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The effects of diversity and inclusion on ESG performance: A comparison between Islamic and conventional banks

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ABSTRACT

This study analyzes the effects of diversity, inclusion, and people development (DIP) on environmental, social, and governance (ESG) performance in Islamic and conventional banks from 2015 to 2022. Using data from Refinitiv database, it reveals that a more diverse and inclusive workplace is found to have better overall ESG performance and both pillars (environmental and social performance). This positive and significant association is more pronounced in Islamic banks than in its conventional counterpart. However, no significant effect was found on governance performance. These findings are robust to several sensitivity analyses based on some alternative measures. To the best of the authors' knowledge, this is the first empirical study investigating the effects of diversity, inclusion, and people development on ESG performance, using multi-country data on Islamic and conventional banks.

1. Introduction

Since the affirmation of the significance of the Paris Agreement on Climate Protection 2010, compelling 195 sovereign nations and territories to transition toward a climate-friendly global economy, coupled with the introduction of the 2015 Sustainable Development Agenda by the United Nations (UN), it has catalyzed multisector firms including the banking sector to align its actions with environmental, social, and governance (ESG) goals (Quick et al., 2023). The finance industry, particularly the banking sector, is recognized for its pivotal role in efficiently channeling financial funds and facilitating the allocation of economic resources. There has been a noticeable increase in banks strategically shifting their focus towards ethical and socially responsible aspects, aiming to build stakeholder confidence and trustworthiness (Coulson, 2009). The increased ESG importance has also garnered the interest of numerous scholars to identify the factors that can enhance ESG performance, particularly in the banking sector (Bhaskaran et al., 2020; Birindelli et al., 2018; El Khoury et al., 2023). Some various dimensions of corporate governance, for instance, the representation of women in executive management and board diversity (Barako & Brown, 2008; Shakil et al., 2020), the presence of CSR committee and board size (Brindelli et al., 2018), board independence (Jizi et al., 2014), and ownership structure (Agnese et al., 2022) have been identified by several scholars as key influencers of banks' ESG performance. It is noteworthy, however, that most existing research on ESG in the banking sector predominantly focuses on conventional banks.

On the one hand, the assets of the Islamic finance industry globally have experienced rapid development in the last few decades which were estimated to be worth US$2.4 trillion in 2017 and are projected to achieve a compound annual growth rate (CAGR) of 6 percent, reaching US$3.8 trillion by 2023 (Thomson Reuters, 2020). In particular, Islamic banking has become the most developed sector of the Islamic finance

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industry, taking up to 71 percent of the total assets in this industry (Thomson Reuters, 2018). Moreover, Islamic banking is a preferred option not only in predominantly Muslim nations, but it is also a growing financial alternative in numerous Western countries, attributed to ethical and moral economy principles, as well as the perceived social justice and human well-being principle (Asutay, 2012; Mergaliyev et al., 2021). Furthermore, a significant challenge in the Western world is the continuing skepticism about integrating religious considerations into the economic sphere as, following the recent global financial crisis, emphasis on legal and ethical principles is deemed more crucial than religious considerations (Jawadi et al., 2014).

The acceptance of the Islamic banking framework extends beyond the countries with a Muslim majority and potentially fosters a profound adoption of the value of diversity. Several prior studies in the field of the Islamic bank sector have documented that diversity in educational background, nationality, and gender on its Shariah Supervisory Board (SSB) will increase Islamic bank performance (AlAbbad et al., 2019; Nomran et al., 2018; Kachkar & Yilmaz, 2023). Besides, some regulatory bodies have introduced diversity issues in Islamic bank's regulation. For example, the Malaysian Code of Corporate Governance (MCCG) revision in 2017 also marks the greater emphasis on the importance of women representation by allocating at least 30 percent women directors at Malaysian Islamic banks (MCCG, 2017). In addition, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), in its exposure draft no 8, allocates several key attributes on SSB, including the inclusion of representative/key scholars from multiple countries/jurisdictions, encompassing a variety of expertise within the membership, and upholding a commitment to gender inclusivity without discrimination (AAOIFI, 2017). These practices are naturally reflected in the primary principle of IB, *maqasid sharia* (the objectives of Islamic principles), specifically protecting people (*nifzun nafs*) and offspring (*hifzunn nasb*), following Islamic instruction. Therefore, Khan (1991) argued that banks can address socio-economic challenges that have proven resistant to resolution within the frameworks of conventional neoclassical economics. Diversity and inclusion have also been embedded in Islamic bank principles.

Observing the current literature on diversity, we found that this issue has been largely discussed in various fields, including corporate governance (Adams & Ferreira, 2009; Ali et al., 2023; Campbell & Mínguez-Vera, 2008; Owen & Temesvary, 2018). Attention has been given to diversity issues after the release of the pioneering studies of Farrell and Hersch (2005). However, it has been limitedly fragmented into some gender-related issues separately, such as the percentage of women at the board/top management level (Biswas et al., 2023; Campbell & Mínguez-Vera, 2008), gender pay gap (Keller et al., 2023; Magda & Sałach, 2023). Consequently, the accumulative effects of diversity-oriented policy and action have been less observed, with several exceptional studies constructing an index to capture multiple diversity-oriented indicators (del Rio et al., 2021; Dilli et al., 2019). Moreover, there is a lack of focus on various issues related to inclusion and people development, such as the representation of employees with disabilities, the promotion of flexible working hours, the career development policy.

Furthermore, studies investigating the effects of diversity on a firm's performance have been increasingly found in the current literature (Dong et al., 2023; Reguera-Alvarado et al., 2017; Sharma et al., 2024). As a development, some scholars (Velte, 2016; Yadav & Prashar, 2023) have also extended their research to examine diversity's effect on non-financial performance, such as ESG performance, including in the context of the banking sector (Menicucci & Paolucci, 2023). Yet, particularly in the context of Islamic banks, the effect of diversity on a firm's performance has still been marginally addressed. To the best of the authors' knowledge, Jabari and Muhamad (2020) are the first empirical study investigating the relationship between these two in Islamic banks. However, they only focus on the financial aspect, leaving the more substantial ESG aspect undiscovered. There is a shortage of research examining the comprehensive DIP performance covering the multidimensional elements of diversity, inclusion, and people development in addressing stakeholders' interest in various ESG issues, particularly in Islamic banking.

This study fills a gap in the research and, thus, provides empirical evidence using newly introduced and comprehensive DIP scores to investigate its effect on ESG performance in conventional and Islamic banks. We also extend the existing literature by comparing multi-country samples of Islamic and conventional banks and empirically examining DIP effects on each dimension of environmental, social, and governance performance separately. We obtain DIP and ESG scores from Refinitiv databases for eight years (2015–2022). The final sample of this study consists of 31 Islamic banks and 59 conventional banks in 11 countries, resulting in 333 bank-year observations.

This study has three main findings. First, a more diverse and inclusive workplace is found to have better ESG performance. Second, when the pillars are separately analyzed, the results prove that improvement in diversity, inclusion, and people development will strongly enhance environmental and social performance but is slightly less strongly in governance performance. Third, when analyzing the subsamples separately, it is observed that the linear relationship between DIP score and ESG performance is more pronounced in Islamic banks than in its conventional counterpart. Moreover, looking more closely into each pillar, an insignificant effect of the DIP score on governance performance in conventional banks is documented.

This research contributes to the current literature in multiple ways. Firstly, this study extends the current literature on diversity (Aljughaiman et al., 2023; Elgadi & Ghardallou, 2022; Kochan et al., 2003), which mainly focuses on the representation of women/diverse racial backgrounds and often overlooks other minority groups (the disabled people, employees with children, etc.). This study also complements those studies using a comprehensive DIP score by Refinitiv but has failed to establish a positive effect of DIP on their investigated variables. Second, this study complements the existing literature examining Diversity in Islamic banks, focusing on its effect on financial performance (Jabari & Muhamad, 2020; Khan et al., 2024). This study provides empirical evidence that implementing DIP could significantly drive ESG performance, which is currently high on the agenda for major corporations. Third, building on the current literature exploring the effects of banks' diversity and ESG performance (Menicucci & Paolucci, 2023; Shakil et al., 2020), this study adds new insights into its comparative effect on Islamic and conventional banks. We empirically provide evidence that the effect of DIP on ESG performance is more pronounced in Islamic banks compared to its conventional counterpart.

The remainder of the article is structured as follows. Section 2 reviews DIP and ESG Performance literature to formulate the relevant hypotheses. Section 3 presents the details of data, sample, and empirical models. Section 4 elaborates on the empirical findings from the regression results, and Section 5 concludes with a summary, implications, and limitations of the study.

2. Literature review and hypothesis development

Despite the growing awareness of diversity, inclusion, and people development globally, there is a disproportionate number of studies on these issues, with a heavy discussion on diversity and leaving the other two relatively undiscovered. Studies that have already been conducted, in particular on diversity, have produced a variety of findings regarding the importance of diversity's influence on the performance of ESG. A majority of studies have found positive effects on ESG performance (Galletta et al., 2022; Menicucci & Paolucci, 2023; Shakil et al., 2020; Wong, 2023; Yadav & Prashar, 2023); however, some studies have documented negative effects (Cucari et al., 2018; Husted & Sousa-Filho, 2019) and few studies have reported no significant results (Manita et al., 2018; Nguyen et al., 2021).

By examining a sample of 808 observations from 49 countries over

the period 2011 to 2019, Galletta et al. (2022) have demonstrated that increasing the percentage of female directors can enhance both financial and environmental performance. They discovered that banks with female directors could be crucial in developing emission reduction strategies. Moreover, Manita et al. (2018) advocates several possible reasons why female board members are more likely to be active in a firm's CSR strategy from stakeholder theory. Women have communal characteristics, such as being empathic and supportive, that lead to fulfilling stakeholder's interests. Rather than being business professionals, women are more likely to receive help from specialists or influential members of the community since they have a wider background and skills outside of business (Hillman et al., 2002). Women's characteristics and experience are more likely to affect a firm's corporate social responsibility and its stakeholders because women are more perceptive of specific organizational practices, such as corporate responsibility (Manita et al., 2018). However, Menicucci and Paolucci (2023) showed that the presence of women on the board positively affects ESG performance up to a certain threshold in Italian banking. Moreover, Yadav and Prashar (2023) determined that there should be three or more women directors since more women can draw attention to themselves and improve environmental performance.

Conversely, Husted and Sousa-Filho (2019) and Cucari et al. (2018) have found negative effects between the presence of women on the board and ESG disclosure. However, their studies may not be generalizable as they focused only on a limited country sample and did not include a sample of Islamic banks. For instance, Cucari et al. (2018) exclusively used data from Italian-listed companies, while Husted and Sousa-Filho (2019) used data from Brazil, Chile, Colombia, and Mexico. Moreover, Manita et al. (2018) and Nguyen et al. (2021) have found no significant relationship between board gender diversity and ESG performance. The insignificant relationship is caused by some factors including a low presence of women in the context of heavily polluting firms in China. Overall, we hypothesize that more diverse and inclusive banks will perform better in ESG aspects.

Hypothesis 1. A positive relation is found between DIP scores and ESG performance.

3. Research methodology

3.1. Research data and sample

Based on the preliminary group of IBs retrieved from Refinitiv Eikon datastream, we select 31 Islamic banks (IBs) for our study based on the existing data on the DIP score. To compare them with conventional banks, we searched for the conventional banks in the same countries where Islamic banks operate. Hence, we select 59 conventional banks in 11 countries. Table 1 presents a detailed distribution of the samples in each country. Our final sample covers an eight-year period, 2015–2022, with 79 observations of IBs and 254 observations of conventional banks. The filtering process that yields the final sample is presented in Table 2.

Table 1
Distribution of samples by country.

No	Countries	Islamic Banks	Conventional Banks	Full sample	Obs	% Islamic Bank
1	Bahrain	5	2	7	14	71%
2	Egypt	2	2	4	13	50%
3	Indonesia	1	10	11	44	9%
4	Jordan	2	4	6	10	33%
5	Kuwait	4	4	8	26	50%
6	Oman	1	5	6	26	17%
7	Pakistan	3	5	8	21	38%
8	Qatar	4	3	7	31	57%
9	Saudi Arabia	4	6	10	50	40%
10	Turkey	1	8	9	44	11%
11	United Arab Emirates	4	10	14	54	29%
Total		31	59	90	333	34%

3.2. Measures of dependent and explanatory variables

Table 3 provides the definition and measurement of and source for all the variables in this study. ESG performance, the dependent variable, is proxied by an ESG score calculated based on the combined scores of the three pillars: environmental (ENV), social (SOC), and governance (GOV). The environmental (ENV) score assesses a company's commitment to decreasing environmental emissions in its operations, reducing environmental expenses for consumers, and lowering the consumption of resources, such as water, energy, and raw materials. The social (SOC) score examines how responsible a company is, in terms of protecting public health and maintaining ethical business practices. It evaluates the ability of a company to deliver high-quality goods and services while prioritizing consumers' health and safety and maintaining integrity and customer data privacy. Additionally, it assesses the effectiveness of a company in adhering to human rights conventions (Refinitiv, 2022). Lastly, the GOV score encompasses three key dimensions: the management score, which indicates the effectiveness of implementing best practices in corporate governance; the shareholder score, highlighting fair treatment, which includes defenses against a takeover; and the CSR strategy score, which reflects a company's approach to transparent communication of the corporate social responsibility (CSR) initiatives in everyday operations.

The DIP score, the explanatory variable, is captured based on 24 metrics for measuring diversity, inclusion, and people development (see Appendix 1). The diversity pillar includes cultural diversity on the board, gender diversity, and the diversity process. Inclusion is evaluated by factors such as flexibility in working hours, availability of day-care services, and the proportion of employees with disabilities. Meanwhile, people development is assessed by the extent to which the bank's policies facilitate skills training, assessment of employee satisfaction, career development, and internal promotion at the bank (Refinitiv, 2022). The data are extracted from Refinitiv databases, which gather the relevant information from publicly accessible sources and then calculate the overall DIP score. The DIP score is from 0 to 100, with 0 indicating poor performance and 100 indicating high performance (Bax, 2023).

Following some related literature, this study uses three control variables at the firm's financial, governance, and country levels. The financial control variables include firm size, leverage, and capital structure (Boudawara et al., 2023; Cillo et al., 2022; Haque & Ntim, 2020). To construct the corporate governance indicators, we employ board size, board independence, and CEO duality (Galletta et al., 2022; Haque & Ntim, 2020; Jabari & Muhamad, 2020). Lastly, macroeconomic control variables cover inflation, gross domestic product (GDP), the Human Development Index (HDI), and carbon dioxide emissions (Birindelli et al., 2019; Boudawara et al., 2023; Mollah et al., 2017).

3.3. Empirical models and estimated method

Because our data have a cross-sectional and time-series dimension,

Table 2
Sample selection.

	IBs	CBs	Total Observations
All bank 8-year observations based on the availability of ESG score	118	350	468
Less: Observations with insufficient data on DIP score	39	96	135
Final Sample	79	254	333

Table 3
Definition and source of variables.

Variables name	Symbol	Explanation	Sources
Dependent Variable			
ESG Performance	esg	A composite index of Environmental, social, and governance score	Refinitiv Eikon
Environmental Performance	env	Environmental score covering emission, innovation, and resource use categories with 68 metrics assessment	Refinitiv Eikon
Social Performance	soc	Social score covering community, human right, product responsibility and workforce categories with 62 metrics assessment	Refinitiv Eikon
Governance Performance	gov	Governance score covering CSR strategy, management, and shareholders with 56 metrics assessment	Refinitiv Eikon
Independent Variable			
DIP total score	dip	A composite index of Diversity, Inclusion and People Development total score	Refinitiv Eikon
DIP diversity	div	8 indicators for Diversity assessment	Refinitiv Eikon
DIP inclusion	incl	5 indicators for Inclusion assessment	Refinitiv Eikon
DIP people development	people	7 indicators for People development assessment	Refinitiv Eikon
Control Variable			
Corporate governance variable			
Board size	bsize	The total number of BOD members	Refinitiv Eikon
CEO duality	ceo	A dummy variable indicating a separation of roles of the CEO and board chairperson	Refinitiv Eikon
Firm Characteristics variable			
Firm Size	fsize	Natural logarithm of total assets	Refinitiv Eikon
Capital Structure	capstr	The ratio of total equity to total assets	Refinitiv Eikon
Leverage	lev	The ratio of total debt to total assets	Refinitiv Eikon
Market to Book Value	mbv	The ratio of total market capitalisation to total equity	Refinitiv Eikon
Macroeconomics variable			
Country Emission	co2	Country CO2 emission in the year t	World Bank Database
Country Human Development Index	hdi	Country Human Development Index in the year t	Human development data center - UNDP database

we employ a panel regression model to test our hypothesis. To select the appropriate regression technique for our data, we conduct several tests suggested by Dougherty (2011) using Stata software, which includes the Breusch and Pagan (1980) Lagrange multiplier (LM) test for serial correlation and random effects as well as the modified Wald test for heteroskedasticity (Laskar & King, 1997). First, we run the Breusch and Pagan LM test and find potential serial correlation and random effects in our model ($p = 0.000$). Hence, pooled ordinary least squares (OLS) regression is not recommended for our study because the samples in our study might be highly heterogeneous, as our data consist of many different companies that could have unobserved differences. Therefore, we use a fixed-effects model and control for all time-invariant characteristics, enabling us to account for unobserved heterogeneity (Rehman et al., 2024). Furthermore, as in prior studies (i.e., Aljifri, 2023), we use robust standard errors (vce option) and cluster them at the firm (bank) level, to account for potential heteroskedasticity and serial correlation.

In addition, our model accounts for year and country effects. Accordingly, the main equation is as follows:

$$ESG_{it} = \beta_0 + \beta_1 * DIP_{it} + \sum_{i=2}^{n} \beta_i CONTROLS_{it} + \sum_{i=1}^{n} \beta_n Country_Dummies_{it} + \sum_{i=1}^{n} \beta_n Year_Dummies_{it} + \delta_t + \varepsilon_{it} \quad (1)$$

To measure the relationship between each pillar of ESG performance and the DIP score, we also estimate the following models:

$$ENV_{it} = \beta_0 + \beta_1 * DIP_{it} + \sum_{i=2}^{n} \beta_i CONTROLS_{it} + \sum_{i=1}^{n} \beta_n Country_Dummies_{it} + \sum_{i=1}^{n} \beta_n Year_Dummies_{it} + \delta_t + \varepsilon_{it} \quad (2)$$

$$SOC_{it} = \beta_0 + \beta_1 * DIP_{it} + \sum_{i=2}^{n} \beta_i CONTROLS_{it} + \sum_{i=1}^{n} \beta_n Country_Dummies_{it} + \sum_{i=1}^{n} \beta_n Year_Dummies_{it} + \delta_t + \varepsilon_{it} \quad (3)$$

$$GOV_{it} = \beta_0 + \beta_1 * DIP_{it} + \sum_{i=2}^{n} \beta_i CONTROLS_{it} + \sum_{i=1}^{n} \beta_n Country_Dummies_{it} + \sum_{i=1}^{n} \beta_n Year_Dummies_{it} + \delta_t + \varepsilon_{it} \quad (4)$$

where ESG and its pillars (ENV, SOC, GOV) are dependent variables for bank *i* in year *t*, and DIP is the independent variable. β1 is the coefficient for the independent variables, and β*i* are the coefficients for the control variables. We incorporate time and country dummy variables, with ε_{it} as the error term.

4. Results and discussion

4.1. Descriptive statistics

Table 4 gives the descriptive statistics of all the variables, comparing samples of Islamic banks in Columns (1)–(4) to conventional banks in Columns (5)–(8), followed by a two-sample *t*-test in the last column. The *t*-test for the dependent variables shows that overall ESG score and its pillars are significantly higher for conventional banks than Islamic banks. Meanwhile, the overall DIP score and its components (except Inclusion) for the independent variables, is also significantly greater for conventional banks than Islamic banks. These preliminary results generally reveal that ESG and DIP performance are better at conventional banks than at Islamic banks (51.399 vs, 33.186; 40.369 vs, 34.889, respectively).

Furthermore, the *t*-test results vary across governance-level characteristics, in which a significant statistical difference is found between IBs and conventional banks regarding board size and board independence: conventional banks have a smaller board size but higher board independence. Nevertheless, insignificant differences are found between IBs and conventional banks in one governance characteristic (CEO duality) and all the firm-level characteristics (roa, capin, lev). However, we find a significant difference in all country-level characteristics (carbon emissions, GDP, HDI, and inflation), in which conventional banks have higher values than of IBs, except for the HDI.

Moreover, as illustrated by the coefficients in the correlation matrix (Table 5), the DIP score and its components (diversity, inclusion, and people development) are positively correlated with the ESG score and its

Table 4
Descriptive statistics.

Variables	N	Islamic Banks				Conventional Banks				Paired *T*-test
		Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max	
dip (%)	333	34.889	12.428	3.25	68.75	40.369	15.623	3.5	69.75	2.8487***
div (%)	333	9.987	11.754	0	45	18.385	14.767	0	56	4.6186***
incl (%)	333	11.897	23.668	0	88	16.429	22.955	0	90	1.5214
people (%)	333	25.419	17.166	0	68	35.499	23.989	0	84	3.4673***
esg (%)	333	33.168	15.753	5.92	67.404	51.399	19.801	12.314	91.308	7.4779***
env (%)	333	13.882	20.847	0	86.314	36.095	29.934	0	97.256	6.1453***
soc (%)	333	28.683	18.893	1.336	72.497	52.105	25.328	6.364	98.394	7.5858***
gov (%)	333	47.63	22.109	4.493	84.967	57.509	20.888	11.818	93.766	3.6204***
bsize (absolute)	333	9.924	1.907	6	17	8.846	3.287	0	17	−2.770***
ceo (dummy)	333	0.987	0.112	0	1	0.952	0.212	0	1	−1.386
fsize (ln)	333	23.727	1.119	20.474	26.036	24.224	1.159	19.483	26.434	3.352***
capstr (ratio)	333	0.117	0.034	0.004	0.178	0.134	0.054	0.046	0.705	2.612***
lev (ratio)	333	.114	.137	0	.749	.101	.121	0	.899	0.5638
mbv (ratio)	333	2.350	2.124	0.319	13.488	1.429	1.229	.231	7.449	−4.801***
co2 (billion tonnes)	333	2.711	2.378	0.255	6.723	3.313	2.233	0.249	6.723	2.059***
hdi (score)	333	.836	0.088	.544	.92	.803	0.096	.534	.92	−2.701***

pillars (environmental, social, and governance). Gujarati (2004) suggests that if the correlation coefficient among the predictors is above the threshold of 0.80, a severe multicollinearity issue might exist, but that is not the case in this study. The correlation matrix shows that none of the coefficients (except the overall ESG score and its pillars) exceeds this threshold, signaling the absence of multicollinearity issues.

4.2. Regression analysis

Table 6 shows the results of regressing the DIP score on the ESG score in Columns (1)–(3): the full sample in Column 1 and Islamic and conventional banks in Columns (2) and (3), respectively. The results show across all panels that DIP scores, at both the total and pillar levels, might significantly enhance the overall ESG performance of banks, suggesting that H1 is confirmed. A more diverse and inclusive firm is statistically proven to be "greener," more oriented toward society, and better governed, as supported by Galletta et al. (2022) and Wong (2023). Despite the limited number of studies on the other two indicators, inclusion and people development, we can still support the positive association between diversity and ESG performance posited by multiple studies (Shakil et al., 2020; Yadav & Prashar, 2023). Our findings suggest that diversity and inclusion policies and targets, including higher representation of females and minority groups in the workplace at all levels (from new employee to manager/director), could drive banks to become more sensitive and more likely to engage in ethical activities that address the interests of a larger stakeholder group, as represented by their ESG performance.

This result appears to apply not only to the full sample but also to the subsamples of Islamic and conventional banks when analyzed separately. IBs have a higher coefficient than conventional banks (0.434 vs. 0.137), indicating that diversity and inclusion have a greater influence on IBs' ESG performance. This result contradicts Umar and Musa (2020), which suggests that diversity at IBs does not affect corporate philanthropic giving, as they focus on one country (Bangladesh), in which no female director was appointed during the period studied. Our study uses a cross-country sample, whose scope was not limited to diversity at the board level. Moreover, this study shows that Islamic banks have increasingly internalized the spirit of diversity and inclusion and shaped them to devise more relevant policies in response to growing awareness and pressure from various stakeholders. Furthermore, the issue of ESG is also highly aligned with Islamic principles, particularly with respect to *maqashid sharia* (Julia & Kassim, 2020).

Table 6 also reports the results from regressing the DIP score on the environmental score in Columns (4)–(6): the full sample in Column 4 and Islamic and conventional banks in Columns (5) and (6), respectively. Our study provides strong evidence that higher diversity and inclusion scores lead to better environmental performance. This finding is supported by previous studies (Cordeiro et al., 2020; Lu & Herremans, 2019; Wang et al., 2023), which suggest that diverse cultural backgrounds and experiences can be transferred to a firm through how it views and reacts to various environmental issues, in particular the way in which women play a pivotal function at various environmental organizations (Tindall et al., 2003) and are essential actors in numerous environmental movements (Merchant, 2012; Mohai, 2014; Zelezny et al., 2000). This significant result is also obtained for IBs, which have a higher positive coefficient than conventional banks (0.355 vs 0.219). It is in line with the results in previous studies (Kolsi & Al-Hiyari, 2023; Sharmeen et al., 2019), which show that IBs, on average, are more environmentally friendly than conventional banks. One possible explanation for this is that most Islamic banks are in developing economies, which are very vulnerable to the detrimental effects of the climate crisis. As suggested by Kreft et al. (2017), nine out of the ten most affected countries are developing economies.

Table 6 also shows the results of regressing the DIP score on the social score in Columns (7)–(9): the full sample in Column (7) and Islamic and conventional banks in Columns (8) and (9), respectively. We find a positive link between the DIP score and social performance. This evidence corroborates prior studies (Hafsi & Turgut, 2013; Harjoto et al., 2019; Yilmaz et al., 2021), which posit that greater diversity can significantly improve a firm's social performance through closer engagement with the community, protection of human rights, workplace welfare, and product responsibility. This significant result also applies to both subsamples, and Islamic banks have a higher coefficient than their conventional counterparts (0.577 vs. 0.232). It also demonstrates the significance of diversity and inclusion in driving IBs to fulfill the original motive for their establishment, which is to promote social justice and redistribution of wealth (Alhammadi et al., 2022; Mergaliyev et al., 2021), as an alternative to the mainstream conventional banks.

Columns (10)–(12) of Table 6 shows the results from regressing the DIP score on the governance score: the full sample in Column (10) and Islamic and conventional banks Columns (11) and (12), respectively. With respect to governance performance, we do not find statistical evidence of a relationship between the DIP score and ESG performance. This finding contradicts the findings by Wasiuzzaman and Wan Mohammad (2020), wh o focus on ESG disclosure, not ESG performance as in this study. Moreover, the results are only weakly significant and even disappeared in their sensitivity analyses. In this regard, diversity and inclusion might improve transparency on governance issues but does not necessarily mean a greater focus on governance matters (e.g., fair compensation) as shown in prior studies (Carter et al., 2017; Sarhan et al., 2019), which find no significant effect between diversity and gender pay gaps/actual executive pay. This insignificant relationship is

Table 5
Correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) esg	1.000															
(2) env	0.802*	1.000														
(3) soc	0.929*	0.806*	1.000													
(4) gov	0.649*	0.252*	0.343*	1.000												
(5) dip	0.524*	0.506*	0.553*	0.174*	1.000											
(6) div	0.624*	0.607*	0.6068	0.290*	0.632*	1.000										
(7) incl	0.399*	0.382*	0.421*	0.123*	0.679*	0.514*	1.000									
(8) people	0.660*	0.590*	0.674*	0.287*	0.705*	0.716*	0.537*	1.000								
(9) bsize	0.109*	0.160*	0.132*	−0.009	0.072	−0.028	0.028	0.061	1.000							
(10) ceo	−0.056	−0.020	−0.011	−0.111*	−0.027	−0.059	0.079	−0.039	0.032	1.000						
(11) fsize	0.481*	0.446*	0.489*	0.219*	0.346*	0.222*	0.239*	0.501*	0.236*	−0.135	1.000					
(12) capstr	−0.140*	−0.186*	−0.188*	0.049	−0.030	−0.039	0.020	−0.048	−0.186*	0.107	−0.167*	1.000				
(13) lev	0.189***	0.202***	0.186***	0.076	0.011	0.189***	0.056	0.159***	0.041	0.018	−0.083	−0.174***	1.000			
(14) mbv	0.063	−0.064	−0.024	0.244*	−0.014	−0.112*	−0.009	−0.019	−0.006	−0.088	0.111*	0.066	0.219(	1.000		
(15) co2	0.304*	0.215*	0.331*	0.130*	0.263*	0.242*	0.232*	0.414*	−0.024	−0.032	0.322*	0.140*	0.170*	0.195*	1.000	
(16) hdi	−0.170*	−0.077	−0.160	−0.140*	0.046	0.004	−0.005	0.123*	0.109*	−0.023	0.193*	0.150*	−0.033	0.042	−0.094	1.000

***, **, and * indicates that p-value is below 0.01, 0.05, and 0.1, respectively.

Table 6
The effect of DIP score on each ESG performance and its pillars.

VARIABLES	Full	IB	CB	Full	IB	CB	Full	IB	CB	Full	IB	CB
	esgscore	esgscore	esgscore	env_score	env_score	env_score	soc_score	soc_score	soc_score	gov_score	gov_score	gov_score
dirscore	0.253***	0.434**	0.137*	0.323***	0.355*	0.219*	0.325***	0.577***	0.232***	0.136	0.271	−0.0137
	(0.0806)	(0.182)	(0.0739)	(0.0997)	(0.192)	(0.114)	(0.0806)	(0.236)	(0.0745)	(0.105)	(0.195)	(0.103)
bsize	−0.255	−2.475**	0.219	−0.333	−2.571**	−0.0249	−0.104	−1.092	0.245	−0.429	−4.348**	0.310
	(0.233)	(1.204)	(0.240)	(0.346)	(1.199)	(0.371)	(0.260)	(1.424)	(0.286)	(0.342)	(1.723)	(0.356)
ceo	1.754	−29.51***	9.501**	5.624	1.605	9.196	6.595	−25.67***	15.38***	−6.498	−47.67***	1.964
	(3.408)	(2.310)	(4.188)	(4.966)	(3.594)	(5.821)	(4.227)	(2.761)	(4.705)	(5.296)	(4.017)	(6.267)
fsize	8.482***	1.248	7.280***	10.46***	4.243**	10.14***	9.459***	−0.231	8.545***	6.209***	2.004	4.127***
	(0.728)	(1.606)	(1.079)	(0.953)	(1.818)	(1.251)	(0.847)	(2.206)	(1.269)	(0.982)	(2.491)	(1.326)
capstr	20.07	74.13	−11.07	33.47**	166.0*	10.52	−6.954	36.48	−35.70*	50.98**	79.04	12.36
	(13.13)	(51.48)	(11.97)	(16.75)	(97.09)	(15.65)	(15.19)	(73.78)	(20.55)	(21.97)	(98.68)	(16.53)
mbv	2.008***	1.609*	4.703***	2.294***	2.731*	3.975***	1.500**	0.322	4.222***	2.624**	2.854	5.890***
	(0.680)	(0.886)	(0.811)	(0.594)	(1.461)	(0.961)	(0.664)	(0.939)	(0.779)	(1.110)	(2.049)	(1.269)
lev	22.15***	−38.43***	26.92***	17.18*	−39.59**	21.74**	15.06*	−48.06***	16.57*	33.83***	−24.19	43.20***
	(7.845)	(13.17)	(7.912)	(9.230)	(18.34)	(9.789)	(8.023)	(15.96)	(8.919)	(9.962)	(24.61)	(9.798)
co2	4.20e-08	−2.22e-07	2.22e-08	1.79e-07**	−8.37e-08	1.55e-07*	8.60e-08	−2.38e-07	8.37e-08	−5.66e-08	−2.94e-07	−9.70e-08
	(4.60e-08)	(1.72e-07)	(4.21e-08)	(7.94e-08)	(2.59e-07)	(8.30e-08)	(5.55e-08)	(1.80e-07)	(5.38e-08)	(6.99e-08)	(3.03e-07)	(6.95e-08)
hdi	104.3	−104.7	140.6	335.0*	487.0**	283.9	39.47	−268.3	97.64	122.3	11.38	145.5
	(149.1)	(193.4)	(146.2)	(184.0)	(239.1)	(208.3)	(161.3)	(174.8)	(136.5)	(213.5)	(368.3)	(238.9)
Year Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	−257.5*	128.7	−264.1**	−526.8***	−513.7**	−471.2**	−256.5*	260.1	−284.9**	−158.2	107.5	−142.6
	(133.4)	(175.3)	(132.8)	(161.7)	(231.7)	(183.2)	(143.8)	(166.6)	(125.6)	(189.1)	(337.8)	(211.3)
Observations	333	79	254	333	79	254	333	79	254	333	79	254
R-squared	0.649	0.675	0.741	0.701	0.755	0.710	0.717	0.669	0.800	0.342	0.560	0.450

Note: t-statistics estimated using robust standard errors are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

found for both Islamic and conventional banks.

4.3. Robustness check

We conduct several sensitivity tests to confirm the robustness of our main results. First, the main regression result demonstrates that more diverse and inclusive firms tend to enhance their ESG performance. However, diversity and inclusion policies might also be influenced by a firm's commitment to ESG issues (ESG performance). Therefore, to check for potential correlation between error terms and explanatory variables, we perform additional testing with two-stage least squares (2SLS) and generalized method of moments (GMM) regressions to account for potential endogeneity problems. In the 2SLS regression, we employ "DIP change" as the instrumental variable (IV), following Zahid et al. (2023). We measure DIP change by calculating the difference between the DIP score in the current year and the previous year. We argue that the DIP change satisfies the criteria of both relevance and exclusion for valid instruments, as it is correlated with the independent variable (i.e., DIP score) but uncorrelated with the dependent variable (ESG score).

In addition, we perform a fixed-effect GMM analysis, as suggested in prior studies (Aydemir & Guloglu, 2017; Baum et al., 2007). This method is different from the two-step difference and system GMM methods introduced by Arellano and Bond (1991) and Blundell and Bond (1998) in two ways. First, it assumes that the disturbances in the initial model are autocorrelated and heteroskedastic, which produce more efficient estimates. Second, it does not employ dynamic instruments, allowing the number of instruments to be static over time. These main characteristics of fixed-effect GMM fit our model, not only in terms of the static instruments in this study but also potential autocorrelation and heteroskedasticity, as indicated by the results for LM_{het} and F_{AC} in Table 7.

Table 7
Robustness tests: 2SLS & GMM regressions.

VARIABLES	2SLS	GMM
	esgscore	esgscore
L.esgscore		0.907***
		(0.0438)
dirscore	0.250*	0.172**
	(0.133)	(0.0735)
bsize	−0.0844	0.0935
	(0.483)	(0.246)
ceo	−2.854	0.182
	(6.536)	(2.421)
mbv	1.131	−0.00272
	(0.834)	(0.454)
fsize	8.001***	−0.338
	(1.239)	(0.754)
capstr	−8.836	−0.962
	(21.20)	(18.26)
lev	40.54***	7.048
	(10.00)	(8.399)
co2	7.64e-09	1.37e-09
	(4.82e-09)	(2.70e-09)
hdi	−66.40***	−6.895
	(11.75)	(5.715)
Constant	−104.2***	12.16
	(30.23)	(16.02)
Rank LM test		22.631***
Cragg-Donald		82.630*
Hansen		0.210
F		214.23***
Fμ		34.13***
LM_{het}		796.38***
F_{AC}		45.854***
Observations	240	172
R-Squared	0.471	0.898

Note: t-statistics estimated using robust standard errors are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

This paper employs the current and lagged values of exogenous variables as instruments for the lagged dependent variable and other endogenous variables. To assess the accuracy of the instruments in the estimations, we perform three tests: the Kleibergen and Paap rank LM test (2006), the Cragg-Donald F test (1993), and the Hansen J statistic (1982). The first two tests assess the correlation between endogenous variables and IVs, whereas the third test evaluates the correlation between the IVs and errors.

In Table 7, the results of the Kleibergen and Paap rank LM test and the Cragg-Donald F test report a weak correlation between the IVs and the endogenous variables, and the Hansen J test fails to reject overidentification limits. Therefore, the IVs in this model appear to be valid. Together, the results of the 2SLS and GMM regressions indicate that the coefficients of the DIP score remain significant and positively correlated with ESG performance. These results confirm our main findings, suggesting that, after controlling for potential endogeneity, our findings remain consistent with those from the baseline model.

Next, we replace both the dependent and independent variables (ESG and DIP scores) with their value in natural logarithm, as in prior studies, such as Fang et al. (2023). The natural logarithm is used to normalize the density function, indicating the high persistence of the dependent variable (Galletta et al., 2022). The results in Table 8 are consistent with our main findings and, therefore, demonstrate that the DIP-ESG nexus is robust enough to include these measures. Lastly, we re-run the regression analysis using each pillar of the DIP score separately. In Table 9, the effect on ESG performance remains significant and positive for all pillars of the DIP score (diversity, inclusion, and people development).

5. Conclusion, implications, and limitations

This study examines the impact of DIP on ESG performance at 31 Islamic banks and 59 conventional banks in 11 countries over the period 2015–2022, using the full sample and subsamples of Islamic and conventional banks separately. It provides empirical evidence using newly

Table 8
Robustness Tests: Sensitivity Analyses with Alternative Proxies of DIP & ESG score.

VARIABLES	(1)	(2)	(3)
	esgscore	lnESG	lnESG
ln_dip	3.400**		0.102**
	(1.612)		(0.0484)
dirscore		0.00715***	
		(0.00217)	
bsize	−0.230	−0.0116*	−0.0110
	(0.232)	(0.00679)	(0.00683)
ceo	1.990	0.0428	0.0505
	(3.507)	(0.0977)	(0.100)
fsize	9.123***	0.225***	0.243***
	(0.697)	(0.0249)	(0.0247)
capstr	22.12*	1.009**	1.067**
	(13.33)	(0.439)	(0.444)
mbv	2.060***	0.0546***	0.0560***
	(0.675)	(0.0176)	(0.0175)
lev	22.10***	0.568***	0.569***
	(7.679)	(0.193)	(0.190)
co2	3.76e-08	5.17e-10	4.18e-10
	(4.66e-08)	(1.21e-09)	(1.23e-09)
hdi	106.7	2.274	2.382
	(152.7)	(4.508)	(4.658)
Year Dummies	YES	YES	YES
Country Dummies	YES	YES	YES
Constant	−280.0**	−3.715	−4.394
	(136.4)	(3.991)	(4.131)
Observations	333	333	333
R-squared	0.638	0.570	0.558

Note: t-statistics estimated using robust standard errors are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9
Robustness Tests: The effects of each pillar of DIP score on ESG performance.

VARIABLES	(1)	(2)	(3)
	esgscore	esgscore	esgscore
dir_div	0.572***		
	(0.0735)		
dir_incl		0.111***	
		(0.0386)	
dir_people			0.368***
			(0.0565)
bsize	−0.0400	−0.188	−0.171
	(0.207)	(0.223)	(0.209)
ceo	4.199	0.0528	1.085
	(3.323)	(3.469)	(3.628)
fsize	8.127***	8.785***	6.570***
	(0.741)	(0.723)	(0.836)
capstr	16.01	17.67	22.78*
	(11.88)	(13.42)	(11.93)
mbv	2.132***	2.030***	2.026***
	(0.700)	(0.656)	(0.732)
lev	16.15**	19.49***	15.49**
	(7.158)	(6.979)	(7.432)
co2	4.00e-08	1.26e-08	7.22e-09
	(4.35e-08)	(4.67e-08)	(4.20e-08)
hdi	50.11	55.20	119.4
	(129.8)	(161.7)	(124.5)
Year Dummies	YES	YES	YES
Country Dummies	YES	YES	YES
Constant	−208.0*	−212.9	−222.0*
	(116.2)	(143.8)	(113.5)
Observations	333	333	333
R-squared	0.697	0.641	0.682

Note: t-statistics estimated using robust standard errors are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

introduced and comprehensive DIP scores that capture the multidimensional aspects (policy, metrics, etc.) of diversity, inclusion, and people development. The evidence suggests that greater diversity and inclusion in the workplace leads to better ESG performance. Furthermore, when we analyze the subsamples separately, we find a stronger association between the DIP score and ESG performance at IBs than at their conventional counterparts. Lastly, we also find an insignificant effect of the DIP score on governance performance at conventional banks.

Several of our findings have implications for the management and regulatory bodies of both Islamic and conventional banks. They suggest that bank managers, particularly at Islamic banks, need to implement diversity and inclusion policies throughout their business operations to attract the best talent with competitive skills that will contribute to high performance (e.g., ESG performance). Our empirical findings on the usefulness of diversity and inclusion in improving ESG performance shows that regulatory authorities should consider some regulatory reforms. Bank regulators need to consider more detailed and broader aspects of diversity and inclusion in banks' corporate governance guidelines. To date, IBs have been required only to appoint a certain number of women to boards (e.g., the Sharia Supervisory Board), but not other minority groups (e.g., people with children, the disabled people).

With respect to limitations, first, we select a sample from the banking sector in different countries, which have distinct cultures and regulatory/national policies on diversity and inclusion issues. Future studies could use a single-country sample or perform a comparative analysis on several countries/regions to identify the effects of country-level variables on the DIP-ESG nexus. Second, this study does not include several variables, such as the firm's size, age, and institutional ownership, which could indirectly affect the nexus between DIP and ESG performance. Hence, future studies could investigate the moderating effect of these variables. Third, as the DIP score is a relatively new indicator released by Refinitiv, multi-country data were not yet available. In the future, after more databases publish DIP and ESG scores, scholars could use more updated data to provide a richer discussion and analysis. Lastly, one indicator in the DIP score is not aligned with Islamic principles (e.g., LGBTQ); therefore, future studies focused on Islamic banks could modify this index by replacing it with sharia-aligned indicators, such as the diversity and inclusion of the SSB.

CRediT authorship contribution statement

Yunice Karina Tumewang: Conceptualization, Methodology, Study design, Software, Validation, Formal analysis, Resources, Data curation, Writing – original draft, Writing – review & editing, Project administration, Funding acquisition. **Kemala Putri Ayunda:** Methodology, Study design, Formal analysis, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization. **Maudi Rahmah Azzahra:** Formal analysis, Writing – original draft, Writing – review & editing, Visualization. **M. Kabir Hassan:** Validation, Formal analysis, Investigation, Writing – review & editing, Visualization, Supervision.

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Appendix 1. DIP Indicator Assessment

No	DIP Indicator Assessment
	Diversity
1	Analytic Board Cultural Diversity
2	Policy Diversity Opportunity
3	Targets Diversity Opportunity
4	Women Employees
5	New Women Employees
6	Women Managers
7	Analytic Board Female
8	Analytic Executive Members Gender Diversity
	Inclusion
1	US LGBT Equality Index
2	Flexible Working Hours
3	Day Care Services
4	Employees With Disabilities
5	HIV/AIDS Program
	People Development

(*continued on next page*)

(*continued*)

No	DIP Indicator Assessment
1	Policy Skills Training
2	Policy Career Development
3	Average Training Hours
4	Internal Promotion
5	Management Training
6	Analytic Training Costs
7	Employee Satisfaction

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