International Journal of Innovative Research and Scientific Studies, 8(2) 2025, pages: 4424-4434

IJIRSS
International Journal of Innovative Research & Scientific Studies

ISSN: 2617-6548

URL: **www.ijirss.com**

Impacts of ESG practices on the operation performance: An empirical study of Vietnamese commercial banks

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Abstract

Environmental, Social, and Governance (ESG) activities are becoming essential drivers of performance for commercial banks in Vietnam. This study aims to identify the impact of ESG practices on the financial success of 27 Vietnamese banks from 2015 to 2023 and offers actionable insights for policymakers and bank leaders. We evaluate bank performance using key indicators such as Return on Assets (ROA) and Return on Equity (ROE), alongside moderating variables like size (SIZE), capital adequacy (CAP), cost-to-income ratio (CIR), and loan-to-deposit ratio (LDR). Additionally, we consider macroeconomic factors, including per capita income (GDP), inflation (INF), and the impact of COVID-19. Our research sample is selected based on adherence to the Global Reporting Initiative (GRI) Standards, ensuring a solid approach to ESG reporting. Employing STATA17 software and advanced models, our findings reveal that banks with robust ESG practices, particularly in social and governance areas, achieve significantly higher ROA and ROE. This underscores that investing in ESG is not merely a regulatory obligation but a strategic advantage that enhances long-term financial performance and competitiveness. Increasing awareness of sustainable development in bank management, developing a long-term strategy for ESG Standards, and enhancing transparency in ESG disclosures are essential recommendations for ESG practices for Vietnamese commercial banks to strengthen their performance in a sustainable way.

Keywords: ESG practices, GRI, operational performance, Vietnamese commercial bank.

DOI: 10.53894/ijirss.v8i2.6376
Funding: This study received no specific financial support.
History: Received: 3 March 2025 / **Revised:** 4 April 2025 / **Accepted:** 7 April 2025 / **Published:** 22 April 2025

Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Publisher: Innovative Research Publishing

1. Introduction

Environmental, social, and governance factors have gained significant popularity and recognition in recent years [1, 2]. ESG is now regarded as a crucial element for businesses, serving as a framework for stakeholders to comprehend and assess an organization's level of sustainable performance [3]. The integration of ESG practices into business decision-making has garnered considerable attention [4]. This interest has expanded to emerging markets, including Vietnam [5].

Vietnam presents a unique case for studying the impact of ESG practices due to its rapidly growing economy and increasing integration into the global market. In this context, commercial banks play an essential role, significantly influencing the country's economic development and financial landscape. The operational efficiency of these banks is crucial for the stability of Vietnam's financial system and overall economic growth.

In 2024, the credit growth of the Vietnamese banking system reached 7.38% compared to 2023, with private joint-stock commercial banks experiencing an 8.6% increase. This growth aligns with the government's economic restructuring goals, continuing to prioritize production and business activities. Joint-stock commercial banks account for 45% of the market share in total assets, and their total mobilized capital rose by 5.44%, representing 46.1% of the market share [6]. This substantial contribution underscores the importance of studying the impact of ESG practices on the performance of Vietnamese joint-stock commercial banks.

Recent studies by both domestic and international scholars have explored the impact of ESG practices on the performance of commercial banks [7-14]. However, there are limited comprehensive studies addressing this issue globally and specifically in Vietnam [13, 15]. Research findings remain inconsistent, likely due to variations in sample selection, research methodologies, and time frames [7, 14-18].

Some researchers assert that ESG factors significantly enhance the performance of commercial banks [9, 10, 13, 19, 20]. Conversely, other studies suggest that focusing on ESG practices can incur higher costs, negatively impacting bank operations [17]. Some research even argues that there is no significant relationship between the implementation of ESG practices and bank performance [20]. Most of the existing studies have been conducted in developed countries [10, 16] with less attention paid to developing nations like Vietnam. Notably, there has been no research conducted on the impact of ESG practices on the performance of Vietnamese commercial banks during the COVID-19 pandemic, a period marked by significant economic and financial fluctuations [14, 15, 20].

Previous studies on the impact of ESG practices on bank performance often employed multivariate linear regression models. However, while foreign scholars included a variety of control variables reflecting macroeconomic conditions, the Vietnamese studies typically lacked diverse macroeconomic control variables [14, 15, 20].

This study aims to assess the impact of ESG practices on the performance of Vietnamese joint-stock commercial banks by utilizing key financial performance indicators such as return on assets (ROA) and return on equity (ROE), along with macroeconomic control variables including GDP per capita (GDPbq), inflation (INF), and the effects of COVID-19. This approach represents a novel perspective and provides a solid foundation for comprehensively evaluating the impacts of ESG practices on the performance of Vietnamese joint-stock commercial banks from 2015 to 2023. Additionally, the study seeks to propose recommendations for stakeholders to support the sustainable development of these banks in the future.

2. Literature Review

2.1. Definition of ESG

The concept of Environmental, Social, and Governance activities has increasingly replaced the term Corporate Social Responsibility (CSR). This represents a significant shift in how companies measure their success and impact on society [21, 22]. This transition highlights that sustainable business practices are essential for a company's long-term performance.

ESG encompasses a variety of initiatives designed to promote accountability, transparency, and ethical behavior, while considering the interests of a broad range of stakeholders beyond just shareholders [2]. This comprehensive approach to corporate responsibility emphasizes the necessity for companies to actively address environmental and social challenges while maintaining robust governance structures.

2.2. ESG Practices in Vietnamese Commercial Banks

Recognizing the significance of ESG factors, Vietnamese commercial banks are increasingly adopting ESG practices. These practices encompass several key areas:

- Environmental practices focus on reducing the banks' environmental impact and addressing risks related to climate change and resource depletion [23]. Both organizations in general and commercial banks in Vietnam, in particular, face growing pressure to implement sustainable practices to lower carbon emissions and comply with evolving regulatory requirements. Environmental disclosure is crucial as it provides stakeholders with transparency regarding the banks' environmental performance [2, 21]. In Vietnamese commercial banks, environmental initiatives include efforts to reduce emissions, conserve natural resources, and leverage technology for sustainability.
- Social practices encompass various initiatives aimed at fostering positive relationships with stakeholders and enhancing social well-being [2, 24]. These practices include fair labor standards, community engagement, and diversity and inclusion initiatives, all of which contribute to the long-term success and sustainability of a business [2, 20, 23, 24]. For Vietnamese commercial banks, social practices play a crucial role in building trust and enhancing brand reputation, which positively affects operational performance. Corporate Social Responsibility (CSR) initiatives are essential for listed joint-stock commercial banks in Vietnam as they seek to strengthen relationships with stakeholders and address societal challenges. These initiatives encompass a range of activities, such as employee

welfare programs, community development projects, and ethical sourcing practices. By implementing these practices, banks can improve their competitiveness and resilience, ultimately creating long-term value for both shareholders and society.

- Governance practices focus on promoting transparency, accountability, and ethical decision-making within organizations. Effective governance structures ensure that companies comply with legal and regulatory requirements, mitigate risks, and align their objectives with the interests of their stakeholders [20, 23]. In the Vietnamese banking system, governance activities are crucial for building trust with investors and fostering a culture of integrity and accountability. This includes adhering to the highest standards of integrity and responsibility, establishing clear lines of responsibility, implementing effective risk management processes, and promoting a culture of transparency and ethical conduct [24]. By prioritizing governance activities, banks can strengthen investor trust, reduce risks, and protect their long-term financial performance.

2.3. Business Performance of Commercial Banks

A commercial bank is a business organization that aims to maximize profits while operating within acceptable levels of risk. The operating efficiency of a commercial bank is considered good when it achieves the highest possible profits without exceeding its risk tolerance. Financial efficiency in commercial banks reflects how well they utilize their resources to meet their profit goals, indicating the relationship between input and output factors that either enhance profit efficiency or minimize costs to boost competitiveness [25]. In this research, the operating performance of commercial banks is measured using two key metrics: Return on Assets (ROA) and Return on Equity (ROE).

- ROA measures how effectively a bank uses its assets to generate profits. It is calculated by dividing net income by total assets, making it particularly useful for assessing a bank's profitability in relation to its total assets.
- ROE evaluates the return on shareholders' equity and provides insight into how effectively management utilizes the shareholders' funds to generate profits. This ratio is calculated by dividing net income by shareholders' equity. Both metrics offer distinct views of a bank's financial health: ROA highlights operational efficiency, while ROE emphasizes financial leverage and the effectiveness of using shareholders' capital.

3. Research Model and Hypothesis

3.1. Research Model

To achieve the research objectives, the authors use a panel data regression model. Based on the synthesis of theoretical foundations and previous studies on the impact of ESG practices on the operational performance of commercial banks, the authors propose the following research models:

$$ROA_{it} = \beta_0 + \beta_1*ESG_{it} + \beta_2*SIZE_{it} + \beta_3*CAP_{it} + \beta_4*CIR_{it} + \beta_5*LDR_{it} + \beta_6*GDPbq_t + \beta_7*INF_t + \beta_8*COVID_t + \varepsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1*ESG_{it} + \beta_2*SIZE_{it} + \beta_3*CAP_{it} + \beta_4*CIR_{it} + \beta_5*LDR_{it} + \beta_6*GDPbq_t + \beta_7*INF_t + \beta_8*COVID_t + \varepsilon_{it}$$

The research models are adapted from the previous works of Wang and Sarkis [21]; Shen et al. [26], Wu et al. [11] and Gangi et al. [8] with some variables omitted and others selected to better fit the context of Vietnamese commercial banks. In this model, the dependent variables for operational performance—return on equity (ROE) and return on assets (ROA)—are derived from the research conducted by [20] and Wu and Shen [12].

The independent variable concerning ESG practices, as measured in Wu and Shen [12], was originally assessed using data from the Ethical Investment Research Service (EIRIS) databank and the BankScope database. However, gathering information on sustainable development and corporate social responsibility (CSR) in Vietnam according to a pre-defined set of indicators poses significant challenges. Consequently, this study employs both quantitative and qualitative methods to evaluate the ESG practices of banks. To measure the ESG practices of Vietnamese commercial banks, the authors have chosen the GRI Standards Glossary [19] as a comprehensive framework. This approach represents a novel aspect of this study compared to the earlier research by Wu and Shen [12].

Furthermore, the authors have retained several control variables, including bank size (SIZE), capital adequacy ratio (CAP), cost-to-income ratio (CIR), and loan-to-deposit ratio (LDR) from previous studies. Additionally, they have introduced two new control variables: the inflation rate (INF) and a dummy variable for the impact of COVID-19.

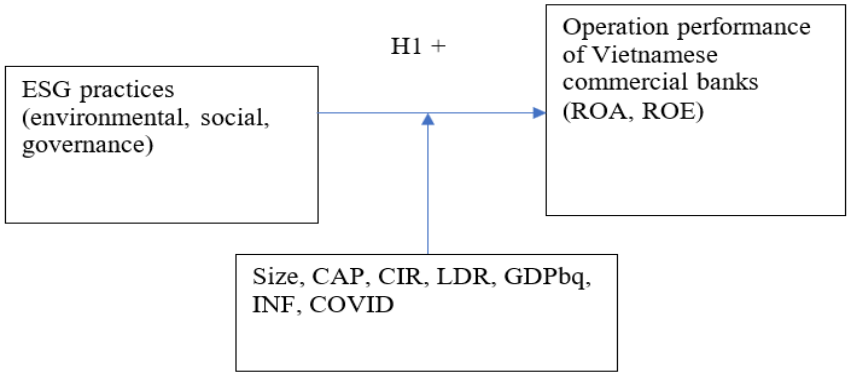

Figure 1.
Proposed research model.

3.2. Research Hypothesis

The theoretical foundation linking ESG activities to corporate performance is based on stakeholder theory and CSR theory. Stakeholder theory suggests that companies that effectively manage their relationships with various stakeholders, such as customers, employees, suppliers, and the broader community, are more likely to achieve a sustainable competitive advantage [20, 27]. CSR theory builds on this idea by emphasizing that responsible corporate actions, including environmental management and social contributions, can enhance a firm's reputation and overall performance, ultimately leading to improved financial results [28]. However, empirical evidence regarding the relationship between ESG practices and corporate performance is mixed. Some studies indicate that companies with high ESG scores may benefit from lower capital costs, better investor perceptions, and increased brand loyalty [20, 29, 30]. These advantages often correspond to better financial performance metrics, such as higher return on assets (ROA) and return on equity (ROE). Nevertheless, the strength and direction of these relationships can vary significantly across different markets and sectors. Therefore, this study proposes the following hypothesis:

H_1: ESG practices have a positive impact on the operational performance of Vietnamese commercial banks.

3.3. Influence of Control Variables in the Proposed Research Model

- Bank Size (SIZE): Larger banks typically demonstrate better performance and engage more effectively in sustainable development activities compared to smaller banks. This is mainly because larger banks can achieve greater efficiency and often attract more public attention. Essentially, banks with larger asset bases tend to be more profitable and generally receive higher ESG scores [25, 31, 32].
- Capital Adequacy Ratio (CAP): The capital adequacy ratio reflects the financial strength of a bank by comparing owners' equity to the bank's total assets. A high capital adequacy ratio indicates that a bank has sufficient capital to withstand potential financial shocks. When the CAP index is elevated, it suggests that the bank is well-positioned to manage various financial risks. As a result, the need for external funding diminishes, the risk of insolvency decreases, and the bank gains access to better business opportunities. This ultimately leads to higher profits and encourages participation in sustainable development [25, 33, 34].
- Cost-to-Income Ratio (CIR): The cost-to-income ratio is a key indicator of how effectively banks convert their assets into earnings, serving as a measure of management efficiency. It is calculated by dividing operating expenses by total operating income. Operating income includes both net interest income (earnings from lending activities) and non-interest income (revenue from services, foreign exchange trading, securities, etc.). Operating costs primarily arise from activities related to capital mobilization, such as receiving deposits and issuing securities. A higher CIR indicates lower operational efficiency, suggesting that the bank incurs significant costs to generate revenue. Managers typically aim to maintain the lowest CIR possible [35].
- The loan-to-deposit ratio (LDR): LDR is a key indicator of a bank's liquidity and its ability to finance loans using funds gathered from deposits. This ratio is calculated by dividing the total loan balance by the total deposits. A higher LDR suggests that banks have more reliable sources of capital to support their Environmental, Social, and Governance (ESG) initiatives.
- In this analysis, several macroeconomic variables are considered, including GDP per capita (GDPbq), inflation (INF), and the impact of COVID-19 (COVID). The inclusion of the inflation variable is crucial, as it significantly influences bank performance [20, 36, 37]. Furthermore, COVID is examined to evaluate how macroeconomic factors can either promote or impede banks' decisions regarding ESG activities.
- The anticipated effects of these control variables in this study are summarized in Table 1, based on previous research findings.

Table 1.
Measures and expected sign of the control variable.

Control variable	Measurement	Expected sign	Authors
SIZE	SIZE = *ln (Total assets)*	+	Buallay [28] and Van Nguyen, et al. [25]
CAP	CAP = $\frac{Equity}{total\ assets}$	+/-	San and Heng [33]
CIR	CIR = $\frac{Operational\ costs}{Total\ revenue}$	-	Tran, et al. [35]
LDR	LDR = $\frac{Total\ loan}{Total\ deposit}$	+	Van Nguyen, et al. [25]
GDPbq	GDP per capita Vietnam	+	Belasri, et al. [34]
INF	Annual Inflation in Vietnam	+/-	
COVID	Equal "1" for the Covid years, "0" for the non-Covid years	-	Tran Thi [20] and Van Nguyen, et al. [25]

4. Data Collection and Research Methodology

4.1. Research Sample

To conduct a comprehensive study, the research sample consists of commercial banks listed on the Vietnamese stock market from 2015 to 2023. This period was chosen because the State Bank of Vietnam began raising concerns and implementing activities related to ESG practices and Sustainable Development in 2015. At that time, the government also increased pressure on enterprises to disclose information related to Sustainable Development on the stock market. Additionally, the period experienced several socio-economic fluctuations due to the COVID-19 pandemic from 2020 to 2023. The research sample comprises 243 observations from 27 commercial banks over a consecutive nine-year period, from 2015 to 2023. For regression analysis to yield accurate results, the sample must satisfy the formula: $n \geq 8m + 50$, where n represents the minimum required sample size and m stands for the number of independent variables in the model. This study includes 8 independent variables (ESG practices score, SIZE, CAP, CIR, LDR, GDPbq, INF, and Covid), which indicates a minimum sample size of $n \geq 114$. Therefore, a sample size of 243 observations is both appropriate and satisfactory for ensuring the representativeness of the research sample.

4.2. Data Collection

This study utilized secondary data collected from official and reliable sources, which is presented in tabular form for 27 Vietnamese commercial banks covering the period from 2015 to 2023. Specifically:

4.2.1. Dependent and Control Variables

The authors gathered financial data, including Return on Assets (ROA), Return on Equity (ROE), Capital (CAP), and Size (SIZE), from the banks' financial statements, notes to financial statements, and annual reports for the years 2015 to 2023. This data was used to calculate the dependent and control variables according to specified formulas.

Control variables such as Gross Domestic Product (GDP) and Inflation (INF) were collected and computed based on the annual reports from the State Bank of Vietnam.

For the COVID-19 dummy variable, the authors assessed and measured this based on recorded epidemic information, which was widely reported through news articles and other media sources. During the years 2015 to 2023, the authors assigned a value of '1' to the COVID dummy variable for the years when the epidemic occurred in Vietnam. Conversely, in the years when there was no epidemic, the COVID variable was assigned a value of '0.'

4.2.2. Independent Variables

The authors utilize both qualitative (content analysis) and quantitative methods (scoring criteria based on a designed scale) to assess the ESG (Environmental, Social, and Governance) practices of Vietnamese commercial banks.

For the ESG practices scoring criteria, the authors identified 61 criteria grouped into three main categories: environment, society, and corporate governance. These criteria were selected based on standards outlined in GRI 2020 and are aligned with the research objectives. Ten experts in sustainable development and the banking industry scored the ESG practices of the commercial banks according to these established criteria.

Data on ESG practices were collected and calculated from the annual reports and sustainable development reports of commercial banks, using sources like Vietstock, Café F, and the banks' official websites. The ESG practice score represents the average score based on these criteria, where the minimum value is 0 and the maximum is 1. An ESG score of 0 indicates that the bank does not engage in any ESG activities, while a score of 1 demonstrates that the bank fully complies with all 61 criteria for measuring its ESG implementation.

4.3. Data Analysis Method

The authors utilize the STATA 17 platform to analyze data for two models, focusing on two dependent variables: Return on Assets (ROA) and Return on Equity (ROE). To assess the suitability of the models, three estimation methods are employed: Pooled Ordinary Least Squares (P-OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). Additionally, the authors examine multicollinearity and autocorrelation to evaluate the impact of Environmental, Social, and Governance (ESG) practices on the performance of commercial banks in Vietnam.

5. Findings

Table 2 presents the average Return on Assets (ROA) of Vietnamese commercial banks from 2015 to 2023, which is 1.03%. During this period, the highest ROA recorded was 3.58%, while the lowest was -0.72%. Additionally, the average Return on Equity (ROE) for these banks is 12.15%. The Environmental, Social, and Governance (ESG) scores ranged from a minimum of 0 in 2015 to a maximum of 0.99 in 2023.

Table 2.
Statistical description.

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
ROA	243	1.035062	0.7878071	-0.72	3.58
ROE	243	12.15078	7.827614	-12.33	30.33
ESG	243	0.5625514	0.2138105	0	0.99
SIZE	243	18.99753	1.120609	16.69	21.56
CAP	243	8.369835	3.007695	3.63	19.11
CIR	243	50.10498	14.85899	22.71	108.51
LDR	243	91.55288	15.44961	31.2	142.82
GPDbq	243	3432.778	555.6328	2595	4285
INF	243	2.735967	0.8967712	0.63	3.54
Covid	243	0.3333333	0.4723775	0	1

Analyzing the correlation between variables in the research models presented in Table 3 reveals that the highest pairwise correlation coefficient among independent variables is 0.6980, specifically between the CIR and ROE variables. According to Hair et al. [38], multicollinearity arises when the correlation coefficient between pairs of variables exceeds 0.8. This indicates that the research models avoid multicollinearity, demonstrating that the explanatory variables are not highly correlated with one another. As a result, it is entirely reasonable to use these variables for further analyses.

The dependent variables (ROA, ROE) and independent variables (ESG, SIZE, CAP, CIR, LDR, GDPbq), except for INF, show statistically significant relationships with one another, as indicated by a significance coefficient of less than 0.05. ROA exhibits a positive correlation with most independent variables, except for a negative correlation of -0.6356 with CIR, which is also the variable that most strongly influences ROA. A similar pattern is observed with ROE, where CIR impacts both ROE and ROA the most significantly.

Table 3.
Correlation matrix.

	ROA	ROE	ESG	SIZE	CAP	CIR	LDR	GPDbq	INF	Covid
ROA	1.0000									
ROE	0.8473	1.0000								
ESG	0.4256	0.4857	1.0000							
SIZE	0.4308	0.6145	0.4466	1.0000						
CAP	0.4252	0.0194	0.0483	-0.2127	1.0000					
CIR	-0.6356	-0.6980	-0.4623	-0.6353	-0.1626	1.0000				
LDR	0.4868	0.4443	0.4211	0.2748	0.2289	-0.4556	1.0000			
GPDbq	0.3133	0.3287	0.7278	0.3251	0.0914	-0.4006	0.3799	1.0000		
INF	0.0593	0.1374	0.5029	0.1380	-0.1113	-0.1226	0.2112	0.4178	1.0000	
Covid	0.2397	0.2516	0.2861	0.1763	0.0782	-0.2902	0.1957	0.5129	0.0006	1.0000

Three regression models were conducted: P-OLS (see Table 4), FEM (see Table 6), and REM (see Table 7). The F test and the Hausman test were also performed (see Table 8) to determine the most suitable model for the study.

Table *Error! No text of specified style in document.*.
P-OLS regression model.

P-OLS				
Item	**ROA**		**ROE**	
	Beta	**P-value**	**Beta**	**P-value**
ESG	0.205	0.004	0.247	0.001
SIZE	0.218	0.001	0.230	0.000
CAP	0.377	0.000	-0.041	0.397
CIR	-0.310	0.000	-0.427	0.000
LDR	0.164	0.001	0.150	0.003
GDPbq	-0.142	0.045	-0.180	0.012
INF	-0.046	0.371	-0.033	0.523
Covid	0.063	0.219	0.082	0.116
Cons		0.027		0.368

According to the Ordinary Least Squares (OLS) method, the ESG variable positively affects the Return on Assets (ROA) and Return on Equity (ROE) variables, with coefficients of 0.205 and 0.247, respectively. Both coefficients have P-values less than 0.05, indicating statistical significance. When examining other control variables, SIZE, CAP, CIR, and LDR are statistically significant and positively influence ROA, except for CIR and GDPbq, which have a negative impact. However, the CAP variable is not statistically significant for ROE; instead, GDPbq is significant for ROE and has a negative effect. The remaining variables, INF and COVID-19, do not show statistical significance.

Table 5.
VIF coefficients.

Variable	VIF	1/VIF
ESG	2.82	0.354
SIZE	2.18	0.460
CAP	1.33	0.750
CIR	2.27	0.440
LDR	1.43	0.702
GPDbq	2.85	0.351
INF	1.51	0.661
Covid	1.5	0.667

Table 5 indicates that all independent variables have VIF coefficients below 10, and the correlation coefficients among the independent variables are less than 0.8, as shown in the results of Table 3. Therefore, multicollinearity is not present in either the ROA or ROE models.

Table 6:
FEM model.

FEM				
Items	**ROA**		**ROE**	
	Beta	**P-value**	**Beta**	**P-value**
ESG	0.192	0.041	2.260	0.031
SIZE	**0.324**	**0.074**	3.763	0.034
CAP	0.072	0.000	-0.333	0.028
CIR	-0.019	0.000	-0.237	0.000
LDR	0.010	0.000	0.084	0.003
GPDbq	-0.000	0.180	-0.002	0.119
INF	-0.028	0.447	-0.081	0.826
Covid	0.074	0.287	1.058	0.120
Cons	-5.123	0.101	-46.386	0.129

According to the FEM method, both models demonstrate that the ESG variable positively impacts ROA and ROE. In this analysis, the CAP variable shows the highest level of impact and reliability. However, the SIZE variable does not have statistical significance in relation to the dependent variable, ROA, and the correlation coefficient in both models is lower than that obtained from the P-OLS method. The results regarding the level and direction of influence of the other control variables on the dependent variable are consistent with those from the P-OLS model (see Table 6).

Table 7.
REM model.

REM				
Items	**ROA**		**ROE**	
	Beta	**P-value**	**Beta**	**P-value**
ESG	0.307	0.017	3.603	0.011
SIZE	0.155	0.018	1.810	0.006
CAP	0.082	0.000	-0.248	0.070
CIR	-0.019	0.000	-0.240	0.000
LDR	0.010	0.000	0.084	0.002
GPDbq	-0.000	0.225	-0.001	0.135
INF	-0.027	0.468	-0.083	0.821
Covid	0.085	0.221	1.155	0.090
Cons	-2.300	0.080	-13.336	0.309

According to the REM method, there is not much difference compared to the FEM model. The results indicate a positive correlation between the variables ROA, ROE, and ESG, with the regression coefficients showing a slight increase at the same significance level of 95% as observed in the P-OLS and REM methods. Unlike the FEM model, the SIZE factor is statistically significant (consistent with the P-OLS results) at a confidence level of 95%. The impact of the independent variables on the dependent variables, ROA and ROE, aligns with the outcomes of the P-OLS and FEM models. Additionally, the variables GDPbq, INF, and Covid remain statistically insignificant for both ROA and ROE when using the REM method (refer to Table 7). These findings demonstrate the consistent positive impact of ESG practices on the performance of commercial banks in Vietnam across the three estimation methods. This outcome is supported by legitimacy theory, stakeholder theory, and prior research, including studies by Wu and Shen [12] and Tran Thi Hoang [39]. The authors utilize the F and Hausman tests to select the appropriate regression model.

Table 8.
F and Hausman test.

Test	ROA	ROE
	P-value	
F-test	0.0000	0.0000
Breusch	0.0000	0.0000
Hausman	0.9508	0.9860

The authors employed the F test to determine the suitability of the Fixed Effects Model (FEM) and the Pooled Ordinary Least Squares (P-OLS) regression method. The results indicated a p-value of less than 0.05, suggesting that the FEM model is more appropriate than the P-OLS model. Next, the authors conducted the Breusch-Pagan test to assess the appropriateness of the two models, P-OLS and Random Effects Model (REM). The results yielded a p-value of less than 0.05, indicating that the REM model is more suitable than the P-OLS model. Furthermore, the authors utilized the Hausman test to choose between the FEM and REM models. As shown in Table 8, the p-value was greater than 0.05, which suggests that the REM method is more appropriate than the FEM for ROA and ROE models.

6. Discussions, Conclusion and Recommendations

6.1. Discussions

This study analyzes the impact of Environmental, Social, and Governance practices on the performance of Vietnamese commercial banks from 2015 to 2023, using two key indicators, ROA and ROE (refer to Table 9). The REM method provides the most accurate and reliable results for this research.

Table 9.
Effect signs of research variables.

Variables	Expected sign	Findings	
		ROA	ROE
ESG	+	+	+
SIZE	+	+	+
CAP	+/-	+	NO
CIR	-	-	-
LDR	+	+	+
GDPbq	+	NO	NO
INF	+/-	NO	NO
Covid	-	NO	NO

Table 9 demonstrates that ESG practices positively impact the performance of Vietnamese commercial banks, thereby supporting the research hypothesis H1. By transparently disclosing their ESG practices, commercial banks help reduce information asymmetry among managers, shareholders, and investors in the market. This transparency boosts investors' confidence in the bank's potential and sustainable operations, ultimately attracting more capital. Moreover, engaging in ESG activities enhances the bank's reputation and brand perception within the community. This, in turn, can improve employee motivation and attract high-quality talent willing to contribute more to the organization. These factors significantly enhance the operational efficiency of banks. The findings of this research align with studies conducted by scholars such as Gangi et al. [8], Tran et al. [35], Giao and Hiếu [40], Chiaramonte et al. [10], and Alamsyah and Muljo [18]. The statistically significant relationship between ESG practices and the performance of commercial banks underscores the importance of these practices in determining bank performance. Therefore, prioritizing ESG initiatives is crucial for bank managers in achieving their broader objectives. ESG practices serve as valuable tools for organizations to attract attention and gain the trust of customers, the community, and the public.

The nature of commercial banks primarily revolves around financial services, which necessitates a high level of trust from customers. This trust is crucial for enhancing the efficiency of banking operations more than in any other type of

organization. Today, implementing Environmental, Social, and Governance (ESG) practices is essential for commercial banks to generate positive value for their businesses and boost their sustainability.

Currently, the State Bank of Vietnam and the government have established policies to encourage commercial banks to engage actively in activities related to sustainable development and growth. Recognizing that ESG practices can enhance operational efficiency, commercial banks are increasingly taking the initiative to strengthen their responsibilities in areas such as information disclosure, sustainable economic activities, and environmental and social initiatives. This proactive approach is creating competitive advantages for banks in the global economy, especially as Vietnam's economy faces various fluctuations.

The policies and programs that the banking system has been implementing to promote sustainable development primarily focus on green credit development, green banking, and the application of digital technologies. According to the State Bank of Vietnam, the banking system has achieved an average growth rate of 23% per year in green credit balances from 2017 to 2022, with a focus on approximately 12 sectors, including renewable energy and green agricultural development.

In terms of green banking, Vietnamese commercial banks are minimizing activities that negatively impact the environment. They are working to reduce CO2 emissions, eliminate paper records, avoid the use of plastic bottles, and promote technology adoption. Furthermore, banks are actively digitizing their operating processes and providing digital financial solutions. By applying Big Data technology and FinTech, they aim to automate data collection and information processing, which helps address challenges in effectively utilizing data and enhances their ability to identify and manage potential risks.

The results indicate that bank size positively influences return on assets (ROA), while the ratio of operating expenses to income has a negative effect. Capital adequacy shows a positive impact on ROA but does not affect return on equity (ROE). Additionally, the ratio of outstanding loans to total deposits positively influences both ROA and ROE.

After selecting the appropriate model for analysis, the results reveal that the control variables, inflation, average income, and COVID-19, are not statistically significant. The findings regarding inflation are consistent with the research conducted by Giao and Hiếu [40]. The COVID-19 variable is insignificant in this study because the research period spans nine years, with the pandemic lasting only three years and measured through a dummy variable. This duration provides a sufficient basis to assess its impact on the research model. Conversely, the average income variable did not show statistical significance, marking a difference between this study and previous research.

6.2. Conclusion

To examine the impact of Environmental, Social, and Governance practices on the performance of Vietnamese commercial banks, the authors collected data from 27 commercial banks in Vietnam covering the period from 2015 to 2023. This data included Financial Reports, Sustainable Development Reports, and Annual Reports from the banks. The assessment and scoring of ESG were based on criteria developed by the GRI 2020 standards.

The research findings indicate that ESG practices positively influence the development efficiency of commercial banks, as measured by two key indicators: Return on Assets (ROA) and Return on Equity (ROE). Notably, the influence on ROE is significantly stronger than that on ROA. The authors conclude that their findings support the theoretical framework put forth by stakeholders and align with the research of Wu and Shen [12].

Additionally, the performance of Vietnamese commercial banks is influenced by several other factors. Bank size has a positive impact, capital adequacy positively affects ROA (though it has no impact on ROE), the operating expense to income ratio has a negative impact, and the loan balance to total deposits ratio positively influences both ROA and ROE. Among these factors, bank size (SIZE) has the strongest effect, while the loan balance to total deposits ratio has the weakest effect on ROA and ROE. Furthermore, other factors such as GDP per capita, inflation, and the COVID-19 pandemic showed no correlation with ROA or ROE.

6.3. Recommendations

To enhance the performance of Vietnamese commercial banks through ESG practices, the following recommendations are proposed for relevant stakeholders:

- Increase Awareness of Sustainable Development in Bank Management: Commercial banks should proactively shift their business mindset and management approaches to prioritize sustainable development. Governance structures must integrate sustainability factors as much as possible. Leaders and managers should recognize the significance and benefits of ESG activities, enabling them to make informed decisions regarding the bank's strategy and policies based on ESG practices. Additionally, it is crucial to increase employees' awareness of ESG practices, as they play a vital role in effectively implementing these initiatives within Vietnamese commercial banks.
- Develop a Long-Term Strategy for ESG Standards: Vietnamese commercial banks should take the initiative to develop and refine long-term strategies that establish appropriate ESG standards. This proactive approach will help ensure that the banks are effectively implementing ESG practices.
- Enhance Transparency in ESG Disclosures: Vietnamese commercial banks need to strengthen the disclosure of information regarding their ESG practices. This can be achieved by developing transparent reporting content that adheres to reputable international and national standards on ESG practices.

6.4. Limitation and Future Research Direction

Research in this area faces several notable limitations:

- The study does not delve into the individual impacts of each aspect of ESG practices. Instead, it focuses solely on the overall effects of ESG practices on the performance of Vietnamese commercial banks, leaving critical nuances unexplored.
- The evaluation relies heavily on publicly available bank reports from 27 commercial banks over a nine-year period, using a scoring system based on 61 indicators. This approach introduces challenges in achieving precise comparisons and may result in unintentional inaccuracies in assessing ESG practices.
- Furthermore, the authors assess bank performance using only two profitability metrics: Return on Assets (ROA) and Return on Equity (ROE), which do not provide a comprehensive picture of performance.

Considering these limitations, it is vital for future research to investigate potential moderators and mediators that may influence the relationship between ESG activities and performance. Factors such as corporate culture, regulatory environments, and market conditions can play pivotal roles in determining the effectiveness of ESG initiatives. A deeper understanding of these contextual influences will enhance our comprehension of how and why ESG activities drive performance, ultimately leading to more informed decision-making within the banking sector.

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