Pak. j. life soc. Sci. (2024), 22(2):11896-11909 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.00848

RESEARCH ARTICLE

Can ESG Performance Contribute To A Reduction In Banks' Nonperforming Loans? Evidence from Emerging Countries Banks

Suman Najam Hussain[1*], Prof Dr. Rosalan Bin Ali[2], Dr. Jalila Binti Johari[3]

[1]PhD Scholar, Putra Business School, University of Putra, Malaysia

[2]Professor, Putra Business School, University of Putra, Malaysia

[3]Senior Lecturer, Putra Business School, University of Putra, Malaysia

ARTICLE INFO

Received: Aug 11, 2024

Accepted: Oct 19, 2024

Keywords

Bank non-performing loans

ESG Score

Emerging Countries

Sustainability

Financial Resilience

***Corresponding Author:**

pbs21104066@grad.putrabs.edu.my

ABSTRACT

Banks play a crucial role in fostering financial stability, and understanding how ESG performance can impact loan quality is vital, particularly in economies with varying regulatory frameworks. Using a quantitative research approach, this study examines the relationship between nonperforming loans (NPLs) and environmental, social, and governance (ESG) performance in banks within emerging markets banks. Utilizing data from banks in these regions, we find a negative correlation between a bank's ESG score and its level of NPLs. Additionally, we observe that strong performance across all three ESG pillars- Environmental, Social, and Governance—reduces the NPL ratio. Our findings suggest an improved ESG approach bolstering financial stability by indicating that higher ESG performance improves loan quality in emerging market banks and thus reduces NPLs.

INTRODUCTION

The integration of ESG standards into corporate operations signifies a paradigm change in the way businesses address the issues of social responsibility, environmental sustainability, and efficient governance. Understanding how ESG performance affects credit risk is crucial in the banking industry, where risk management is crucial. Furthermore, the way that banks operate in emerging economies is greatly influenced by the calibre of their institutions.

The amount of nonperforming loans (NPLs) tends to rise during financial crises, frequently hitting record highs (Khairi et al., 2021). Financial instability has the potential to cause bank runs in addition to public panic. When borrowers miss planned principle or interest payments over a predetermined period, they default on their loans and become non-performing assets (NPLs). Commercial loans are classified as nonperforming when payments are overdue by 90 days or more, with a high proportion of NPLs reflecting poor loan quality and increased default risk. As such, NPLs are widely used as an

indicator of a bank's loan portfolio quality. Despite several prudential measures to address this problem, non-performing loans (NPLs) kept rising far into the 2000s.

(Ajekigbe, 2008) found a notable rise in First Bank of Nigeria Plc's non-performing loans, advances, and discounts (LAD), which increased from N2.021 billion in 2007 to N6.015 billion in 2008. This was just one instance among many distressed banks within the Nigerian banking system. The situation reached a breaking point in 2009 when the Central Bank of Nigeria (CBN) revoked the licenses of 10 out of 24 banks in Nigeria. The CBN attributed these drastic measures to the executive management team's poor credit risk management, flawed judgment, and a lack of experience, effectively bursting the bubble that had been building within the banking sector.

This study examines the influence of ESG (environmental, social, and governance) performance on the quality of a bank's non-performing loans. By analyzing various ESG assessments, we aim to explore the relationship between banks' ESG practices and their loan performance. We hypothesize that banks with strong ESG performance are more attentive to the interests of their stakeholders, leading to more rigorous screening of borrowers and closer monitoring of loan usage, which helps mitigate default risks. Since such borrowers are more likely to remain profitable and meet their repayment obligations, banks with higher ESG performance are expected to have lower default probabilities and fewer nonperforming loans (NPLs). Consequently, we anticipate a negative correlation between a bank's ESG score and its NPL ratio.

Furthermore, this study empirically examines the relationship between banks' ESG performance and loan quality using data from emerging countries' commercial banks and ESG performance evaluation scores from 2013 to 2021. In a significant divergence from earlier studies, we not only find evidence of a negative association between banks' ESG scores and nonperforming loans (NPLs), but we also pinpoint the main variables influencing this relationship. Our findings: (1) add to the expanding corpus of ESG literature in the banking industry; (2) highlight the importance of ESG performance for stakeholders who are not shareholders, especially depositors; and (3) show how strong environmental and social pillars can positively impact bank stability in addition to the widely acknowledged significance of the governance pillar.

The rest of the paper is structured as follows: Section 2 reviews the relevant literature and hypothesis development, Section 3 outlines the research methodology and results analysis, Section 4 presents the conclusion and recommendations, and Section 5 Implication of the study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The stability of the financial system, especially in banks, can be impacted by several dangers, and it might be difficult to establish a clear way to reduce this risk. To mitigate these risks, however, incorporating ESG measurements into their risk management framework might be a useful first step.

(Chiaramonte et al., 2021) study on European banks between 2005 and 2017 examines how the environmental, social, and governance scores can affect bank stability both alone and jointly to evaluate whether this involvement lowers the riskiness of banks in times of financial instability. The findings show that stabilizing effects, which are enhanced by longer-term ESG disclosures, greatly benefit banks with higher ESG scores.

Furthermore, it was noted in a study by (Lee et al., 2022) that the variables during a financial crisis were bank risk and bank default which covered 12 ASEAN countries, suggested that banks' sustainable operations and financial performance should be subject to more frequent disclosure regulations. disclosures that are quarterly or semi-annual, for instance. Sustainable practices, as demonstrated by ESG scores, are essential for banks to maintain their stability. To lower bank risk and uphold their social obligation, banks should invest resources in improving all other ESG

indicators in addition to governance-related ones. This study shows that enhanced ESG successfully lowers the risk of bank failure, which benefits stakeholders and shareholders in addition to providing non-financial advantages.

In response to stakeholders' growing need for enhanced transparency about environmental, social, and governance (ESG) matters, sustainability reporting has become widely adopted by companies worldwide. Companies aim to create value while adhering to pertinent principles, such as fair employee compensation, adherence to ethical and social values, and environmental preservation, by the criteria provided by the (European Central Bank, 2020).

The importance of ESG considerations in the reshaping of banking strategy is the driving force behind the investigation of the relationship between ESG performance in banking management. Furthermore, this investigation has garnered support from regulatory authorities, as evidenced by the (European Banking Authority, 2021; European Central Bank, 2021; Riouch et al., 2024).

In a study by (Chollet & Sandwidi, 2018) the environmental, social, and governance practices hold great importance for all stakeholders in the banking sector. Effective social and governance performance plays a vital role in mitigating financial risks and solidifying the banks' dedication to sound governance and environmentally responsible practices. If the risk is low, it generally results in a positive impact on the bank's credit risk (Banks' financial uncertainty decreases). When the likelihood of borrowers defaulting on their obligations due to financial-related factors is low, the bank faces fewer credit losses. This lower credit risk allows the bank to maintain a healthier loan portfolio with reduced potential for non-performing loans and defaults. Consequently, the bank's overall creditworthiness and financial stability improved, leading to more favorable borrowing terms, reduced funding costs, and increased investor confidence. Additionally, a low credit risk position enables the bank to allocate resources more efficiently and fosters a positive reputation in the financial market. The long-term decision-making of management is heavily influenced by financial performance, as banks that consistently achieve high levels of profitability can prioritize both their sustained viability and the endorsement of CSR activities without immediate concerns.

The notion of ESG participation is intricate and encompasses various aspects. The combined effects of environmental, social, and governance policies—as well as the opportunities and difficulties they present—can be succinctly expressed by the abbreviation ESG (Chouaibi et al., 2022; Nizam et al., 2019; Farooq et al., 2010). A bank needs to guarantee that its customers and business associates are informed about its commitments to the environment, social responsibility initiatives, and the standard of its governance guidelines (Bătae et al., 2021; Al-khresheh et al., 2023). The broad challenges surrounding ESG reporting have been thoroughly studied in previous studies (Buallay, 2019; Ching et al., 2017; Gallego-Álvarez & Ortas, 2017; Hussain et al., 2018; Shad et al., 2019; Al-khresheh., 2023). Stakeholder theory, first presented by Freeman in 1984, says that when long-term core strategies align with the objectives of many stakeholders, including customers, government agencies, employees, and local communities, ESG engagement can give a competitive advantage. Certain ESG activities can yield benefits by strengthening the bank's relationships with its stakeholders and promoting greater transparency. In times of crisis, banks with higher ESG ratings may be perceived as having lower risk profiles and may even outperform the market, according to (Albuquerque et al., 2020; Broadstock et al., 2020). Stakeholder theory suggests, however, that a bank's lack of involvement in ESG activities may indicate its commitment to bondholders and potential minority investors. The use of ESG criteria and their relationships to the risk and performance of non-financial institutions have attracted the attention of academics and researchers (Fatemi et al., 2018; Garcia et al., 2017; Kabir Hassan et al., 2021; Naimy et al., 2021). But with contributions from a wide range of scholars, the body of literature on ESG performance in the banking sector has also expanded (Ahmed et al., 2018; Azmi et al., 2021; Bătae et al., 2021; Birindelli et al., 2018; Buallay et al., 2020; Z. Chen & Xie, 2022; Chiaramonte et al., 2021; Di Tommaso & Thornton,

2020; El Khoury et al., 2021; Miralles Quirós & Redondo-Hernández, 2019; Miralles-Quirós & Hernández, 2019; Paltrinieri et al., 2020; Shakil et al., 2019). However, research on ESG is still lacking, especially when it comes to the NPls of banks when they lend money, especially in the banking industry of emerging economies.

A study by (Buallay, 2020) on 882 banks from a diverse range of countries, both developed and developing, following the aftermath of the 2008 financial crisis, it was revealed that ESG performance played a substantial role in enhancing the financial and market-based performance of banks situated in developing nations. The process of establishing a robust ESG performance is anticipated to incur certain costs; however, these expenditures are expected to be offset by the advantages of revenue stability, reduced business risks, positive performance outcomes, and significant added value, as outlined in the study.

According to (Azmi et al., 2021), the primary drivers of bank stability appear to be environmental transparency and emissions reduction. This suggests that stakeholders, such as stockholders and bondholders, place more emphasis on a bank's commitment to environmental transparency and emissions reduction compared to conventional corporate governance matters. Their study also identified a non-linear relationship between ESG activities and bank value, indicating that lower levels of ESG activity positively influence bank value, but there are diminishing returns to scale. Notably, environmentally friendly initiatives have the most significant impact on bank value. The researchers further explored the mechanisms through which ESG activities affect bank value and identified a positive correlation between ESG activities and both cash flows and efficiency. Additionally, they found that ESG activities have a positive impact on reducing the cost of equity but do not significantly influence the cost of debt. Moreover, he concluded that there is a positive relationship between environmental activities and bank value, while there is limited evidence of a connection between the social and governance aspects of the ESG measure and bank value.

Besides this, according to (W. Da Chen et al., 2021) banks fulfil a distinct role within society, wherein their objectives extend beyond profit maximization to encompass the welfare of stakeholders. This investigation delves into whether banks consider a company's pollution track record when making lending decisions. The findings indicate that, in cases where companies exhibit higher levels of chemical pollution, banks impose notably higher loan interest rates, resulting in increased overall borrowing costs, shorter loan durations, and the requirement for more substantial collateral. When working with borrowers with poorer corporate governance systems and greater risk profiles, these negative consequences become more noticeable. Moreover, the research provides strong evidence underscoring the significant influence of banks' corporate social responsibility (CSR) programs on environmental risk factors.

A significant and positive correlation has been shown (Miralles-Quirós & Hernández, 2019) between banks' corporate governance and environmental performance and Tobin's Q, indicating a link with the generation of shareholder value. In contrast, there is a negative and notable association between the social performance of banks and shareholder value creation. Furthermore, the study revealed that European banks are actively pursuing cost savings related to electricity, water, and paper usage.

(Chollet & Sandwidi, 2018) discussed and analyzed that financial stability is a macroeconomic indicator of the financial performance of any country and it explores the financial stability of a banking sector which examines the relationship between CSR and financial risk. This study used proxies such as systematic, and total risk for the measurement of financial risk and concluded that the positive social performance of a bank reduced financial risk and increased financial stability. On the other side, (Hassan et al., 2019) conclude that bank stability is negatively correlated with liquidity and credit risk. (Zhou et al., 2020) discussed the relationship between bank stability and social capital by taking the social capital index as a measure, they conclude that more social capital banks have less chances of failure and fewer chances of financial trouble. Lastly, a study conducted by (Shakil et al.,

2019) examined 93 banks from developing countries between 2015 and 2018. Their governance scores had little effect on their ROA and ROE, but their environmental and social scores had a good impact.

Strong Environmental, Social, and Governance (ESG) performance can reduce financial risks during economic downturns, according to a study on ESG performance in China. High ESG score portfolios typically outperform lower score portfolios, suggesting that businesses with strong sustainability processes have fewer uncertainties and are more stable during difficult times (Broadstock et al., 2020). Maintaining high ESG standards can help companies navigate risky situations more effectively. The study also notes that the positive impact of ESG performance is less pronounced under normal conditions, emphasizing the economic benefits of ESG engagement specifically during crises.

Significant threats to financial stability exist in the banking industry because of high-risk tolerance, which affects lending policies. Because they offer liquidity to the actual economy, banks and non-bank financial firms are governed by tight laws, in contrast to other economic sectors (Allen et al., 2019). The amount of non-performing loans (NPLs)—loans that are unlikely to be repaid or whose payments are past due by more than 90 days—is one of the important metrics for regulators (European Banking Authority, 2021). Elevated non-performing loan (NPL) levels pose a risk to the banking industry's stability, obstruct intermediation endeavors, and may hamper sustained economic expansion (Alessi et al., 2021; Staehr & Uusküla, 2021). Given that loan portfolios frequently make up a sizable amount of bank assets, non-performing loans (NPLs) are a crucial indicator of impending bank failures since they can interrupt cash flows and point to more serious problems with financial stability (Farooq et al., 2019; Khairi et al., 2021; Messai & Jouini, 2013).

As borrowers faced defaults and income loss, the start of the COVID-19 pandemic sparked worries about a possible spike in non-performing loans (NPLs) (IMF, 2020). The possibility of large losses loomed for banks, which if they were serious enough would mean taking money out of their capital reserves, which may reduce the value of the banks overall. Despite short-term regulatory relief measures, banks tightened lending standards and raised their loan loss provisions in response to this (IMF, 2020). As the economy stabilized by the end of 2022, banks started to increase their loan loss reserves, but regulators advised caution because of persistent macroeconomic uncertainty and declining asset quality (Cloutier, 2022).

Macroeconomic, macro-financial, and bank-specific factors play a crucial role in the origination of NPLs (Ahmad et al., 2022; Messai & Jouini, 2013). Strong links between GDP growth and NPL levels have been observed during economic downturns, such as the global financial crisis of 2007–2009 (Beck et al., 2015). But despite the expected increase in defaults, recent crises—such as the COVID-19 pandemic and geopolitical unrest—did not produce the anticipated rise in defaults, perhaps because of tightened regulatory frameworks and strong government backing (IMF, 2020; Morgan & Pontines, 2018; White & Case, 2022).

There may be a connection between lower NPL ratios and ESG performance, according to recent research Reduced non-performing loan (NPL) levels could improve banks' financial stability if there is a high level of ESG participation, especially in governance and risk management (Balázs tóth et al., 2021). For example, in Islamic banking, there is a negative correlation found between the social pillar of ESG and non-performing loans (NPLs); this correlation may be attributed to more selective lending methods and lower customer service standards (Paltrinieri et al., 2020). Green loans and sustainable corporate financing are two examples of ESG-related financial products that are becoming more and more popular, which is indicative of this trend (Kim & Li, 2021; Swedish Bankers Association, 2021).

Moreover, banks that have higher ESG scores may take more calculated risks, which could result in a decrease in the amount of non-performing loans (NPLs) (Makri et al., 2014). Given the connection

between taking on risk and the growth of non-performing loans (NPLs), banks that give priority to ESG issues may be able to lower their exposure to credit risk and enhance overall financial stability. This demonstrates how useful ESG measures may be in the banking industry for tracking and reducing systemic risk (Abbas et al., 2021).

Higher ESG scores indicate that banks care more about their stakeholders and are more likely to follow social norms, according to Donaldson and Preston's (1995) stakeholder theory (Kölbel et al., 2017; Muller & Kräussl, 2011; Surroca et al., 2010). It is more likely for these banks to screen their borrowers to prevent large amounts of non-performing loans (NPLs). In contrast to banks with lower ESG scores, they might, for example, issue fewer mortgages in low-income areas (Basu et al., 2022). Moreover, a lower default risk is linked to high ESG scores (Di Tommaso & Thornton, 2020). More NPLs are a sign of worse loan quality and increased default risk, therefore it seems to sense that banks with higher ESG scores will have fewer NPLs overall, Thus, we hypothesize:

H1: Banks' ESG scores are inversely related to non-performing loans

Banks with strong environmental scores tend to lend to companies actively reducing their carbon emissions, packaging waste, and water usage. By cutting costs through measures like using more recycled materials, these companies save money and reduce legal risks. These factors contribute to higher net income, allowing companies to better manage loan repayments. As a result, such companies are less likely to default. Thus, we propose:

H2: Banks' Environmental scores are inversely related to non-performing loans.

A strong social pillar within a company promotes support from employees, customers, and the community. By offering benefits like flexible work hours, health coverage, and community support initiatives, companies foster goodwill and enhance revenue potential. This, in turn, strengthens their relationship with banks and increases the likelihood of timely loan repayments. Hence, we hypothesize:

H3: Banks' social scores are inversely related to non-performing loans

Good corporate governance aligns shareholder interests with those of the board and management. Banks with high governance scores are likely to ensure transparency, accurate financial reporting, and accountability, which leads them to lend to similarly governed companies. These companies are more likely to maintain a positive relationship with the bank and repay loans promptly. Therefore, we conjecture:

H4: Banks' Governance scores are inversely related to non-performing loans

Statistical tables such as those summarizing sample construction, variable definitions, and regression outcomes further demonstrate the correlation between high ESG scores and reduced NPLs across environmental, social, and governance pillars.

RESEARCH METHODOLOGY

This study applied the quantitative research design where according to (Hair et al., 2003), it shall adopt scientific methods and procedures to obtain the required and describe the existing features of a defined target population. Refinitiv Eikon database is used to collect banks' data for the period 2013-2022. Refinitiv database (also called Refinitiv Eikon, hosted by Thomson Reuters) is used in this study because the data of banks is available at large, and it is one of the most extensive ESG databases with almost 630 different ESG metrics and over 80% of the worldwide market cap. It is also used in previous similar studies by (Di Tommaso & Thornton, 2020; Kabir Hassan et al., 2021; Lisin et al., 2022; Lupu et al., 2022; Naimy et al., 2021). The data collected from Refinitiv used as variables are ESG combined scores, as well as the individual environmental, social, and governance pillar scores. The dependent variable is non-performing loans. Furthermore, several control

variables highlighting macroeconomic aspects were collected from the World Development Index-WDI.

This study investigates a sample of banks with headquarters in emerging countries. The economy can grow and develop more easily thanks to the emerging (Buallay, 2019; Kabir Hassan et al., 2021). The rising sustainable development standards include emerging nations even though their domestic banking laws may differ. This can lessen the variations among the sample banks and increase the generalizability of the study's findings.

The first sample comprised 358 banks whose fiscal year ended on December 31st and whose headquarters were located in 24 emerging nations. Refer to Table 1. Due to missing ESG scores, which were thought to be essential for the study, this figure dropped. The banks that were in default were also removed because their financial circumstances could hurt the study's conclusions. Subsequent analysis of the data showed that certain banks' ESG scores were only missing during certain sample years. For longitudinal panel data, it is typical (Badi H. Baltagi, 2015; Baltagi & Song, 2006). In this sample, it may be because the banks stopped reporting non-financial data at some point during the study period, or it may have been the result of a bank merger, acquisition, or withdrawal from the market. After the years with incomplete data were eliminated, the panel became imbalanced. Since it would be impossible to ascertain how ESG scores affected the dependent variables, observations in which each of the three dependent variables was missing were all eliminated.

Our sample consists of commercial banks from emerging countries covering the period from 2012 to 2021. After excluding observations with missing data, the final sample includes 1436 bank-year observations (Table 1).

Table 1: Sample Selection

	Sample Size
Num of banks from the year 2013-2021	3200
Less:	
Missing data banks drop	(900)
Missing data was deleted and merged with available ESG data	(864)
The final sample of bank observations	1436

Table 2: Definitions of variables

Variables	Definition	Source
NPL_t	Loans that are in default or close to default each year t, are deflated by the total amount of loans from the previous year (year t-1).	Refinitiv
ESG_{t-1}	ESG Score in year t-1.	Refinitiv ESG
ROA_t	The ratio of a bank's pre-tax income in year t to its total assets from the previous year (t-1), measures how efficiently the bank uses its assets to generate profits.	Compustat Bank
NPL_{t-1}	The ratio of non-performing loans (NPLs) in the previous year (t-1), is deflated by the total loans from the year before that (t-2).	Refinitiv ESG
$LOAN_{t-1}$	The ratio of total loans in the previous year (t-1) to total assets in year t-2, indicates a bank's loan exposure in the past year.	Compustat Bank
$\Delta LOAN_t$	The percentage change in total loans from year (t-1) to year t, reflecting loan growth.	Compustat Bank
LLA_{t-1}	The ratio of loan loss allowances in year (t-1) to total loans in year t-2 indicates provisions made for potential loan losses in the previous year.	Compustat Bank
GDP_t	The annual growth rate of Gross Domestic Product in year t, measuring economic performance.	WDI
$Unemployment_t$	The unemployment rate in year t represents the percentage of the labor force that is jobless.	WDI
$Inflation_t$	The inflation rate in year t reflects the percentage increase in the price level of goods and services.	WDI

To test Hypothesis 1, we follow the approach of previous studies and incorporate both macroeconomic and bank-specific factors into the model (1). Based on the Hausman test results, we include year-fixed effects (σt) in our regression analysis. To mitigate concerns about reverse causality, we use the lagged independent variable ESG_{it-1}.

This study utilizes two-stage least squares (2SLS) regressions using instrumental variables (IVs) to allay any worries regarding the omitted variable. (Danisman & Tarazi, 2023) utilize as IV the bank's ESG score from the prior year ($ESGi_{t-2}$). We anticipate that these IVs will only affect banks' non-performing loans (NPLs) as a result of their ESG score, meeting the criteria for IV relevance and strength. Our 2SLS equations use $X_{i,t}$ to represent macroeconomic and bank-specific control variables, and σt to represent year-fixed effects.

RESULTS ANALYSIS

Table 3 reports the summary statistics of all the variables. The descriptive statistics in this table present the summary for a sample of 1,436 observations across various financial and macroeconomic variables. The average non-performing loan (NPL) is 2.0%, with a standard deviation of 1.1%, ranging from 0% to 12.0%. The mean value of nonperforming loans (NPL) is 0.020, indicating that, on average, 2% of total loans are bad loans. The ESG score is continuous between 0 and 1, and the average ESG score is 0.456. The lagged Environmental, Social, and Governance (ESGt-1) score has an average of 0.456, with a relatively high variation (S.D. = 0.140), while the return on assets (ROA) averages 3.2%, showing minimal negative values. The capital adequacy ratio (CAPR1) is stable at an average of 13.2%. The lagged variables, including NPLt-1 and LOANt-1, exhibit a mean of 1.2% and 76.6%, respectively. Loan growth (ΔLOAN) shows a positive mean of 13.1% but varies widely. Additionally, macroeconomic factors such as GDP growth, unemployment, and inflation exhibit moderate averages of 2.0%, 6.5%, and 3.2%, respectively, with some variation across the data. The mean value of nonperforming loans (NPL) is 0.020, indicating that, on average, 2% of total loans are bad loans. The ESG score is continuous between 0 and 1, and the average ESG score is 0.456.

The regression results are shown in Table 4. According to column (1), banks with higher ESG scores have smaller non-performing loans (NPLs), which is consistent with our first hypothesis. The coefficient of the ESG score is negative and significant at the 1% level. Notably, a bank's nonperforming loan ratio might drop by 0.4% with every unit improvement in ESG score. Next, we provide in columns (2) and (3) the IV regression's results using 2SLS estimators. The ESG score from the previous year (ESG_{it-2}) is used to calculate the ESG score (ESG_{it-1}). ESG_{it-1} is the dependent variable in the first stage, and we estimate the predicted ESG score ESG_t using the one IV and additional control variables. Furthermore, this table shows the OLS regression results of the bank's non-performing loans (NPL) on ESG scores (ESGt-1) and the results of instrumental variable (IV) regression with two-stage least squares (2SLS) estimators. The IV is ESG rating in year t-2 (ESG_{t-2}). The dependent variable is the ESG rating of year t-1 in the first stage of regression and the dependent variable is the bank's nonperforming loan in the second stage of regression. ESG_{t-1} is the independent variable in the second stage, which is the predicted value from the first-stage regression. All variables are winsorized at the 1% and 99% levels. Detailed definitions of all other variables are available in Table 2. T-statistics are reported in parentheses and ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

The Independent variable which is ESG_{it-2}, has positive and significant coefficients in column (2). This study concludes that they meet the standards for relevance and strength as IV based on the F-statistic (283.811) and the Hansen p-value (0.155). We regress the nonperforming loans (NPLs) of the banks on the expected ESGs (ESG_{t-1}) that we found from the first-stage regression in column (3). Our primary finding is supported by the negative and substantial coefficient of ESG_{t-1} at the 5% level.In

Table 5, the relationship between banks' non-performing loans (NPLs) and ESG score is examined. Bank non-performing loans (NPLs) are regressed on three different ESG component pillar scores to display the results in columns (1) through (3). Each of the three pillars has a negative correlation with banks' non-performing loans (NPLs), suggesting that every ESG component pillar lowers the proportion of banks' NPLs.

Table 3: Summary statistics

Variables	N	Mean	S.D.	Min	Max
NPL	1436	0.020	0.011	0	0.120
ESG_{t-1}	1436	0.456	0.140	0.019	0.812
ROA	1436	0.032	0.008	-0.068	0.044
CAPR1	1436	0.132	0.025	0.065	0.336
NPL_{t-1}	1436	0.012	0.011	0	0.115
$LOAN_{t-1}$	1436	0.766	0.198	0.048	1.520
ΔLOAN	1436	0.131	0.172	-0.434	1.580
LLA_{t-1}	1436	0.013	0.007	0.001	0.061
GDP	1436	0.020	0.027	-0.034	0.057
Unemployment	1436	0.065	0.018	0.037	0.096
Inflation	1436	0.032	0.012	-0.004	0.047

This table shows the statistical results for the variables used in the regressions. All variables are winsorized at the 1% and 99% level. Definitions of variables are in Table 2.

Table 4: Nonperforming loans and ESG scores of banks

	OLS (1) NPL	2SLS (2) First Stage ESG_{t-1}	(3) Second Stage NPL
ESG_{t-1}	-0.004*** (-4.122)		
ESG_{t-2}		0.978*** (79.193)	
ESG_{t-1}			-0.003** (-3.397)
ROA	-0.150** (8.904)	0.116 (0.408)	-0.1538** (5.191)
CAPRI	-0.007 (0.915)	-0.210** (2.798)	-0.003 (0.390)
NPL	0.738** (0.955)	-0.506** (2.553)	0.682** (23.200)
LOAN	-0.002*** (2.944)	-0.035*** (3.289)	-0.001 (0.647)
ALOAN	0.005*** (7.513)	-0.008 (0.882)	0.006*** (5.205)
LLA	0.025 (0.914)	1.337** (3.917)	-0.004 (0.145)
GDP	0.052 (0.966)	8.219 (3.767)	0.295** (2.166)
Unemployment	0.000 (0.697)	-0.082 (3.645)	0.003** (2.301)
Inflation	0.000 (0.392)	0.152 (3.813)	-0.006** (2.353)
Constant	0.009*** (0.714)	0.302 (5.078)	-0.003 (0.704)
Year FE	YES	YES	YES
N	1436	1436	1436
R	0.791	0.516	0.782
F		283.711	74.392

Table 5: Analysis of three pillars of ESG

	(1) *NPL*	*(2)* *NPL*	*(3)* *NPL*
Environmental Pillar$_{t-1}$	-0.004***		
	(-4.306)		
Social Pillar$_{t-1}$		-0.006***	
		(-3.823)	
Governance Pillar$_{t-1}$			-0.004**
			(-3.169)
ROA$_t$	-0.252***	-0.163***	-0.171***
	(-8.008)	(-7.117)	(-6.941)
CAPR1$_t$	-0.008	-0.008	-0.006
	(-1.531)	(-1.619)	(-1.226)
NPL$_{t-1}$	0.829***	0.960***	0.862***
	(61.355)	(61.615)	(61.543)
LOAN$_{t-1}$	-0.003***	-0.003***	-0.003**
	(-2.256)	(-2.209)	(-1.525)
ΔLOAN$_t$	0.005***	0.005***	0.005***
	(8.387)	(8.464)	(8.609)
LLA$_{t-1}$	0.025	0.025	0.010
	(1.090)	(1.091)	(0.938)
GDP$_t$	-0.051	-0.060	-0.038
	(-0.954)	(-1.110)	(-0.703)
Unemployment$_t$	-0.000	-0.000	-0.000
	(-0.690)	(-0.841)	(-0.450)
Inflation$_t$	0.000	0.001	0.000
	(0.382)	(0.542)	(0.131)
Constant	0.007***	0.008***	0.009***
	(4.806)	(5.176)	(6.509)
Year FiXed Effects	YES	YES	YES
N	1436	1436	1436
R^2	0.789	0.790	0.788

CONCLUSION AND RECOMMENDATIONS

Our study investigates the connection between the environmental, social, and governance (ESG) performance of banks and the quality of their loans. Stakeholder theory states that banks with better ESG scores respect societal norms and give priority to stakeholder interests. These ethical banks are more likely to monitor loans diligently, screen borrowers completely, and lower the number of nonperforming loans (NPLs). Our results validate our premise that banks with high ESG scores have reduced NPL ratios. We examine each of the three ESG pillars separately to better understand the underlying causes of this link. We discover that while each pillar contributes to the negative correlation, the environmental and social pillars have the most effects. When examined throughout a range of periods and with different ESG datasets, our results hold. This study contributes to the ESG literature in the banking sector by focusing on loan quality and disaggregating ESG scores into their component pillars.

Implications of the Study

The findings of the study on the impact of ESG performance on reducing non-performing loans (NPLs) in emerging countries' banks hold significant practical and theoretical implications. Practically, the research suggests that banks in emerging markets can potentially mitigate credit risk and improve asset quality by integrating robust environmental, social, and governance (ESG) practices into their operations. This can guide bank management and policymakers to promote ESG initiatives as part of risk management strategies, ultimately contributing to financial stability and sustainable development. Theoretically, the study contributes to the literature by providing empirical evidence that supports the positive link between ESG performance and lower NPLs, particularly in the context of emerging economies where financial systems are often more vulnerable to instability. This highlights the role of ESG factors as a risk-mitigating tool, suggesting a need to refine existing credit risk models to incorporate ESG considerations more explicitly.

REFERENCES

Abbas, F., Masood, O., Ali, S., & Rizwan, S. (2021). *How do capital ratios affect Bank risk-taking: new evidence from the United States*. *11*(1). https://doi.org/10.1177/2158244020979678

Ahmad, M., Ahmed, Z., Yang, X., Hussain, N., & Sinha, A. (2022). Financial development and environmental degradation: Do human capital and institutional quality make a difference? *Gondwana Research*, *105*, 299–310. https://doi.org/10.1016/J.GR.2021.09.012

Ahmed, S. U., Ahmed, S. P., & Hasan, I. (2018). Why banks should consider ESG risk factors in bank lending? *Banks and Bank Systems*, *13*(3), 71–80. https://doi.org/10.21511/BBS.13(3).2018.07

Ajekigbe. (2008). *First Bank Annual Reports, Lagos, Vol. No. 7, pp. 111*. https://www.annualreports.com/Company/first-bank

Albuquerque, R. A., Koskinen, Y., Yang, S., & Zhang, C. (2020). *Love in the Time of COVID-19: The Resiliency of Environmental and Social Stocks*. https://papers.ssrn.com/abstract=3594293

Alessi, L., Bruno, B., Carletti, E., Neugebauer, K., & Wolfskeil, I. (2021). Cover your assets: Non-performing loans and coverage ratios in Europe,. *Economic Policy*, *36*(108), 685–733. https://doi.org/10.1093/EPOLIC/EIAB013

Allen, F., Carletti, E., & Gu, X. (2019). The Roles of Banks in Financial Systems. *The Oxford Handbook of Banking*, 40–61. https://doi.org/10.1093/OXFORDHB/9780198824633.013.2

Azmi, W., Hassan, M. K., Houston, R., & Karim, M. S. (2021). ESG activities and banking performance: International evidence from emerging economies. *Journal of International Financial Markets, Institutions and Money*, *70*. https://doi.org/10.1016/j.intfin.2020.101277

Badi H. Baltagi. (2015). *The Oxford Handbook of Panel Data* -. Oxford University Press. https://global.oup.com/academic/product/the-oxford-handbook-of-panel-data-9780199940042?cc=pk&lang=en&

Balázs tóth, Edit Lippai-Makra, Dániel szládek, & Gábor dávid. (2021). *View of The Contribution of ESG Information to the Financial Stability of European Banks*. https://journals.lib.uni-corvinus.hu/index.php/penzugyiszemle/article/view/1233/695

Baltagi, B. H., & Song, S. H. (2006). Unbalanced panel data: A survey. *Statistical Papers*, *47*(4), 493–523. https://doi.org/10.1007/S00362-006-0304-0/METRICS

Basu, S., Vitanza, J., Wang, W., & Zhu, X. R. (2022). Walking the walk? Bank ESG disclosures and home mortgage lending. *Review of Accounting Studies*, *27*(3), 779–821. https://doi.org/10.1007/S11142-022-09691-3/TABLES/11

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

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

Broadstock, D. C., Chan, K., Cheng, L. T. W., & Wang, X. (2020). The role of ESG performance during times of financial crisis: Evidence from COVID-19 in China. *Finance Research Letters*, *38*, 101716. https://doi.org/10.1016/J.FRL.2020.101716

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

Buallay, A. (2020). Sustainability reporting and firm's performance: Comparative study between manufacturing and banking sectors. *International Journal of Productivity and Performance Management*, *69*(3), 431–445. https://doi.org/10.1108/IJPPM-10-2018-0371/FULL/PDF

Buallay, A., Fadel, S. M., Alajmi, J., & Saudagaran, S. (2020). Sustainability reporting and bank performance after financial crisis: Evidence from developed and developing countries. *Competitiveness Review*, *31*(4), 747–770. https://doi.org/10.1108/CR-04-2019-0040

Chen, W. Da, Chen, Y., & Huang, S. C. (2021). Liquidity risk and bank performance during financial crises. *Journal of Financial Stability*, *56*. https://doi.org/10.1016/J.JFS.2021.100906

Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. *International Review of Financial Analysis*, *83*. https://doi.org/10.1016/J.IRFA.2022.102291

Chiaramonte, L., Dreassi, A., Girardone, C., & Piserà, S. (2021). Do ESG strategies enhance bank stability during financial turmoil? Evidence from Europe. *Https://Doi.Org/10.1080/1351847X.2021.1964556*, *28*(12), 1173–1211. https://doi.org/10.1080/1351847X.2021.1964556

Ching, H. Y., Gerab, F., & Toste, T. H. (2017). The Quality of Sustainability Reports and Corporate Financial Performance: Evidence from Brazilian Listed Companies. *SAGE Open*, *7*(2). https://doi.org/10.1177/2158244017712027/ASSET/IMAGES/LARGE/10.1177_2158244017712027-FIG1.JPEG

Chollet, P., & Sandwidi, B. W. (2018). CSR engagement and financial risk: A virtuous circle? International evidence. *Global Finance Journal*, *38*, 65–81. https://doi.org/10.1016/J.GFJ.2018.03.004

Chouaibi, S., Chouaibi, J., & Rossi, M. (2022). ESG and corporate financial performance: the mediating role of green innovation: UK common law versus Germany civil law. *EuroMed Journal of Business*, *17*(1), 46–71. https://doi.org/10.1108/EMJB-09-2020-0101

Cloutier, E. (2022). *Non-performing loans: Early signs point towards an increase in 2023, KPMG. Available at:* https://kpmg.com/xx/en/home/insights/2022/11/non-performing-loans-early-signs-point-towards-an-increase-in-2023.html

Danisman, G. O., & Tarazi, A. (2023). Esg Activity and Bank Lending During Financial Crises. *SSRN Electronic Journal*. https://doi.org/10.2139/SSRN.4013766

Di Tommaso, C., & Thornton, J. (2020). Do ESG scores effect bank risk taking and value? Evidence from European banks. *Corporate Social Responsibility and Environmental Management*, *27*(5), 2286–2298. https://doi.org/10.1002/CSR.1964

El Khoury, R., Nasrallah, N., & Alareeni, B. (2021). The determinants of ESG in the banking sector of MENA region: a trend or necessity? *Competitiveness Review*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/CR-09-2021-0118/FULL/PDF

European Banking Authority. (2021). *European Banking Authority*. https://www.eba.europa.eu/

European Central Bank. (2020). *Annual report 2020.* https://www.ecb.europa.eu/pub/annual/html/ar2020~4960fb81ae.en.html

European Central Bank. (2021). *What are provisions and non-performing loan (NPL) coverage?* https://www.bankingsupervision.europa.eu/about/ssmexplained/html/provisions_and_nplcoverage.en.html

Farooq, M. O., Elseoud, M. S. A., Turen, S., & Abdulla, M. (2019). Causes of Non-Performing Loans: the experience of Gulf Cooperation Council countries. *Entrepreneurship and Sustainability Issues*, *6*(4), 1955–1974. https://doi.org/10.9770/JESI.2019.6.4(29)

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, *38*, 45–64. https://doi.org/10.1016/J.GFJ.2017.03.001

Gallego-Álvarez, P. I., & Ortas, P. E. (2017). Corporate environmental sustainability reporting in the context of national cultures: A quantile regression approach. *International Business Review*, *26*(2), 337–353. https://doi.org/10.1016/J.IBUSREV.2016.09.003

Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. (2017). Sensitive industries produce better ESG performance: Evidence from emerging markets. *Journal of Cleaner Production*, *150*, 135–147. https://doi.org/10.1016/J.JCLEPRO.2017.02.180

Hair, J. F., Bush, R. P., & Ortinau, D. J. (2003). *Marketing research : within a changing information environment*. 720. https://books.google.com/books/about/Marketing_Research.html?id=je0FnwEACAAJ

Hassan, M. K., Khan, A., & Paltrinieri, A. (2019). Liquidity risk, credit risk and stability in Islamic and conventional banks. *Research in International Business and Finance*, *48*, 17–31. https://doi.org/10.1016/J.RIBAF.2018.10.006

Hussain, N., Rigoni, U., & Orij, R. P. (2018). Corporate Governance and Sustainability Performance: Analysis of Triple Bottom Line Performance. *Journal of Business Ethics 2016 149:2*, *149*(2), 411–432. https://doi.org/10.1007/S10551-016-3099-5

IMF. (2020). *Global Financial Stability, April 2020: Markets in the time of covid-19, IMF.* https://www.imf.org/en/Publications/GFSR/Issues/2020/04/14/Global-Financial-Stability-Report-April-2 020-49020

Kabir Hassan, M., Chiaramonte, L., Dreassi, A., Paltrinieri, A., & Piserà, S. (2021). The crossroads of ESG and religious screening on firm risk. *Research in International Business and Finance*, *58*, 101500. https://doi.org/10.1016/J.RIBAF.2021.101500

Khairi, A., Bahri, B., & Artha, B. (2021). A Literature Review of Non-Performing Loan. *Journal of Business and Management Review*, *2*(5), 366–373. https://doi.org/10.47153/JBMR25.1402021

Kim, S., & Li, Z. (2021). Understanding the impact of esg practices in corporate finance. *Sustainability (Switzerland)*, *13*(7). https://doi.org/10.3390/su13073746

Kölbel, J. F., Busch, T., & Jancso, L. M. (2017). How Media Coverage of Corporate Social Irresponsibility Increases Financial Risk. *Strategic Management Journal*, *38*(11), 2266–2284. https://doi.org/10.1002/SMJ.2647

Lee, P. L., Lye, C. T., & Lee, C. (2022). Is bank risk appetite relevant to bank default in times of Covid-19? *Central Bank Review*, *22*(3), 109–117. https://doi.org/10.1016/J.CBREV.2022.08.003

Lisin, A., Kushnir, A., Koryakov, A. G., Fomenko, N., & Shchukina, T. (2022). Financial Stability in Companies with High ESG Scores: Evidence from North America Using the Ohlson O-Score. *Sustainability 2022, Vol. 14, Page 479*, *14*(1), 479. https://doi.org/10.3390/SU14010479

Lupu, I., Hurduzeu, G., & Lupu, R. (2022). How Is the ESG Reflected in European Financial Stability? *Sustainability 2022, Vol. 14, Page 10287*, *14*(16), 10287. https://doi.org/10.3390/SU141610287

Makri, V., Tsagkanos, A., & Bellas, A. (2014). Determinants of non-performing loans: The case of Eurozone. *Panoeconomicus*, *61*(2), 193–206. https://doi.org/10.2298/PAN1402193M

Messai, A. S., & Jouini, F. (2013). Micro and Macro Determinants of Non-performing Loans. *International Journal of Economics and Financial Issues*, *3*(4), 852–860. https://www.econjournals.com/index.php/ijefi/article/view/517

Miralles Quirós, M. M., & Redondo-Hernández, J. (2019). The impact of environmental, social, and governance performance on stock prices: Evidence from the banking industry. *Corporate Social Responsibility and Environmental Management*, *26*(6), 1446–1456. https://doi.org/10.1002/CSR.1759

Miralles-Quirós, M. M., & Hernández, J. R. (2019). ESG Performance and Shareholder Value Creation in the Banking Industry: International Differences. *Sustainability 2019, Vol. 11, Page 1404*, *11*(5), 1404. https://doi.org/10.3390/SU11051404

Morgan, P. J., & Pontines, V. (2018). Financial Stability and financial inclusion: The case of SME lending, The Singapore Economic Review, 63(01), pp. 111–124. Available at: *Https://Doi.Org/10.1142/S0217590818410035*, *63*(1), 111–124. https://doi.org/10.1142/S0217590818410035

Muller, A., & Kräussl, R. (2011). Doing good deeds in times of need: a strategic perspective on corporate disaster donations. *Strategic Management Journal*, *32*(9), 911–929. https://doi.org/10.1002/SMJ.917

Naimy, V., Khoury, R. E. L., & Iskandar, S. (2021). ESG Versus Corporate Financial Performance: Evidence from East Asian Firms in the Industrials Sector. *Studies of Applied Economics*, *39*(3). https://doi.org/10.25115/EEA.V39I3.4457

Nizam, E., Ng, A., Dewandaru, G., Nagayev, R., & Nkoba, M. A. (2019). The impact of social and environmental sustainability on financial performance: A global analysis of the banking

sector. *Journal of Multinational Financial Management*, *49*, 35–53. https://doi.org/10.1016/J.MULFIN.2019.01.002

Paltrinieri, A., Dreassi, A., Migliavacca, M., & Piserà, S. (2020). Islamic finance development and banking ESG scores: Evidence from a cross-country analysis. *Research in International Business and Finance*, *51*, 101100. https://doi.org/10.1016/J.RIBAF.2019.101100

Shad, M. K., Lai, F. W., Fatt, C. L., Klemeš, J. J., & Bokhari, A. (2019). Integrating sustainability reporting into enterprise risk management and its relationship with business performance: A conceptual framework. *Journal of Cleaner Production*, *208*, 415–425. https://doi.org/10.1016/J.JCLEPRO.2018.10.120

Shakil, M. H., Mahmood, N., Tasnia, M., & Munim, Z. H. (2019). Do environmental, social and governance performance affect the financial performance of banks? A cross-country study of emerging market banks. *Management of Environmental Quality: An International Journal*, *30*(6), 1331–1344. https://doi.org/10.1108/MEQ-08-2018-0155/FULL/XML

Staehr, K., & Uusküla, L. (2021). Macroeconomic and macro-financial factors as leading indicators of non-performing loans: Evidence from the EU countries. *Journal of Economic Studies*, *48*(3), 720–740. https://doi.org/10.1108/JES-03-2019-0107/FULL/PDF

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: the role of intangible resources. *Strategic Management Journal*, *31*(5), 463–490. https://doi.org/10.1002/SMJ.820

Swedish Bankers Association. (2021). *The banking indusTry's framework for climaTe acTion climate roadmap to zero emissions*. www.swedishbankers.se.

White & Case. (2022). *European NPLs: The journey from COVID-19 to Ukraine | White & Case LLP. Available at:* https://www.whitecase.com/insight-our-thinking/european-npls-journey-covid-19-ukraine

Zhou, D., Liu, T., & Wang, Q. (2020). How Social Capital Affects Environmental Performance in China. *Frontiers in Energy Research*, *7*, 506248. https://doi.org/10.3389/FENRG.2019.00160/BIBTEX

Al-khresheh, M. (2023). A mixed method study on the metacognitive awareness of reading strategies used by Saudi EFL students. *Journal of Pedagogical Research*, *7*(4), 30-47.https://doi.org/10.33902/JPR.202321535

Al-khresheh, M. H., Mohamed, A. M., & Ali, R. A. B. B. (2023). A Study on the Nature of Writing Apprehension among Saudi Undergraduate EFL Students. *Language Teaching Research*, *34*, 1-18.https://doi.org/10.32038/ltrq.2023.34.01

Farooq, A. J., Akhtar, S., Hijazi, S. T., & Khan, M. B. (2010). Impact of advertisement on children behavior: Evidence from pakistan. *European Journal of Social Sciences*, *12*(4), 663-670.

Riouch, A., Benamar, S., Ezzeri, H., & Cherqi, N. (2024). Assessing Student Perceptions of Pollution and Management Measures Related to COVID-19 Vaccination Tools in Morocco. *Pakistan Journal of Life and Social Science*, *22*(2).