Review of Economic Analysis 17 (2025) 405-434 1973-3909/2025405

Does Boardroom Ethnic Diversity Shape ESG Performance? Insights from the US Banking Sector

EVANGELOS G. VAROUCHAS
Hellenic Mediterranean University *

STAVROS E. ARVANITIS
Hellenic Mediterranean University

CHRISTOS FLOROS
Hellenic Mediterranean University

This research investigates the relationship between ethnic diversity in the boardroom and the ESG performance of US banks during the 2016-2021 period. To this aim, we implement the 2-step system GMM estimation technique, which addresses endogeneity issues that have posed challenges in many studies. Our findings indicate that boardroom ethnic diversity negatively influences ESG performance. Moreover, in a nonlinear analysis, we provide evidence of a U-shaped relationship between boardroom ethnic diversity and the ESG performance of banks. These results remain robust when, instead of ESG performance, we examine the social and corporate governance performance of banks. We also demonstrate that the impact of boardroom ethnic heterogeneity on ESG performance varies with bank size. Furthermore, we reveal that during the pandemic, the previously negative impact of ethnically diverse directors on ESG performance shifts and ultimately becomes positive. Consequently, our conclusions serve as an important source of information to lawmakers and regulators and enrich the corporate governance research concerning the nexus between board characteristics and ESG performance.

Keywords: Corporate Governance; Board ethnic diversity; ESG performance; COVID-19; Bank size; Banks; United States

JEL Classifications: C12; G21; G30; G34; L25; M14

1 Introduction

Over recent years, there has been an expanding interest in board ethnic diversity from academics, government officials, and policymakers. Globalization, cross-border M&As, cross-listing, and cross-border capital movements have led to a greater need for foreign directors on

*Corresponding Author, varouchasv@hmu.gr. All: Department of Accounting and Finance.

corporate boards (Masulis et al., 2012; Oh et al., 2021). According to Institutional Shareholder Services (ISS) board diversity data, there has been significant progress since the tragic death of George Floyd in 2020 in the number of ethnically /racially diverse board members in US corporations. This progress reflects the growing demand and need for ethnic/racial equality in all spheres of society, including business[1].

In contrast to the European situation, there are no federal mandates for boardroom diversity in the US (Prunty, 2021). Typically, most governance topics are managed by the states in which companies have their headquarters or by the stock exchanges where they are listed. Recently, California signed "Assembly Bill No. 979 (AB 979)" into law, requiring all corporations headquartered in this state to include a minimum number of board members who self-identify as "Black or African American, Hispanic or Latino, Asian, Pacific Islander, Native Hawaiian, Native American, or Alaskan Native, or who self-identify as lesbian, gay, bisexual, or transgender"[2]. Nonetheless, when it comes to public corporations, the Securities and Exchange Commission (SEC) plays a substantial regulatory role. To be more precise, the SEC has decided to abstain from involvement in the establishment of board diversity quotas. Instead, it has delegated this authority to the stock exchanges on which public firms are listed. However, before their implementation, the diversity proposals presented by stock exchanges are subject to review and approval by the Securities and Exchange Commission. The SEC recently approved the NASDAQ's proposal, which obliges every organization listed on the NASDAQ exchange (with specific exceptions) to include a minimum of one female director and one minority director on their corporate boards or to explain why they do not[3]. Unlike Nasdaq, the New York Stock Exchange (NYSE) has pursued a different approach that endorses board diversity without requiring any disclosure or diversity standards. Specifically, in 2019, the NYSE launched its Board Advisory Council (BAC) to address the pressing need for diverse and inclusive leadership[4]. The BAC was made up of CEOs from some of the largest and most renowned organizations in the world. Its main goal was to use the personal networks of those CEOs to identify and connect diversified directors with public and private NYSE-listed corporations.

Considering the above, it is crucial to investigate the influence of ethnically diverse directors on corporate and bank outcomes. However, most existing studies in this domain have limited their research interest to the effect of boardroom ethnic heterogeneity on financial performance, whereas only a few have investigated the impact of board ethnic/racial diversity on

1 .Please see: https://corpgov.law.harvard.edu/2022/07/21/racial-and-ethnic-diversity-on-u-s-corporate-boards-progress-since-2020/

2 CA Assembly Bill No. 979, Chapter 316, Corporations: boards of directors: underrepresented communities.

3 Please see: https://www.sec.gov/news/public-statement/statement-nasdaq-diversity-080621

4 Stewart Landefeld, Board Diversity: A Comparison Between the NYSE & Nasdaq Now, Public Chatter, Nov. 1, 2021.

environmental, social, and governance (ESG) performance of organizations (e.g., Harjoto et al., 2019; Shatnawi et al., 2022; Kizys et al., 2023; Yilmaz et al., 2022; Toumi et al., 2022).

ESG performance is a burning matter in governance literature that has attracted the interest of investors and public authorities since it reflects the degree to which an organization is operating sustainably[5]. An increasing number of investors globally consider ESG performance alongside the financial performance of companies/banks to filter their future investment decisions (Birindelli et., 2018)[6]. Thus, corporations should be accountable for striking a balance between financial and non-financial aims (Kiliç et al., 2015). Moreover, adopting ESG best practices enables banking institutions to achieve sound financial performance, build a good reputation, and obtain long-term competitive advantage (Shen et al., 2016; Birindelli et al., 2018; Buallay, 2019). For example, Velte (2017) reports that the ESG performance of companies is positively associated with their accounting performance (ROA), while Bătae et al. (2021) report that banks that are more efficient in emission and waste reductions tend to achieve higher profitability.

In the banking industry, there is a growing interest in considering ESG. Although prior empirical studies have examined the influence of board attributes such as board size, meetings, independence, and gender diversity on the ESG performance of banks, to the best of our knowledge, the impact of ethnic diversity on banks' ESG performance has not yet been explored. Thus, this research aims to fill this gap in the literature by investigating the influence of directors' ethnicity on the ESG performance of banking institutions. To this end, we use an unbalanced panel dataset of 304 publicly listed US banks over the period from 2016 to 2021. Our empirical results indicate that board ethnic heterogeneity inhibits ESG performance. However, the negative effect of ethnically diverse directors on ESG performance reverses to a positive one when their board presence surpasses the threshold of 38.5%.

Our paper contributes to the existing literature in several aspects. First, our study enriches the limited ESG literature by providing empirical evidence that board ethnic diversity significantly impacts the ESG performance of banks. Second, to the best of the authors' knowledge, this research is the first that empirically explores the linear and nonlinear influence of board ethnic heterogeneity on the ESG performance of US banks. Therefore, our empirical conclusions constitute a valuable source of knowledge for legislators and policymakers in the US. Third, while most studies on the relationship between board diversity and ESG performance focus on non-financial firms, this study specifically examines the banking industry. Consequently, our empirical analysis contributes to the banking literature by offering industry-specific insights. Fourth, in a supplementary analysis, we investigate the influence of

[5] Please see: https://corporatefinanceinstitute.com/resources/esg/esg-score/.

[6] Please see: https://www.investopedia.com/terms/e/environmental-social-and-governance-esg-criteria.asp

ethnic diversity on sustainable performance during unstable socioeconomic conditions (COVID-19), where many corporations struggled to survive. Exploring this context could offer valuable insights for promoting sustainability during uncertain times. Thus, our research enriches the crisis literature as well. Further, from a theoretical standpoint, unlike prior empirical studies, our research adopts a multi-theoretical approach as proposed by Kagzi and Guha (2018), Khatib et al. (2021), and Baker et al. (2020), integrating competing theoretical frameworks. On the methodological side, implementing the 2-step system GMM estimator, our research addresses endogeneity concerns that have posed challenges in previous studies.

The subsequent sections of this study are organized as follows. The literature review and the formulation of our hypotheses are presented in Section 2. In Section 3, we present our data, variables, and econometric approach. Section 4 presents and discusses our empirical findings. The additional analysis is presented in Section 5. Section 6 concludes the paper.

2 Literature Review and Hypotheses Development

Board diversity has been considered a double-edged sword. Specifically, some governance theories (e.g., agency theory, resource dependence theory, and stakeholder theory) support the beneficial impact of board diversity on the financial and non-financial performance of companies and banks, while others (e.g., social identity theory and similarity attraction theory) view board diversity as a detrimental factor for corporate prosperity. Therefore, an integrated theoretical framework that incorporates competing theories is crucial for better understanding and capturing the relationship between board diversity and corporate success (Varouchas et al., 2024; Baker et al., 2020; Khatib et al., 2021).

2.1 Agency Theory

According to agency theory (Jensen and Meckling, 1976), the board's main role is to monitor the financial and non-financial actions of corporate managers. Based on this theory, boardroom ethnic diversity serves as an additional governance mechanism, allowing directors to effectively fulfill their oversight responsibilities, as diversity strengthens board independence and objectivity (Kang et al., 2007; Arnaboldi et al., 2020). Thus, an ethnically diverse board is considered an effective mechanism to keep an eye on how the organizations follow their environmental strategy and put their environmental policy into practice (Kizys et al., 2023). In addition, ethnically diverse directors bring unique viewpoints and fresh perspectives to the board, enabling boards to make rational financial, environmental, social, and governance decisions, as well as to improve information transparency, which can ultimately improve both financial and ESG performance of organizations (Carter, 2003; Kizys et al., 2023).

2.2 Stakeholder Theory

Stakeholder theory (Freeman, 1984) supports that corporate success is determined by the satisfaction of various stakeholders (stockholders, customers, suppliers, staff, society, and environment). According to this theoretical framework, foreign directors, particularly those from nations in which corporations promote ESG, may bring the stakeholder perspective of business into boardroom conversations and encourage organizations to engage in more ESG-oriented practices, which in turn can boost ESG performance (Harjoto et al., 2019). Furthermore, foreign directors with international experience and background enhance the quality of decision-making regarding social, governance, and environmental issues, which in turn enables corporations to achieve higher CSR performance (Naciti, 2019; Rao and Tilt, 2016).

2.3 Resource Dependence Theory

Resource dependence theory (Pfeffer and Salancik, 1978) highlights another role of the board, that of resource provision. According to this theory, corporate performance depends on the critical resources that diverse board members hold, such as experience, background, and cultural values (Kyaw et al., 2017; Manita et al., 2018). Diverse directors possess a wider range of knowledge, skills, perspectives, and experience that enhances the decision-making process (Hillman and Dalziel, 2003; Estélyi and Nisar, 2016) and enables organizations to attain higher ESG performance (Shakil et al., 2021). Also, ethnically diverse directors, due to their open-mindedness and international experience, are more likely to represent the interests of diverse stakeholders, which can lead to better ESG performance (Shatnawi et al., 2022; Yilmaz et al., 2022).

2.4 Social Categorization and Similarity/Attraction Theories

Social categorization and similarity/attraction theories emphasize the detrimental effects of diversity on group cohesion and performance, due to negative perceptions of dissimilar members and communication barriers within diverse teams. Social categorization theory (Turner et al., 1987) predicts that individuals classify themselves and others into social categories based on certain attributes (e.g., age, gender, and ethnicity). This self-categorization harms the board's unity and decision-making, resulting in lower corporate value (García-Meca et al., 2015; Masulis et al., 2012). Based on similarity/attraction theory (Byrne, 1971), people tend to join groups of similar individuals, splitting the board into subgroups. As a result, inter-subgroup stereotyping arises with detrimental consequences on board cohesion.

2.5 Critical Mass Theory

From the standpoint of critical mass theory (Kanter, 1977), minorities with specific attributes (e.g., gender, nationality, ethnicity, age, tenure, and expertise) will begin to influence the board function only if their size reaches a certain threshold. Specifically, if board minorities constitute a critical mass, their voices and perspectives will be heard, influencing the board's decision-making and significantly altering boardroom dynamics (Arnaboldi et al., 2021). Consistent with this theory, Liao et al. (2022) note that a critical mass of directors with foreign experience improves corporate transparency.

2.6 Research Studies on the Relationship Between Board Ethnic Diversity and *ESG Performance*

A considerable body of research in governance literature has attempted to explore the effect of ethnically diverse directors on corporate performance, but the empirical results remain inconclusive (e.g., Carter et al., 2010; Masulis et al., 2012; Estélyi and Nisar, 2016; Ntim, 2015; García-Meca et al., 2015). However, relatively few have examined the influence of directors' ethnicity on ESG performance. Ethnically diverse board members, due to their experience, religion, language, culture, background, and international market engagement, bring different perspectives and viewpoints to the boardroom discussions, which can influence various corporate outcomes (Johnson et al., 2013) and shape organizations' vision and attitudes toward ESG (Harjoto et al., 2019). For instance, Harjoto et al. (2019) indicate that boardroom nationality diversity enhances the corporate social performance of US corporations. In line with the resource dependence perspective, Shatnawi et al. (2022) conclude that there is a positive link between the directors' nationality and CSR performance of Australian corporations. Moreover, Wong (2024) supports that ethnically diverse boardroom committees boost ESG performance. Quintana-García et al. (2022) claim that management ethnic diversity improves innovation. Furthermore, Hartmann and Carmenate (2021) support the positive association between having a combination of female and ethnically diverse directors and companies' CSR reputation. Kizys et al. (2023) report that boardroom genetic diversity enhances the environmental performance and ESG disclosures of US firms, highlighting that directors' genetic heterogeneity plays a critical role in addressing climate-related challenges. Paolone et al. (2024) demonstrate that boardroom cultural diversity enhances European banks' ESG performance. Specifically, they argue that racial and cultural diversity can give banks a competitive edge by bringing together directors with diverse experiences, viewpoints, and problem-solving skills, helping banking institutions achieve ESG goals. Yilmaz et al. (2022) argue that board cultural diversity has a positive and significant impact on corporate governance performance, while its impact on social performance is also positive but lacks statistical significance. On the contrary, Toumi et al. (2022) report that board nationality diversity inhibits

social and governance information disclosed by French companies, attributing this finding to the fact that diverse directors in terms of nationality are less able to disclose governance and social information, probably because they may lack the necessary experience in these areas and likely safeguard the interests of shareholders. In the Palestinian context, Zaid et al. (2020) support that the boardroom nationality diversity is insignificantly related to CSR performance, as most of the foreign directors in their sample are from neighboring countries and share similar attributes and cultures with domestic directors. In contrast, Jeyhunov et al. (2025) and Khan et al. (2019) report no significant association. Given the preceding discussion, we expect that:

H1a. Boardroom ethnic heterogeneity affects ESG performance.

H1b. The relation between boardroom ethnic heterogeneity and ESG performance is nonlinear.

3 Research Methodology

3.1 Sample

Our sample includes 304 publicly listed US banks. It is worth noting that unlisted banks were excluded from our analysis due to limited transparency and a lack of available data on certain variables compared to their publicly traded counterparts. The analysis spans from 2016 to 2021, incorporating 1603 observations, due to missing information for certain banks during the full period. This makes our panel dataset unbalanced. We opted for 2016 as the starting point, since only a few banks had board-related information available before this point. The year 2021 was chosen as the cut-off for our analysis, as it was the most recent year available when the research commenced. In terms of the number of selected US banks and the total number of observations, our dataset is significantly larger than those of previous studies on this topic (e.g., Shakil et al., 2021; Owen and Temesvary, 2018), making our sample highly representative. Following previous studies (Shakil et al., 2021; Bătae et al., 2021; Menicucci and Paolucci, 2022), we obtained ESG, financial, and governance information from the Refinitiv database. When downloading data from Refinitiv, our primary inclusion criterion was the availability of ESG scores. Data on ethnic diversity in boardrooms was initially sourced from the Refinitiv database. However, due to limited availability for certain banks, we supplemented the data with manually gathered information from 10-K annual reports and DEF 14A proxy statements.

3.2 Variables

Following previous studies (e.g., Shakil et al., 2021; Menicucci and Paolucci, 2022; Bătae et al., 2021), we employed Refinitiv's ESG score to measure ESG performance. The ESG score is an overall score for banks that is based on self-reported information regarding the environmental, social, and corporate governance pillars. It is expressed as a ratio that ranges from 0 (0%) to 1 (100%).

More specifically, environmental performance measures the bank's ability to decrease environmental emissions, avoid environmental risks, utilize natural resources efficiently in production processes, and capitalize on environmental opportunities to generate long-term value for stakeholders. Social performance measures a bank's ability to foster trust and loyalty among its employees, customers, and society by implementing best management practices. Finally, governance performance measures a bank's systems and processes, both of which ensure that its board of directors and executives act in the best interests of its long-term shareholders.

Our primary explanatory variable of interest is boardroom ethnic diversity (ethnic). We utilize three different proxies to capture board ethnic diversity. Initially, in line with previous studies (Ntim, 2015; Guest, 2019), we use the proportion of non-white directors as our main diversity proxy. Furthermore, for the robustness of our results, we also employ two commonly applied diversity indices (the Blau index and the Shannon index). The Blau index is calculated as $(1-\sum_{i=1}^{n} P_i^2)$, where "i" represents different board ethnic categories (whites and non-whites, thus n=2) and " P_i " denotes the share of directors in each category. This index ranges from 0 (perfectly homogeneous board) to 0.5 (equal number of white and non-white directors). The Shannon index is defined as $(-\sum_{i=1}^{n} P_i \ln P_i)$ where "i" represents different board ethnic categories (whites and non-whites, thus n=2) and " P_i " denotes the fraction of directors in each category. This index's highest and lowest values are 0.693 (equal proportion of white and non-white board members) and zero (perfectly homogeneous board). Higher values of those indices imply greater board heterogeneity.

In addition, consistent with prior studies (Shakil et al., 2021; Harjoto et al., 2019; Menicucci and Paolucci, 2022; Shatnawi et al., 2022; Yilmaz et al., 2022), to elude model misspecification, we control for additional bank-specific and board-specific characteristics that could impact the ESG performance of US banks, such as return on assets, leverage, bank size, board size, board meetings, and CSR-governance committee. Table 1 summarizes the acronyms and definitions of our variables**.**

3.3 Descriptive Statistics and Correlation Analysis

Descriptive statistics of variables are presented in Table 2. The mean (median) value of the ESG score is 0.341 (0.324), which indicates a below-average ESG performance of US banks during the sampling period. This average value is lower than the 0.52 reported by Shakil et al. (2021), signaling that US banks have room for environmental, social, and governance performance improvement. On average, non-white directors account for 11.5% of total board members. This finding is slightly higher than the 10% reported by both Guest (2019) and Harjoto et al. (2019), but lower than the 25.77% reported by Ntim (2015). Furthermore, the mean blau (shannon) is 0.144 (0.234) ranging from 0 (0) to 0.5 (0.693).

Table 1: Description of variables

Variables	Acronym	Definition	Expected Effect
Dependent variable			
ESG performance	esg	ESG score is an overall bank score based on self-reported information in environmental, social, and governance pillars, which captures the bank's ESG performance.	
Independent variables			
Ethnic minorities board percentage	nonwhites	The ratio of non-white board members (e.g., "Black or African American, Hispanic or Latinx, Asian, Native American or Alaska Native, Native Hawaiian or Pacific Islander, and Mixed Ethnicities") to the total number of board members.	(+)/(-)
Blau index for ethnic diversity	blau	Blau index for ethnicity: $1-\sum_{i=1}^{n} P_i^2$, where "i" represents different board ethnic categories (whites and non-whites, thus n=2) and "P_i" denotes the proportion of directors in each category.	(+)/(-)
Shannon index for ethnic diversity	shannon	Shannon index for ethnicity: $-\sum_{i=1}^{n} P_i \, lnP_i$, where "$i$" represents different board ethnic categories (whites and non-whites, thus n=2) and "P_i" denotes the proportion of directors in each category.	(+)/(-)
Control variables			
Leverage	lev	The ratio of the bank's total debt to its total assets.	(+)/(-)
Bank size	banksize	The natural logarithm of the book value of total assets.	(+)
Return on Assets	roa	Income after taxes for the fiscal period divided by the average total assets.	(+)/(-)
Board size	boardsize	Total number of board members.	(+)
Board meetings	meetings	Number of board meetings.	(+)
Governance-CSR committee	govcsr	Dummy variable that takes the value of one if the bank has a governance or CSR committee, and zero otherwise.	(+)

Considering the above-mentioned average values, we conclude that board ethnic diversity in US banks is still modest at best and could be improved. The mean board size is approximately 12 members, which is lower than that of 14 reported by Menicucci and Paolucci (2022) for Italian banks. On average, sampled boards meet 11 times per year. This result is close to the findings (10) of García-Meca et al. (2015) and (12) of Birindelli et al. (2018). Moreover, we observe that 86.4% of US banks in our sample have CSR or governance committees. Regarding

the rest of the control variables, we observe that the mean value of return on assets is 0.011 (ranging from -0.052 to 0.079), which falls below the average value of 0.049 reported by Harjoto et al. (2019). Lastly, the mean values of bank size (natural log of total assets) and leverage are 22.591 and 0.040, respectively.

Based on the data in Table 3, we observe that 43.2 % of sampled banks do not have non-white directors on their boards. Further, we notice that only 30.6 % (15.7%) of sampled boards have two or more (three or more) non-white directors. These results depict the low ethnic heterogeneity on US bank boards.

Table 2: Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Q1	Median	Q3	Min	Max
esg	1603	0.341	0.135	0.255	0.324	0.401	0.030	0.892
nonwhites	1317	0.115	0.172	0	0.077	0.166	0	1
blau	1317	0.144	0.150	0	0.140	0.260	0	0.500
shannon	1317	0.234	0.228	0	0.269	0.429	0	0.693
banksize	1602	22.591	1.482	21.488	22.359	23.347	20.005	28.951
lev	1600	0.040	0.078	0.010	0.022	0.041	0	0.889
roa	1601	0.011	0.007	0.008	0.011	0.013	-0.052	0.079
meetings	1566	10.916	4.376	8	11	13	1	67
boardsize	1603	11.478	3.173	9	11	13	4	33
govcsr	1603	0.864	0.342	1	1	1	0	1

Table 3: The Frequency of Non-White Directors by Board Size

	Number of non-white directors							Total
Board size	**0**	**1**	**2**	**3**	**4**	**5**	**6-13**	
4	1	0	0	0	0	0	0	**1**
5	3	0	0	0	1	0	0	**4**
6	6	4	0	0	0	4	0	**14**
7	31	19	5	0	2	2	2	**61**
8	58	18	17	0	6	2	5	**106**
9	80	32	12	3	3	4	4	**138**
10	77	34	20	4	4	1	5	**145**
11	98	49	40	9	3	1	8	**208**
12	88	67	32	11	6	4	10	**218**
13	51	49	22	19	7	2	6	**156**
14	30	27	18	10	5	1	4	**95**
15	16	19	13	9	2	0	3	**62**
16-33	30	27	17	12	9	10	4	**109**
Total	**569**	**345**	**196**	**77**	**48**	**31**	**51**	**1317**

Table 4: Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	VIF
(1) esg	1										
(2) nonwhites	0.267***	1									1.09
(3) blau	0.419***	0.701***	1								
(4) shannon	0.419***	0.681***	0.992***	1							
(5) roa	0.035	0.053*	0.031	0.030	1						1.03
(6) lev	0.176***	0.063**	0.192***	0.184***	0.145***	1					1.17
(7) banksize	0.684***	0.277***	0.495***	0.501***	0.026	0.230***	1				1.49
(8) boardsize	0.140***	-0.018	0.106***	0.123***	-0.025	-0.025	0.363***	1			1.24
(9) meetings	0.023	-0.018	-0.008	-0.014	-0.129***	0.087***	-0.021	-0.026	1		1.04
(10) govcsr	0.245***	0.086***	0.104***	0.106***	-0.008	0.055**	0.115***	-0.086***	0.004	1	1.04

Note: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***)

Table 4 presents the correlations among the selected variables. All the explanatory variables (nonwhites, blau, shannon, lev, banksize, boardsize, and govcsr) except for return on assets (roa) and board meetings (meetings) exhibit a significant and positive correlation with ESG performance (esg). We notice high correlation coefficients among ethnic heterogeneity proxies (shannon, blau, and nonwhites), however, because these variables are not employed concurrently in our models, the high correlation between them doesn't pose any challenge. Concerning the correlations among the independent variables, we spot that the highest significant correlation coefficient is 0.501 (between banksize and shannon), denoting that multicollinearity is not a grave problem. Moreover, we re-examine for multicollinearity by utilizing variance inflation factors (VIFs). Based on the findings, the maximum VIF stands at 1.49, and the mean of VIFs is 1.16, denoting that multicollinearity is not a severe concern in our research.

3.4 Model Specification

Based on the theoretical arguments and empirical findings provided by Harris and Raviv (2008), Schultz et al. (2010), and Wintoki et al. (2012), the nexus between corporate governance and performance is dynamic in nature, implying that a firm's past performance influences its current governance structure and performance. Thus, the appropriate model to explore the governance-performance association should not be static, but dynamic, with past values of the performance variable as additional independent variables. In line with previous empirical studies (Nguyen et al., 2015; Zaid et al., 2020; Shakil et al., 2021; Varouchas et al., 2024), we include the 1-year lag of the dependent variable as one of the explanatory variables to capture the dynamic nature of the governance-ESG performance relation. Moreover, to test the presence of a nonlinear relation between boardroom ethnic heterogeneity and banks' ESG performance,

we incorporate the squared term (ethnic^2) of our primary explanatory variable (ethnic) in the baseline model. Considering the above discussion, our regression model is specified as follows:

$$esg_{it} = \beta_0 + \beta_1 esg_{it-1} + \beta_2 ethnic_{it} + \beta_3 roa_{it} + \beta_4 lev_{it} + \beta_5 banksize_{it} + \beta_6 boardsize_{it} + \beta_7 meetings_{it} + \beta_8 govcsr_{it} + yeardummies + \eta_i + \varepsilon_{it} \quad (1)$$

where "i" indexes banks and "t" indexes time; β_0 represents the constant; $\beta_1 \ldots \beta_8$ denote the coefficients of the regressors; *esg* is the bank's ESG performance; $\text{esg}_{\text{it}-1}$ is the 1-year lagged ESG variable; our key predictor variable (*ethnic)* is proxied by the ratio of non-white directors (nonwhites), the Shannon index (shannon), and the Blau index (blau); we also include their quadratic terms (nonwhites^2, $\text{blau}^2$and shannon^2) in our main model to examine for possible nonlinearities; roa captures the bank's financial performance measured by Return on Assets; lev measures the bank's leverage (Debt/Assets); banksize is the natural logarithm of the book value of total assets; boardsize is the total number of board members; meetings indicates the total number of board meetings during the fiscal year; govcsr is a dummy variable that takes the value of one if the bank has governance-CSR committee, and zero otherwise; yeardummies denote year dummy variables; η_i depicts unobserved time-invariant bank effects; ε_{it} denotes the error term.

3.5 Estimation Methodology

The present study applies the 2-step system GMM estimation technique proposed by Blundell and Bond (1998). Contrary to traditional panel estimators (pooled OLS, fixed effects, and random effects), the 2-step system GMM estimator deals efficiently with endogeneity issues arising from unobserved heterogeneity, simultaneity, and dynamic endogeneity (Wintoki et al., 2012). Flannery and Hankin's (2013) simulation analysis supports that system GMM is the appropriate estimator for unbalanced panels with endogenous variables. Although many earlier studies have employed the instrumental variables (IV) estimation technique to tackle endogeneity concerns, this strategy is not intended to deal with dynamic endogeneity (Wintoki et al., 2012). Moreover, given that most of the explanatory variables used in this research are considered to be endogenously determined, finding valid external instruments required for the implementation of the IV approach is not an easy task (Flannery and Hankin, 2013; Nguyen et al., 2015). Therefore, the 2-step system GMM constitutes the most appropriate estimator, since it allows us to use internal instrumental variables available within the panel itself, which simplifies our estimation procedure. We estimate our regression models using the "xtabond2" command in Stata 17, employing all variables lagged two to four periods as instruments. As suggested by Wintoki et al. (2012), we used the "collapse" option in "xtabond2" to mitigate the issue of too many instruments (instrument proliferation). Moreover, to correct the downward

bias of standard errors in the 2-step system GMM for small samples, we apply the Windmeijer finite-sample correction.

It is worthwhile to note that since the validity of the 2-step system GMM estimations is determined by the instruments' validity, it is important to examine if the instruments are exogenous by applying two post-estimation tests. The first one is the Arellano-Bond test for first-order and second-order serial correlation in the first-differenced residuals under the null of no serial correlation. By construction, the residuals in first differences AR(1) should be correlated, whereas serial correlation in second differences AR(2) should not exist. The presence of second-order serial correlation undermines the validity of our instrumental variables and makes our estimations biased (Wintoki et al., 2012). The second one is the Hansen test of over-identification. This test yields a J-statistic which is distributed χ^2 under the null hypothesis of the validity of the instruments.

4 Empirical Results and Discussion

In Table 5, we present our empirical findings. Specifically, we find that board ethnic diversity has a negative impact on ESG performance. The negative and statistically significant coefficients of nonwhites, blau, and shannon (columns 1, 3, and 5) confirm this finding. Thus, our initial hypothesis 1a, which states that there is a significant relation between ethnic heterogeneity and ESG performance is supported. The above-mentioned empirical result is in line with social categorization and similarity/attraction theories. According to these theories, board diversity harms the board unity, cohesion, and decision-making process, which in turn can lead to lower ESG performance. Due to their different cultural backgrounds and beliefs, ethnically diverse directors may face coordination and communication problems with domestic directors, which in turn can slow down the decision-making speed and the implementation of effective ESG initiatives. In addition, the negative prejudices and stereotypes of their colleagues may constrain the capacity of ethnic minorities to contribute to ESG performance. The previously observed negative relationship aligns with the findings of Kong et al. (2023), who report that ethnic diversity exerts a notable detrimental effect on CSR outcomes. Moreover, this empirical outcome is consistent with Toumi et al. (2022), who support that foreign directors lead to lower social and governance information disclosure due to their limited experience in these areas, while it contrasts the findings of Harjoto et al. (2019) and Shatnawi et al. (2022), who support the beneficial impact of board ethnic heterogeneity on ESG performance.

As previously stated, to test whether there is a non-linear relationship between ethnic diversity and ESG performance, we add in our models the quadratic terms of nonwhites ($nonwhites^2$), blau ($blau^2$), and shannon ($shannon^2$). As anticipated, we find a non-linear, U-shaped relationship between boardroom ethnic heterogeneity and the ESG performance of banks. The negative and significant coefficients of nonwhites, blau, and shannon, and the

positive and significant coefficients of nonwhites^2, blau^2, and shannon^2 verify this result. Thus, this outcome corroborates Hypothesis 1b, which states that the link between ethnic diversity and ESG performance is non-linear. This empirical evidence advances the extant literature by demonstrating that the relationship between boardroom ethnic heterogeneity and banks' ESG performance follows a curvilinear pattern, attributable to the trade-off between the costs and benefits of diversity. More precisely, we find that at first ESG performance decreases as the proportion of non-white board members increases, until they reach a critical level (38.5% board representation), beyond which a continuous addition of ethnic-minority directors starts to improve the ESG performance of banks, suggesting that the benefits of ethnic diversity predicted by agency, resource dependence and stakeholder theories (e.g., better monitoring, high-quality decision-making, unique viewpoints, international experience, open-mindedness and stakeholder perspective of business) outweigh the drawbacks (e.g., lower cooperation and unity, antagonism, communication barriers and stereotyping) drawn in social categorization and similarity/attraction theories. This result also aligns with the critical mass theory, which posits that board minorities can influence boardroom dynamics and banking outcomes only when they reach a critical mass (Arnaboldi et al., 2021). More precisely, according to this theoretical framework, the influence of board minorities on corporate outcomes (including performance, CSR, and ESG) becomes more pronounced when their presence evolves from tokenism to a sizeable minority. Otherwise, their contributions and influence are at risk of being marginalized. At lower levels, boardroom ethnic heterogeneity may create coordination difficulties and tokenism-related issues that limit effective governance and weaken ESG performance (Toumi et al., 2022). However, as the proportion of ethnically diverse directors reaches a certain threshold, these initial costs diminish, and the benefits of a diverse team (e.g., broader networks, greater legitimacy, and stakeholder perspective of business) become more apparent, boosting banks' ESG performance (Zaman et al. 2024; Harjoto et al., 2019). Hence, having a critical mass of ethnically diverse directors can act as a driver in favor of the bank's engagement in ESG activities. However, the previously noted U-shaped pattern between boardroom ethnic diversity and ESG performance contradicts the recent findings of Jeyhunov et al. (2025) and Khan et al. (2019), who found an insignificant association.

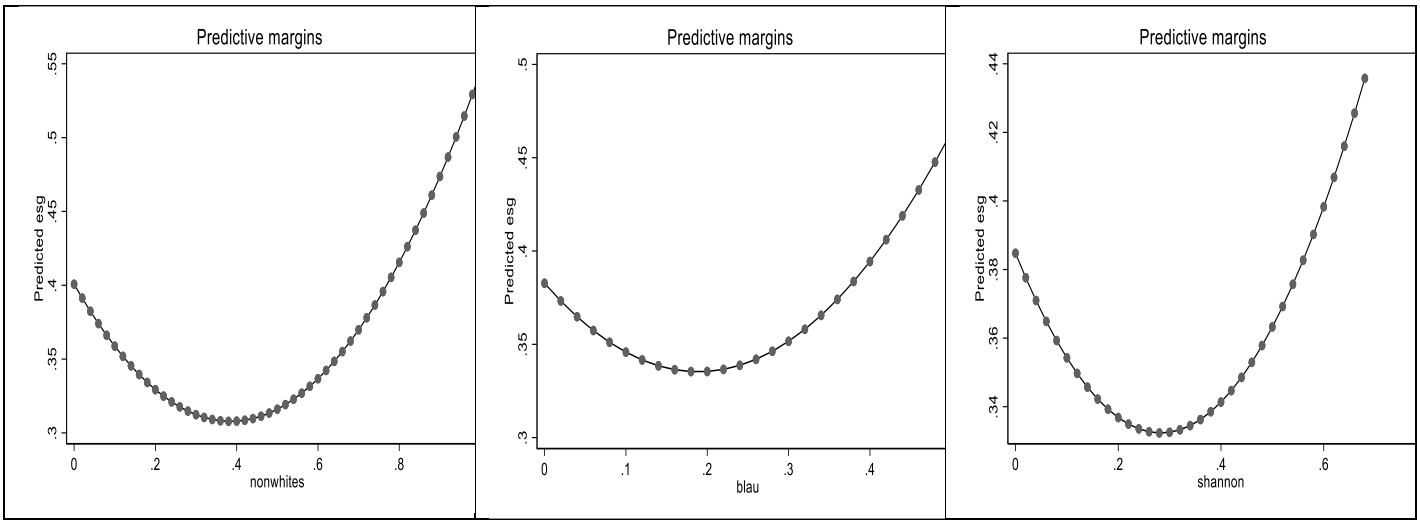
Drawing on Haans et al. (2016), the validation of the U-curve goes beyond checking the significance and sign of the quadratic terms' ($\text{nonwhites}^2, \text{blau}^2 \text{and shannon}^2$) coefficients. Specifically, alongside the previous condition, we also examine whether the slope is sufficiently steep at both ends of the data range. For a U-curve, the slope of the upper bound must be significantly positive, and the slope of the lower bound must be significant and negative. Moreover, we assess if the turning point (minimum) of the curve falls within the data range. To determine whether the critical point falls within the data range, we construct a (Fieller) confidence interval for this term and evaluate whether the resulting interval is within the data range.

Table 5: The effect of ethnic diversity on ESG performance

Dependent variable: esg	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
esg_{t-1}	0.843***	0.569***	0.710***	0.673***	0.790***	0.675***
	(7.626)	(7.189)	(9.729)	(7.589)	(8.405)	(7.841)
nonwhites	-0.275*	-0.482***				
	(-1.802)	(-3.386)				
$nonwhites^2$		0.626**				
		(2.294)				
blau			-0.153**	-0.502*		
			(-2.374)	(-1.897)		
$blau^2$				1.327**		
				(2.042)		
shannon					-0.106*	-0.371**
					(-1.810)	(-2.142)
$shannon^2$						0.655**
						(2.208)
roa	-4.068	-2.243	-1.160	-4.742***	-3.693*	-4.743***
	(-1.562)	(-1.206)	(-0.544)	(-2.888)	(-1.782)	(-2.796)
lev	0.126	0.204	-0.043	0.106	0.066	0.080
	(0.816)	(1.247)	(-0.170)	(0.335)	(0.426)	(0.260)
banksize	0.005	0.062***	0.019***	0.019**	0.007	0.019**
	(0.436)	(4.043)	(2.813)	(2.256)	(0.706)	(2.298)
boardsize	0.001	-0.007*	-0.001	-0.005	0.004	-0.005
	(0.228)	(-1.896)	(-0.202)	(-1.259)	(0.577)	(-1.332)
meetings	-0.001	-0.002	0.001	-0.005	-0.003	-0.005
	(-0.187)	(-0.672)	(0.156)	(-1.394)	(-0.645)	(-1.436)
govcsr	-0.027	0.102***	0.116**	0.037***	0.007	0.036***
	(-0.514)	(5.950)	(2.440)	(3.231)	(0.149)	(3.331)
Constant	0.038	-1.219***	-0.379***	-0.172	-0.031	-0.168
	(0.199)	(-3.857)	(-2.717)	(-1.144)	(-0.207)	(-1.121)
Observations	1126	1126	1126	1126	1126	1126
Number of banks	272	272	272	272	272	272
Instruments	31	33	31	34	31	34
Year dummies	✓	✓	✓	✓	✓	✓
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.371	0.390	0.193	0.835	0.701	0.785
Hansen p-value	0.279	0.748	0.603	0.474	0.344	0.517
U test	Lower Bound	Upper Bound	Lower Bound	Upper Bound	Lower Bound	Upper Bound
Interval	0	1	0	0.5	0	0.693
Slope	-0.482	0.769	-0.502	0.825	-0.371	0.538
t-value	-3.385	1.751	-1.897	2.019	-2.142	2.114
Overall test p-value	0.040		0.029		0.018	
Turning point	0.385		0.189		0.283	
Fieller C.I. for turning point	[0.266-0.880]		[0.092-0.272]		[0.184-0.400]	

Note: Models (1)–(6) were estimated using the 2-step system GMM estimator. All t-statistics are enclosed in parentheses and are based on Windmeijer-corrected standard errors. Asterisks denote significance at 10% (*), 5% (**), and 1% (***). AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals (H_0: no serial correlation). The H_0 in the Hansen test is that our instruments are valid. In our estimations, we used the "collapse" option to prevent the problem of too many instruments.

Figure 1: Marginal effects plot



As illustrated in Table 5, all the previous conditions are satisfied, confirming the U-shaped nexus between boardroom ethnic heterogeneity and ESG performance. More specifically, the slopes at both the lower and upper bounds are significant, sufficiently steep, and have the expected sign, while the critical points (0.385, 0.189, 0.283) lie within the data range. Also, the estimated 90% Fieller confidence intervals (0.266-0.880, 0.092-0.272, 0.184-0.400) met the necessary conditions. Moreover, the overall test p-values (0.040, 0.029, 0.018) support the presence of the U-curve.

Furthermore, in untabulated analysis, we examined for a possible cubic relationship. To this aim, a cubic term ($ethnic^3$) was added to the model. However, the cubic coefficient was statistically insignificant, suggesting that higher-order nonlinearities are not present. Therefore, the quadratic specification adequately captures the U-shaped relationship between boardroom ethnic heterogeneity and ESG performance of banks, providing support for our main conclusions. To further enhance the reliability of our results, we also offer a visual depiction of the obtained U-curve. Figure 1 presents the predicted ESG performance across different levels of boardroom ethnic diversity proxies.

In agreement with Shakil et al. (2021) and Toumi et al. (2022), we report that past ESG performance (esg_{t-1}) has a positive and significant influence on current ESG performance. In line with previous studies (Menicucci and Paolucci, 2022; Shakil et al., 2021; Birindelli et al., 2018) we find that bank size (banksize) has a positive and significant influence on ESG performance, which shows that larger banks, due to their vast resources and large workforces, are better able to achieve higher levels of ESG performance. Also, in agreement with Birindelli et al. (2018) and Menicucci and Paolucci (2022), the presence of a CSR or governance

committee (govcsr) positively influences the ESG performance of banks. Establishing specialized committees strengthens banks' credibility on sustainability issues and reinforces their legitimacy among all stakeholders. Concerning the rest of the control variables, their impact on ESG performance, in most models, lacks statistical significance.

Finally, the results from the AR(2) and Hansen specification tests suggest that there is no evidence of second-order serial correlation, and the selected instruments are valid.

5 Additional analysis

5.1 Ethnic diversity and ESG sub-dimensions

Building on previous research (Yilmaz et al., 2022), we explore how ethnic diversity within boardrooms affects the sub-dimensions of ESG. By examining the influence of boardroom ethnic heterogeneity on each ESG pillar—environmental, social, and governance—we aim to pinpoint which areas of ESG performance are most impacted by boardroom ethnic minorities. To this aim, we use the environmental pillar score (env), social pillar score (social), and governance pillar score (gov), to measure the environmental, social, and corporate governance performance of banks, respectively. These scores range from 0 (0%) to 1 (100%). Moreover, we use the proportion of non-white boardroom members (nonwhites) as our proxy for ethnic diversity. The empirical results are presented in Table 6.

As indicated in Table 6, ethnic diversity diminishes banks' corporate governance and social performance. Due to their different backgrounds and beliefs, ethnically diverse directors may face coordination and cohesion problems with domestic directors, harming the governance and social performance of banks. Moreover, this negative relationship may be because ethnic minorities' inclusion on the board as protectors of shareholders' interests might reduce the required emphasis on governance and social matters. This empirical outcome also corroborates those reported by Toumi et al. (2022). Moreover, when we include the quadratic term of the proportion of non-white boardroom members in our regression models, we notice a nonlinear U-shaped relationship. Therefore, banks should aim for a high level of ethnic diversity in the boardroom to overcome the initial dip in their social and corporate governance performance and fully leverage its benefits. As before, the necessary conditions for the U-shaped relationship are confirmed using the “U-test” procedure. However, the impact on environmental performance is negligible, probably because ethnically diverse directors may lack specific knowledge of environmental issues. Another possible explanation is that ethnically diverse directors may not see the environmental initiatives of US banks as a requirement to comply with US regulations concerning the protection of the environment.

Table 6: Boardroom ethnic diversity and ESG sub-dimensions

	(1)	(2)	(3)	(4)	(5)	(6)
Performance sub-dimension:	**Social**		**Corporate governance**		**Environmental**	
Dependent variable:	**social**	**social**	**gov**	**gov**	**env**	**env**
$social_{t-1}$	0.898***	0.754***				
	(10.235)	(9.335)				
gov_{t-1}			0.476***	0.510***		
			(7.049)	(7.283)		
env_{t-1}					0.941***	0.905***
					(23.970)	(19.689)
nonwhites	-0.260*	-0.435**	-0.381*	-0.818***	0.080	0.128
	(-1.701)	(-2.369)	(-1.668)	(-3.050)	(0.934)	(0.979)
$nonwhites^2$		0.615**		2.183***		-0.154
		(2.242)		(3.542)		(-0.785)
roa	-3.620**	0.926	-12.485***	-2.961	-0.506	-1.190
	(-2.225)	(0.266)	(-3.368)	(-1.089)	(-0.337)	(-0.953)
lev	-0.159	0.047	0.079	0.859*	0.106	-0.000
	(-0.889)	(0.253)	(0.152)	(1.816)	(1.030)	(-0.000)
banksize	0.009	0.021**	0.013	0.024*	0.004	0.013*
	(0.856)	(2.363)	(0.965)	(1.684)	(0.658)	(1.769)
boardsize	-0.000	-0.004	0.003	0.006	0.008**	0.002
	(-0.074)	(-0.793)	(0.267)	(0.627)	(2.012)	(0.590)
meetings	-0.003	0.002	-0.024***	-0.009**	-0.002	0.001
	(-0.766)	(0.511)	(-2.699)	(-2.017)	(-0.496)	(0.213)
govcsr	-0.078	0.173***	-0.060	0.237***	-0.065	-0.081
	(-0.824)	(2.672)	(-0.686)	(2.876)	(-1.480)	(-1.470)
Constant	0.010	-0.528***	0.416	-0.473	-0.097	-0.216
	(0.057)	(-2.814)	(1.457)	(-1.609)	(-0.792)	(-1.517)
Observations	1126	1126	1126	1126	1126	1126
Number of banks	272	272	272	272	272	272
Instruments	34	25	38	46	33	44
Year dummies	✓	✓	✓	✓	✓	✓
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.657	0.414	0.148	0.348	0.110	0.110
Hansen p-value	0.248	0.734	0.975	0.900	0.328	0.333
U test	Lower Bound	Upper Bound	Lower Bound	Upper Bound		
Interval	0	1	0	1		
Slope	-0.435	0.794	-0.818	3.547		
t-value	-2.368	1.910	-3.050	3.417		
Overall test p-value	0.028		0.001			
Turning point	0.354		0.187			
Fieller C.I. for turning point	[0.197-0.712]		[0.119-0.265]			

Note: Models (1)–(6) were estimated using the 2-step system GMM estimator. All t-statistics are enclosed in parentheses and are based on Windmeijer-corrected standard errors. Asterisks denote significance at 10% (*), 5% (**), and 1% (***). AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals (H_0: no serial correlation). The H_0 in the Hansen test is that our instruments are valid. In our estimations, we used the "collapse" option to prevent the problem of too many instruments.

To summarize, the heterogeneous effect of ethnic diversity on ESG pillars can be attributed to the unique nature of each pillar. In particular, ethnically diverse boardroom members shape the governance and social aspects of ESG, as these areas rely on robust board processes and systems, monitoring efficiency, ethical decision-making, CSR engagement, business ethics, and stakeholder trust, domains in which diverse directors can have a substantial impact. In contrast, the effect on the environmental dimension is limited, as environmental initiatives are often driven by regulatory pressure, industry standards, operational knowledge, and green technology adoption, factors where the contribution of diverse directors is likely less pronounced. The statistically significant (insignificant) impact of diverse boards on governance and social (environmental) pillar scores is also supported by Sandretto et al. (2025).

5.2 Ethnic diversity, ESG performance, and Covid-19

Complementary to our main research question, we also examine whether the impact of board ethnic diversity on the ESG performance of US banks differs during the pandemic (COVID-19) period, an aspect that has not been previously explored. On the one hand, pandemic-related financial strains could have led some banks to prioritize short-term financial stability over long-term ESG initiatives, potentially diminishing the influence of diverse voices on ESG decisions. On the other hand, diverse boards with a stakeholder-focused approach may engage in more ESG-related activities when urgent support is needed for the economy, environment, and society (Kara et al., 2022). In agreement with this argument, Umar et al. (2022) support the positive association between foreign directors and CSR expenditure before and during COVID-19. Also, Sajwani et al. (2024) support the positive association between board attributes and financial sustainability during the coronavirus period, highlighting the need for effective oversight during the crisis.

To investigate whether ethnically diverse directors become more valuable during the pandemic (COVID-19), we construct a dummy variable named covid, which equals one for the coronavirus period (2020 and 2021), and zero otherwise. We then interact this variable with ethnic diversity proxies (nonwhites, blau, and shannon). As illustrated in Table 7, COVID-19 moderates the nexus between board ethnic diversity and banks' ESG performance. During COVID-19, the negative association between board ethnic diversity and ESG performance is reversed. Specifically, the large positive coefficient of the interaction term indicates that during the pandemic, the influence of boardroom ethnic diversity becomes positive. Therefore, ethnically diverse directors become more valuable during the pandemic, helping their boards to engage in more ESG activities. Before COVID-19, board ethnic diversity was negatively linked to ESG performance due to decision-making complexities and coordination challenges.

Table 7: Boardroom ethnic diversity, ESG and COVID-19

Dependent variable: esg	**(1)**	**(2)**	**(3)**
esg_{t-1}	0.689***	0.639***	0.634***
	(9.675)	(6.996)	(6.753)
nonwhites	-0.055**		
	(-2.248)		
covid	-0.002	-0.001	-0.000
	(-0.172)	(-0.039)	(-0.023)
nonwhites × covid	0.073***		
	(2.616)		
blau		-0.088*	
		(-1.701)	
blau × covid		0.130*	
		(1.953)	
shannon			-0.062*
			(-1.878)
shannon × covid			0.084*
			(1.901)
roa	-0.034	-2.225	-2.195
	(-0.038)	(-0.824)	(-0.780)
lev	-0.031	0.004	0.022
	(-0.223)	(0.018)	(0.085)
banksize	0.015**	0.019**	0.019**
	(2.442)	(2.498)	(2.512)
boardsize	-0.007**	-0.003	-0.003
	(-2.580)	(-0.663)	(-0.667)
meetings	-0.000	-0.009*	-0.010*
	(-0.175)	(-1.728)	(-1.888)
govcsr	0.108***	0.080	0.078
	(4.478)	(1.568)	(1.502)
Constant	-0.228*	-0.201	-0.198
	(-1.832)	(-1.231)	(-1.199)
Observations	1126	1126	1126
Number of banks	272	272	272
Instruments	37	32	32
Year dummies	✓	✓	✓
AR(1) p-value	0.000	0.000	0.000
AR(2) p-value	0.150	0.428	0.347
Hansen p-value	0.254	0.365	0.409

Note: Models (1)–(3) were estimated using the 2-step system GMM estimator. All t-statistics are enclosed in parentheses and are based on Windmeijer-corrected standard errors. Asterisks denote significance at 10% (*), 5% (**), and 1% (***). AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals (H_0: no serial correlation). The H_0 in the Hansen test is that our instruments are valid. In our estimations, we used the "collapse" option to prevent the problem of too many instruments.

As indicated by Lins et al. (2017), to navigate crises, firms tend to invest in more CSR-related activities. Therefore, one plausible explanation for the positive association between board ethnic heterogeneity and ESG performance during the COVID-19 outbreak is that the pandemic may have compelled organizations to place greater emphasis on ethical, sustainable, and inclusive practices as an insurance policy that pays off in times of socioeconomic hardships (Lins et al., 2017). Under these circumstances, the contribution of ethnically diverse directors—who are often better positioned to drive such initiatives—becomes particularly pronounced. Moreover, as noted by Al Amosh and Khatib (2023), organizations demonstrated heightened commitment to ESG initiatives during the COVID-19 pandemic, safeguarding stakeholders' interests while mitigating potential adverse reactions arising from noncompliance. Thus, in the context of heightened stakeholder pressure and public scrutiny, ethnically diverse boards, which tend to be more stakeholder-focused, may help companies prioritize long-term sustainability over short-term solutions. Overall, consistent with earlier research (Umar et al., 2022; Sajwani et al., 2024), our analysis reveals that diverse boards strengthened banks' ability to navigate pandemic-related disruptions by exercising prudent governance and embracing ESG initiatives.

5.3 Ethnic diversity, ESG performance, and Bank size

While bank size is regarded as a crucial factor in a bank's operations and management, prior studies have only included it as a control variable. In this subsection, we investigate whether bank size moderates the influence of boardroom ethnic diversity on ESG performance.

Larger corporations tend to be more willing to engage in ESG activities to sustain competitive advantage due to economies of scope, scale, and strategic resources (Drempetic et al., 2020). Additionally, larger corporations, due to heightened visibility and scrutiny from stakeholders, tend to invest in more ESG activities (Bissoondoyal-Bheenick et al., 2023). Therefore, the diverse and innovative perspectives of ethnic board minorities may be leveraged to a greater extent in larger corporations. However, Arnegger et al. (2014) assert that larger corporations are more susceptible to bureaucracy and core rigidity, which can reduce their directors' creative potential. Zona et al. (2013) support that the link between board diversity and corporate innovation is more pronounced in smaller corporations, where the boardroom members have greater opportunities to be involved in the details of corporate affairs. In addition, Li and Chen (2018) demonstrate that the size of the company undermines the beneficial impact of board heterogeneity on financial performance, indicating that board diversity benefits smaller firms. Specifically, they argue that smaller companies have fewer bureaucratic structures and complex operations, which facilitate the diverse board’s attention and creative ideas on strategic matters and thus benefit corporate performance. Moreover, the recent study by Al-Sarraf et al. (2025) supports the notion that the influence of boardroom diversity on ESG performance varies by firm size.

Table 8: The role of bank size on the nexus between boardroom ethnic diversity and ESG performance

Dependent variable: esg	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Bank size:	**ln(assets)**	**ln(assets)**	**ln(assets)**	**ln(revenue)**	**ln(revenue)**	**ln(revenue)**
esg_{t-1}	0.665***	0.658***	0.655***	0.644***	0.646***	0.648***
	(8.622)	(9.839)	(9.715)	(9.892)	(10.377)	(10.385)
nonwhites	-5.227***			-2.722**		
	(-3.847)			(-2.348)		
banksize	-0.015	-0.006	-0.006	-0.002	0.007	0.007
	(-1.223)	(-0.572)	(-0.484)	(-0.152)	(0.571)	(0.590)
nonwhites×banksize	0.221***			0.129**		
	(3.722)			(2.251)		
blau		-2.993***			-1.317*	
		(-3.290)			(-1.809)	
blau×banksize		0.125***			0.061*	
		(3.232)			(1.680)	
shannon			-1.831***			-0.791*
			(-3.035)			(-1.671)
shannon×bank size			0.076***			0.036
			(2.943)			(1.515)
roa	-0.990	-1.217	-1.157	-0.990	-1.298	-1.284
	(-0.351)	(-0.426)	(-0.384)	(-0.523)	(-0.677)	(-0.662)
lev	-0.180	-0.075	-0.075	0.304	0.258	0.254
	(-0.895)	(-0.433)	(-0.432)	(0.967)	(0.903)	(0.875)
boardsize	-0.005**	-0.005**	-0.005**	-0.005**	-0.005**	-0.005**
	(-2.019)	(-2.168)	(-2.287)	(-2.297)	(-2.392)	(-2.504)
meetings	-0.002	-0.002	-0.002	-0.000	-0.001	-0.001
	(-1.267)	(-1.151)	(-1.152)	(-0.312)	(-0.374)	(-0.420)
govcsr	0.119***	0.124***	0.122***	0.113***	0.111***	0.111***
	(3.625)	(4.102)	(4.002)	(4.272)	(4.162)	(4.159)
Constant	0.481*	0.276	0.268	0.157	-0.012	-0.019
	(1.868)	(1.195)	(1.067)	(0.723)	(-0.055)	(-0.086)
Observations	1126	1126	1126	1111	1111	1111
Number of banks	272	272	272	268	268	268
Instruments	34	34	34	39	39	39
Year dummies	✓	✓	✓	✓	✓	✓
AR(1) p-value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) p-value	0.328	0.257	0.271	0.118	0.110	0.118
Hansen p-value	0.585	0.596	0.536	0.658	0.823	0.813

Note: Models (1)–(6) were estimated using the 2-step system GMM estimator. Bank size (banksize) is measured by i) the natural logarithm of total assets (columns 1-3) and ii) the natural logarithm of total revenues (columns 4-6). All t-statistics are enclosed in parentheses and are based on Windmeijer-corrected standard errors. Asterisks denote significance at 10% (*), 5% (**), and 1% (***). AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals (H_0: no serial correlation). The H_0 in the Hansen test is that our instruments are valid. In our estimations, we used the "collapse" option to prevent the problem of too many instruments.

Following the convention in the literature (Drempetic et al., 2020), we measure bank size using: i) the natural logarithm of total assets and ii) the natural logarithm of total revenues. Then, we interact these variables with ethnic diversity proxies to examine whether the effect of ethnic diversity of bank boards on ESG performance depends on bank size.

As indicated in Table 8, bank size moderates the influence of boardroom ethnic diversity on ESG performance. Specifically, as bank size increases, the negative influence of boardroom ethnic minorities on ESG performance weakens, indicating that larger banks are better equipped (due to resource advantages, formalized governance process, and economies of scale) to handle diversity-related challenges and can potentially turn diversity into an asset for improving ESG performance. Furthermore, in untabulated analysis, we find that the average proportion of ethnically diverse directors is significantly lower in smaller banks compared to their larger counterparts. This makes tokenism issues even more intense in smaller banks, where diverse directors have limited influence and voice in decision-making, which in turn leads to lower ESG performance. Our results support the notion that the nexus between board diversity and bank outcomes needs to be understood in the context of firm-specific characteristics (Zona et al., 2013). Therefore, regulators should consider contextual factors, such as the size of financial institutions, when shaping diversity and ESG strategies (Al-Sarraf et al., 2025).

6 Conclusion

In recent years, the link between boardroom ethnic heterogeneity and ESG performance has gained substantial attention from academics, researchers, policymakers, and legislators. However, as far as we know, this topic has not yet been explored in the case of US banks. Therefore, this research intends to fill this gap in the existing research. By applying the 2-step system GMM methodology on a sample of 304 US banking institutions during the 2016-2021 period, we find that boardroom ethnic heterogeneity leads to lower ESG performance. Moreover, we provide evidence that the nexus between boardroom ethnic heterogeneity and US banks' ESG performance is described by a U-curve, indicating that after a certain threshold of 38.5%, the benefits of ethnic diversity (e.g., better monitoring, high-quality decision-making, and legitimacy) outweigh the drawbacks (e.g., conflicts, miscommunication, and stereotyping). The results remain consistent when we examine the corporate governance and social pillar scores, but do not apply to the environmental scores. In addition, we show that during the pandemic, the previously negative impact of ethnically diverse directors on ESG performance shifts and ultimately becomes positive. We also demonstrate that the impact of boardroom ethnic heterogeneity on ESG performance is contingent on bank size.

Our research makes several contributions to existing literature. This study enriches both the governance and ESG literature of banks by providing empirical evidence that ethnically diverse directors significantly affect the ESG performance of banking organizations. Furthermore, as

far as the authors know, this study represents the first empirical investigation into the linear and nonlinear relationships between boardroom ethnic diversity and the ESG performance of US banks. As a result, our empirical results provide valuable insights for regulators and lawmakers in the US. In addition, by exploring the effect of ethnic diversity on sustainable performance during the turbulent period of COVID-19, our study also contributes to the crisis literature. Finally, this research responds to recent calls for theory integration (Kagzi and Guha, 2018; Khatib et al., 2021; Baker et al., 2020) and tackles the issue of endogeneity.

Although this study is not free of limitations, these could inspire future research directions. First, this study relies on information from a single country, limiting the generalizability of its conclusions. Therefore, future studies can expand this empirical research by considering an international sample. Second, due to accessibility issues, our research focuses on Refinitiv's ESG scores as a performance measure. As a result, future studies can expand our research by using alternative ESG scores from different data sources (e.g., MSCI, Sustainalytics, and Bloomberg). Finally, future studies could build on this research by exploring the moderating effect of social norms on the relationship between boardroom diversity and ESG performance.

References

Al Amosh, H., & Khatib, S. F. (2023), ESG performance in the time of COVID-19 pandemic: cross-country evidence. *Environmental Science and Pollution Research*, 30(14), 39978-39993. https://doi.org/10.1007/s11356-022-25050-w

Al-Sarraf, J., Al-Swidi, A. K., & Al-Hakimi, M. A. (2025), Board diversity matters: assessing ESG performance through the lens of firm size. *Corporate Governance: The International Journal of Business in Society*. https://doi.org/10.1108/CG-11-2023-0495

Arnaboldi, F., Casu, B., Gallo, A., Kalotychou, E., & Sarkisyan, A. (2021), Gender diversity and bank misconduct. *Journal of Corporate Finance*, 71, 101834. https://doi.org/10.1016/j.jcorpfin.2020.101834

Arnaboldi, F., Casu, B., Kalotychou, E., & Sarkisyan, A. (2020), The performance effects of board heterogeneity: what works for EU banks? *The European Journal of Finance*, 26(10), 897-924. https://doi.org/10.1080/1351847X.2018.1479719

Baker, H. K., Pandey, N., Kumar, S., & Haldar, A. (2020), A bibliometric analysis of board diversity: Current status, development, and future research directions. *Journal of Business Research*, 108, 232-246. https://doi.org/10.1016/j.jbusres.2019.11.025

Bătae, O. M., Dragomir, V. D., & Feleagă, L. (2021), The relationship between environmental, social, and financial performance in the banking sector: A European study. *Journal of Cleaner Production*, 290, 125791. https://doi.org/10.1016/j.jclepro.2021.125791

Birindelli, G., Dell'Atti, S., Iannuzzi, A. P., & Savioli, M. (2018), Composition and activity of the board of directors: Impact on ESG performance in the banking system. *Sustainability*, 10(12), 4699. https://doi.org/10.3390/su10124699

Bissoondoyal-Bheenick, E., Brooks, R., & Do, H. X. (2023), ESG and firm performance: The role of size and media channels. *Economic Modelling*, 121, 106203. https://doi.org/10.1016/j.econmod.2023.106203

Blundell, R., & Bond, S. (1998), Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115-143. https://doi.org/10.1016/S0304-4076(98)00009-8

Buallay, A. (2019), Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98-115. https://doi.org/10.1108/MEQ-12-2017-0149

Byrne, D. E. (1971), *The attraction paradigm*. New York: Academic Press.

Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010), The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, 18(5), 396-414. https://doi.org/10.1111/j.1467-8683.2010.00809.x

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003), Corporate governance, board diversity, and firm value. *Financial Review*, 38(1), 33-53. https://doi.org/10.1111/1540-6288.00034

Drempetic, S., Klein, C., & Zwergel, B. (2020), The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal of Business Ethics*, 167(2), 333-360.

Estélyi, K. S., & Nisar, T. M. (2016), Diverse boards: Why do firms get foreign nationals on their boards? *Journal of Corporate Finance*, 39, 174-192. https://doi.org/10.1016/j.jcorpfin.2016.02.006

Flannery, M. J., & Hankins, K. W. (2013), Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, 19, 1-19. https://doi.org/10.1016/j.jcorpfin.2012.09.004

Freeman, R. E. (1984), *Strategic management: A stakeholder approach*. Boston: Pitman.

García-Meca, E., García-Sánchez, I. M., & Martínez-Ferrero, J. (2015), Board diversity and its effects on bank performance: An international analysis. *Journal of Banking & Finance*, 53, 202-214. https://doi.org/10.1016/j.jbankfin.2014.12.002

Haans, R. F., Pieters, C., & He, Z. L. (2016), Thinking about U: Theorizing and testing U-and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, 37(7), 1177-1195. https://doi.org/10.1002/smj.2399

Harjoto, M. A., Laksmana, I., & Yang, Y. W. (2019), Board nationality and educational background diversity and corporate social performance. *Corporate Governance: The International Journal of Business in Society*, 19(2), 217-239. https://doi.org/10.1108/CG-04-2018-0138

Harris, M., & Raviv, A. (2008), A theory of board control and size. *The Review of Financial Studies*, 21(4), 1797-1832. https://doi.org/10.1093/rfs/hhl030

Hartmann, C. C., & Carmenate, J. (2021), Does board diversity influence firms' corporate social responsibility reputation? *Social Responsibility Journal*, 17(8), 1299-1319. https://doi.org/10.1108/SRJ-04-2020-0143

Hillman, A. J., & Dalziel, T. (2003), Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396. https://doi.org/10.5465/amr.2003.10196729

Jensen, M. C., & Meckling, W. H. (1976), Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3, 305-360.

Jeyhunov, A., Kim, J. D., & Bae, S. M. (2025), The effects of board diversity on Korean Companies' ESG performance. *Sustainability*, 17(2), 787. https://doi.org/10.3390/su17020787

Johnson, S. G., Schnatterly, K., & Hill, A. D. (2013), Board composition beyond independence: Social capital, human capital, and demographics. *Journal of Management*, 39(1), 232-262. https://doi.org/10.1177/0149206312463938

Kagzi, M., & Guha, M. (2018), Does board demographic diversity influence firm performance? Evidence from Indian-knowledge intensive firms. *Benchmarking: An International Journal*, 25(3), 1028-1058. https://doi.org/10.1108/BIJ-07-2017-0203

Kang, H., Cheng, M., & Gray, S. J. (2007), Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An international Review*, 15(2), 194-207. https://doi.org/10.1111/j.1467-8683.2007.00554.x

Kanter, R. M. (1977), Some effects of proportions on group life: Skewed sex ratios and responses to token women. *American Journal of Sociology,* 82(5), 965-990.

Kara, A., Nanteza, A., Ozkan, A., & Yildiz, Y. (2022), Board gender diversity and responsible banking during the COVID-19 pandemic. *Journal of Corporate Finance*, *74*, 102213. https://doi.org/10.1016/j.jcorpfin.2022.102213

Khan, I., Khan, I., & Saeed, B. B. (2019), Does board diversity affect quality of corporate social responsibility disclosure? Evidence from Pakistan. *Corporate Social Responsibility and Environmental Management*, 26(6), 1371-1381. https://doi.org/10.1002/csr.1753

Khatib, S. F., Abdullah, D. F., Elamer, A. A., & Abueid, R. (2021), Nudging toward diversity in the boardroom: A systematic literature review of board diversity of financial institutions. *Business Strategy and the Environment*, 30(2), 985-1002. https://doi.org/10.1002/bse.2665

Kiliç, M., Kuzey, C., & Uyar, A. (2015), The impact of ownership and board structure on Corporate Social Responsibility (CSR) reporting in the Turkish banking industry. *Corporate Governance*, 15(3), 357-374. https://doi.org/10.1108/CG-02-2014-0022

Kizys, R., Mamatzakis, E. C., & Tzouvanas, P. (2023), Does genetic diversity on corporate boards lead to improved environmental performance? *Journal of International Financial Markets, Institutions and Money*, 84, 101756. https://doi.org/10.1016/j.intfin.2023.101756

Kong, G., Kong, T. D., Qin, N., & Yu, L. (2023), Ethnic diversity, trust and corporate social responsibility: the moderating effects of marketization and language. *Journal of Business Ethics*, 187(3), 449-471. https://doi.org/10.1007/s10551-022-05236-5

Kyaw, K., Olugbode, M., & Petracci, B. (2017), Can board gender diversity promote corporate social performance? *Corporate Governance: The International Journal of Business in Society*, 17(5), 789-802. https://doi.org/10.1108/CG-09-2016-0183

Li, H., & Chen, P. (2018), Board gender diversity and firm performance: The moderating role of firm size. *Business Ethics: A European Review*, 27(4), 294-308. https://doi.org/10.1111/beer.12188

Liao, G., Ma, M., & Yu, X. (2022), Transporting transparency: Director foreign experience and corporate information environment. *Journal of International Business Studies*, 53(7), 1343-1369. https://doi.org/10.1057/s41267-021-00488-1

Lins, K. V., Servaes, H., & Tamayo, A. (2017), Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. *The Journal of Finance*, 72(4), 1785-1824. https://doi.org/10.1111/jofi.12505

Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018), Board gender diversity and ESG disclosure: evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206-224. https://doi.org/10.1108/JAAR-01-2017-0024

Masulis, R. W., Wang, C., & Xie, F. (2012), Globalizing the boardroom—The effects of foreign directors on corporate governance and firm performance. *Journal of Accounting and Economics*, 53(3), 527-554. https://doi.org/10.1016/j.jacceco.2011.12.003

Menicucci, E., & Paolucci, G. (2022), Board diversity and ESG performance: Evidence from the Italian banking sector. *Sustainability*, 14(20), 13447. https://doi.org/10.3390/su142013447

Naciti, V. (2019), Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, 237, 117727. https://doi.org/10.1016/j.jclepro.2019.117727

Nguyen, T., Locke, S., & Reddy, K. (2015), Does boardroom gender diversity matter? Evidence from a transitional economy. *International Review of Economics & Finance*, 37, 184-202. https://doi.org/10.1016/j.iref.2014.11.022

Ntim, C. G. (2015), Board diversity and organizational valuation: Unravelling the effects of ethnicity and gender. *Journal of Management & Governance*, 19(1), 167-195. https://doi.org/10.1007/s10997-013-9283-4

Oh, S., Ding, K., & Park, H. (2021), Cross-listing, foreign independent directors and firm value. *Journal of Business Research*, 136, 695-708. https://doi.org/10.1016/j.jbusres.2021.06.059

Owen, A. L., & Temesvary, J. (2018), The performance effects of gender diversity on bank boards. *Journal of Banking & Finance*, 90, 50-63. https://doi.org/10.1016/j.jbankfin.2018.02.015

Paolone, F., Pozzoli, M., Chhabra, M., & Di Vaio, A. (2024), Cultural and gender diversity for ESG performance towards knowledge sharing: empirical evidence from European banks. *Journal of Knowledge Management*, 28(11), 106-131. https://doi.org/10.1108/JKM-05-2023-0445

Pfeffer, J., Salancik, G. (1978), *The External Control of Organizations: A Resource Dependence Perspective*. New York: Harper and Row.

Prunty, D. (2021), Board Diversity Requirements: Comparison of US and European Law, *International Program Papers*, 128 (Last accessed April 2024).

Quintana-García, C., Marchante-Lara, M., & Benavides-Chicón, C. G. (2022), Boosting innovation through gender and ethnic diversity in management teams. *Journal of Organizational Change Management*, 35(8), 54-67. https://doi.org/10.1108/JOCM-05-2021-0137

Rao, K., & Tilt, C. (2016), Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics*, 138, 327-347. https://doi.org/10.1007/s10551-015-2613-5

Sajwani, B., Al-Shboul, M., & Maghyereh, A. (2024), Do board characteristics affect financial sustainability? The COVID-19 pandemic experience. *Journal of Financial Reporting and Accounting*. https://doi.org/10.1108/JFRA-11-2023-0648

Sandretto, D., Rizzi, A., & Esposito, G. (2025), Gender Diversity Leadership and ESG Performance: The Influence of Women on Boards and in Management. *Business Strategy and the Environment*, 34(4), 5075-5094. https://doi.org/10.1002/bse.4241

Schultz, E. L., Tan, D. T., & Walsh, K. D. (2010), Endogeneity and the corporate governance-performance relation. *Australian Journal of Management*, 35(2), *145-163.* https://doi.org/10.1177/0312896210370079

Shakil, M. H., Tasnia, M., & Mostafiz, M. I. (2021), Board gender diversity and environmental, social and governance performance of US banks: Moderating role of environmental, social and corporate governance controversies. *International Journal of Bank Marketing*, 39(4), 661-677. https://doi.org/10.1108/IJBM-04-2020-0210

Shatnawi, A., Al-Gasawneh, J., Mansur, H., & Alresheedi, A. (2022), The effect of board nationality and educational diversity on CSR performance: Empirical evidence from Australian companies. *Uncertain Supply Chain Management*, 10(4), 1467-1478.

Shen, C. H., Wu, M. W., Chen, T. H., & Fang, H. (2016), To engage or not to engage in corporate social responsibility: Empirical evidence from global banking sector. *Economic Modelling*, 55, 207-225. https://doi.org/10.1016/j.econmod.2016.02.007

Toumi, N. B. F., Khemiri, R., & Makni, Y. F. (2022), Board directors' home regions and CSR disclosure: evidence from France. *Journal of Applied Accounting Research*, 23(2), 509-539. https://doi.org/10.1108/JAAR-02-2021-0032

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987), *Rediscovering the social group: A self-categorization theory*. Oxford, England: Blackwell.

Umar, U. H., Jibril, A. I., & Musa, S. (2023), Board attributes and CSR expenditure before and during COVID-19. *Journal of Financial Reporting and Accounting*, 21(4), 800-819. https://doi.org/10.1108/JFRA-05-2022-0197

Varouchas, E., Arvanitis, S., Agiomirgianakis, G., & Floros, C. (2024), Boardroom tenure, financial expertise and bank performance: a nonlinear dynamic framework. *Applied Economics*, 1-17. https://doi.org/10.1080/00036846.2024.2414921

Varouchas, E., Arvanitis, S., Mamatzakis, E., & Agiomirgianakis, G. M. (2024), Examining the influence of gender and ethnic diversity on bank performance: empirical insights from the USA. *International Journal of Banking, Accounting and Finance*, 14(4), 513-558. https://doi.org/10.1504/IJBAAF.2024.144602

Velte, P. (2017), Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility*, 8(2), 169-178. https://doi.org/10.1108/JGR-11-2016-0029

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012), Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3), 581-606. https://doi.org/10.1016/j.jfineco.2012.03.005

Wong, S. L. (2024), The impact of female representation and ethnic diversity in committees on environmental, social and governance performance in Malaysia. *Society and Business Review*, 19(2), 207-229. https://doi.org/10.1108/SBR-02-2023-0052

Yilmaz, M. K., Hacioglu, U., Tatoglu, E., Aksoy, M., & Duran, S. (2023), Measuring the impact of board gender and cultural diversity on corporate governance and social performance: evidence from emerging markets. *Economic research-Ekonomska istraživanja*, 36(2). https://doi.org/10.1080/1331677X.2022.2106503

Zaid, M. A., Wang, M., Adib, M., Sahyouni, A., & Abuhijleh, S. T. (2020), Boardroom nationality and gender diversity: Implications for corporate sustainability performance. *Journal of Cleaner Production*, 251, 119652. https://doi.org/10.1016/j.jclepro.2019.119652

Zaman, R., Asiaei, K., Nadeem, M., Malik, I., & Arif, M. (2024), Board demographic, structural diversity, and eco-innovation: International evidence. *Corporate Governance: An International Review*, 32(3), 374-390. https://doi.org/10.1111/corg.12545

Zona, F., Zattoni, A., & Minichilli, A. (2013), A contingency model of boards of directors and firm innovation: The moderating role of firm size. *British Journal of Management*, 24(3), 299-315. https://doi.org/10.1111/j.1467-8551.2011.00805.x