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Sustainability reporting and financial performance: The case of Indonesian banks

--Manuscript Draft--

Manuscript Number:	HELIYON-D-22-34532
Article Type:	Original Research Article
Section/Category:	Social Sciences
Keywords:	ESG; Financial Performance; Sustainability reporting; Return on Assets; Return on Equity
Abstract:	This study examines the relationship of environmental, social, and governance (ESG) performance to financial performance in Indonesian banking companies during the period 2010-2020. The study uses panel data (ESG data from Thomson Reuters), statistical correlations, and regression models. It measures financial performance by Return on Assets (ROA), Return on Equity ROE, and Tobin's Q prevailing market price for the exchange of assets divided by the market price of newly produced goods (TQ). The findings show that ESG is negatively related to all dependent variables (ROA, ROE, and TQ). Each ESG pillar (environmental, social, and governance) has different results. We find that the social pillar has a significant positive effect on ROA and ROE, governance has a significant negative effect on TQ, and the business environment does not impact financial performance significantly. Limitations/implications of the study: The findings reported in this article advance decision makers' understanding of the quality of organizations' contributions to better ESG reporting in financial reporting. The study's findings on the relationship between ESG reporting and the financial performance of banks also have implications for stakeholders, ESG policymakers, academics, and assurance providers. The specific research gap addressed is the relationship between ESG and financial performance in Indonesian banking companies. Other interesting issues are the voluntary vs. mandatory nature of these reports and the impact of each modality on the variables considered.

Sustainability reporting and financial performance: The case of Indonesian banks

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Abstract

This study examines the relationship of environmental, social, and governance (ESG) performance to financial performance in Indonesian banking companies during the period 2010-2020. The study uses panel data (ESG data from Thomson Reuters), statistical correlations, and regression models. It measures financial performance by Return on Assets (ROA), Return on Equity ROE, and Tobin's Q prevailing market price for the exchange of assets divided by the market price of newly produced goods (TQ). The findings show that ESG is negatively related to all dependent variables (ROA, ROE, and TQ). Each ESG pillar (environmental, social, and governance) has different results. We find that the social pillar has a significant positive effect on ROA and ROE, governance has a significant negative effect on TQ, and the business environment does not impact financial performance significantly. Limitations/implications of the study: The findings reported in this article advance decision makers' understanding of the quality of organizations' contributions to better ESG reporting in financial reporting. The study's findings on the relationship between ESG reporting and the financial performance of banks also have implications for stakeholders, ESG policymakers, academics, and assurance providers. The specific research gap addressed is the relationship between ESG and financial performance in Indonesian banking companies. Other interesting issues are the voluntary vs. mandatory nature of these reports and the impact of each modality on the variables considered.

Keywords: ESG, Financial Performance, Sustainability reporting, Return on Assets, Return on Equity

1. Introduction

The disclosure of prudential information on environmental, social and governance (ESG) risks is increasingly relevant in large institutions with securities traded on a regulated market in different regions. In Europe, the European Banking Authority (EBA), with the aim of improving the identification, assessment, and management of Environmental, Social and Governance (ESG) risks by institutions and the assessment of their impact by supervisors, has made modifications to the Directive and the Regulation on capital requirements (CRR2/CRD5). Therefore, the European Commission has already defined the scope of what is considered ESG risks given that ESG factors can have a major impact on banks' bottom line and liquidity and can change a bank's risk profile directly and quickly. Currently, financial institutions are struggling to maintain customer loyalty and those entities that can differentiate themselves and promoting the inclusion of ESG factors in their business strategy will have a great competitive advantage, thus strengthening their reputation.

The last decade has seen an increase in investor demand for sustainable products. Thus, from the point of view of financing, there are all loans oriented towards "green" or "Green Lending" and products such as green mortgages, lines of credit, green loans, as well as specialized financing projects linked to ESG criteria. From the point of view of the investment strategy, green and social bonds aimed at financing environmentally sustainable projects stand out. In addition, if we consider the term "finance" from an ethical point of view, which includes social, environmental, and climate-related factors, we will be faced with the current concept of "Sustainable Finance". Therefore, there is a consensus in considering Sustainable Finance as those that condition economic growth towards a more humane and balanced development. Socially Responsible Investment (SRI): investments that include environmental, social and governance criteria apart from the strictly economic ones (risk, profitability, and liquidity).

In Indonesia Sustainability reporting (ESG) has been regulated since 2017 by Regulation of the Financial Services Authority No. 51/POJK.03/2017 on the application of sustainable finance to financial services institutions, issuers, and listed companies. The financial sector, somewhat stigmatized in recent times, faces a great opportunity to contribute to sustainable development and convince society that its role in this career is highly relevant and necessary for all stakeholders (shareholders, employees, managers, etc.). The "ideal scenario" for ESG policies involves widespread adoption of higher corporate governance standards, reduced environmental consequences, and increased social responsibility initiatives. Although ESG practices are intended to be important for all parties involved, competing managerial interests

may prevent improvement of them. Similarly, the need for profitability may prevent the adoption of stronger ESG policies.

The relationship between sustainability reporting and financial indicators has been studied in companies from different sectors and regions. Research has found a significant relationship between financial indicators and ESG information (Gutiérrez-Ponce *et al*.,2022a; García-Benau *et al.*, 2022; Gutiérrez-Ponce *et al*.,2022b; Sierra-Garcia *et al*., 2018). Regarding the specific works on the financial sector that relate ESG and financial performance, the results depend on the regulatory context of each region. In this sense, there are important differences between countries of the European Union, Asian and American countries after the financial crisis of 2008 (Scholtens, 2009; Cornett *et al*., 2016; Esteban-Sanchez *et al*., 2017a; Aras *et al*., 2018; Gangi *et al*., 2019; Shakil *et al.*, 2019; Siueia *et al*., 2019; Buallay, 2020; Menicucci, and Paolucci, 2022).

In this research, due to their significant contribution to the expansion of the Indonesian and Southeast Asian economies, we chose to look at large Indonesian banks and how ESG affects their financial performance. In this context, Indonesia is one of the main nations in Southeast Asia to promote sustainable finance and sustainability reports serve to build trust, provide added value, and outline the corporate strategy of these entities. In this sense, this study is a pioneer in Indonesia in analyzing how ESG affects financial performance and therefore, the purpose of this research is evaluated how prepared Indonesian financial institutions are for this requirement order to evaluate the level of awareness of these institutions in relation to the materiality of ESG risks and their economic effects analyzing the relationship between ESG and financial performance in banking companies.

This study contributes to the literature in several ways. First, it expands on earlier research on the relation between sustainability reporting and various perspectives on corporate performance. Second, the findings should increase awareness of ESG policies in Indonesian banking, ultimately impacting the sustainable growth of banking in Southeast Asia. Third, this study performs in-depth analysis of ESG by dividing it into 3 pillars; environmental, social, and governance to determine which dimensions of the three ESG pillars are dominant in banking.

We analyzed the relationship between ESG and financial performance using ESG data from Thomson Reuters for 2010-2020. During this period, five Indonesian banks had ESG data. The independent variable in this study is the ESG score, calculated from its three pillars. The

dependent variable consists of Return on Assets (ROA), Return on Equity (ROE) and Tobin's Q (TQ) (the ratio between a physical asset's market value and its replacement value), and the study addresses a specific research gap in examining the relationship between ESG and financial performance in Indonesian banking companies. Another interesting issue is the voluntary vs mandatory nature of these reports and the impact of each modality on the variables considered.

This study is divided into the following sections: Section 1 introduces the topic. Section 2 presents the literature review and theoretical background. Section 3 discusses the design and research methodology. Section 4 shows the empirical results and discussions. Section 5 concludes the paper and discusses the implications and limitations of the study, as well as recommendations for further research.

2. Literature Review and theoretical background

Addressing environmental, social, and corporate governance (ESG) issues has become a critical element of the company's strategy and its study has been carried out from various perspectives. The analysis of the relationship between corporate social responsibility and financial performance has given rise to diverse and contradictory results due to the problems of measuring both concepts in different organizational and cultural environments (Wu and Shen, 2013; Galant and Cadez, 2017; Wu and Shen, 2017). Too Akdogan *et al.*, (2020) analyzes the sustainability and corporate social responsibility reports in the Turkish region and finds that Turkish companies prefer to invest in CSR projects that directly contribute to the economic development of the country. However, in African banks, the same corporate governance structures promote and hinder the maximization of shareholder and stakeholder value.

El Khoury *et al.*, (2021) investigated ESG factors and financial performance of banks in the Middle East, North Africa and Turkey region and found a non-linear relationship between ESG and financial performance and Siueia *et al.*, (2019) examines the impact of voluntary CSR disclosure on Financial Performance (FP) in the Sub-Saharan banking sector and find that the voluntary report on commitment to CSR could help the banking sector to improve its (FP).

In this same line Gallego-Álvarez & Ortas, (2017) studies the influence of cultural characteristics of communities on corporate environmental sustainability reporting practices and concluding that business sustainability behaviors are highly sensitive to the pressures and demands of stakeholders, which ultimately are conditioned by the cultural environment. Pérez and del Bosque, (2015) highlights the importance of customers in banks' social responsibility practices and Shen *et al.*, (2016) finds that banks with socially responsible activities

overwhelmingly outperform non-CSR banks in terms of return on assets and return on capital. Also, Birindelli *et al.*, (2015) it analyzes the ethical qualification of the banks included in a European sample and concludes that banks pay more attention to the offer of socially responsible products y Carnevale & Mazzuca, (2014) concludes that investors appreciate the additional and complementary disclosure provided by the sustainability report. Miras-Rodríguez *et al*., (2015) analyze a global sample of electricity companies, why companies are being socially responsible and find that the economic crisis is testing their real commitment to CSR more than ever, especially when it goes beyond its economic consequences.

Therefore, the literature shows that progress has been made in the commitment to ESG information by stakeholders and that it is considered a source of competitive advantage in the design of long-term strategies (Khlif *et al.*, 2015). Along the same lines, Nekhili, M., Boukadhaba, A., & Nagati, H. (2021) analyze the role that human resources (shareholders and employee representatives) play in ESG and the financial performance of French companies and Baldini, M., Maso, L.D., Liberatore, G. *et al.*, (2018) show that company-level characteristics related to a company's visibility (analyst coverage, cross-listing, leverage, and size) have a positive and consistent effect on ESG disclosure and each pillar. However, Ching *et al*., (2017) concludes that there is no association between the accounting and financial performance variables in the Brazilian Listed Companies.

Many works have analyzed the link between ESG and specific financial performance indicators such as ROA, ROE or (Tobin's Q). So, Buallay, (2019) investigates the relationship between ESG and the operational (Return on assets), financial (Return on equity) and market (Tobin's Q) performance of European banks and concludes that there is a significant positive impact of ESG on performance. However, if each of the three ESG pillars is measured individually, they affect financial performance differently.

Jyoti, G., & Khanna, A. (2021) examines the impact of sustainable company performance on the financial performance of service sector companies listed on the Bombay Stock Exchange. The results of the study indicate a significant negative relationship between the Environment score with Return on Assets (ROA) and Return on Capital Employed (ROCE). Too Miralles-Quirós *et al*., (2019) found that investors value the three ESG pillars in a different manner. In the same line Menicucci, and Paolucci, (2022) investigates the impact of environmental performance, social responsibility, and corporate governance (ESG) on banking performance in the Italian banking sector and demonstrate that ESG policies negatively affect operating performance and that each of the three dimensions of ESG affects them differently. Velte, (2017) evaluates the relationship between ESG and financial performance in German

companies and finds that ESG has a positive impact on ROA but no impact on Tobin's Q. Furthermore, when looking at the three different components of the ESG, governance performance has the strongest impact on FIN compared to environmental and social performance.

The impact of ESG practices on companies in emerging countries have also been studied. Thus Naeem, M., Ullah, H., & Jan, S. (2021) studied 1042 companies from 26 emerging countries. Garcia, A. S., Mendes-Da-Silva, W., &Orsato, R. J. (2017) investigates whether the financial profile of a firm is associated with superior environmental, social and governance (ESG) performance, considering firms from Brazil, Russia, India, China and South Africa (the so-called BRICS countries) and Ali, Qaisar et al., (2022) analyzes the impact of environmental, social and governance management practices on the Malaysian financial performance of 141 Bursa Malaysia-listed companies and showing the persistence of a direct relationship between the two variables. Atan, R., Alam, M.M., Said, J. and Zamri, M. (2018) found that there is no significant relationship between individual and combined ESG factors and company profitability (i.e., ROE) as well as company value (i.e., Tobin's Q) in the performance of Malaysian joint stock companies. Following the same purpose Shad *et al*., (2019) study in sustainability reporting business risk management and its relationship to business performance in Malaysian oil and gas companies and concluding that the sustainability reports promote competitiveness and enhance business value. Too, Mayur, M. and Saravanan, P. (2017) examine the performance implications of board size, composition and frequency of board meetings on the performance of banks in India.

The few studies carried out in the Indonesian region on the social responsibility of companies and the sustainability reports are striking, despite the fact that since 2017 it has been regulated. for all large and listed companies, the obligation to report on ESG. Recently Tjahjadi, Bambang *et al.*, (2021), using the Triple Bottom Line (TBL) approach, investigates the effect of good corporate governance on corporate sustainability performance in non-financial companies listed on the Indonesian Stock Exchange and emphasizes that sustainability information is relatively new in Indonesia and governance and managers must improve on sustainability performance. Therefore, it seems very necessary to carry out research that serves to cover an important gap and thus expand knowledge and literature

In Europe, Branco & Rodrigues, (2008) based on the theory of legitimacy, investigates the disclosure of social responsibility in Portuguese banks and concludes that some benefits may be the result some changes in SRD practices by some banks to legitimize their activities.

Another aspect investigated by Avrampou *et al*., (2019) discoverthe link between the reported performance of European banks and their alignment with the support of the SDGs.

Buallay, (2020) conducted a comparative study between ESG sustainability reports and their impact on operational, financial and market performance in the manufacturing and banking sectors of 80 countries and concluding that ESG affects operating, financial and market performance in the two sectors but in opposite directions. Too, Nizam *et al*., (2019) It also analyzes environmental financing in the financial performance of 713 banks from 75 countries worldwide.

Studies on how ESG disclosure affects financial performance in the banking have produced mixed findings. For Albertini, (2013) most of the findings have shown that environmental performance improves financial performance, while others have suggested that the relationship is neutral or even negative. Numerous studies have shown a positive correlation between banks in emerging and developed countries (Soana, 2011; Wu & Shen, 2013; Cornett *et al*., 2016; Oino, 2019; Shen *et al*., 2016; Matuszak & Rózańska, 2017; Laguir *et al*., 2018; Finger *et al*., 2018; Buallay, 2019; Gangi *et al.,* 2019). Most studies conclude that the relationship between ESG pillars and financial performance is more complicated than a direct cause-and-effect relationship and more research is needed into each component of ESG strategy due to the potential for strong correlations between the many ESG pillars and financial performance. So, Buallay *et al.,* (2020) examines the sustainability reports of 880 banks and their performance after the financial crisis in developed and developing countries and shows that ESG improves the accounting and market performance of banks in developed countries.

Another of the pillars of ESG is Governance. Corporate governance involves the establishment of mechanisms that can add value to the company in different ways and in different areas. On the one hand, it favors internal decision-making, allowing the company to act more quickly and efficiently. It implies making decisions with responsibility, transparency, accountability and equitable treatment. Corporate governance practices reflect the culture from which decisions are made in a company. For this reason, it has been the object of concern and study in different contexts.

Governance, the design of the business model and its value chain (i.e., the value network, relationships with supply chain partners and value propositions towards customers) and its influence on financial results have been studied by various authors (Centobelli *et al*., 2020; Elali, W. 202; Youssef and Diab, 2021) and specifically related to banks John *et al*., (2016) find that a high leverage and the close relationship with shareholders improve the governance of financial institution. As indicated Grove *et al*., (2011) corporate governance structures ought

to be able to align the interests of managers and shareholders. Also, Kusi *et al*., (2018) indicates that corporate governance structures in general they promote the maximization of shareholder or stakeholder value. Orazalin & Mahmood, (2019) investigate the effects of different sets of corporate governance (CG) practices on bank performance before, during and after the financial crisis and Zehri and Zgarni, (2020) found that better CG practices led to better operating performance of banks after periods of financial crisis.

Agency theory argues that managerial and board incentives are a crucial aspect of corporate governance and aid financial performance (Harkin *et al*., 2020). Shakil *et al.*, (2019), in contrast, discover no connection between financial performance and the effectiveness of corporate governance. Also, the work of Hussain *et al.*, (2018) studies the relationship between corporate governance and triple bottom sustainability performance in US-based companies and whose findings contribute to improving the establishment of standards of the economic dimension of sustainability within the framework of the GRI standards created by the Global Reporting Initiative.

Therefore, they are nnumerous studies have been conducted on the effect of corporate governance quality on financial performance in the financial entities (Peni & Vähämaa, 2012; Dalwai *et a*l., 2015; Esteban-Sanchez *et al*., 2017; Nawaz, 2017; Ghosh, 2017; Anginer *et al*., 2018; Maxfield, *et al*., 2018; Shakil *et al*., 2019; Buallay, 2019; Aslam & Haron, 2020; Harkin *et al*., 2020; Nobanee & Ellili, 2022).

So far there is a consensus in the literature that, to the extent that environmental and social investments increase (such as paper and water reduction policies and electricity saving plans) they will improve the competitive advantages of banks. that being environmentally conscious and proactive environmental management can lead to the creation of distinctive organizational capabilities to reduce environmental impact as a source of competitive advantage. However, in the literature review we have found few studies on the ESG of companies in Indonesia even though sustainability reporting has been mandatory since 2017. Tjahjadi, Bambang *et al.*, (2021) studies the ESG of non-financial companies however, we have not found studies on this topic that focus exclusively on Indonesian banking. Therefore, with this research we aim to fill a fundamental research gap for Indonesian banks and building on previous studies, we disaggregated the ESG pillars and investigated these relationships and analyzing the relationship between ESG and financial performance in banking companies.

Based on the goals proposed and the literature review, we have formulated the following research questions (RQs):

RQ1: How prepared are Indonesian financial institutions to report on ESG after the 2017 regulation?

RQ2: What level of ESG information do Indonesian banks present in each of the three pillars?

RQ3: What level of financial performance (ROA ROE, TQ and leverage) Indonesian banks present?

RQ4: What statistical connections and associations exist between ESG and financial performance in banking companies in Indonesia?

3. Research methodology

To achieve our research objectives and answer the questions raised, we conducted an exploratory, descriptive, and inferential study. Study methods include panel data analysis (ESG data from Thomson Reuters), statistical correlations, and regression models.

3.1. Sources of ESG data

This research used a sample of banks in Indonesia for the period 2010-2020. We began by identifying the banking population in Indonesia. The country had 47 banks as of 31 December 2021. Second, we ensured that all banks were active and had not undergone a merger during the observation period.be in the Indonesian banking system (both public and private)

Third, we analyzed the banks that published ESG data (Thomson Reuters) during the observation period. We identified five banks that consistently report ESG data (2010-2020), for a total of 55 observations. The criteria followed to determine the sample are:

1) have been active during 2020-2021
2) have ESG data from Thomson Reuters for 2020–2021
3) have undergone no merger during the observation period

3.2. Variable measurement

This study uses ESG data from Thomson Reuters, a reputable global databank with one of the most comprehensive ESG datasets and over 450 historically available distinct ESG variables. The database's official website, used often by researchers, provides a clear robust methodology for ESG data. Previous studies of the banking used the Refinitiv database (Esteban-Sanchez et al., 2017; Gangi et al., 2019; Miralles-Quirós *et al.*, 2019; Shakil *et al.*, 2019; Menicucci & Paolucci, 2022;). However, to the best of our knowledge, this research is the first to look at all three pillars of ESG performance in the Indonesian banking sector.

3.3. Independent variables of the three pillars of ESG and Dependent Variables

The definition and choice of the independent variables of the three pillars of ESG we have based on banking previous studies of; (Peni & Vähämaa, 2012; Esteban-Sanchez *et al*., 2017; Buallay, 2019; Shakil *et al*., 2019; Menicucci & Paolucci, 2022) and they are the following: (ENVI), social activities (SOC), and governance activities (GOV) as defined in Table 1.

Table 1: Explanation of variables

Variables	Labels	Formula
Independent variables		
Environmental, social and governance	ESG	Thomson Reuters index: Combines the environment, social, and governance index.
Environmental activities	ENVI	T.R. index: Measures banks' disclosure of energy use, waste, pollution, natural resource conservation, and animal treatment.
Social activities	SOC	T.R. index: Measures the disclosure of workforce, community, product responsibility, bank effectiveness toward job satisfaction, and safe and healthy workplace, while developing both equal and diversity opportunity.
Governance activities	GOV	T.R. index: It essentially consists of balancing the interests of the many stakeholders of a company
Dependent Variables		
Return on Assets	ROA	Net income after taxes divided by average total assets
Return on Equity	ROE	Net income after taxes divided by average total equity
Tobin's Q	TQ	Market value of equity and total book value of liabilities, divided by total book value of assets.
Control variables		
Size	SZ	Natural logarithm of total assets.
Leverage	LEV	Total leverage.

Also, in revious research that tested sustainability reporting in banking used ROA, ROE, and TQ as dependent variables of financial performance (Albertini, 2013; Chowdhury *et al.*, 2017; Esteban-Sanchez *et al.*, 2017; Mayur & Saravanan, 2017; Nizam *et al*., 2019; Buallay, 2019; Buallay et al., 2020).

This study uses two control variables to examine the relationship between sustainability reports and financial performance: Size and Leverage. Size is measured using the natural logarithm of total assets (Buallay, 2019; Nizam *et al.*, 2019; Platonova *et al*., 2018; Velte, 2017). Leverage, measured by calculating total debt, has been used in previous studies (Shen et al., 2016; Buallay, 2019; Nizam *et al.*, 2019). Leverage shows the risk the bank owns; the greater the bank's debt, the more debt will impact the amount of the bank's funds for CSR activities.

3.3. Research hypotheses

Considering the purpose of this research and based on the theoretical background, the review of the literature on previous studies and, to answer the research questions of the exploratory and inferential study on the relationships between ESG and financial performance (ROA, ROE and Tobin's Q) of Indonesian banks, research hypotheses are formulated.

The hypotheses have been formulated by assuming disaggregation of ESG performance proxy, and financial performance the hypotheses H1a, H1b and H1c are proposed as constituents of each of the hypotheses formulated H1:, H2: and H3:

H1: There is a positive relationship between environmental aspects and the financial performance of Indonesian banks.

H1a: There is a positive relationship between environmental activities and financial ROA performance.

H1b: There is a positive relationship between environmental activities and financial ROE performance.

H1c: There is a positive relationship between environmental activities and financial (Tobin's Q) performance.

H2: There is a positive relationship between social aspects and the financial performance of Indonesian banks.

H2a: A positive relationship exists between social activities and financial performance (ROA).

H2b: A positive relationship exists between social activities and financial performance (ROE).

H2c: A positive relationship exists between social activities and financial performance (Tobin's Q).

H3: There is a positive relationship between governance aspects and the financial performance of Indonesian banks.

H3a: A positive relationship exists between governance activities and bank financial performance (ROA).

H3b: A positive relationship exists between governance activities and bank financial performance (ROE).

H3c: A positive relationship exists between governance activities and bank financial performance (Tobin's Q).

3.4. Empirical model

To contrast the formulated hypotheses, panel data techniques and the E-Views statistical tool are used. Techniques for panel data modeling have been used extensively in numerous banking

studies of financial performance (Esteban-Sanchez *et al*., 2017; Platonova *et a*l., 2018; Buallay, 2019; Siueia *et al.*, 2019; Buallay *et al.*, 2020; Menicucci & Paolucci, 2022). Panel regressions and either fixed or random-effects models help by limiting unobserved heterogeneity and enabling analysis of data over a longer period (Laguir *et al*., 2018).

Furthermore, the large number of data points provided by panel data reduces collinearity among independent variables and increases degrees of self-determination. To determine whether Fixed Effect Model (FEM) or Random Effect Model (REM) was appropriate, we employed the Hausman test. FEM examines variation within the unit. Because each company has a separate set of base levels for the dependent variable, panel regression with fixed effects assumes that the intercept is not a random value. In contrast, panel regressions with REM examine fluctuations within each company over time as well as between companies in the same year. A null hypothesis suggests that FEM and REM are equivalent in Hausman test capabilities, making it impossible to distinguish between the two approaches. When a null hypothesis is rejected, FEM is more suitable because REM is inappropriate.

Based on the studies cited above, this research uses econometric equations with the following multiple regression models:

$$FP_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 ENVI_{it} + \beta_3 SOC_{it} + \beta_4 GOV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + e_{it}$$

where Financial Performance (FP) is the dependent variable divided into three proxies (e.g., ROA, ROE, and TQ), "β_0" is the constant, and "$\beta_{1\text{-}6}$" is the slope of the controls and independent variables. The independent variable, sustainability reporting, is measured by four indicators (e.g., environmental, social, and governance (ESG), environment activities (ENVI), social activities [SOC], and governance [GOV]). The control variables are size, total assets, and leverage (LEV). "e" is the random error, "i stands for the bank, and "**t" is** stands for the period.

4. Results and discussion

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for all the variables. The ESG average obtained was 59.32. The highest score was 88 out of 100 and the minimum 30, indicating that no bank's ESG achieved the maximum score possible. Governance is the highest ESG pillar of the three, with a mean score of 68.70. The second highest is social, with a mean score of 61.16. The lowest ESG pillar is the environmental, with a mean score of 40.63. The maximum score of each ESG pillar indicates that none of the pillars can achieve a maximum score of 100. The maximum score for the environmental is 79, for social 94, and for governance 90.

The mean scores for the dependent variable are ROA (2.47), ROE (16.94), and TQ (1.11), with maximum scores of ROA (3.66), ROE (35.89), and TQ (1.40) and minimum scores of ROA (0.38), ROE (1.50), and TQ (0.94). The mean scores for the control variable are SZ (6.444) and leverage (5.545), with maximum scores of SZ (1.610) and leverage (9.975), and minimum scores of TA (1.182) and leverage (1.383).

The standard deviation is lower than mean score, indicating that the data are homogeneous, and the score deviation level low. To measure whether the data are normal, we observe Jarque Bera variables distributed normally, as they have a Jarque Bera probability of > 5%. ESG scores are (0.829), environmental (0.062), social (0.275), governance (0.515), ROA (0.175), ROE (0.816), TQ (0.545), TA (0.178), and leverage (0.183).

Table 2: Descriptive statistics

Variables	Mean	Standard Deviation	Maximum	Minimum	Jarque-Bera Probability
ESG	59.32	12.96	88	30	0.829
ENVI	40.63	21.80	79	10	0.062
SOC	61.16	18.28	94	22	0.275
GOV	68.70	13.14	90	34	0.515
ROA	2.47	0.72	3.66	0.38	0.175
ROE	16.94	8.49	35.89	1.50	0.816
TQ	1.11	0.11	1.40	0.94	0.545
SZ	6.444	5.21	1.610	1.182	0.178
LEV	5.545	3.35	9.975	1.383	0.183

4.2. Empirical results

Table 3 shows the correlations between all ESG variables environmental, social, and governance as an independent variable. ROA, ROE, and TQ are dependent variables, and SZ and leverage are control variables. Note that ESG correlates negatively with bank financial performance: ROA (-0.197), ROE (-0.409), and TQ (-0.448). When banks divert their funds and focus on funding social programs and initiatives, they position themselves at a disadvantage compared to banks that are not committed to social activities. This result supports the findings of previous studies (Buallay, 2019; Buallay, 2020; Duque-Grisales & Aguilera-Caracuel, 2021). ESG will also require a lot of resources, especially funds. In the short term, therefore, ESG burdens bank profitability, in line with prior research (Esteban-Sanchez *et al.*, 2017). Management should thus concern itself with planning, supervising, and evaluating CSR so that it has a significant impact on bank profitability.

Table 3 Correlations

	ESG	ENVI	SOC	GOV	ROA	ROE	TQ	SZ	LEV
ESG									
Pearson Correlation	1	0.631**	0.922**	0.397**	-0.243*	-0.417**	-0.450**	0.674**	0.657**
Sig. (2-tailed)		0.000	0.000	0.003	0.074	0.002	0.001	0.000	0.000
ENVI									
Pearson Correlation		1	0.627**	-0.161	-0.077	-0.164	-0.195	0.368**	0.351**
Sig.			0.000	0.240	0.578	0.233	0.153	0.006	0.009
SOC									
Pearson Correlation			1	0.073	-0.131	-0.262	-0.375**	0.727**	0.715**
Sig.				0.595	0.340	0.054	0.005	0.000	0.000
GOV									
Pearson Correlation				1	-0.231*	-0.374**	-0.319**	0.172	0.165
Sig.					0.090	0.005	0.018	0.209	0.228
ROA									
Pearson Correlation					1	0.853**	0.242	-0.016	-0.023
Sig.						0.000	0.075	0.909	0.865
ROE									
Pearson Correlation						1	0.479**	-0.039	-0.026
Sig.							0.000	0.776	0.850
TQ									
Pearson Correlation							1	0.075	0.099
Sig.								0.586	0.470
SZ									
Pearson Correlation								1	0.759**
Sig.									0.000
LEV									
Pearson Correlation									1
Sig.									

Notes: correlation is significant *5%, **1%.

Table 4 presents the results of the regression between the independent variables (ESG, ENVI, SOC, and GOV) and the dependent variables (ROA, ROE, and TQ). The test was administered three times in this regression test, first to test ESG, against ROA; second to test ESG, against ROE; and third to test ESG, against TQ. As these results determine the best model the Common Effect Model or the Fixed Effect Model—we chose the fixed effect model as the best for this regression.

Table 4 Regression

Variable	(1) ROA Coef. (p-value)	(2) ROE Coef. (p-value)	(3) TQ Coef. (p-value)
Independent variables	-	-0.2952(0.45)	0.0198(0.009)*
ESG	0.0953(0.05)**		
ENVI	0.0085(0.23)	-0.0261(0.64)	-0.0015(0.13)***
SOC	0.0711(0.01)*	0.1204(0.59)	-0.0148(0.0009)*
GOV	0.0253(0.21)	0.1966(0.22)	-0.0101(0.001)*
Control variables			
LSZ	3.6002(0.20)	-39.2398(0.08)	-1.2650(0.004)
LnLEV	-4.8650(0.09)	27.4542(0.23)	1.3579(0.002)
Adj R-squared	0.5368	0.7852	0.5734
Prob (F-statistic)	0.00001	0.00000	0.00000
Model	Fixed Effect	Fixed Effect	Fixed Effect

Notes: Significant at P value *<1%; **<5%; ***<10%

The environmental activities variable (ENVI) is not significant for ROA and ROE because the p value (0.23 and 0.64) is >5%. On the other hand, ENVI has a significant negative effect on TQ with a coefficient of -0.0015 and a p value of 0.13 <10%. We thus reject Hypotheses H1a, H1b, and H1c, as they do not align with previous studies (Albertini, 2013). Stakeholders do not understand that regulated environmental practices and directed investment decisions should provide good future financial performance, as shown in studies by Duque-Grisales & Aguilera-Caracuel, 2021; Jyoti & Khanna, 2021.

Consequently, ENVI environmental activity in Indonesian banking tends to fall short of the standard approved in 2016, which should be met. The descriptive statistics in Table 2 provide evidence to support this conclusion, as the score for the ENVI variable is 40 points out of 100 possible.

The social activities variable (SOC) exercises a positive and significant influence on ROA and TQ, with coefficients of 0.0711 and 0.0148 and p values of 0.01 and 0.0009 <1%. SOC is not significant for ROE, with a p value of 0.59> 5%. H2a and H2c are thus not accepted, in line with previous research (Velte, 2017). SOC is not significant for ROE, leading us to reject H2b, in line with (Miras-Rodríguez *et al*., 2015). GOV is only negatively significant for TQ, with a coefficient value of -0.0101 and a p value of 0.001 <1%. As GOV is not significant for ROA and ROE, all three hypotheses are rejected (H3a, H3b, and H3c). This result contradicts previous research (Esteban-Sanchez et al., 2017; Soana, 2011). The finding shows that executive management's or boards of directors' engage in social activities for their own benefit, making these activities a cost burden that reduces the company's profitability and value

(Buallay, 2019). This finding aligns with Qureshi *et al*. (2020), which concludes that governance practices in European companies do not impact firm value.

The control variable size (SZ) is positive and significant for ROE and TQ, with a negative coefficient (-39.23; -1.26) and significance < p value (0.08;0.004). SZ, in contrast, is not significant for ROA, 0.20 > p value. Leverage is significantly negative for ROA, with coefficient and p value (-4.86;0.09); significantly positive for TQ, with coefficient and p value (1.35;0.002), and not significant for ROE, with coefficient and p value (27.45;0.23).

Table 5 presents the results of contrasting the hypotheses formulated on the relationships between ESG and the financial performance of Indonesian banks.

Table 5: Summary of Hypotheses

Hypothesis	Result
H1a: A positive relationship exists between environmental activities and bank financial performance (ROA)	Rejected
H1b: A positive relationship exists between environmental activities and bank financial performance (ROE)	Rejected
H1c: A positive relationship exists between environmental activities and bank financial performance (Tobin's Q).	Rejected
H2a: A positive relationship exists between social activities and bank financial performance (ROA).	Accepted
H2b: A positive relationship exists between social activities and bank financial performance (ROE).	Rejected
H2c: A positive relationship exists between social activities and bank financial performance (Tobin's Q).	Accepted
H3a: A positive relationship exists between governance activities and bank financial performance (ROA).	Rejected
H3b: A positive relationship exists between governance activities and bank financial performance (ROE).	Rejected
H3c: A positive relationship exists between governance activities and bank financial performance (Tobin's Q)	Rejected

5. Conclusions

As detailed in the literature review, numerous studies have stressed the need for banks to factor the risks of their ESG reporting into their risk management frameworks. In addition to pressure

from regulators for banks to submit sustainability reports and increased demand for sustainable products from investors, general consensus holds that stakeholders should view financial institutions as entities committed to environmental, social, and governance values. In 2016, ESG regulation went into effect for all financial institutions in Indonesia, requiring them to complete sustainability reports. After the financial crisis, regaining customer trust was a significant factor in development of ESG practices in credit institutions.

As detailed in the literature review, several previous studies have analyzed the relationship between ESG and banking financial performance in developed countries. Our study analyses the relationship between ESG and banking financial performance, using Thomson Reuters ESG data for 2010-2020 for banks in Indonesia. We analyze ESG in depth by dividing it into 3 pillars (environmental, social, and governance) to determine which specific pillars have a significant effect on banking financial performance. Future research could examine which dimensions of the three pillars dominate in banking.

Descriptive analysis has revealed that ESG scores in Indonesian banking remain within the range of 59.32 out of a total of 100. The highest mean scores for ESG pillars are governance activities, with a mean of 68.70, and social activities, with an average of 61.16. Environmental activities show a lower average of 40.63, however, indicating that environmental activities at Bank Indonesia do not receive enough attention.

The results show that ESG is negatively related to all the dependent variables (ROA, ROE, and TQ). Although each ESG pillar has different results, social activities influence ROA and ROE. We therefore reject Hypotheses H1a, H1b, and H1c. These results show that stakeholders do not understand that regulated environmental practices and specific investment decisions should provide good financial returns in the future.

Hypotheses H3a, H3b, and H3c are also rejected. This finding disagrees with previous research findings (Esteban-Sánchez *et al.*, 2017; Soana, 2011) and shows that the executive management or board of directors engage in social activities for their own benefit, making these activities a cost burden that reduces the company's profitability and value (Buallay, 2019). Managers of financial companies should take care, however, to plan, monitor, and evaluate the sustainability of their activities and the latter's impact on the profitability of their balance sheets.

This finding aligns with stakeholder theory, which argues that good social activities for banks' customers, suppliers, and employees have a high impact on the bank's profitability and market value. The environment, in contrast, is not significant in ROA and ROE. When banks divert their funds and focus on financing social programs and initiatives, they are at a disadvantage compared to banks that do not engage in social activities and whose stakeholders do not think

that environmental practices and specific investment decisions must provide good financial performance in the future (Duque-Grisales & Aguilera-Caracuel, 2021; Jyoti & Khanna, 2021). Consequently, ENVI's environmental activity in Indonesian banking tends to be below the standard approved in 2016, which should be met. The results of the descriptive statistics displayed in Table 2 demonstrate this conclusion. The score for ENVI is 40 out of 100 possible points, indicating that ESG will collect banks' profitability in the short term, in line with Esteban-Sánchez et al. (2017).

The possibility is that there is a lack of awareness among stakeholders or investors about the impact that financial activities may have on the environment in the short term. However, we believe that banks' actions related to the environment will increase their competitive advantage (corporate image, corporate awareness, intangible assets, etc.) in the short and long term. When viewed from a governance perspective, there is no doubt that investors greatly appreciate banks with quality governance. If you believe that banks are high-risk companies, you agree that high quality governance is imperative.

This study has significant implications for stakeholders, ESG policymakers, and academics. For stakeholders, it clarifies the relationship between ESG disclosure in the sustainability reports and financial performance of Indonesian banks. For investors, it reveals that sustainability reports related to financial performance help to reduce risks for banks. For policymakers, the results provide new information on the impact and credibility of banks' sustainability reports and improve understanding of how and why organizations modify their sustainability practices. For academics, the study contributes to an emerging body of literature aligned with sustainability reporting. From a practical perspective, the results contribute to understanding the commitment of financial institutions to sustainability and the credibility of their transparent and reliable ESG reporting efforts.

For stakeholders, the study demonstrates a relationship between ESG and financial performance, although the relationship is negative. The ESG and ESG pillar activities performed by banks are not yet optimal, as can be seen from the average score, which is still far from optimal. Management must focus more on environmental conditions, social contributions, and corporate governance to achieve a positive impact on profitability and company value in the long run. For policy makers, our research provides insight into which ESG pillars banks perform most. We have shown that banking focuses most on social activities, followed by governance activities, and finally obligations to the environment.

Nevertheless, this paper's conclusions must be viewed with caution because of its inherent limitations. The main research limitation is unavailability of ESG data in Indonesian banks.

Not many Indonesian banks have ESG data on Thomson Reuters. Our conclusions must therefore be viewed with caution due to small sample size. Many future research opportunities remain for ESG and financial performance. Subsequent studies could contribute to the literature by adding moderating variables (CEO structure, corporate reputation, impact of the Covid phenomenon) to determine the impact of the relationship between ESG and company performance.

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