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STRATEGIC ESG DISPARITY AND BANK PERFORMANCE: EVIDENCE FROM BANKS FINANCING SMEs IN EMERGING ECONOMIES POST COVID-19

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ABSTRACT

This study examines the strategic disparity in Environmental, Social, and Governance (ESG) practices and their effects on bank performance in emerging economies during the post-COVID-19 period. Banks particularly those financing SMEs faced increased institutional pressure following the pandemic to integrate ESG into their operational strategies. However, the allocation of resources across the ESG pillars often varied significantly. This disparity, defined as the uneven commitment to the E, S, and G pillars, is considered a strategic response to institutional and financial constraints. The objective of this study is to examine, specifically in terms of return on assets (ROA) and return on equity (ROE). Employing a panel dataset of 398 publicly listed banks across 35 emerging countries from 2020 to 2023, many of which provide financing to SMEs, the study uses fixed-effects regression and multiple robustness checks to explore this relationship. The results suggest that banks with greater ESG disparities may yield higher returns, indicating that selective investment in specific ESG pillars may lead to greater returns. Meanwhile, the positive impact is less pronounced in countries with high climate risk. Subsample analyses further indicate that banks subject to mandatory ESG disclosures and more substantial commitments to environmental and social components outperform those that are not. The governance pillar, in contrast, has a relatively minor impact on ESG disparity and bank performance. These findings emphasize that ESG disparity is a deliberate strategy banks employ to optimize resource allocation and enhance performance outcomes in response to external.

INTRODUCTION

Small and Medium Enterprises (SMEs) account for approximately 90% of businesses and over 50% of global employment (Hacini et al., 2022) because they are more labor-intensive than larger corporations (Acs et al., 1999). Levine (1997) states that businesses depend heavily on bank debt, which drives economic growth and development. Therefore, understanding how ESG strategies impact banks that serve SMEs is essential for both financial resilience and sustainable development.

The COVID-19 pandemic caused significant disruptions (Elnahass et al., 2021) and exposed vulnerabilities in existing financial systems. As a result, it has become crucial for organizations to integrate Environmental, Social, and Governance (ESG) considerations into their business and investment strategies (Singhania & Saini, 2023). This shift in incorporating ESG is crucial for ensuring the long-term success of banks (Huang, 2024) and protecting stakeholders (Cornell & Shapiro, 2021). In emerging economies, banks are under increasing pressure to balance profit and sustainability goals. While many banks have engaged in ESG, research on allocating their resources across the E, S, and G pillars remains limited and underexplored.

Integrating ESG practices into banks in emerging economies has become increasingly important since the COVID-19 pandemic. This shift is mainly due to greater awareness of sustainability issues (Arvidsson & Dumay, 2022; Sciarelli et al., 2021), regulatory pressure (Singhania & Saini, 2023), and the need for banks to be resilient and achieve long-term sustainable growth (Sekol, 2024). After the pandemic, banks had to reassess their organizational strategies and began to

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prioritize ESG initiatives. Many studies investigate the link between banks' commitment to ESG and their performance, but findings vary significantly based on different contexts. Some studies have shown that banks that commit to ESG perform better in different regions, particularly in emerging markets (Azmi et al., 2021; Gangwani & Kashiramka, 2024; Rahat & Nguyen, 2023), Turkey (Akdogan et al., 2020), Europe (Buallay, 2019; Torre Olmo et al., 2021), globally (Wu & Shen, 2013; Wu et al., 2022), ASEAN (Nguyen, 2024) and in China (Yu & Xiao, 2022). Conversely, some studies indicate a negative correlation between ESG and bank performance in various aspects, especially in the Global (Alam, 2022; Yuen et al., 2022), the MENA region (El Khoury et al., 2023), Italy (Menicucci & Paolucci, 2023), and Europe (Bătae et al., 2021). Buallay (2020) finds conflicting results, showing a negative relationship in developed countries and a positive relationship in developing countries. Meanwhile, other studies indicate that, in Italy, there is no significant relationship between ESG and bank performance (Soana, 2011). These varying results suggest that the relationship between ESG and bank performance is complex and varies in different contexts and situations. Despite the increasing focus on ESG within the banking sector, this study is among the first to examine how an imbalance in ESG practices affects bank performance, particularly in the post-COVID-19 pandemic. Understanding this gap is crucial because it helps to understand how banks strategically adopt ESG practices in response to increasing institutional pressures and financial constraints.

As banks increasingly commit to ESG, notable disparities occur in how they implement it. These bank disparities are attributed to differences in bank ownership and strategic or profit-driven motives (Ji et al., 2023). For example, in China, state-owned commercial banks lead in ESG investment and performance, mainly because their goals align with government policy. Meanwhile, joint stock commercial banks have focused more on profit maximization. They exhibit weaker ESG performance and less social context (Ji et al., 2023). This raises concerns about ESG washing and emphasizes the need for stringent regulations and standards that ensure banks genuinely practice sustainable ESG principles. We believe that banks adopt ESG practices because they feel pressure from outside, such as the need for legitimacy (Ferretti et al., 2024), compliance with regulations (Bruno & Lagasio, 2021), and adherence to the industry average (Saviano et al., 2024). In emerging markets, the effect of ESG on bank performance varies by Country and is influenced by local laws and economic and cultural factors (Shakil et al., 2019). Our research is based on neo-institutional and resource-based view (RBV) theories. These theories help explain how the environment in which a bank operates influences its behavior by emphasizing norms, rules, and cultural factors. Within this context, uneven ESG commitments among banks indicate a strategic allocation of limited resources, which helps enhance their legitimacy and overall bank performance.

Previous studies often treat ESG as an average index, overlooking the variations in each pillar's commitments, known as ESG disparity. This paper argues that these imbalances in ESG allow banks to improve their reputation and legitimacy. The paper investigates whether disproportionate ESG strategy influences bank performance, particularly in the post-COVID-19 pandemic period. We will utilize a dataset comprising 398 listed banks across 35 emerging countries from 2020 to 2023. Our analysis is divided into three distinct stages. In the first stage, we examine how ESG disparity impacts bank performance. The findings demonstrate that banks with larger ESG disparities tend to achieve higher ROA. In the second stage, we examine whether strong E, S, and G commitments affect the impact of high ESG disparity on bank performance. In the third stage, we investigate how high climate risks influence the relationship between high ESG disparities and bank performance. Additionally, we conduct sub-sample analyses to understand how factors specific to each Country affect the relationship between mandatory ESG disclosure and varying levels of ESG disparity and bank performance. This research is relatively underexplored, particularly in emerging economies, where institutional environments vary significantly. Lastly, our results remain reliable even after addressing potential biases in ESG disparity and using alternative measures for both ESG disparity and performance.

This research contributes to the growing body of literature on variations in ESG practices by examining their impact on bank performance across three key areas. Firstly, previous studies have mainly focused on ESG scores. However, to our knowledge, no study has investigated the impact of variations across the Environmental, Social, and Governance (ESG) pillars, known as ESG disparity, on bank performance in emerging countries. Our findings may lead banks to prioritize specific ESG pillars in response to various institutional pressures. We specifically examine how ESG disparity relates to bank performance, especially considering the impact of the COVID-19 pandemic. Second, we analyze how firm commitments in the E, S, and G pillars influence the relationship between a high ESG disparity and bank performance. Third, we explore how high climate risks impact the relationship between high ESG disparity and bank performance. Overall, this investigation provides valuable insights into how post-pandemic challenges may prompt banks to adopt ESG more strategically. By doing so, we provide an in-depth understanding of how ESG disparity and bank performance interact, particularly about the impact of COVID-19 on banks, investors, and policymakers. This study examines how ESG disparities affect bank performance in emerging markets, particularly post-COVID-19 pandemic and climate risks.

The following section of this paper is structured as follows: In the subsequent section, we look at relevant literature and develop our hypotheses. Next, we outline our data and methodology. Following this, we summarized the key results and conducted robustness tests. In conclusion, we explore our analysis's implications and suggest future research directions.

LITERATURE REVIEW

Theoretical Background

Research on ESG disparity in the banking context commonly uses theories from the theoretical frameworks of neo-institutional theory and the resource-based view (RBV). When used together, neo-institutional theory and the resource-based view (RBV) help us understand why there are differences in the ESG pillars and how these differences can help banks perform better.

Neo-institutional theory explains that external pressures shape organizations (Fernández-Alles & Llamas-Sanchez, 2008; Obayi & Ebrahimi, 2021). These pressures force organizations to adapt for survival amid competition. In this context,

we assume that banks primarily adopt ESG in response to institutional pressures, including the need for legitimacy (Ferretti et al., 2024), regulatory compliance (Bruno & Lagasio, 2021), and adherence to professional norms (Saviano et al., 2024). While neo-institutional pressures compel banks to adopt ESG, we also observe variances in ESG pillar commitments, which may indicate that banks are making strategic resource allocation decisions. Supported by the resource-based view theory, we argue that banks selectively emphasize ESG components, primarily governance and social pillars, to maximize returns on ESG investments (Bhandari et al., 2022). This cherry-picking behavior represents a rational, performance-oriented response to resource constraints, particularly in emerging markets with less developed institutional environments (Singhania & Saini, 2023). As a result, banks allocate resources deliberately to areas where they expect the most significant strategic gain rather than uniformly addressing all ESG dimensions.

Both theories support this paper's hypothesis, suggesting that ESG disparity arises as a strategic response to the external pressures and internal constraints banks face to survive and remain competitive, particularly in the post-COVID-19 pandemic period.

Disparities in ESG Performance and Bank Performance

ESG disparity refers to the unevenness in banks' ESG performance across the E, S, and G components. When a bank exhibits a high ESG disparity, it suggests that it prioritizes one or two pillars while neglecting the others, potentially indicating opportunistic or insincere ESG practices (de la Fuente & Velasco, 2024). ESG disparity signals managerial opportunism and weakens the positive effect of ESG engagement on firm value, especially indicating agency problems. For instance, firms may have strong environmental practices but weak governance or average social initiatives, resulting in varied performance across the three pillars. This disparity is sometimes called a 'pillar mix' or cross-dimensional ESG profile, where the company's strengths and weaknesses are not balanced across E, S, and G (Cheng et al., 2023; Engelhardt et al., 2021; Taddeo et al., 2024). Those studies emphasize that the impact of uneven ESG commitments on financial outcomes can be mixed. Many firms, particularly those in specific industries, aim to maximize overall ESG by prioritizing the pillars that align best with their business model or meet stakeholder expectations.

Many firms intentionally focus on specific ESG pillars most relevant to their industry or in response to stakeholder pressure. For example, Energy firms may prioritize the environmental pillar (Baratta et al., 2023), Tech companies might emphasize governance (Cheng et al., 2023), and consumer goods firms may prioritize social factors (Tripopsakul & Puriwat, 2022). This suggests that organizations may exploit ESG selectively to enhance their relationships with stakeholders and boost their short-term profit. Few studies find that governance has the strongest and most direct link to ROA in banks (Bătae et al., 2021; El Khoury et al., 2023), while environmental scores tend to have a weaker correlation in industries such as energy and heavy industry (Buallay, 2019).

H_1: Banks with greater ESG disparity tend to perform better.

Moderating factors of high E, S, G Pillars and Climate risks.

The Influence of High ESG Disparity on Bank Performance and the Moderating Role of High Environmental Pillars.

Banks that focus on and commit to the environmental pillar tend to perform better financially and operationally, thereby strengthening the overall impact of ESG efforts on performance. Research has shown that emerging market banks' environmental and social performance positively correlates with financial performance (Shakil et al., 2019). As a result, when environmental initiatives are the primary focus, the positive impact of ESG disparity on bank performance is more pronounced. Environmental actions are directly linked to cost-saving and regulatory compliance (Bătae et al., 2021). Therefore, having firm environmental commitments may further enhance the positive impact of ESG disparity on bank performance, especially when environmental initiatives are the key driver of this disparity.

H_{2a}: A strong commitment to the environment may strengthen the relationship between high ESG disparity and bank performance.

The Influence of High ESG Disparity on Bank Performance and the Moderating Role of High Social Pillars.

The relationship between ESG disparity, social performance, and bank performance is complex. Research indicates that banks in emerging markets with more substantial commitments to environmental and social pillars tend to perform better financially (Shakil et al., 2019). Many studies have shown that banks with more substantial ESG commitments, including social pillars, tend to perform better financially, such as experiencing an increase in ROA, ROE, and improved market valuation (Gangwani & Kashiramka, 2024; Shakil et al., 2019). Firm social and governance commitments in these emerging markets are associated with larger bank loans, lower collateral requirements, and reduced loan costs (Qian et al., 2023). Therefore, having a strong social commitment may enhance the positive impact of ESG disparity on bank performance, especially when social efforts contribute to better bank performance.

H_{2b}: A strong commitment to social may strengthen the relationship between high ESG disparity and bank performance.

The Influence of High ESG Disparity on Bank Performance and the Moderating Role of High Governance Pillars.

A strong commitment to governance is typically associated with a higher ROA, which translates to better financial results and more efficient asset utilization across various countries and sectors. The audit committee of a well-governed company enhances company value through ROA (Kadarningsih et al., 2020). A one-unit increase in corporate governance perception index score correlates with increases in ROA, ROE, and EPS, even considering variables like firm size and industry type

(Husnah et al., 2023). Top management commitment and a clear sustainability strategy can strengthen the positive impact of governance on ROA (Rahman et al., 2023). Therefore, more substantial commitments to governance enhance the positive impact on ESG disparity and bank performance.

H_{2c}: A strong commitment to governance may strengthen the relationship between high ESG disparity and bank performance.

The Influence of High ESG Disparity on Bank Performance and the Moderating Role of High Climate Risks.

Due to rising climate risks, ESG factors have become increasingly significant within the banking sector. As a result, banks integrate sustainability into their operations to meet the expectations of their stakeholders. NIT suggests that increased climate risk will enhance the positive effects of ESG on bank performance. These factors will further influence how banks develop sustainable banking strategies in response to institutional pressures. We expect that regulatory authorities will implement stricter environmental rules in countries at high risk from climate change. These requirements will compel banks to improve their ESG commitment (Aras & Hacioglu Kazak, 2022). By adhering to these regulations, banks can lower legal and reputational risks while enhancing financial stability (Miller et al., 2020). Banks that are highly committed to ESG can gain advantages from regulators, such as tax incentives or reduced capital requirements (Eliwa et al., 2021), which can positively impact their performance.

However, the ESG disparity can weaken bank performance in countries with high climate risk. Underperforming ESG banks may face higher costs (Carnevale & Drago, 2024) and greater reputational risks (Galletta et al., 2023) and are less likely to benefit from tax incentives. In these environments, the pressures from institutions and regulations are more intense (Feridun & Güngör, 2020), which makes the adverse effect of ESG disparity more severe. As a result, uneven ESG scores may weaken the bank's performance. This study suggests that consistency in ESG across all three pillars in countries with high climate risks is vital for sustaining financial strength and achieving competitive advantage.

H_3: High climate risk may weaken the relationship between high ESG disparity and banks' performance.

MATERIALS AND METHODS

Data and Sample Selection

This study aims to explore the connections that emerge in the post-pandemic era. So, our sample comprises publicly listed banks from emerging markets between 2020 and 2023. Many of the sampled banks have significant exposure to SME financing, reflecting the critical role SMEs play in the economic development of emerging markets. As such, this study provides valuable insights into how ESG disparity strategies may impact the performance of banks serving this crucial sector. We gather annual financial statement data from Refinitiv Eikon, ESG data from Refinitiv Eikon, and Country-Level Climate risk data from Greenwich. Additional country-level information on ESG, macroeconomics, and governance is sourced from the World Bank. To construct our sample, we initially gathered all available observations from 2020. After excluding these observations, the final sample comprises 398 bank-year observations from 35 countries. Additionally, to minimize the influence of outliers, we apply winsorization to all continuous variables at the 1% and 99% levels (Ferdous et al., 2024; Sullivan et al., 2021). Table 1 provides further details regarding the sample selection procedure.

Table 1. Sample Selection

Criteria	Number of observations
Refinitiv Eikon	1990
Less: observations without all necessary control variables	(632)
Final Sample	1358

Measurement of ESG

Following Ozkan et al. (2023), we calculate our ESG measure using comprehensive data from the Refinitiv Eikon database. The database offers an ESG index for every bank, designed to transparently and objectively evaluate a company's ESG activities, commitments, and impact across ten key themes. The environmental pillar indicates the category weights derived from three aspects: resource use efficiency, emission and waste reduction, and environmental innovation. The social pillar signifies the total category weights across four aspects: workforce, human rights, community involvement, and product accountability. Finally, the governance pillar encompasses the total sum of category weights across three key aspects: management oversight, shareholders' rights, and corporate social responsibility strategies.

Measurement of ESG Disparity

Following de la Fuente and Velasco (2024), we employ two proxies to measure ESG disparity: the coefficient of variation (CV) and the Gini coefficient (GINI). The coefficient of variation (CV) is determined by dividing the standard deviation of a bank's individual ESG pillar scores by its total ESG score (de la Fuente & Velasco, 2024; Harrison & Klein, 2007). E represents the environment pillar score, S denotes the social pillar score, G indicates the governance pillar score, and n is the total number of individual ESG pillars (n=3). The CV varies from 0 to the square root of (n - 1).

$$CV = \frac{\frac{\sqrt{(E-ESG)^2 + (S-ESG)^2 + (G-ESG)^2}}{n}}{ESG} \quad (1)$$

The Gini coefficient is calculated by taking the sum of all pairwise absolute differences between individual pillar scores in a bank, divided by 2 multiplied by ESG and n squared (de la Fuente & Velasco, 2024; Harrison & Klein, 2007). GINI ranges between 0 and 1- $\frac{1}{n}$ (de la Fuente & Velasco, 2024; Harrison & Klein, 2007)

$$GINI = \frac{(E-S)+(E-G)+(S-G)}{2\ X\ ESG\ X\ n^2} \quad (2)$$

Measurement of Bank Performance

Return on assets (ROA), commonly used as a key measure of bank performance in ESG studies, is computed as net income divided by total assets (Loan et al., 2024), as it indicates how efficiently a bank uses its assets to generate profit. ROA assesses how effectively a company converts its assets into net income, directly indicating its operational performance (Al Hawaj & Buallay, 2022; De Lucia et al., 2020). This measure is well-recognized and comparable across industries and regions, enabling consistent analysis in multi-firm or cross-country ESG studies. To ensure strong results, this study uses another bank performance measure, such as return on equity (ROE), which is calculated by dividing net income by average equity (Loan et al., 2024), to provide comprehensive results of bank performance in ESG.

Measurement of Climate Risk

This study constructed our country-level climate risks using the Global Climate Risk Index, which Greenwatch has published since 2006 (Ozkan et al., 2023), to identify countries with high and low climate risk. Greenwatch is a tool for the financial services sector to assess and monitor the authenticity of companies' green claims. They measure the global climate risk index annually based on weather-related events, including storms, floods, and temperature extremes. It relies on four primary indicators: the total number of deaths per 100,000 inhabitants, the aggregate losses in real US dollars, and the losses as a percentage of GDP. Therefore, each Country's climate risk score is calculated annually; however, these scores are derived from data collected two years before the year of publication. We followed Ozkan et al. (2023) by multiplying both indices by -1.

Control Variables

This study controls for several factors that can affect bank performance such as: Bank size is calculated using the natural Logarithm of the total assets (Saif-Alyousfi et al., 2023); Income Diversification is proportion of non-interest income to net income (Gangwani & Kashiramka, 2024); Leverage approximated by the ratio of total liabilities to total assets (Gangwani & Kashiramka, 2024); Loan loss provisions are calculated using the ratio of loan loss provisions to gross loans (Danisman & Tarazi, 2024); Loan to total deposit is calculated as the proportion of loans funded by deposits (Menicucci & Paolucci, 2023; Wu & Shen, 2013); Net Interest Margin is computed as net interest income to total income (Liu & Xie, 2024); Non-Performing Loans is calculated as non-performing loans to total loans (Liu & Xie, 2024); Operating efficiency is calculated using non-interest expenses to total income (Ghosh, 2015); Cash is figured out by looking at Cash compared to total Assets (Chiaramonte et al., 2022); Capital is determined by the portion of bank equity in the total assets (Danisman & Tarazi, 2024); Gross Domestic Product Growth (GDPD) is the yearly growth rate of GDP per capita (Menicucci & Paolucci, 2023); Inflation is the yearly growth rate of the GDP deflator (Menicucci & Paolucci, 2023); and WGI is the combined measure of how well a country is governed, based on Worldwide Governance Indicators (WGI). It includes six specific indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption (Group, 2017; Thomas, 2010). We account for industry and year-fixed effects in each model by adding dummy variables.

Regression Model and Estimation Methods

This study uses a fixed-effects regression analysis with panel data to account for unobservable, time-invariant bank characteristics that could affect ESG disparity and bank performance. In the first stage, the baseline model examines the impact of ESG disparity and bank performance and is formulated as follows:

$$ROA_{,i,t} = \text{ESG Disparity}_{i,t} + X_{i,t} + Y_{i,t} + \alpha_i + \lambda_c + \theta_t + \varepsilon i,t. \quad (3)$$

X and Y denote bank- and country-specific variables, respectively. Subscripts *i* and t represent the bank and year at the bank level, respectively. α_i represents the year fixed effects, λ_c represents the Country fixed effects, and θ_t represents the bank fixed effects. A brief description of variables and data sources is in Appendix A.

The second stage of this study examines how the interaction of high E, S, and G pillars affects the relationship between high ESG disparity and bank performance.

$$ROA_{,i,t} = \text{High ESG Disparity}_{i,t} + \text{High ENV}_{i,t} + \text{High ESG Disparity}_{,t}\ X\ \text{High ENV}_{i,t} + X_{i,t} + Y_{i,t} + \alpha_i + \lambda_c + \theta_t + \varepsilon i,t \quad (4)$$

$$ROA_{,i,t} = \text{High ESG Disparity}_{i,t} + \text{High SOC}_{i,t} + \text{High ESG Disparity}_{,t}\ X\ \text{High SOC}_{i,t} + X_{i,t} + Y_{i,t} + \alpha_i + \lambda_c + \theta_t + \varepsilon i,t \quad (5)$$

$$ROA_{,i,t} = \text{High ESG Disparity}_{i,t} + \text{High GOV}_{i,t} + \text{High ESG Disparity}_{,t}\ X\ \text{High GOV}_{i,t} + X_{i,t} + Y_{i,t} + \alpha_i + \lambda_c + \theta_t + \varepsilon i,t \quad (6)$$

The third stage of this study explores how high climate risks influence the relationship between high ESG disparity and bank performance, determining whether they strengthen or weaken it.

$$ROA_{i,t} = \text{High ESG Disparity}_{i,t} + \text{High Climate Risks}_{i,t} + \text{High ESG Disparity}_{,t} \; X \; \text{High Climate Risks}_{,t} + X_{i,t} + Y_{i,t} + \alpha_i + \lambda_c + \theta_t + \varepsilon i,t \quad (7)$$

To further understand the reasons behind our main findings, this study employs a subsampling method that examines two situations: whether the relationship differs in countries where ESG disclosure is mandatory versus voluntary and in countries with high and low ESG disparities.

RESULTS

Descriptive Statistics

Table 2. Sample Distributions

Panel A: by Country	Freq.	Percent	Cum.		Freq.	Percent	Cum.
Argentina	32	2.36	2.36	Nigeria	11	0.81	65.02
Bahrain	21	1.55	3.90	Oman	28	2.06	67.08
Brazil	37	2.72	6.63	Pakistan	27	1.99	69.07
Chile	25	1.84	8.47	Panama	5	0.37	69.44
China	214	15.76	24.23	Peru	28	2.06	71.50
Colombia	25	1.84	26.07	Philippines	27	1.99	73.49
Egypt	16	1.18	27.25	Puerto Rico	15	1.10	74.59
Hong Kong	29	2.14	29.38	Qatar	26	1.91	76.51
India	205	15.10	44.48	Saudi Arabia	52	3.83	80.34
Indonesia	55	4.05	48.53	Singapore	25	1.84	82.18
Jordan	21	1.55	50.07	South Africa	30	2.21	84.39
Kazakhstan	2	0.15	50.22	Thailand	82	6.04	90.43
South Korea	47	3.46	53.68	Togo	3	0.22	90.65
Kuwait	36	2.65	56.33	Turkey	47	3.46	94.11
Lebanon	2	0.15	56.48	Uganda	5	0.37	94.48
Malaysia	50	3.68	60.16	UAE	70	5.15	99.63
Mexico	39	2.87	63.03	Vietnam	5	0.37	100.00
Morocco	16	1.18	64.21	Total	1358	100.00	

Descriptive Statistics by Country

Panel A of Table 2 shows the distribution of the sample by Country. The least represented banks in our sample are from Kazakhstan and Lebanon, accounting for 0.15% of the total observations. In contrast, the most represented countries are China and India, at 15.76% and 15.10%, respectively.

Descriptive statistics by the mean ESG disparity, ranked by Country.

Table 3. Mean ESG Disparity by Country - Ranked

	CV		CV
Hong Kong	0.255	Mexico	0.521
Morocco	0.310	Vietnam	0.532
Brazil	0.322	India	0.543
Turkey	0.341	UAE	0.556
South Korea	0.353	Jordan	0.560
Malaysia	0.370	Panama	0.569
Argentina	0.417	Nigeria	0.606
Philippines	0.419	Egypt	0.619
China	0.441	Togo	0.622
Chile	0.445	Pakistan	0.634
Thailand	0.458	Qatar	0.675
Singapore	0.469	Puerto Rico	0.682
Indonesia	0.470	Saudi Arabia	0.694
Peru	0.476	Kuwait	0.725
Colombia	0.485	Oman	0.809
South Africa	0.487	Bahrain	0.862
Uganda	0.511	Lebanon	1.112
Kazakhstan	0.514		

Table 3 shows the mean ESG disparity by Country. This study employs CV to measure the internal variations between ESG pillars; the higher the CV, the more dispersed the ESG scores among the Country's banks. The table is ranked with lower CV values (least disparity) and higher CV values (greater disparity). Hong Kong has more uniform ESG practices across banks, with the least disparity of 0.255. In contrast, Lebanon has the most inconsistent ESG practices across banks, with the highest disparity of 1.112.

Descriptive statistics for Variables

Table 4. Panel A: Descriptive statistics of all variables

Variable	Obs	Mean	Std. Dev.	Min	Max	VIF
ROA	1358	0.014	0.019	-0.074	0.101	
ESG Disparity	1358	0.500	0.307	0.004	1.368	1.19
Bank Size	1358	24.21	1.925	17.29	28.82	2.11
Income Diversification	1358	1.615	2.858	-2.086	23.17	1.29
Leverage	1358	0.207	0.232	0.000	0.859	2.02
Loan Loss Reserves	1358	0.010	0.018	-0.002	0.162	1.37
Loan to Total Deposit	1358	0.690	0.412	0.000	2.090	2.09
Net Interest Margin	1358	0.034	0.045	0.000	0.349	1.64
Non-Performing Loans	1358	0.029	0.037	0.000	0.208	1.30
Operating Efficiency	1358	-0.426	0.244	-1.186	0.000	3.76
Cash	1358	0.004	0.036	-0.115	0.150	1.04
Capital	1358	0.143	0.112	0.001	0.784	2.17
GDPG	1358	0.042	0.109	-0.217	0.308	1.21
Inflation	1358	7.464	15.86	-15.10	96.04	1.46
WGI	1358	0.189	2.087	-4.443	8.392	1.11
					Mean VIF	1.70

Panel B: Mean-Test between High and Low Disparity

	High ESG Disparity Mean	Low ESG Disparity Mean	Difference	t-test (p-value)
ROA	0.0156	0.0133	0.0023	2.242**

Panel C: Pairwise Correlation

Variables	1	2	3	4	5	6	7
ROA	1.000						
ESG Disparity	0.045**	1.000					
Bank Size	-0.137***	0.215***	1.000				
Income Diversification	-0.131***	0.001	0.084***	1.000			
Leverage	0.194***	-0.035	-0.250***	-0.176***	1.000		
Loan Loss Reserves	-0.117***	-0.030	0.025	0.111***	-0.156***	1.000	
Loan to Total Deposit	-0.244***	0.126***	0.394***	0.223***	-0.486***	0.228***	1.000
Net Interest Margin	0.072***	-0.013	-0.057**	0.131***	-0.292***	0.393***	0.211***
Non-Performing Loans	-0.213***	-0.054**	0.058***	0.137***	-0.346***	0.253***	0.235***
Operating Efficiency	0.395***	-0.032	-0.300***	-0.394***	0.634***	-0.214***	-0.656***
Cash	0.022	-0.029	-0.007	0.019	-0.009	0.053**	-0.054**
Capital	0.347***	-0.106***	-0.629***	-0.167***	0.147***	-0.043*	-0.413***
GDPG	0.056**	0.036	0.025	-0.083***	0.018	-0.047**	-0.009
Inflation	0.091***	0.096***	-0.085***	0.046**	-0.035	0.152***	-0.023
WGI	-0.087***	0.086***	0.144***	-0.022	-0.079***	-0.112***	0.140***

Variables	8	9	10	11	12	13	14	15
Net Interest Margin	1.000							
Net Performing Loans	0.146***	1.000						
Operating Efficiency	-0.390***	-0.396***	1.000					
Cash	0.018	0.007	-0.021	1.000				
Capital	-0.038*	-0.219***	0.461***	-0.041*	1.000			
GDPG	-0.005	-0.057**	0.038*	-0.079***	0.008	1.000		
Inflation	0.274***	-0.012	-0.074***	0.046**	-0.011	0.325***	1.000	
WGI	-0.188***	-0.005	-0.025	-0.025	0.006	0.021	-0.139***	1.000

In Panel A of Table 4, descriptive statistics for the variables are presented. The mean of the dependent variable, the return on assets (ROA), is 0.014. Similarly, the mean of the independent variable, which is ESG disparity, is 0.500. The mean values of the bank-level controls used in this paper are Bank Size is 24.21, Income Diversification is 1.615, Leverage is 0.207, Loan loss reserves is 0.010, Loan to total deposit is 0.690, Net Interest Margin is 0.034, Non-performing Loan is 0.029, Operating efficiency is -0.426, Cash is 0.004, and Capital is 0.143. The mean values of the country-level controls used in our analysis are 0.042 for GDP growth, 7.464 for inflation, and 0.189 for WGI. The study in Panel B of Table 4 finds a statistically significant difference in bank performance between high and low ESG disparity values in our sample, with a p-value of less than 0.05. Panel C of Table 4 shows the Pearson correlations between the tested and control variables. Multicollinearity is not a concern for our empirical tests because none of the correlation coefficients between the ESG and other independent variables exceeds 0.7. Moreover, the VIF for all variables is less than 5, indicating that no independent variable in the model is highly correlated with the others.

Baseline Regression

The study examines the impact of ESG disparity on bank performance. The findings presented in Table 5 indicate a positive correlation between ESG disparity and Return on Assets (ROA). The findings indicate a significantly positive impact of

ESG commitment on profitability in Model 1, with β = 0.0026 and $p < 0.05$. This shows that banks with greater variation in ESG commitments tend to have higher profitability. The findings could suggest that banks may be selectively investing in ESG areas that align more closely with profit rather than consistently adopting ESG principles across all ESG pillars.

Several control variables, such as loan loss reserves, have a strong adverse effect, indicating the cost of credit risk. Operating efficiency and net interest margin positively and significantly impact ROA, indicating that more efficient and profitable banks tend to earn higher returns. However, GDP growth and inflation have a marginal influence on ROA.

Table 5. ESG Disparity, ESG Commitment, and Bank Performance

VARIABLES	(1) ROA
ESG Disparity	0.0026**
	(2.1336)
Bank Size	0.0062
	(1.2545)
Income Diversification	-0.0000
	(-1.3950)
Leverage	-0.0274
	(-1.5756)
Loan Loss Reserves	-0.3676***
	(-4.3129)
Loan to Total Deposit	0.0003
	(1.0468)
Net Interest Margin	0.1260*
	(1.8985)
Non-Performing Loans	-0.0099
	(-1.0582)
Operating Efficiency	0.0222***
	(4.9253)
Cash	-0.0087
	(-0.7603)
Capital adequacy	0.0498
	(1.5518)
GDPG	-0.0094*
	(-1.9465)
Inflation	0.0002**
	(2.4518)
WGI	-0.0000
	(-0.1680)
Constant	-0.1302
	(-1.0834)
Observations	1,358
Adjusted R-squared	0.735
Year Fixed Effect	YES
Firm Fixed Effect	YES
Country Fixed Effect	YES

Moderating the role of High Environmental, Social, and Governance pillars between high ESG Disparity and Bank Performance

The study examines how the individual pillars of E, S, and G affect the correlation between a high ESG disparity and bank performance. The findings presented in Table 6 indicate that banks with both high ESG scores and high ESG disparity tend to have higher ROA, with β = 0.003 and p < 0.10. However, a high ESG score alone is associated with a lower ROA, with β = -0.003 and p < 0.01. This suggests that high ESG may reduce ROA; however, when combined with high ESG disparity, it yields a positive and marginal relationship.

Banks with high E scores and ESG disparity tend to have higher ROA, with β = 0.004 and p < 0.05. However, a high ENV score alone is associated with a lower ROA, with β = -0.003 and p < 0.01. This suggests that high E may reduce ROA. However, when combined with a high ESG disparity, this effect leads to a positive and significant relationship, indicating that a strategic focus can result in better performance. Banks with high SOC scores and ESG disparity tend to have higher ROA, with β = 0.005 and p < 0.05. However, a high S score alone is associated with a lower ROA, with β = -0.003 and p < 0.01. This means that more substantial commitments in S may reduce ROA. Still, when combined with a high ESG disparity, it results in a positive and significant relationship, suggesting that a strategic focus can lead to improved performance. Similarly, high social ESG ratings reduce ROA, but selective ESG practices can improve ROA. Banks with high G scores and ESG disparity tend to have higher ROA, with β = 0.001 and p < 0.01. However, a high G individual pillar is associated with a lower ROA, with β = -0.002 and p < 0.01. This means that high G may reduce the ROA. Still, when combined with a high ESG disparity, it results in a positive and significant relationship, suggesting that a strategic focus can lead to improved performance. High governance ESG ratings alone reduce ROA, but with selective ESG practices, ROA can be improved. High ESG, E, S, and G commitments may reduce ROA. However, when high overall ESG and individual E, S, and G pillars are combined with a high ESG disparity, it enhances the positive impact on ROA. When combined, high ESG disparity with the social pillar impacts ROA more than the environmental and governance pillars.

Table 6. High ESG Disparity, Bank Performance by High ESG, E, S and G Pillar

VARIABLES	(1)	(2)	(3)
HighEnv_HighESGDisparity	0.004**		
	(3.471)		
HighEnv	-0.003***		
	(-6.095)		
HighSoc_HighESGDisparity		0.005**	
		(3.274)	
HighSoc		-0.003***	
		(-6.058)	
HighGov_HighESGDisparity			0.001***
			(4.767)
HighGov			-0.002***
			(-7.422)
HighESGDisparsity	-0.000	-0.001	0.002***
	(-0.337)	(-0.807)	(8.501)
Constant	-0.065**	-0.067**	-0.067**
	(-6.123)	(-7.685)	(-6.038)
Bank Controls	YES	YES	YES
Country Controls	YES	YES	YES
Observations	1,358	1,358	1,358
Adjusted R-squared	0.329	0.329	0.328
Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	YES	YES
Country Fixed Effect	YES	YES	YES

Moderating Role of Climate Risk between ESG Dispersion and Bank Performance

The study examines how significant climate risks influence the relationship between high and low ESG disparity and bank performance. The findings in Table 7 compare high and low ESG disparities. Climate risk influences how banks adopt Environmental, Social, and Governance (ESG) practices, impacting bank performance. In environments with high climate risks, banks face different pressures that change the effectiveness of their strategies. The results indicate that banks with lower ESG disparity are more profitable. However, high climate risk environments hurt ROA, with $\beta = -0.002$ and $p < 0.10$. The negative and significant relationship between high climate risks and high disparity suggests that banks perform worse when climate risks increase. Conversely, high climate risks and low disparity positively impact ROA, with $\beta = 0.02$ and $p < 0.10$. This means that banks with more consistent ESG practices perform better in a high-risk climate context. The high climate risk is strongly negative, indicating that it reduces ROA.

Table 7. High and Low ESG Disparity, Bank Performance by High Climate Risks

VARIABLES	(1)	(2)
	ROA	
HighClimaterisks_HighDisparsity	-0.002*	
	(-2.557)	
HighDisparsity	0.002***	
	(5.102)	
HighClimaterisks_LowDisparsity		0.002*
		(2.557)
LowDisparsity		-0.002***
		(-5.102)
HighClimaterisks	-0.003***	-0.005***
	(-7.670)	(-19.359)
Constant	-0.049***	-0.047***
	(-4.822)	(-4.622)
Bank Controls	YES	YES
Country Controls	YES	YES
Observations	1,358	1,358
Adjusted R-squared	0.314	0.314
Year Fixed Effect	YES	YES
Firm Fixed Effect	YES	YES
Country Fixed Effect	YES	YES

Additional Analysis

Mandatory ESG Disclosure

The analysis presented in Table 8 examines the influence of ESG disparity on bank performance, considering both mandatory and voluntary ESG disclosures. The ESG disparity is positively and significantly associated with higher ROA in countries with mandatory ESG disclosure requirements. The findings suggest mandatory ESG disclosure significantly and positively impacts bank performance, with $\beta = 0.008$ and $P < 0.05$. Conversely, in countries where ESG disclosure is voluntary, the relationship between ESG disparity and ROA is positive but not statistically significant, with $\beta = 0.005$ and $P > 0.10$. This implies that ESG disparity does not significantly influence ROA in less regulated environments.

Table 8. ESG Disparity and Bank Performance by Mandatory vs Voluntary ESG Disclosure

VARIABLES	(1) Mandatory	(2) Voluntary
	ROA	
ESG Disparity	0.008**	0.005
	(2.529)	(1.361)
Constant	-0.065**	-0.087**
	(-2.336)	(-1.977)
Bank Controls	YES	YES
Country Controls	YES	YES
Observations	810	563
Adjusted R-squared	0.313	0.507
Year Fixed Effect	YES	YES
Firm Fixed Effect	YES	YES
Country Fixed Effect	YES	YES

High and Low ESG by ESG Pillars

The analysis in Table 9 examines the relationship between ESG differences and bank performance, focusing on banks with a high commitment to the E, S, and G pillars of ESG. This subsample analysis examines whether overall high ESG commitments and individual E, S, and G pillars may affect the relationship between ESG disparities and ROA differently. Overall, the ESG disparity has a positive and significant impact on ROA. The effect is most potent in environmental and social with β =0.008, $p < 0.01$. The governance also shows a positive effect, with $\beta = 0.005$, $p < 0.05$, although it has a slightly weaker impact on ROA.

Table 9. ESG Disparity and Bank Performance by High ESG. ENV, SOC, and GOV

VARIABLES	(1) High ESG	(2) High ENV	(3) High SOC	(4) High GOV
		ROA		
ESG Disparity	0.006**	0.008***	0.008***	0.005**
	(2.475)	(3.126)	(3.235)	(2.016)
Constant	-0.068**	-0.074**	-0.076**	-0.038
	(-2.073)	(-2.548)	(-2.118)	(-1.631)
Bank Controls	YES	YES	YES	YES
Country Controls	YES	YES	YES	YES
Observations	977	978	976	975
Adjusted R-squared	0.428	0.402	0.444	0.438
Year Fixed Effect	YES	YES	YES	YES
Firm Fixed Effect	YES	YES	YES	YES
Country Fixed Effect	YES	YES	YES	YES

Tests for endogeneity and other robustness tests

In this section, this study conducts several endogeneity tests and other robustness checks on the baseline results presented above. This confirms that our results remain robust when using different estimation techniques and affirms that they do not suffer from endogeneity problems, such as omitted variable bias and reverse causality.

Entropy balancing and Propensity score matching

To ensure that our results are not influenced by differences in control variables between banks with high and low ESG scores, we employ the propensity score matching (PSM) approach (Ferdous et al., 2024). This section addresses the selection bias that stems from bank-specific characteristics. First, the Propensity Score Matching (PSM) analysis will be performed, and banks with a high ESG disparity will be categorized as the treatment group (High Disparity ESG). On the other hand, we classify a bank as a low-disparity ESG if it falls below the median. A bank is classified as having a High Disparity ESG if it surpasses the median value of our sample. In contrast, it is categorized as Low Disparity ESG if it falls below the median. We then matched treatment and control banks within a caliper of 0.001 using replacement based on all control

variables included in the baseline results in Table 5. Finally, we re-estimate our model using the matched sample following prior studies (Li et al., 2021).

This study shows our findings in Table 10; Panel A compares the treatment's and control bank's average characteristics using the same control variables as in Table 5. Furthermore, report the corresponding t-statistics for the bank's characteristics for the control variables. The comparison results in Panel A indicate no statistically significant differences in the characteristics of banks. The univariate comparisons suggest that the matching process has effectively eliminated observable disparities between these two groups. Panel B shows a regression after matching to confirm our robust results, considering all visible differences between the treatment and control groups. Then, replicate the main regression model in Table 5, encompassing all control variables and fixed effects. Our findings remain unchanged across all models – the coefficient estimates for ESG remain positive and statistically significant at the 5% level. Consequently, these results align qualitatively with our baseline findings from Table 5.

Table 10. Endogeneity Tests
Panel A: Difference in mean
Proof that the treatment and control group mean coverage after entropy balancing.

	High ESG Disparity (Treated group)	**Low ESG Disparity (Control group)**	**High ESG Disparity (Treated group)**	**Low ESG Disparity (Control group)**
Variables	**Before Balancing**		**After Balancing**	
Bank Size	24.07	23.26	24.07	24.07
Income Diversification	3.831	35.17	3.831	3.832
Leverage	0.218	0.222	0.218	0.218
Loan Loss Reserves	0.010	0.011	0.010	0.010
Loan/Total Deposit	0.778	5.498	0.778	0.787
Net Interest Margin	0.034	0.035	0.034	0.034
Non-performing Loans	0.034	0.035	0.034	0.034
Operating Efficiency	-0.422	-0.439	-0.422	-0.422
Cash	0.001	0.007	0.001	0.001
Capital Adequacy	0.144	0.167	0.144	0.144
GDP Growth	0.042	0.034	0.042	0.042
Inflation	7.527	5.496	7.527	7.527
WGI	0.124	-0.123	0.124	0.124

Univariate comparison of means between treatment and control groups – PSM

	High ESG	Low ESG	Difference of Mean	
Variables	(Treated)	(Control group)	Diff	t-value
Bank Size	24.01	24.04	0.033	0.253
Income Diversification	1.622	1.307	-0.315	-1.149
Leverage	0.216	0.217	0.001	0.034
Loan Loss Reserves	0.010	0.010	0.000	0.139
Loan/Total Deposit	0.795	0.674	-0.121	-0.940
Net Interest Margin	0.036	0.036	0.000	0.251
Non-performing Loans	0.034	0.039	0.005	0.750
Operating Efficiency	-0.432	-0.423	0.009	0.424
Cash	0.004	0.005	0.001	0.095
Capital Adequacy	0.152	0.142	-0.010	-1.232
GDP Growth	0.045	0.039	-0.006	-0.851
Inflation	6.515	6.976	0.461	0.434
WGI	0.0996	-0.076	-0.175	-1.278

Panel B: PSM and Entropy Balancing

	(1)	(2)
VARIABLES	PSM	Entropy
	ROA	
High Disparity	0.004**	0.003**
	(2.501)	(2.108)
Constant	-0.304	-0.130
	(-0.986)	(-1.070)
Bank Controls	YES	YES
Country Controls	YES	YES
Observations	589	1,358
Adjusted R-squared	0.729	0.735
Year Fixed Effect	YES	YES
Firm Fixed Effect	YES	YES
Country Fixed Effect	YES	YES

Panel C: Heckman Two-Stage Model

VARIABLES	(1) ESG Disparity	(2) ROA
Industry Average	1.407***	
	(6.622)	
High Disparity		0.003*
		(1.777)
LAMBDA		0.000
		(0.345)
Bank Control	YES	YES
Country Control	YES	YES
Constant	-20.298***	-0.064
	(-7.805)	(-0.537)
Observations	1,311	896
R-squared		0.804
Year Fixed Effect	YES	YES
Industry Fixed Effect	YES	YES
Country Fixed Effect	YES	YES

Panel D: Cross-lagged panel

VARIABLES	**(1)** **ESG Disparity**	**(2)** **ROA**
Lag ESG Disparity	0.2909***	0.0000
	(10.1585)	(0.8235)
Lag ROA	3.4405	0.5721***
	(0.2099)	(7.0008)
Constant	32.9948***	-0.0191*
	(6.3792)	(-1.8405)
Bank Control	YES	YES
Country Control	YES	YES
Observations	1,167	1,167
R-squared	0.1324	0.5653
Year Fixed Effect	YES	YES
Firm Fixed Effect	YES	YES
Country Fixed Effect	YES	YES

Heckman Two-Stage Estimation

For the following endogeneity tests, we employ the Heckman (1979) two-stage technique to assess whether our sample is affected by selection bias. For example, banks with higher ESG disparity may be more inclined to disclose relevant data, potentially leading to a non-random sample. The Heckman procedures help correct this selection bias by first estimating a selection equation, a probit model, to determine the likelihood of a bank being included in the sample. Then, we incorporate the inverse Mills ratio (LAMBDA) to adjust for potential selection effects.

In Panel C**,** the Heckman two-stage model addresses possible sample selection bias by predicting the chances of a high ESG disparity and then measuring how the average ESG disparity in the industry affects ROA. The results indicate high ESG disparity significantly impacts ROA, with $\beta = 1.407$, $p < 0.01$. Although the selection term (Lambda) is insignificant, with $p > 0.10$, sample selection bias does not affect the results. Following prior studies (El Ghoul et al., 2011; Kim et al., 2014), we utilize the average ESG disparity among other banks in the same industry as our instrumental variable. The industry average of ESG, serving as an industry-level control, is also positive and significant in the first stage. This suggests that banks in the banking sector with more substantial ESG disparities are likelier to have higher ESG disparities.

Cross-lagged Panel Models (CLPM)

Cross-lagged endogeneity tests are crucial for understanding the relationship between ESG disparity and bank performance. These tests help determine whether changes in ESG disparities lead to changes in bank performance or vice versa. Panel D examines the dynamic relationship between ESG disparity and ROA by including lagged values of ESG and ROA. The results suggest that lagged ESG disparity does not significantly predict current ROA, but lagged ROA has a strong positive effect on current ROA, with $\beta = 0.2909$, $p < 0.01$. However, lagged ROA does not significantly influence current ESG, whereas lagged ESG has a positive and significant impact on ESG, with $\beta = 0.5721$, $p < 0.01$. This finding suggests that while bank performance (ROA) positively influences future profits, past ESG disparities persist and positively impact future ESG disparities but do not directly affect ROA.

Alternative Measures of ESG Disparity and Bank Performance

Other ESG Disparity

The analysis presented in Table 11 examines the impact of Environmental, Social, and Governance (ESG) disparity on bank profitability. The robust test applies other independent variables to measure ESG disparity using the GINI approach. The alternative test in Table 11 supports our results in Table 5, showing that the specific model we used, limitations in the data, or any biases in our methods do not affect the relationship we found. The results indicate a strong positive correlation between ESG disparity and ROA with $\beta = 0.011$, $p < 0.01$.

Table 11. ESG Disparity and Bank performance – using GINI

	(1)
VARIABLES	**ROA**
GINI (ESG Disparity)	0.011***
	(2.700)
Constant	-0.138
	(-1.285)
Bank Control	YES
Country Control	YES
Observations	1,358
Adjusted R-squared	0.744
Year Fixed Effect	YES
Firm Fixed Effect	YES
Country Fixed Effect	YES

Return on Equity (ROE)

The analysis presented in Table 12 examines the impact of Environmental, Social, and Governance (ESG) disparity on bank performance. This robust test uses the dependent variable to measure bank performance, specifically Return on Equity (ROE). The alternative testing in Table 12 reinforces our findings in Table 5 regarding the relationship between ESG disparity and bank performance, confirming that specific model specifications, data constraints, or methodological biases do not influence the observed relationships. The results show a strong positive correlation between ESG disparity and ROE with $\beta = 0.0017$, $p < 0.05$. This suggests that banks with ESG disparity experience better ROE.

Table 12. ESG Disparity and Bank Performance – using ROE

	(2)
VARIABLES	**ROE**
ESG Disparity	0.017**
	(2.483)
Constant	-0.976**
	(-2.272)
Bank Control	YES
Country Control	YES
Observations	1,358
Adjusted R-squared	0.712
Year Fixed Effect	YES
Firm Fixed Effect	YES
Country Fixed Effect	YES

DISCUSSIONS

This section analyses the impact of strategic disparities among ESG pillars on bank performance in emerging markets during the post-COVID-19 period. The primary hypothesis (H1) posits that banks with greater ESG disparities tend to achieve better performance, suggesting that those with significant ESG discrepancies perform better. Additionally, we found that secondary hypotheses (H2a-H2c) regarding the moderating role of substantial environmental, social, and governance commitments positively influence ESG disparity and bank performance. Our findings suggest that stronger social and environmental scores, when combined with ESG disparity, significantly impact bank performance. The results have significant implications for banks that support SMEs, as these institutions often operate under tighter capital constraints and face pressure to balance profitability with inclusive development goals. This evidence suggests that a selective focus on specific ESG areas, rather than a uniform commitment across all pillars, can be a more effective strategy for maximizing profit. However, the third hypothesis (H3) further explores how countries with high climate risks may weaken this positive relationship, emphasizing the need for uniform ESG commitments.

This study supports and expands previous findings. For instance, Shakil et al. (2019) and Gangwani and Kashiramka (2024) demonstrate a positive relationship between social and environmental performance and bank performance in emerging markets. This evidence suggests that specific dimensions of ESG significantly impact ROA. However, El Khoury et al. (2023) and Bătae et al. (2021) argue that the governance pillar positively influences bank performance, which contrasts with our result that governance has the least influence when there is a disparity in ESG performance. These mixed findings emphasize the strategic priorities that banks may adopt, possibly due to resource constraints and institutional pressures, as theorized by the neo-institutional and resource-based review theories. While the positive relationships between ESG disparity and bank performance are robust, this interpretation must consider potential biases and limitations. There may be measurement accuracies associated with the ESG scores from Refinitiv Eikon. To address this concern, we conduct robustness checks, including propensity score matching, entropy balancing, two-stage Heckman, and cross-lagged models.

From the institutional perspective, the study suggests that ESG strategies are most effective when they align with institutional mandates, such as mandatory disclosure requirements. In this context, an uneven ESG commitment positively correlates with bank performance, contrasting with voluntary disclosure. When disclosure is mandatory, and compliance with regulations is high, banks are more likely to align with their objectives. Banks may disclose only the bare minimum or selectively when disclosure is voluntary and regulatory compliance is less stringent. As a result, the success of ESG strategies depends significantly on whether banks truly comply with regulations, not just whether disclosure exists. Overall, this study suggests that variations in ESG strategies, combined with pressures from institutions and limited resources, can enhance bank performance, but only under specific circumstances, and not in countries with high climate risk or those with mandatory ESG disclosure.

CONCLUSIONS

This study examines how strategic disparities in Environmental, Social, and Governance (ESG) commitments affect bank performance in emerging economies during the post-COVID-19 period. We analyzed data from 398 listed banks across 35 emerging countries between 2020 and 2023 and found a significant positive correlation between higher ESG disparity and bank performance. Our findings suggest that banks strategically prioritize specific ESG pillars over others, and this strategic emphasis correlated positively with bank performance. Our results further explain that banks gain more from emphasizing certain ESG areas than maintaining uniform ESG scores across all pillars. We confirmed the robustness of these findings through a series of tests and assessments for endogeneity. The study also shows that the impact of ESG disparity on bank performance is more pronounced in countries with mandatory ESG disclosures and higher environmental and social commitments. Among the ESG components, the social pillar has the most significant impact on bank performance, particularly when disparities among the pillars are significant, followed by the environmental and governance pillars. Additionally, we find that in the presence of climate risks, banks with lower ESG disparities perform better than those with higher disparities.

Theoretically, this paper contributes significantly to the literature by examining how ESG disparity, which reflects how banks allocate their resources unevenly across ESG pillars, may improve their performance. This paper shifts attention from the traditional measures of overall average ESG scores to the strategic variation within ESG components. It expands the scope of ESG study by concentrating on emerging markets in the post-COVID-19 pandemic period, when institutional pressure, resource constraints, and regulatory differences shape how banks respond to ESG, rather than focusing merely on developed countries. The study also empirically examines how external pressures, such as climate risk exposure and mandatory ESG disclosure, moderate the relationships between ESG disparity and bank performance. These findings have significant implications for theoretical and practical perspectives on how banks may strategically commit to ESG under institutional and environmental pressures, resulting in diversity in ESG scores.

This study has significant practical implications for investigating the relationship between ESG disparity and bank performance, providing valuable insights for researchers, policymakers, investors, and financial institutions. For regulators, the study emphasizes the importance of implementing ESG disclosure mandates to encourage banks to be more transparent and accountable in their ESG practices. For banks, the findings emphasize the importance of managing ESG strategies effectively, particularly in countries vulnerable to high climate risks. Rather than focusing selectively on individual pillars, banks should strive for greater consistency across all three pillars to maintain legitimacy, enhance financial resilience, and meet the expectations of their stakeholders. This is particularly relevant for banks serving SMEs, which must align with ESG commitments while ensuring access to finance for SMEs that have limited access to traditional capital market financing. Since this study demonstrates the impact of ESG disparity on bank performance, a more robust ESG evaluation is needed, as traditional aggregate scores overlook variations in the pillars. Thus, rating agencies or researchers could develop metrics that capture ESG imbalance scoring, offering more informative market signals.

Despite its contributions, the study is subject to several limitations. First, the findings are not fully generalizable to emerging markets where institutional pressures, investors' expectations, regulatory environments, and culture may differ significantly. Second, the sample primarily comprises large and publicly listed banks, which may be biased toward better-governed banks and exclude non-listed banks. Third, the study relies on post-COVID-19 data from 2020 to 2023, which further limits our ability to make longitudinal inferences, although it does capture the impact after the pandemic. Further research could address several issues, such as comparative empirical studies involving both developed and emerging countries, to have a broader understanding of how ESG disparities influence bank performance in both segments. A further test is needed to assess how uneven ESG commitments may affect risk measurements, especially for climate-related risks such as transition risk and physical risk, and to investigate in non-banking sectors whether similar results also exist across industries, providing a better understanding to researchers, policymakers, investors, and financial institutions, not limiting

to banking sector only.

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APPENDICES

Appendix A: Brief description of variables and data sources

Variables	Description	Sources	References
Dependent Variables:			
ROA	Net income divided by total assets	Refinitiv	(Wang, 2023)
ROE	Net income divided by total shareholders' equity	Refinitiv	(Buallay, 2019)
Independent Variables:			
Environmental	The environmental pillar score indicates banks' environmental performance on a scale of 0 to 100.	Refinitiv	(Danisman & Tarazi, 2024)
Social	The Social pillar score indicates banks' social performance on a scale of 0 to 100.	Refinitiv	(Danisman & Tarazi, 2024)
Governance	The Governance pillar score indicates banks' governance performance, ranging from 0 to 100.	Refinitiv	(Danisman & Tarazi, 2024)
ESG	The ESG Combined score is an overall company score, which is the weighted average of the ESG and controversy score, ranging from 0 to 100	Refinitiv	(Danisman & Tarazi, 2024)
ESG Disparity	The coefficient of variation is calculated as the standard deviation of individual ESG scores within a firm divided by its average ESG score. Gini coefficient, computed as the sum of all pairwise absolute differences between individual pillar scores within a firm divided by $2 \times ESG \times n^2$, with "n" being the number of pillars (n = 3)	Refinitiv	(Harrison & Klein, 2007) (de la Fuente & Velasco, 2024)
Dummy ESG Disparity	A dummy equal to one if a firm's CV is equal to or higher than the yearly sample median, and zero otherwise.	Refinitiv	(de la Fuente & Velasco, 2024)
Control Variables:			
Bank-Specific Variables			
Bank size	Natural Logarithm of total assets	Refinitiv	Saif-Alyousfi et al. (2023)
Capital	The ratio of bank equity to total Assets	Refinitiv	(Danisman & Tarazi, 2024)
Income Diversification	The ratio of non-interest income to total income.	Refinitiv	(Gangwani & Kashiramka, 2024)
Net Interest Margin	Net interest income to total income	Refinitiv	(Liu & Xie, 2024)
Non-Performing loans	Non-Performing Loans to Gross Loans	Refinitiv	(Danisman & Tarazi, 2024)
Leverage	Total liabilities to total assets	Refinitiv	(Gangwani & Kashiramka, 2024)
Cash	Cash to Total Assets	Refinitiv	(Chiaramonte et al., 2022)
Capital	Share of bank equity in the total assets	Refinitiv	(Danisman & Tarazi, 2024)
Loan/Total Deposits	Total loan / Total Deposits	Refinitiv	Saif-Alyousfi et al. (2023)
Loan loss reserves	The ratio of Loan loss reserves to gross loans	Refinitiv	(Danisman & Tarazi, 2024)
Operating Efficiency	Non-interest expenses to total assets	Refinitiv	(Ghosh, 2015)
Country-Specific Variables			
GDP growth	Annual GDP growth	World Bank	Saif-Alyousfi et al. (2023)
Inflation	The annual growth rate of the GDP implicit deflator	World Bank	Saif-Alyousfi et al. (2023)
WGI	The aggregated measure of country-level governance quality is derived from the "Worldwide Governance Indicators" (WGI). It consists of six individual indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption.	World Bank	(Thomas, 2010)
Climate Risk	Annual climate risk from Greenwatch multiplied by -1. Higher values indicate higher climate risks.	Greenwich	(Ozkan et al., 2023)
Mandatory reporting	The dummy variable equals 1 if the Country is applying mandatory ESG reporting and 0 otherwise.		(Krueger et al., 2021)

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