitive edge in the market. Knowledge sharing is imperative for all businesses but is crucial for banking institutions because they view information as an elusive and valuable asset. It permits the intellectual reuse and replenishment of knowledge held by bank personnel ([Andleeb et al., 2020](#); [Memon et al., 2020](#); [Nurdin and Yusuf, 2020](#)).

Although organisational culture is invisible, knowledge sharing is crucial ([Andleeb et al., 2020](#)). Through it, an organisational culture that inculcates moral standards of conduct connected to ESG norms, together with profitability, demonstrates sensitivity to a high market reputation ([Yang and Han, 2023](#)). As a result, ESG efforts have become a tool for satisfying the needs of shareholders and stakeholders and providing them with the knowledge they need to evaluate business operations ([Daugaard and Ding, 2022](#)). According to the RBV theory, ESG investments provide a company with more resources and capacities to increase operational effectiveness and better manage ESG-related risks, leading to better financial performance ([Shahbaz et al., 2020](#); [Behl et al., 2021](#); [Gillan et al., 2021](#)) and improved market valuation through knowledge sharing. In addition, according to the RBV, investments in ESG-related activities aid in developing capacities to lessen potential burdens on the future cash flow by mitigating regulatory litigation related to ESG requirements. Consequently, these investments favourably affect a firm's financial performance ([Behl et al., 2021](#)). Hence, following RBV theory, investing in ESG for knowledge sharing aids businesses in the development of both tangible and intangible resources, such as the capacity to reduce potential ESG-related regulatory costs and boost product quality, a company's reputation, operational efficiency and financial performance,

ultimately increasing a business's competitive advantage (Mervelskemper and Streit, 2017; Shahbaz *et al.*, 2020; Behl *et al.*, 2021).

BoDs require characteristics – such as demographic and personality ones – classified into several categories (Milliken and Martins, 1996). BoDs are the strategic core of business organisations, and the decision about their composition is crucial for an organisation's success (Berraies and Rejeb, 2019; Velte, 2016). Scholars have hypothesised that the BoD's composition influences ESG performance, as the successful implementation of ESG and CSR practices depends upon the role of BoDs' decisions (Garcia-Sanchez *et al.*, 2014). BoDs strongly influence ESG actions, which implies that board composition can substantially affect CSR (O'Neill *et al.*, 1989). The topic of diversity in the structure of BoDs is relevant and has been discussed among scholars, with a focus on gender (Hillman, 2015). The literature has investigated how a diversified BoDs can impact financial and non-financial performance (Tingbani *et al.*, 2020). According to Shakil *et al.* (2021, p. 664), BoDs diversity and ESG performance can be explained by the resource dependence view (RDV), which underlines that “firm performance depends on the critical resources that board members hold such as background, psychological characteristics, and experience” (Kyaw *et al.*, 2017). According to Hillman and Dalziel (2003), BoDs represent a strategic source of resources for firms that support them in satisfying stakeholder needs through a combination of members' levels of expertise (Post *et al.*, 2015). Different perspectives of diverse board members may assist firms or banks in making strategic decisions driven by compassion (e.g. ESG), which can enhance ESG performance (Manita *et al.*, 2018). The existing literature has discussed the role of the BoDs, considering the board as a “resources provider” that provides “legitimacy” (Hillman *et al.*, 2000; Singh *et al.*, 2001), mitigates risks and aligns the interests of management and shareholders (Belkhir, 2009).

In recent years, the academic and professional literature on “corporate responsibility” communication has substantially increased – for instance, with the special issue of *Corporate Communications: An International Journal* (Schoeneborn and Trittin, 2013; Johansen and Nielsen, 2013). According to Maniora (2017), ESG communication and “integrated reporting” in general can be understood as a process of “negotiating understanding” among stakeholders. To better understand ESG challenges, the act of conveying ESG to stakeholders can be framed within a negotiated knowledge transfer process (Serenko and Bontis, 2016). Therefore, in the knowledge transfer process, businesses will not only contribute to the market's knowledge base about ESG by actively addressing ESG with stakeholders but also provide a chance for firms to explain their communication agenda.

Recent studies have underlined the need to investigate one of the most important features of diversity in terms of cultural identity and gender (Van der Walt and Ingley, 2003; Landaw, 2020; Provasi and Harasheh, 2021; Beji *et al.*, 2021). Diversity in the cultural component of BoDs can support sharing responsibility knowledge and contribute to adverse negative externalities (Paoloni *et al.*, 2023). Gender and cultural diversity can influence the decision-making process, thereby affecting corporate strategies and managerial operations (Karolyi, 2016). Diversity is commonly required to enhance reporting by ensuring the objectivity and interests of all stakeholders. Hence, as seen from the above contexts, it can be noted that there is no generally true or assured linear relationship between board diversity, ESG performance and knowledge sharing. The context in which they are used, such as the industry, business culture and the stance taken by the board of directors on ESG problems, can have an impact on the efficacy of these factors (Harjoto *et al.*, 2015). In addition, for diversity to reach its full potential, inclusive leadership techniques should be used in conjunction with it. Diversity can result in excellent outcomes. Organizations seeking to improve their ESG performance through board diversity should take into account not only the makeup of the board but also the adoption of knowledge-sharing processes that actively involve varied viewpoints in decision-making and strategy creation. In our

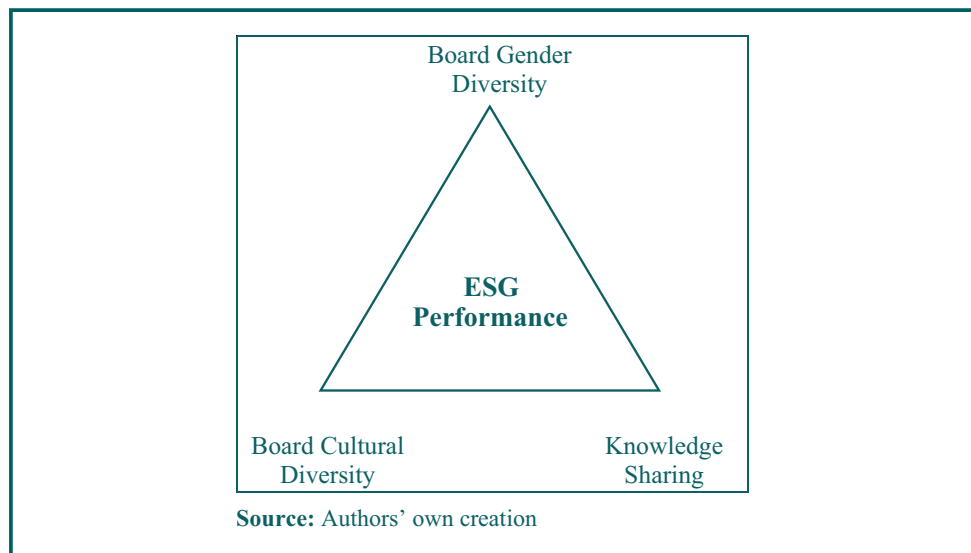
endeavour to study the relationship between board diversity and ESG performance our focus is European banks as they are a regulated sector with substantial public interest, where investors focus intensely on the board's composition (Alexander, 2015). At the same time, it allows for a homogeneous environment and corroborates the statistical investigation. Figure 1 reports the theoretical framework.

2.1.1 Board cultural diversity and environmental, social and governance performance. According to the RBV, firms with higher levels of multi-cultural diversity can increase their competitive advantage (Fitzsimmons, 2013). BCD may help understand the needs of various stakeholders (Khan et al., 2023). Shukeri et al. (2012) found that a high level of cultural diversity on boards broadens knowledge, ideas and experience. According to Ouyang et al. (2022), ESG performance is positively affected by boards whose composition appears to be diversified regardless of the period. Martinez-Ferrero et al. (2021) concluded that BoDs with a higher level of cultural diversity led firms to realise more significant environmental performance. Furthermore, the research demonstrates the mediating role of CSR committees in a context in which BCD is the driver of higher sustainability performance. Some scholars have demonstrated that foreign directors lead to better environmental outcomes and community involvement (Beji et al., 2021; Lau et al., 2016) revealed that BoDs with different professional and cultural representations are more oriented towards adopting CSR measures. Furthermore, a diversified combination of nationalities can lead the board to enhance CSR quality (Katmon et al., 2017; Pi and Yang, 2023) examined the composition of Chinese A-share listed companies to test whether banks' board culture impacts innovation and found a positive association. Based on a large body of literature, we can postulate that when the number of board members with different cultural backgrounds is higher, a firm may achieve higher ESG performance. To the best of our knowledge, the literature on cultural diversity is limited to financial institutions (Frag and Mallin, 2017), and few studies have addressed the link between BCD and ESG performance in the European banking sector. Thus, the following hypothesis is proposed:

H1. BCD is positively associated with ESG performance in the European banking sector.

2.1.2 Board gender diversity and environmental, social and governance performance. Several scholars have focused on BGD (Rao et al., 2012; Khan et al., 2019; Nguyen et al., 2020; Ong et al., 2023). Boards with a substantial proportion of women can make high-quality decisions and benefit from different approaches and perspectives (Huse and Solberg, 2006;

Figure 1 Theoretical framework



Adams and Ferreira, 2009; Torchia *et al.*, 2011), and a gender-diversified board can improve communication channels by maintaining good relationships with all stakeholders (Liu *et al.*, 2013). Following RBV theory, GD is a board feature resource that can lead to higher firm performance. Gul *et al.* (2011) stated that GD enhances the quality of the board's analysis and oversight function. Relatively to the financial institution, prior studies on GD in banks (Birindelli *et al.*, 2019) and ESG have provided evidence that the presence of women on the board significantly produces higher ESG performance in banks (Manita *et al.*, 2018; Arayssi *et al.*, 2020). According to Kyaw *et al.* (2017), this positive association supports the resource dependence theory by showing that women provide substantial resources to banks (background, psychological and experience features). Fan *et al.* (2019) found a U-shaped relationship between GD and earnings management, demonstrating that in the case of a lower number of women on the board, banks are more inclined to manage earnings opportunistically. However, earnings management decreases when the board includes at least three women directors. Birindelli *et al.* (2018) demonstrated that only gender-balanced boards can positively impact bank sustainability performance, and Yilmaz *et al.* (2021) showed no significant association between BGD and BCD with social performance in companies operating in emerging countries. Moreover, Wongsinhirun *et al.* (2023) demonstrated that BGD significantly strengthens a positive corporate culture. In line with prior contributions and theoretical frameworks, the presence of a higher number of women on the BoDs can reduce stakeholder-agent conflict, leading to more sustainable strategies and performance (Velte, 2016). Hence, we formulate the following hypothesis:

H2. BGD is positively associated with ESG performance in the EU banking sector.

2.1.3 *The interaction effect between board cultural diversity and board gender diversity on environmental, social and governance performance.* The sustainable development goals of the United Nations (SDG Goal 5, gender equality) call for equal opportunities for women in leadership and decision-making, which is why GD is gaining ground (United Nations, 2016; Ali *et al.*, 2023; Di Vaio, Hassan *et al.*, 2023). It is assumed that women directors have psychological traits that enable them to be more aware of social and environmental issues while balancing all stakeholders' needs (Terjesen *et al.*, 2009). Previous studies analysing the relationship between board composition and ESG have reported mixed results. Shakil *et al.* (2021), in their study of 37 US banks from 2013 to 2017, posit a significant positive relationship between BGD and ESG performance. In their study of Indian firms, Yadav and Prashar (2022) reported that the relatively small ratio of women directors did not affect ESG performance. However, with at least three women directors, the correlations improve. According to Hafsi and Turgut (2013), the presence of women on corporate boards significantly improves the social and CSR performance of American businesses. Similarly, Qureshi *et al.* (2020) found a positive correlation between BGD and ESG performance when they examined the impact of board composition and ESG on firm value for 812 firms across 22 European nations. However, other scholars have shared contrary propositions BGD and ESG performance. Nguyen *et al.* (2021) found that BGD had no appreciable impact on environmental performance after examining the association between the board characteristics and environmental performance in 100 Chinese companies of key polluting industries. Husted and de Sousa-Filho (2019) and Zahid *et al.* (2020) reported similar negative relationships between board diversity and corporate social performance in their Latin America and Malaysia studies, respectively. Therefore, research on whether BGD affects firms' environmental and social outcomes is conflicting. Some studies have suggested a positive association between BGD and ESG (Hafsi and Turgut, 2013; Qureshi *et al.*, 2020; Shakil, 2021), whereas others have found a negative relationship (Husted and de Sousa-Filho, 2019; Zahid *et al.*, 2020; Nguyen *et al.*, 2021). The current body of research on the connection between women directors and ESG is inconclusive. According to Milliken and Martins (1996), ethnic diversity in corporate boards is typically seen as a "double-edged sword" due to both its detrimental and beneficial consequences.

Directors from diverse cultural backgrounds are seen as being more inclined than their counterparts to openly confront management because they strengthen board independence and foster more fruitful international ties (Kang *et al.*, 2007). On the flip side, cultural variety has a detrimental impact on the workplace since it makes coordination challenging and communication slow and unclear, which leads to more misunderstandings (Al-Hiyari *et al.*, 2023). Few studies have examined the effects of culturally diverse boards on ESG performance, firm value, or other financial outcomes. In addition, studies that do exist offer conflicting and inconclusive results. For instance, Menicucci and Paolucci (2022) and Scholtz and Kieviet (2018) show a negative association between BCD and financial performance. However, Beji *et al.* (2021) and Dong *et al.* (2023) found a favourable correlation between BCD and ESG performance. According to Ben-Amar *et al.* (2013), having foreign directors on boards improves company success; consequently, board members from different cultural backgrounds can assist businesses in managing the interests of various stakeholder groups. Hence, the inconclusive evidence in the literary corpus on ESG performance within the context of BCD and BGD provides sufficient ground for research in this context. In addition, to the best of our knowledge, the literature on testing the effects of different types of board diversity on ESG performance is scarce for financial institutions. Consequently, a gap remains in the literature regarding the relationship between BCD, BGD and ESG scores in European banks. Thus, we formulate the following hypothesis:

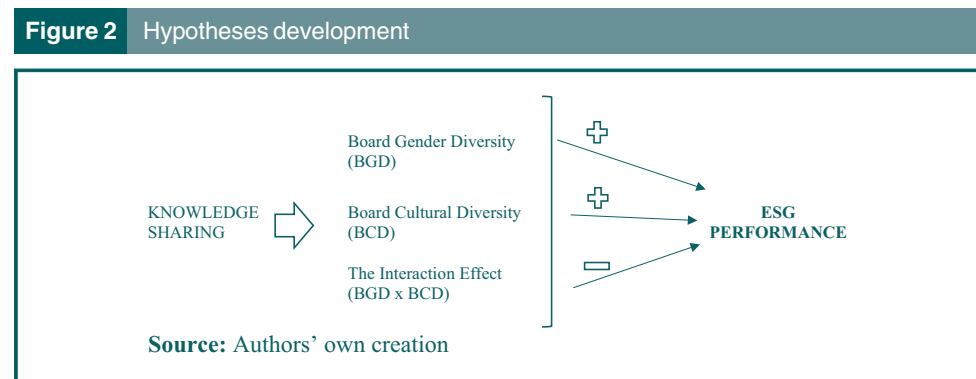
H3. The joint effect of BCD and BGD is negatively associated with ESG performance in the European banking sector.

Figure 2 shows the hypotheses development.

3. Research method

3.1 Data collection

This study seeks to investigate the impact of diversity determinants (cultural and gender) on ESG performance in 96 European financial companies operating in the banking sector. ESG and diversity variables were collected from Refinitiv Eikon and analysed using the ordinary least squares (OLS) model covering the last available period in 2021. The Refinitiv Eikon database is relevant for pursuing our aims for several reasons (Del Giudice and Rigamonti, 2020). Firstly, it provides an authoritative ESG score; secondly, it presents an international data set; finally, the values of ESG pillars have a range between 0 and 100, which reduces variability. Refinitiv is a database widely applied in the literature to investigate non-financial performances (Helfaya and Moussa, 2017; Birindelli *et al.*, 2018; Miralles-Quirós *et al.*, 2018).



This study was conducted in the European context regulated by Directive 95/2014/EU, which requires sustainability disclosure. The original population comprised 250 banks. We excluded banks with missing BoDs characteristics and/or nonfinancial and financial data and obtained a final sample of 96 listed European banks. Table 1 shows the sampling and country composition. We then test our hypotheses for the last available year (2021).

3.2 Variables and model specification

We apply the model in Equations (1), (2) and (3) and conduct a descriptive analysis and multiple regressions to test the potential relationships between BGD and BCD on ESG score. By applying a balanced OLS cross-sectional regression model, the empirical models and parameters are tested below. The OLS model has been widely applied by studies on corporate governance and KM (Chams and García-Blandón, 2019; Ferraris et al., 2017; Mak and Roush, 2000; Papa et al., 2020). To check the method's effectiveness, we conducted various tests (i.e. robustness check), as described in sub-section 3.3.

Firstly, we test the single effect of BCD and BGD in two different OLS regressions (1 and 2) and then the interaction effect (BCD × BGD) (3):

$$ESG \ score_{i,t} = \beta_1 BCD_{i,t} + \beta_2 BoardSize_{i,t} + \beta_3 ROE_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 LogTA_{i,t} + \beta_6 LogSales_{i,t} + \beta_7 Price_{i,t} \quad (1)$$

$$ESG \ score_{i,t} = \beta_2 BGD_{i,t} + \beta_2 BoardSize_{i,t} + \beta_3 ROE_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 LogTA_{i,t} + \beta_6 LogSales_{i,t} + \beta_7 Price_{i,t} \quad (2)$$

Table 1 Sampling and country composition

	No. of companies	%
Austria	3	3.1
Belgium	1	1.0
Czech Republic	2	2.1
Denmark	5	5.2
Finland	2	2.1
France	2	2.1
Germany	3	3.1
Greece	4	4.2
Hungary	1	1.0
Iceland	2	2.1
Ireland Republic	2	2.1
Italy	12	12.5
Netherlands	2	2.1
Norway	7	7.3
Poland	5	5.2
Portugal	1	1.0
Romania	2	2.1
Russia	3	3.1
Slovenia	1	1.0
Spain	6	6.3
Sweden	6	6.3
Switzerland	11	11.5
United Kingdom	13	13.5
Total	96	100.0

Source: Authors' own creation from Stata

$$ESG \text{ score}_{i,t} = \beta_1 BCD_{i,t} + \beta_2 BGD_{i,t} + \beta_3 BGD \times BCD_{i,t} + \beta_4 BoardSize_{i,t} + \beta_5 ROE_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 LogTA_{i,t} + \beta_8 LogSales_{i,t} + \beta_9 Price_{i,t} \quad (3)$$

The dependent variable is the *ESG Score* based on the self-reported information in the environmental, social and corporate governance pillars provided by *Refinitiv*. Refinitiv's ESG score measures a company's ESG performance based on reported data in the public domain – an overall company score based on self-reported information in the environmental, social and corporate governance pillars. The ESG score is recorded annually and built through the collection of three different sub-indexes (ESG), each capturing different dimensions of a firm's ESG quality. The ESG score evaluates a company's environmental performance in relation to factors such as clean production, practice in response to climate change and green marketing. The social factors included in the ESG score are evaluated considering business ethics, working conditions for employees and job security, among others. Governance factors included in the ESG score are elements such as board structure, audit quality and information disclosure quality. ESG is progressively becoming an essential part of organisational structures. Although KM directly contributes to the ESG framework, it also feeds indirectly into other ESG segments (Cornican et al., 2021; Arduini et al., 2023).

The independent variables are as follows: *BGD* = the number of women on the board divided by the total number of members on the board; *BCD* = the number of board members with a cultural background different from the location of the bank headquarters divided by the total number of members on the board; *Interaction term* (*BGD* × *BCD*) = measurement of the joint effect of diversity.

Following prior studies which used quantitative regression analysis (Gangi et al., 2018; Ltifi and Hichri, 2022), we also include a set of control variables such as *Board size* = the number of board members; *ROE* = the bank's profitability ratio obtained by dividing net income after taxes and total equity of common shares; *Leverage* = the bank's solvency ratio calculated by dividing net debt and total assets; *Log of total asset* = logarithm of total assets used to proxy the bank's size; *Log of sales* = logarithm of total sales revenues used to proxy the bank's size; and *Price closing* = the price at the end of the year, which is calculated by dividing the market capitalisation by the number of shares outstanding. Furthermore, β_i = parameters, i = bank, t = year 2021 and ε = error term.

4. Findings

4.1 Descriptive statistics

Table 2 shows the descriptive results of all variables in terms of mean, standard deviation and minimum and maximum values. Statistics show that the mean ESG score is 62.468, while the means of BCD and BGD are 20.375 and 35.739, respectively. Furthermore, we

Table 2 Descriptive analysis					
Variable	Obs	Mean	SD	Min	Max
ESG	96	62.468	20.472	2.676	95.391
BCD	96	20.375	17.869	0.000	100.000
BGD	96	35.739	12.843	0.000	57.142
Interaction	96	714.770	669.875	0.000	3.673.469
BoardSize	96	11.125	3.604	-21.840	22.000
ROE	96	62.708	7.733	-20.723	39.670
LEV	96	36.875	14.769	-0.207	57.369
LogTA	96	10.812	0.837	8.977	12.395
LogSales	96	6.354	0.917	3.838	8.1703
Price	96	94.802	525.639	0.001	5.066.518

Source: Authors' own creation from Stata

observe that all correlation coefficients are lower than 0.9, demonstrating no correlation problems among the explanatory variables in our model. Furthermore, as Kennedy (1998) suggests, the variance inflation factor (VIF) of all variables is less than 10, indicating that multicollinearity is not a serious problem.

4.2 Data analysis

Table 3 shows the correlation analysis among independent variables and Table 4 indicates the multi-collinearity test (VIF). Regarding the cultural diversity variable, we run the OLS regression model to estimate the models' parameters using Stata software. The *F*-stat indicates that a null hypothesis is rejected in favour of the OLS model ($p < 0.0000$). The adjusted R-squared value is 0.5383, demonstrating the model's great reliability since all predictors are significant. Table 5 shows a strong and positive association between BCD and ESG score (level of significance = 1%; coefficient = 0.2184). This demonstrates that the higher the number of board members from different cultural backgrounds, the higher the level of ESG performance.

We also run a second regression model with regard to the GD variable. According to the results of Equation (2), the *F*-stat still indicates that the null hypothesis is rejected in favour of the OLS model ($p < 0.0000$). The adjusted R-squared value is higher than that in regression 1 and is equal to 0.5965, demonstrating the reliability of the model because all predictors are significant. Table 6 reports a positive and strong relationship between BGD and ESG scores as the significance is at the 0.1% level (much higher than BCD), and the

Table 3 Correlation analysis

	<i>ESG</i>	<i>BCD</i>	<i>BGD</i>	<i>Interaction</i>	<i>BoardSize</i>	<i>ROE</i>	<i>LEV</i>	<i>LogTA</i>	<i>LogSales</i>	<i>Price</i>
<i>ESG</i>	1.000									
<i>BCD</i>	0.2584**	1.000								
<i>BGD</i>	0.3403***	-0.0544	1.000							
<i>Interaction</i>	0.3157**	0.8563***	0.3495***	1.000						
<i>BoardSize</i>	0.4435***	-0.0328	-0.0832	-0.0712	1.000					
<i>ROE</i>	-0.1829*	0.0165	-0.1314	-0.0327	-0.2893**	1.000				
<i>LEV</i>	-0.1534	-0.0439	0.3307***	0.0956	-0.1477	0.0586	1.000			
<i>LogTA</i>	0.5670***	0.1461	0.0590	0.1522	0.5483	-0.2521	0.0037	1.000		
<i>LogSales</i>	0.6602***	0.0624	0.1955	0.1257	0.4957***	-0.0048	0.0758	0.7039***	1.000	
<i>Price</i>	-0.2610**	-0.0801	-0.0878	-0.0901	-0.0580	0.0002	0.0321	0.1150	-0.2062**	1.000

Notes: *Significance at 10%; **significance at 5% and ***significance at 1%

Source: Authors' own creation from Stata

Table 4 Multi-collinearity test (VIF)

<i>Variable</i>	<i>VIF</i>	<i>1/VIF</i>
<i>Interaction</i>	9.17	0.109
<i>BCD</i>	8.15	0.122
<i>LogTA</i>	3.02	0.331
<i>LogSales</i>	2.98	0.336
<i>BGD</i>	2.74	0.365
<i>BoardSize</i>	1.74	0.574
<i>ROE</i>	1.32	0.758
<i>Price</i>	1.28	0.779
<i>Leverage</i>	1.16	0.859
<i>Mean VIF</i>	3.51	

Source: Authors' own creation from Stata

Table 5 Regression 1 results

Obs	96					
F-stat (7, 88)	16.83					
Prob > F	0.0000					
R-squared	0.5724					
Adj R-squared	0.5383					
Root MSE	13.91					
ESG	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>p-value</i>	<i>[95% Conf.</i>	<i>Interval]</i>
BCD	0.2184***	0.0827	2.64	0.010	0.0540	0.3827
BoardSize	0.3086	0.5117	0.60	0.548	-0.7082	1.3255
ROE	-0.3232	0.2056	-1.57	0.120	-0.7317	0.0853
Leverage	-0.2266**	0.0996	-2.27	0.025	-0.4245	-0.0286
LogTA	3.5174	2.9504	1.19	0.236	-2.3458	9.3806
LogSales	11.1774***	2.6006	4.30	0.000	6.0093	16.3456
Price	-0.0059*	0.0030	-1.91	0.059	-0.0119	0.0002
_cons	-51.0517**	21.7493	-2.35	0.021	-94.2740	-7.8295

Notes: *Significance at 10%; **significance at 5% and ***significance at 1%. The data are from the Refinitiv Eikon database.

Source: Authors' own creation from Stata

Table 6 Regression 2 results

Obs	96					
F(7, 88)	21.07					
Prob > F	0.0000					
R-squared	0.6263					
Adj R-squared	0.5965					
Root MSE	13.004					
ESG	<i>Coef.</i>	<i>Std. err.</i>	<i>t</i>	<i>p-value</i>	<i>[95% Conf.</i>	<i>Interval]</i>
BGD	0.5326***	0.1171	4.55	0.000	0.2998	0.7654
BoardSize	0.5536	0.4832	1.15	0.255	-0.4066	1.5140
ROE	-0.0692	0.1978	-0.35	0.727	-0.4623	0.3238
Leverage	-0.3734***	0.0973	-3.83	0.000	-0.5669	-0.1798
LogTA	6.5107**	2.7000	2.41	0.018	1.1448	11.8766
LogSales	7.6671***	2.5000	3.07	0.003	2.6969	12.6373
Price	-0.0067**	0.0028	-2.38	0.019	-0.0124	-0.0011
_cons	-79.3901***	20.5671	-3.86	0.000	-120.263	-38.5173

Notes: *Significance at 10%; **significance at 5% and ***significance at 1%. The data are from the Refinitiv Eikon database

Source: Authors' own creation from Stata

coefficient is positive and equal to 0.5326 (p -value of 0.010; much greater than BCD). This empirically demonstrates that the higher the number of women on the board, the higher the level of ESG performance.

Regarding the joint effect of the two variables on diversity (BCD and BGD), we run a third OLS regression analysis. The F -stat still indicates that a null hypothesis is not accepted. The adjusted R-squared value is much higher than that of [Equations 1 and 2](#) and equal to 0.6474, demonstrating the better reliability of the models testing the single effects of diversity. [Table 7](#) shows a negative relationship between the interaction effect (BGC \times BGD) and the ESG score, with significance at the 5% level and a negative coefficient of -0.0109. This empirically demonstrates that the joint effect of BGD and BCD may reduce ESG performance.

Our findings support the hypothesis that board cultural and GD enhance ESG performance, whereas the interaction effect between the two types of diversity seems to be negatively related to the ESG score.

Table 7 Regression 3 results

Obs	96					
$F(7, 88)$	20.38					
Prob > F	0.0000					
R -squared	0.6808					
Adj R -squared	0.6474					
Root MSE	12.157					
ESG	<i>Coef.</i>	<i>Std. err.</i>	<i>t</i>	<i>p-value</i>	<i>[95% Conf.</i>	<i>Interval]</i>
BCD	0.5993***	0.1992	3.01	0.003	0.2032	0.9953
BGD	0.7810***	0.1606	4.86	0.000	0.4616	1.1004
Interaction	-0.0109*	0.0056	-1.94	0.056	-0.0221	0.0002
BoardSize	0.7458	0.4563	1.63	0.106	-0.1613	1.6529
ROE	-0.0936	0.1851	-0.51	0.614	-0.4617	0.2743
Leverage	-0.3619***	0.0911	-3.97	0.000	-0.5430	-0.1808
LogTA	4.6939*	2.5882	1.81	0.073	-0.4512	9.8390
LogSales	8.2261***	2.3452	3.51	0.001	3.5639	12.8883
Price	-0.0052*	0.0026	-1.93	0.056	-0.0105	0.0001
_cons	-78.743***	19.838	-3.97	0.000	-118.181	-39.3052

Notes: *Significance at 10%; **significance at 5% and ***significance at 1%. The data are from the Refinitiv Eikon database

Source: Authors' own creation from Stata

4.3 Robustness check and additional analysis

Robustness checks are encouraged to ensure the validity of the findings, as in any other research method (Fiss, 2011; Santamaria *et al.*, 2021). To conduct robustness checks, we tested the relationship between the BGD and BCD determinants for each of the single pillars of ESG, namely, the ESG pillars (not reported). Instead, we could not explore whether our empirical findings are supported by a single year as our regression is already based on a single year (2021). A robustness test was performed on each pillar, and all tests corroborated the robustness of the results (Table 8).

5. Discussion of findings

This study deciphered the significant relationships between BGD/BCD and ESG performance. The results align with prior contributions that emphasised women's orientation

Table 8 Robustness check

<i>Dependent variable</i>	<i>Environmental pillar</i>	<i>Social pillar</i>	<i>Governance pillar</i>
BCD	0.388** (1.09)	0.438* (1.96)	0.907*** (3.01)
BGD	0.681** (2.36)	0.725*** (4.02)	0.895*** (3.68)
Interaction	-0.001* (-0.20)	-0.008* (-1.30)	-0.018** (-2.13)
BoardSize	0.957 (1.17)	1.280** (2.50)	-0.026 (-0.04)
ROE	-0.348 (-1.05)	0.007 (0.04)	-0.138 (-0.49)
Leverage	-0.106 (-0.65)	-0.424*** (-4.15)	-0.374** (1.14)
LogTA	9.321** (2.00)	3.669 (1.26)	4.486 (1.14)
LogSales	7.731* (1.83)	8.467*** (3.21)	7.766** (2.19)
Price	-0.006 (-1.31)	-0.003 (-1.13)	-0.007* (-1.78)
_cons	-128.75 (-3.61)	-71.46 (-3.20)	-69.91 (-2.33)
Observations	96	96	96
Prob > F	0.000	0.000	0.000
Adj R^2	0.454	0.590	0.407

Notes: *Significance at 10%; **significance at 5% and ***significance at 1%. The data are from the Refinitiv Eikon database. *t*-Stat is included in parentheses

Source: Authors' own creation from Stata

to environmental and social engagement (Setó-Pamies, 2015; Paoloni *et al.*, 2023). This study also supports the findings of Di Vaio, Hassan *et al.* (2023) and Di Vaio *et al.* (2023) that business models for improved sustainable management must be more gender inclusive. This study also highlights a positive link between BCD and ESG.

These findings are consistent with the assertion that women are more inclined to care about social and ethical issues (Chell *et al.*, 2016). Previous research has suggested that women pay more attention to stakeholders (Wang *et al.*, 2022a, 2022b); therefore, they are better than men at fusing the interests of numerous parties with those engaged in business procedures and performance. Furthermore, the organisation must have the internal knowledge to give transparent information that meets the stakeholders' expectations. Consequently, the presence of women directors serves as an external assurance of information that is more transparent (Paoloni *et al.*, 2023), and internally decreases the level of conflict (Nielsen and Huse, 2010).

According to the RBV framework, businesses can gain a competitive edge by strategically managing their valuable, rare, unique and non-replaceable resources (VRIN resources) (Castro and Giraldo, 2018). Gender diverse boards can be a useful resource to achieve its ESG goals. Women directors may provide a variety of viewpoints, experiences and backgrounds that can enhance discussions, improve decision-making and deepen awareness of ESG concerns. Although GD on corporate boards is becoming more and more relevant, it is still very uncommon, particularly in some sectors and geographical areas. When properly managed, its rarity can turn into a valuable and possibly advantageous competitive edge. Competitors may find it challenging to swiftly replicate successful diversity and inclusion policies, mentoring programmes and a history of elevating women to top roles, and, thus, making BOD an inimitable resource. It is difficult to replace diverse viewpoints in BoDs and the potential advantages of GD with other resources, making it a non-substitutable resource (Setó-Pamies, 2015; Paoloni *et al.*, 2023). Thus, a gender-diverse board can be an important asset that boosts ESG performance and adheres to RBV's core values by being a source of competitive advantage and long-term value development. However, achieving these advantages calls both deliberate management and a dedication to diversity and inclusion across the board (Di Vaio, Hassan *et al.*, 2023).

Concerning BCD, directors from diverse cultural backgrounds are more willing than their counterparts to openly confront management because they strengthen their level of independence and foster more productive ties (Kang *et al.*, 2007). The findings of the analysis are consistent with RBV theory. Recent studies have suggested that more culturally diverse directors should be appointed to corporate boards, suggesting that this is a method of enhancing corporate governance (Naciti, 2019; Beji *et al.*, 2021; Khatib *et al.*, 2021). In addition, the board's cultural variety provides a wide range of viewpoints and expertise; as a result, a higher level of diversity in BoDs improves creativity and innovation, establishing a better understanding of stakeholders' needs in the global arena and reducing agency costs (He and Huang, 2011). Indeed, the information arising from the study suggests that cultural diversity is also a competitive advantage for banks in terms of sustainability performance – a finding consistent with what a body of literature has already argued (Ouyang *et al.*, 2022). It has been observed that the presence of a board authority culture inhibits corporate innovation and that cultural diversity contributes to determining deep knowledge and supporting directors with more experience, stimulating the company to be more innovative (Luo *et al.*, 2023). Our study aligns with these findings and postulates that different cultures in the BoDs may support organisations in improving ESG performance towards the knowledge transfer process. This competitive advantage can be expressed either because of the increased knowledge gained by directors and to be included in the decision-making process, or because of the relationships to be developed with external stakeholders (Khan *et al.*, 2023). Hence, cultural diversity within a firm can, therefore, be viewed as useful within

the RBV lens because it brings together people with various viewpoints, experiences and problem-solving techniques to meet ESG targets. For instance, varied teams are frequently better able to comprehend and respond to the demands and concerns of a diverse clientele. A firm can differentiate itself from its rivals by having a varied workforce because not all businesses may have embraced diversity to the same degree. When it comes to luring talent, connecting with various client segments and handling social and governance issues, this rarity can provide a business a competitive edge (Yilmaz *et al.*, 2021).

5.1 Theoretical implications

This study makes a theoretical contribution to RBV theory (Penrose, 2009; Pfeffer and Salancik, 2003). According to resource dependence theory, cultural diversity enhances the effectiveness of board monitoring. The BoD can provide a company with valuable resources, including guidance, counselling and credibility (Hillman *et al.*, 2009), which are essential for a company's survival and expansion. According to Al-Hiyari *et al.* (2023), a diverse board can improve a company's ability to obtain a variety of important resources (such as financial expertise, knowledge and information) and fulfil directors' fiduciary obligations to safeguard stakeholder interests.

RBV theory is directly related to corporate governance studies because it views a firm's competitive advantage as a crucial factor in its ability to outperform rivals (Dyer and Singh, 1998). Good corporate governance procedures guarantee that a company's distinctive characteristics will endure over time; these include the distinctive assets of the board members, such as their specialised abilities, backgrounds, credentials, reputations and competencies (Pfeffer and Salancik, 2003). These board member characteristics influence a company's culture or behaviour to advance its sustainable development process (Al-Hiyari *et al.*, 2023). RBV theory maintains that a company's strategic advantage is its distinctive resources, which are referred to as board diversity qualities. The corporation values this strategic advantage because it allows it to outperform its competitors (Barney *et al.*, 2001). Thus, we propose the RBV concept that BGD and BCD work for the firm's competitive advantage towards ESG performance. This study also supports Kanter's (1977) theory that when a minority group reaches a threshold or critical mass, the group's internal interactions expand (Yadav and Prashar, 2022). Our research findings also postulate that CSR and environmental performance improve when the number of women directors is sufficient. In this context, we tested RBV theory in the banking sector from the perspective of Kanter's theory, which appears to be a substantial contribution to the current literature. Resources ought to be VRIN, in accordance with RBV, to provide them a competitive edge (Castro and Giraldi, 2018). According to Kanter's thesis, a critical mass of constituents (individuals) from a varied group can be important and, in some situations, uncommon if they exist within an organisation (Yadav and Prashar, 2022). Through the distinctive ideas, viewpoints and problem-solving techniques this group can offer, it may result in a competitive edge. In conclusion to our findings, RBV can explain how diverse BoDs, especially when it reaches a critical mass (Kanter's theory), can be considered an internal resource that is precious, unique, inimitable and non-substitutable, hence, contributing to a firm's competitive advantage. This fusion of the two theories emphasizes the importance of diversity as an internal resource that, when used correctly, can enhance organisational performance and competitiveness.

5.2 Practical implications

Moreover, from a practical and managerial perspective, managers can increase their legitimacy by structuring boards with different characteristics that support higher performance. This study stresses the managerial need to determine a governing board that can strategically devise – moving from the differentiated cultural and genders views – a synthetic vision of the different approaches formulated by the components. This can

provide valued added to the entity, ensuring the representativeness of different sensitivities. Indeed, data analysis shows that the “diverse balance” that can be created internally within the board determines a competitive advantage in terms of seeking a path of sustainability that should also develop a path of growth in the medium and long term for the company. The research reveals, on the contrary, that an excess of diversification interaction (cultural and gender) can also potentially result in a decrease of performance, creating a *U*-shaped relationship. In this context, the degree of board creativity and cognitive conflict during decision-making increases when the degree of board diversity, in terms of members’ backgrounds and personalities, increases (Torchia *et al.*, 2015). The level and the combination of differences, when manageable, support the growing importance of “deep-level” diversity attributes. From this perspective, this study suggests that companies should carefully address the characteristics of BoDs in terms of cultural and gender features to create an effective mix of experiences. These considerations could managerially support the KM of other board members by enabling directors to consider the perspectives from which the decisions and expectations of colleagues are made. The debate on different perspectives on ESG factors can also support the consideration of the potential reactions of external stakeholders. Knowledge sharing is extremely relevant in the banking sector, where competition is high and clients take care of the strategic entity’s orientation (Andleeb *et al.*, 2020).

5.3 Regulatory implications

This study contributes to the current literature and regulatory environment by testing the links between BGD, BCD and ESG issues in European banks, helping to advance both the theoretical and practical understanding of the crucial role of board diversity; this will ultimately lead to greater corporate transparency and responsibility regarding non-financial issues. The board structure is subject to certain restrictions and procedures under corporate governance that mandate the adoption and implementation of a diversity policy by the board. Hence, this study offers a commentary on these measures. Furthermore, the results imply that while implementing corporate governance reforms, authorities should consider any potential drawbacks of the combined influence of gender and cultural diversity. The benefit of board diversity can be realised by fostering group cohesiveness and improving communication on businesses’ BoDs.

Our findings support calls by policymakers to establish rules and encourage higher BoDs diversity. The findings highlight the effects of gender and cultural diversity as associated with higher ESG scores. Given our findings, policymakers can reasonably make recommendations regarding board diversity.

5.4 A Comparative analysis with previous studies

This study involved and interacted with several previous studies. Our findings provide evidence that gender equality is crucial to promote sustainable business models and responsible innovation (Di Vaio, Hassan *et al.*, 2023; Di Vaio, Zaffar *et al.*, 2023). Our research confirms that board composition can have a substantial impact on CSR (Garcia-Sanchez *et al.*, 2014; O’Neill *et al.*, 1989), and board composition is not irrelevant to the ESG companies’ behaviour and operations. This result confirms, among other aspects, the applicability of RBV theory to the ESG approach in the banking sector (Manita *et al.*, 2018).

This study can be placed within the literature that investigates the effects of KM on the ESG performance of companies and banks. It reveals that a diverse cultural board places banks in a better position to implement an efficient ESG approach and innovate (Martínez-Ferrero *et al.*, 2021; Pi and Yang, 2023). This conclusion confirms the findings in the literature on the financial sector (Frag and Mallin, 2017).

Consistent with an authoritative body of literature, the findings on the relationship between GD and banks' ESG performance also support the hypothesis that a gender-diverse board enables banks to achieve better sustainability performance, providing a broader and more sensitive analysis of the decision-making process (Manita *et al.*, 2018; Birindelli *et al.*, 2019; Arayssi *et al.*, 2020). In general terms, from the perspective of resource-based theories, this study supports the view that boards with a high level of diversity lead to more holistic and thoughtful decision-making (Zaid *et al.*, 2020). It has already been emphasised that a diverse board mitigates agency problems by reducing costs.

Finally, we examined the interaction between BCD and BGD. To the best of our knowledge, a gap in the scientific literature remains concerning this issue. Recent studies have considered the dimensions of BGD and BCD on social performance without addressing the interactive effects or the effects of BGD on corporate culture and without considering the combined aspects (Yilmaz *et al.*, 2021; Wongsinhirun *et al.*, 2023). In this context, the research has emphasised that the combined effect of higher BCD and BGD has a negative impact on ESG performance. This can be explained by Kanter's (1977) theory, which states that group diversification produces a positive effect when a critical mass of components belongs to a group. Accordingly, high diversification can lead to a *U*-shaped effect, resulting in complex decision-making processes.

6. Conclusions

This study stresses that future studies should investigate and comprehend how BGD and BCD can promote higher sustainability performance within banks. Prior studies have investigated various dimensions of diversity (García-Meca *et al.*, 2015) by examining the impact of board diversity characteristics on banks' performance.

This study examined the single and joint effects of cultural and GD on ESG performance in the banking sector, making a substantial contribution to the existing literature. Firstly, it analysed the effects of different types of diversity (BGD and BCD) on a sample of European banks. Secondly, the empirical results demonstrate that the vision of women's representation and different cultural backgrounds, taken separately, are key resources to achieve higher ESG performance for banks. However, the joint effect was found to be negatively correlated with ESG score, and the latter requires further investigation to explore the causes of this resulting negative relationship. Thirdly, the results highlight useful opportunities for banks and policymakers, indicating that gender and cultural equalities represent "a social priority" and "an environmental priority" to establish a long-standing relationship with stakeholders and improve environmental engagement.

This study had some limitations. The analysis considered only one year, while future contributions could focus on multiple years to investigate the development of knowledge sharing in connection with corporate governance diversity. Another limitation in the conceptualisation of this study relates to the identification of diversity in gender and cultural features; it would be interesting to analyse different elements representing different perspectives.

6.1 Future research directions

Several studies have investigated the connection between diversity and cultural innovation (Luo *et al.*, 2023; Pi and Yang, 2023). This analysis could be deepened by examining the KM effects of different types of diversity on more specific aspects, such as the banking sector's ability to focus on sustainable investments and the way in which financing related to the green economy is provided.

Other similar future research could focus on diverse sectors to comprehend whether the findings are common to different segments or if the banking sector expresses a typical orientation towards the examined knowledge-sharing elements.

The sample of 96 banks included both commercial and investment banks, and further studies could differentiate the analysis by considering the banks' characteristics. Future studies should test BGD and BCD on each single pillar, considering alternative environmental, social and/or governance ones. This would be relevant for measuring the company's relative performance on fundamental ESG single attributes, commitment and effectiveness across the E, S and/or G factors.

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