

The Moderating Role of Board Diversity and COVID-19 on ESG Dimension Relationship with Financial Performance

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ABSTRACT

ESG (environmental, social, and governance) had been a field of interest globally these past few years. The purpose of this study was to evaluate impact of each ESG dimension using content analysis method to corporate financial performance (CFP) with board diversity and COVID-19 as moderating variables. Using panel data set consisting of sample of 39 nonfinancial companies listed in ESGSKEHATI during the period 2017 – 2021, it was found that ESG dimension simultaneously had significant positive impact on CFP proxied by ROA. In addition to that, it was found that interaction of social dimension with ROA weakened through moderating role of board gender diversity. In other words, ROA was expected to decrease when social disclosure items were maintained by the presence of this gender diversity. In contrast, interaction of social dimension with market value strengthened through moderating role of board gender diversity. Tobin's Q was expected to increase when social disclosure items were maintained by the presence of this gender diversity. The other finding showed that COVID-19 pandemic strengthens interaction of social dimension with Tobin's Q. Stakeholders need to be aware of potential impact of each ESG dimension, benefits of having board diversity, and anticipating pandemic condition impact on CFP.

Keywords: Board Diversity; COVID-19; ESG; ESGSKEHATI; Financial Performance;

1. INTRODUCTION

ESG disclosure has been an attention globally (Dmuchowski et al., 2023; Kerkemeier & Kruse-Becher, 2022; Liu et al., 2023) causing some countries and unions to mandate such as European Union (EU) through Directive/2014/95/EU EUR-Lex - 32014L0095 - EN - EUR-Lex (n.d.) article 19a and United States through Securities and Exchange Commission (SEC, 2022). One of the commonly used standards for measuring ESG disclosure is Global Reporting Initiative (GRI). In Indonesia, awareness of ESG importance has begun to rise with the enactment of POJK No. 51/POJK.03/2017 regarding Implementation of Sustainable Finance for Financial Services Institutions, Issuers and Public Companies. This regulation requires all related companies to issue a Sustainability Report (SR). Gunawan et al. (2022) stated that the number of Sustainability Reports in Indonesia increased from 5 reports in 2006 to 118 reports in 2018. This shows effective implementation of the regulation.

Several previous studies stated that ESG disclosure specifically environmental and social aspect has positive impact on corporate financial performance (CFP). In this regard, the impact of environmental and social aspects on CFP in a global scope has been previously studied by El Ghouli et al (2017). This research was conducted on 2,445 companies from 53 countries in the period of 2003 to 2010. The paper concluded that corporate social responsibility (CSR) has positive impact on market financial performance in countries with lower market institutions. Wen et al. (2022) in their paper also stated that quality of ESG disclosure has significant positive impact to relationship between corporate ESG performance and market value proxied by Tobin's Q. This study was conducted in 49 countries with developed and emerging market including Indonesia. ESG scores

were obtained from Sustainalytics, however not each listed global company ESG scores were published. In contrary, negative impact of ESG disclosure practices on CFP has been proven by Shaikh (2021). This paper showed that from a sample of 510 companies in 17 countries during period 2010 to 2018, ESG disclosure simultaneously led to a decrease in return on assets (ROA) and return on equity (ROE) and even further reduced the market value of the firm. Interesting finding in Shaikh (2021) also showed that ESG compliance is more profound in European firms while in Asian firms, ESG compliance is more profound in energy sector. In Indonesia, paper regarding ESG disclosure impact on CFP has been done by Safriani & Utomo (2020). This research was conducted on non-financial companies listed on the IDX from 2015 to 2018. The research found that ESG disclosure has significant positive impact on financial and operational performance, but has a negative impact on market performance. The gap found in this study was the selection of time period from 2015 to 2018, where from 2015 to 2016, POJK No. 51/POJK.03/2017 has not been enacted. In addition to that, samples selected in this study were merely companies with overall ESG disclosure scores published by Bloomberg. It is considered beneficial to understand which ESG dimension promotes better CFP in case of firm limitation such as budget.

Research related to each ESG dimension impact on CFP in a country's certain ESG index has been done before by Saygili et al. (2022). This research was conducted on companies listed on the Bursa Istanbul Corporate Governance Index (XKURY) index during period 2007 to 2017. In Indonesia, there are several ESG-related indexes that can be used as research population, such as SRI-Kehati, IDXESGL, ESGSKEHATI, and ESGQKEHATI. ESGSKEHATI and ESGQKEHATI are relatively new indexes because they were just launched by the end of 2021, so there was no research yet that proved the impact of ESG scores of these firms (where their scores are considered good compared to competitors in their industry) on CFP. ESGSKEHATI was selected because it is still relatively new, consisted of 48 firms, and firms included were firms with the best ESG scores from each sector (Kehati, n.d.).

Numerous researches have been conducted to evaluate impact of ESG dimension on CFP, but in Indonesia the research that focused on role of moderating variables specifically board diversity and COVID-19 which began to occur in Indonesia since March 2, 2020 was still undiscoverable. This is compelling to do and became **main objective** and novelty of this research because previous research by Haque & Jones (2020) stated that board diversity has positive effect on the disclosure of environmental dimension. This research was conducted with a sample of companies in 13 European countries with period 2002 to 2016 and a total of 4,013 observations. Regarding financial performance, Jain (2022) stated that higher representation of women at the top levels has impact on better company performance. Complementing this research, Safiullah et al. (2022) proved that companies with higher gender diversity produce better accounting-based financial performance but lower market-based financial performance. Gender diversity in the research by Safiullah et al. (2022) was measured by percentage of women on the board, while accounting-based financial performance is measured through ROA, ROE, and basic earning power ratio (BEP). Market-based financial performance is measured through Tobin's Q.

COVID-19 as moderating variable of ESG disclosure on stock returns has been studied by Takahashi & Yamada (2021). This research was conducted on 3,349 listed non-financial companies on four Japanese stock exchanges during 2019. The stock return used is buy-and-hold abnormal return (BHAR) which is able to describe market-based corporate financial performance. The results showed that during COVID-19 period, there was no significant impact of ESG performance on stock returns. Broadstock et al. (2021) generated different result where it was found during COVID-19 period, ESG score actually had positive impact on short-term stock returns in China.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS FORMULATION

2.1. CSR and ESG

Before ESG, earlier researches have been conducted to examine impact of CSR activities on superior accounting performance (El Ghouli et al. (2017); Ang et al. (2022)). According to Ghillyer (2014), corporate social responsibility (CSR) or corporate citizenship or corporate conscience are actions taken by companies with the target of achieving social benefits and more than the definition of maximizing the profit of its shareholders or simply fulfilling legal obligations. From an ethical point of view, an unethical thing that a company does is anything that does not benefit investors who have entrusted their funds through buying company shares (Ghilyer, 2014). CSR mainly discussed regarding environmental and social dimension. Previous research by Velte (2023) showed that environmental reporting and environmental performance each has positive impact on accounting based financial performance. However, simultaneously both of these have negative impact on market-based financial performance. Velte's research (2023) used a structured literature review method that focuses on examining European capital markets. This research also looks at other variables that impact environmental reporting and performance, such as board composition, ownership structure, governance, and financial and sustainability dimensions. Shaukat et al. (2016) found that board orientation towards CSR has significant positive impact on environmental performance. The board of directors of a company that is more CSR oriented will show a higher commitment to CSR by developing a proactive and comprehensive CSR strategy. This ultimately provides good environmental performance. With these mentioned references, these hypothesis for research have emerged as results:

- H1:** Environmental dimension practices have significant positive impact on ROA_{t+1} of ESGSKEHATI index companies
- H2:** Social dimension practices have significant positive impact on ROA_{t+1} of ESGSKEHATI index companies
- H4:** Environmental dimension practices have significant positive impact on Tobin's Q of ESGSKEHATI index companies
- H5:** Social dimension practices have significant positive impact on Tobin's Q of ESGSKEHATI index companies

ROA_{t+1} is used because we consider latent impact of ESG dimension to ROA that is only visible after financial statement published, while for Tobin's Q we use similar time with ESG dimension because market value moves alongside ESG activities are published.

Specifically for governance dimension, Al-ahdal et al. (2020) in their research proved that governance dimension proxied by board and audit committee accountability did not have significant impact on the company financial performance proxied through ROE and Tobin's Q. This research was conducted on 53 publicly listed non-financial companies in India and 53 publicly listed non-financial companies in Gulf Corporation Council (GCC) countries. All samples are countries with emerging markets (Al-ahdal et al., 2020). The governance data in this study obtained from corporate governance index that complies with the principles of OECD. The governance committee represents public interest to the firm for ethical business practices (OECD, 2015). This committee generally consists of a board of directors and/or board of commissioners and tasked with overseeing the company's ethical performance as well as compliance with the implementation of the code of ethics or compliance with government regulations and applicable laws. OECD (2015) also stated that there is another board called the board of commissioners. They also state that board structures and governance procedures vary both within one country and between countries. There are those who adhere to two-tier boards where separated management and supervisory functions. There are also companies that adhere to unitary boards, where the executive and non-executive boards are one or inseparable. Based on the reference, these hypothesis for research have emerged as results:

H3: Governance dimension practices have significant positive impact on ROA_{t+1} of ESGSKEHATI index companies

H6: Governance dimension practices have significant positive impact on Tobin's Q of ESGSKEHATI index companies

Many researches have proven impact of ESG as a whole on company financial performance ((Saygili et al., 2022; Wen et al., 2022). Previous study regarding ESG disclosure impact to financial performance in Indonesia had been done by Safriani & Utomo (2020) using data from 2015 to 2018, resulting in positive significant impact of ESG to operational and financial performance, but negative significant impact on market performance. Study from Shaukat et al. (2016) can support statement that good ESG disclosure indicates good ESG practices. Shaukat et al. (2016) found that board orientation towards CSR has significant positive impact on environmental performance. Board of directors of a company that is more CSR oriented will show higher commitment to CSR by developing a proactive and comprehensive CSR strategy.

2.2. Signaling, Legitimation, and Isomorphism Theory

Chen et al. (2023) stated that ESG disclosure is closely related to signaling theory where ESG disclosure affects stock liquidity from the point of view of shareholder wealth and utility. Deng & Cheng (2019) through their research state that the release of ESG information can minimize information asymmetry for any party who joins the market, reduce uncertainty, and ultimately affect liquidity and stock prices. In this case, voluntary ESG disclosure can provide the latest information to investors and the public regarding corporate social responsibility as well as reduced costs that lead to excellent business value and stock performance (S. Chen et al., 2023). The same thing was also stated by Bilyay-Erdogan et al. (2023), where ESG activities recognize the contribution of various stakeholders to the creation of corporate value and are considered as direct or indirect "payments" to all stakeholders. Benlemlih (2019) through his research concluded that ESG activity and dividend payments are important aspects for the success of the company, considered as a "motor" to signal the quality of the company and improve the company's reputation.

According to Suchman (1995), legitimacy is a perception or assumption that represents the reaction of observers to the organization according to what they see or feel. It can be said that legitimacy is owned objectively, but created subjectively. An organization may have very different social norms but retain its legitimacy because those differences are not recognized. Legitimacy is built socially so that it reflects compatibility between legitimate entities and the beliefs held by a social group. From this it can be concluded that legitimacy depends on a collective audience, but not on a particular group of observers. An organization may shift away from individual values but retain its legitimacy because this shift does not generate disapproval from the public. It could be argued that when one party says a particular attitude pattern has legitimacy, the other party asserts that a group of observers supports what those observers perceive to be the behavior pattern (Suchman, 1995).

Pizzi et al. (2022) in their paper stated that voluntary disclosure by companies is often considered as a legitimacy tool for involving communities, clients, and suppliers. Unfortunately related to this, several sustainability reports (SR) are adopted by unethical companies in disclosing inappropriate information to improve their legitimacy (Karaman et al., 2021). Imperiale et al. (2023) through their research stated that disclosing ESG information is one of the company's strategies in achieving legitimacy. Lee & Raschke (2023) conducted research to prove stakeholder expectations regarding the legitimacy of ESG implementation and ESG performance of a company and its relation to financial performance. This study found that there is a significant positive relationship between stakeholder legitimacy and ESG performance. Stakeholder legitimacy in this study is measured through stakeholder satisfaction with corporate culture, diversity, work life balance, management leadership, and compensation. It can be concluded that when a company succeeds in demonstrating

stakeholder legitimacy, the company will obtain good ESG performance which is proxied by a high ESG score (Lee & Raschke, 2023). According to Kauppi (2013), institutional theory states that environmental and social conditions can significantly influence the development of formal structures within an organization, which are often stronger than market pressures. Strengthening this statement, Kauppi (2013) stated that organizations tend to comply with institutional regulations, norms, and expectations to maintain and strengthen corporate legitimacy by adhering to three forms of institutional isomorphism: coercive, mimetic, and normative.

2.3. Corporate Financial Performance (CFP) Indicators

Ross et al. (2016) stated that there are three financial ratios commonly used to measure company profitability or accounting-based. These ratios specifically measure how efficiently a company uses its assets and manages its operations. The focus is the bottom line, net income. Formula for each indicator can be seen from Table 1.

Table 1: Formula for three common financial ratios

Indicator	Formula	Remarks
Profit Margins	Profit Margin= (Net income)/Sales	Basically, a relatively high profit margin is highly desired by the company. This situation illustrates a low expense ratio compared to sales. For example, reducing sales prices tends to increase volume but reduce profit margins. Total profit may fluctuate, so smaller margins are not always a bad thing.
Return on Assets (ROA)	ROA= (Net income)/(Total assets)	ROA describes the size of profit or profit per exchange rate of an asset, but actually there are several different calculation methods.
Return on Equity (ROE)	ROE= (Net income)/(Total equity)	ROE is a representation of how much shareholders benefit throughout the year. The company's goal is to maximize shareholder profits, so what is measured is bottom line performance. Sometimes ROE is referred to as return on net worth.

Source: Ross et al. (2016)

Apart from accounting, there is a way to measure company financial performance with market value, that is using Tobin's Q. Hayes (2021) stated that the Q Ratio or more commonly known as Tobin's Q is the market value of a company divided by the replacement cost of its assets. An equilibrium will be reached when the market value equals the replacement value. If written in the formula, Tobin's Q can be calculated as follows:

$$\text{Tobin's Q} = \frac{(\text{Equity Market Value} + \text{Liabilities Market Value})}{(\text{Equity Book Value} + \text{Liabilities Book Value})}$$

2.4 Board Gender Diversity

Numerous studies have proven the positive impact of board gender diversity on company performance such as Jain (2022), Safiullah et al. (2022), and Mohsni et al. (2021). Those mentioned references can provide a signal to stakeholders about the potential for gender diversity among

members of the board of commissioners and directors. Not only financial performance, gender diversity also has a positive influence on the disclosure of ESG dimensions, especially the environment, as stated in research by Haque (2017).

More specifically, Haque & Jones (2020) explain the reasons for the relationship above. First, due to communal characteristics, female board members show a higher sensitivity towards building relationships with stakeholders and accommodating stakeholder concerns such as disclosure of environmental dimension. The implication is that female board members are more involved in sustainable company strategies and actions and focus on long-term company performance indicators (Haque & Jones, 2020). They also conclude that female board members tend to encourage open discussion, information sharing and better participation. As a result, conflicts that generally occur in board decision making can be reduced and good quality decisions can be produced (Haque & Jones, 2020). These references become the base for this research to test for moderating role of board gender diversity, hence these hypothesis are formed:

H7: Board gender diversity strengthens relationship between ESG dimension practices and ROA_{t+1} of ESGSKEHATI index companies

H8: Board gender diversity strengthens relationship between ESG dimension practices and Tobin's Q of ESGSKEHATI index companies

2.5. COVID-19

It has been mentioned before that moderating role of COVID-19 to relationship between ESG disclosure and financial performance has been studied by Takahashi & Yamada (2021) and Broadstock et al. (2021). However, these two studies generated different results, where Takahashi & Yamada (2021) found no significant impact of ESG performance on stock returns during COVID-19 while Broadstock et al. (2021) found positive impact of ESG score on short term stock return. Additional finding by Lashkaripour (2023) gave interesting insight that during COVID-19 where market crash happened, investors tend to hold on to green stocks although they generated negative expected returns. This also caused the price of put options on green stocks higher ((Lashkaripour, 2023). This research was conducted for all United States stocks on Refinitiv database, with period from last quarter of 2019 where COVID-19 began until first period of 2020 where market crash emerged. Based on these references, we generated two more hypothesis as follow:

H9: COVID-19 strengthens relationship between ESG dimension practices and ROA_{t+1} of ESGSKEHATI index companies

H10: COVID-19 strengthens relationship between ESG dimension practices and Tobin's Q of ESGSKEHATI index companies

3. RESEARCH METHOD

3.1 Type of Research

The approach used in this research is a quantitative approach. A quantitative approach is used because this research focused on describing and predicting research variables that are numerical in nature. The other reason of using quantitative approach is because the processed data were generated from secondary data and is ex post facto in nature. Secondary data used were financial statements, annual reports and/or sustainability reports from each non-financial company listed in the ESGSKEHATI index with performance from 2017 to 2021.

3.2 Research Sample and Variables

Objective of this study is to identify relationship between ESG dimension practices of firm listed in ESGSKEHATI and indicators of CFP plus testing moderating roles of board gender diversity and COVID-19 to each of the relationship. This study is based on panel dataset of 39

nonfinancial firms in ESGSKEHATI from period 2017 to 2021. Starting from December 2021, Indonesia began listing 48 companies with best ESG practices as the representation from each industry sector in ESGSKEHATI index. ESG dimension score from each company is not published publicly, so to cover all samples, we used content analysis in this research which we derived from GRI items. Reference for environmental dimension measurement development is research by Bilyay-Erdogan et al. (2023), where there are three main environmental items: environmental innovation, environmental emission, and environmental resource use. Furthermore, we grouped several sub-items from the GRI 2016-300 related to these three things. Meanwhile, reference for social dimension measurement development is research by Saygili et al. (2022), where there are three main items related to social: human resource (HR) policies, relationships with customers and suppliers, and ethical rules and social responsibility. We also grouped several sub-items from GRI 2016-400 related to these three items. For governance dimension, the set subitems used research by Saygili et al. (2022) as well as reference, with 15 subitems that can be seen in Table 2.

In total, we have 42 subitems to be analyzed from this study. Content analysis was conducted by manually coded each item from annual reports and sustainability reports. Independent variables were categorized subitems into environment, social, and governance. For each firm, the presence of each item was coded 1 if it met minimum requirement stated in GRI, and 0 if it did not met minimum requirement. The list of items and subitems can be seen from Table 2.

Table 2: Items and subitems for content analysis

Dimension	Code	Item	Subitem
Environmental (E)	E1	Environmental innovation	1 subitem: Environmental innovation
	E2	2. Environmental emission	6 subitems: Direct GHG emissions, indirect GHG emissions, reduction of GHG emissions, emissions of ozone depleting substances
	E3	3. Environmental resource use	4 subitems: Energy consumption within the organization, energy consumption outside of the organization, energy intensity, reduction of energy consumption
Social(S)	S1	4. Human resources policy	7 subitems: Employee recruitment, employee benefit, maternity leave, training hours per year, employee training, employee performance review, employee diversity
	S2	5. Relations with customers and suppliers	5 subitems: Local community engagement, operations with negative impact to community, supply chain with negative impact to community, supplier selection with social criteria, complaints related to customer privacy
	S3	6. Ethical rules and social responsibility	5 subitems: Discrimination incident, union rights that may be risky, child labor, forced or compulsory labor, CSR activities
Governance(G)	1. G	7. Governance	15 subitems: Stakeholder policy, exercise of shareholder rights, shareholder information right, general assembly rights, voting rights, minority rights, dividend rights, corporate website, annual report, BOD functions, BOD activities, BOD structure, BOD meetings, BOD S committees, BOD remuneration

Sources: research by Bilyay-Erdogan et al. (2023) and Saygili et al. (2022)

For dependent variables, ROA and Tobin's Q are widely used financial measures of CFP as stated by Saygili et al. (2022). For the estimation of ROA_{t+1} , control variables used are company size (CS), debt to equity ratio (DER), sales growth (SG), and asset turnover (ATO). Company size which is proxied by revenue or company income will affect the company's net income which in turn affects the value of ROA. DER is the result of dividing debt by equity, where equity is a component of asset calculations. Sales growth is basically calculated from the increase in revenue in period t to period t+1, it can be stated that sales growth is related to ROA as well. Asset turnover is the result of dividing income by the average total assets, so it is also related to ROA, where the denominator is the average total assets. The use of DER, sales growth, and asset turnover as control variables for ROA uses research by Chen et al. (2022) as reference, where this research checked impact of ESG on ROA, with moderating variables in the form of ownership structure and climate change-related risks and opportunities (CRRO).

For the estimation of Tobin's Q, control variables used are total assets (TA), leverage (LEV), sales growth (SG), and dividend yield (DY). Total assets are one component of the Tobin's Q calculation so they need to be controlled. Leverage is the distribution of total assets to total equity, so its value is also related to Tobin's Q. Sales growth is related to company income which affects company assets in the form of cash, so it is also related to Tobin's Q. Finally, dividend yield is the result of dividend distribution per share with price per share. The price per share also affects market value which is a component of Tobin's Q, so it needs to be controlled. The use of total assets, leverage, and sales growth as control variables for Tobin's Q used research by Bissoondoyal-Bheenick et al. (2023) as reference, where their research proved impact of ESG on company performance with channel moderation variables and media size. The use of dividend yield as a control variable for Tobin's Q used Saygili et al. (2022) as reference. All control variables in this research were treated similarly with independent variables in the model, but did not become the focus of study. However, additional analysis can be made from control variables statistic results.

Moderating variables in this research were board gender diversity and COVID-19, where gender diversity data proxied by percentage of women on board were obtained from Thomson Reuters when available and from the company's annual report when not available. Meanwhile, the COVID-19 variable is a dummy variable with a value of 0 before the COVID-19 period, in this study, 2017 to 2019. A value of 1 is given for 2020 and 2021. Summarized variable definitions can be seen from Table 3.

Table 3: Variable definitions

Variables	Definitions
<i>Dependent variables</i>	
ROA_{t+1}	Return on assets the year after, calculated from net income after taxes divided by average total assets through the year Formula: Net income / Total assets
TQ	Tobin's Q, sum of equity market value and liabilities market value divided by equity book value and liabilities book value Formula: (Equity market value + Liabilities market value) / (Equity book value + Liabilities book value)
<i>Independent variables</i>	
E1-E3	Environmental item: environmental innovation, environmental emission, environmental resource use

S1-S3	Social item: human resources policy, relations with customers and suppliers, ethical rules and social responsibility
G	Governance item
Moderating Variables	
Board gender diversity (KGD)	Percentage of women on board
COVID-19	COVID-19 pandemic period in Indonesia (0 for period 2017-2019, 1 for period (2020-2021))
Control variables	
CS	Company size, proxied by company revenue, ROA _{t+1} controlvariable
DER	Debt to equity ratio, control variable for ROA _{t+1} Formula: Total debt / Total shareholder's equity
SG	Sales growth, calculated from revenue change from previous period to current period, control variable for ROA _{t+1} and Tobin's Q Formula: (Revenue _t - Revenue _{t-1}) / Revenue _{t-1} x 100%
ATO	Asset turnover, calculated from revenue divided by averagetotal asset, control variable for ROA _{t+1} Formula: Net revenue / Average total assets
TA	Total asset, control variable for Tobin's Q
LEV	Leverage, calculated from total asset divided by total equity,control variable for Tobin's Q Formula: Total Assets / Total equity
DY	Dividend yield, calculated from dividend per share divided byprice per share, control variable for Tobin's Q Formula: Dividend per share / Price per share

Sources: Bissoondoyal-Bheenick et al. (2023), Saygili et al. (2022), Thomson Reuters

3.3 Data Analysis Technique

The model of this research and relationship of each variable is best presented in Figure 1.

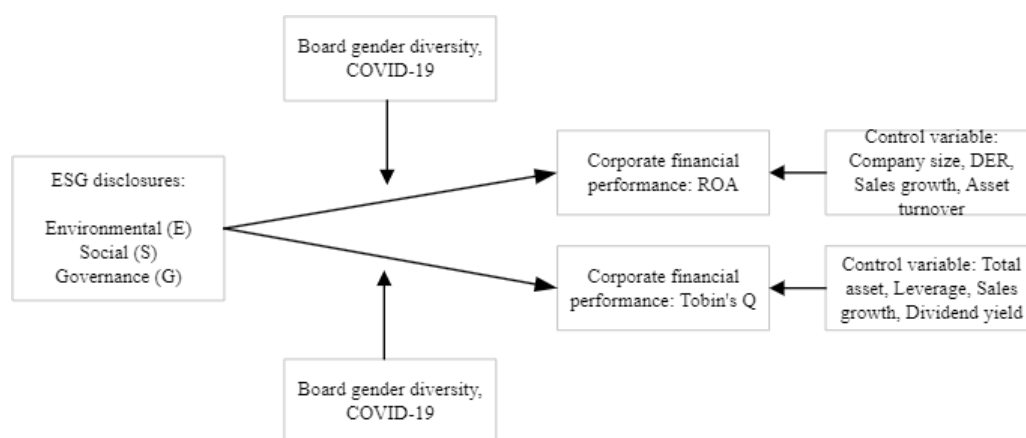


Figure 1: Model of Research

In order to test hypothesis 1 until 6 we use the following empirical model for each financial performance.

$$ROA_{it+1} = Q_0 + Q_1E_{it} + Q_2S_{it} + Q_3G_{it} + Q_4CS_{it} + Q_5DER_{it} + Q_6SG_{it} + Q_7ATO_{it} + \varepsilon_{it}$$

Where:

ROA_{it+1} = ROA of company i on year t+1

β_0 = constant

E_{it} = environmental score of company i on year t

S_{it} = social score of company i on year t

G_{it} = governance score of company i on year t

CS_{it} = company size or revenue of company i on year t

DER_{it} = debt to equity ratio of company i on year t

SG_{it} = sales growth of company i on year t

ATO_{it} = asset turnover of company i on year t

β_1 = beta environmental score

β_2 = beta social score

β_3 = beta governance score

β_4 = beta CS

β_5 = beta DER

β_6 = beta SG

β_7 = beta ATO

ε_{it} = error on company i year t

$$TQ_{it} = Q_0 + Q_1E_{it} + Q_2S_{it} + Q_3G_{it} + Q_4TA_{it} + Q_5LV_{it} + Q_6SG_{it} + Q_7DY_{it} + \varepsilon_{it}$$

Where:

TQ_{it} = Tobin's Q of company i on year t

β_0 = constant

E_{it} = environmental score of company i on year t

S_{it} = social score of company i on year t

G_{it} = governance score of company i on year t

TA_{it} = total asset of company i on year t

LV_{it} = leverage of company i on year t

SG_{it} = sales growth of company i on year t

DY_{it} = dividend yield of company i on year t

β_1 = beta environmental score

β_2 = beta social score

β_3 = beta governance score

β_4 = beta TA

β_5 = beta LEV

β_6 = beta SG

β_7 = beta DY

ε_{it} = error on company i year t

While to test hypothesis 7 to 8 or moderating role of board gender diversity, we use following empirical model for each financial performance.

$$ROA_{it+1} = Q_0 + Q_1X_{it} + Q_2KGD_{it} + Q_3XKGD_{it} + Q_4CS_{it} + Q_5DER_{it} + Q_6SG_{it} + Q_7ATO_{it} + \varepsilon_{it}$$

Where:

ROA_{it+1} = ROA of company i on year t+1

β_0 = constant

X_{it} = Score of each ESG dimension (environmental, social, governance) of company i on year t

KGD_{it} = board gender diversity of company i on year t

$XKGD_{it}$ = moderating coefficient of board gender diversity of company i on year t

CS_{it} = company size or revenue of company i on year t

DER_{it} = debt to equity ratio of company i on year t

SG_{it} = sales growth of company i on year t

ATO_{it} = asset turnover of company i on year t

β_1 = beta ESG dimension score

β_2 = beta board gender diversity

β_3 = beta moderating coefficient of board gender diversity

β_4 = beta CS

β_5 = beta DER

β_6 = beta SG

β_7 = beta ATO

ε_{it} = error on company i year t and

$$TQ_{it} = Q_0 + Q_1X_{it} + Q_2KGD_{it} + Q_3XKGD_{it} + Q_4TA_{it} + Q_5LEV_{it} +$$

Where:

$$Q_6SG_{it} + Q_7DY_{it} + \varepsilon_{it}$$

TQ_{it} = Tobin's Q of company i on year t

β_0 = constant

X_{it} = Score of each ESG dimension (environmental, social, governance) of company i on year t

KGD_{it} = board gender diversity of company i on year t

$XKGD_{it}$ = moderating coefficient of board gender diversity of company i on year t

TA_{it} = total asset of company i on year t

LEV_{it} = leverage of company i on year t

SG_{it} = sales growth of company i on year t

DY_{it} = dividend yield of company i on year t

β_1 = beta ESG dimension score

β_2 = beta board gender diversity

β_3 = beta moderating coefficient of board gender diversity

β_4 = beta TA

β_5 = beta LEV

β_6 = beta SG

β_7 = beta DY

ε_{it} = error on company i year t

Last, to test hypothesis 9 and 10 or moderating role of COVID-19, we use following empirical model for each financial performance.

$$ROA_{it+1} = Q_0 + Q_1X_{it} + Q_2C19_{it} + Q_3XC19_{it} + Q_4CS_{it} + Q_5DER_{it} + Q_6SG_{it} + Q_7ATO_{it}$$

Where:

ROA_{it+1} = ROA of company i on year t+1

β_0 = constant

X_{it} = Score of each ESG dimension (environmental, social, governance) of company i on year t

$C19_{it}$ = COVID-19 dummy value of company i on year t

$XC19_{it}$ = moderating coefficient COVID-19 of company i on year t

CS_{it} = company size or revenue of company i on year t

DER_{it} = debt to equity ratio of company i on year t

SG_{it} = sales growth of company i on year t

ATO_{it} = asset turnover of company i on year t

β_1 = beta ESG dimension score

β_2 = beta COVID-19

β_3 = beta moderating coefficient of COVID-19

β_4 = beta CS

β_5 = beta DER

β_6 = beta SG

β_7 = beta ATO

ε_{it} = error on company i year t

$$TQ_{it} = Q_0 + Q_1X_{it} + Q_2C19_{it} + Q_3XC19_{it} + Q_4TA_{it} + Q_5LEV_{it} + Q_6SG_{it} + Q_7DY_{it}$$

Where:

TQ_{it} = Tobin's Q of company i on year t

β_0 = constant

X_{it} = Score of each ESG dimension (environmental, social, governance) of company i on year t

$C19_{it}$ = COVID-19 dummy value of company i on year t

$XC19_{it}$ = moderating coefficient COVID-19 of company i on year t

TA_{it} = total asset of company i on year t

LEV_{it} = leverage of company i on year t

SG_{it} = sales growth of company i on year t

DY_{it} = dividend yield of company i on year t

β_1 = beta ESG dimension score

β_2 = beta COVID-19

β_3 = beta moderating coefficient of COVID-19

β_4 = beta TA

β_5 = beta LEV

β_6 = beta SG

β_7 = beta DY

ε_{it} = error on company i year t

After the model is generated and data for each variable is completed, we then conducted several tests, panel regression analysis, and moderating variable test using statistic software to test each hypothesis. Generalized Least Square (GLS) is used as estimation testing because research data has random effect and according to Schmidheiny (2022), GLS is suitable for random effect data.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistic Result

The descriptive statistics result for each variable is stated in Table 4. From Table 4, it can be seen that the average environmental score (E) is 4.71 out of a total of 10 subitems provided for content analysis. This shows that the practice of environmental dimensions in the sample studied is still far from the established standards (score 10). Median has score 4 which supports the statement. Standard deviation of environmental dimension is 2.9, which is smaller than average, indicating that environmental dimensions scores at ESGKSKEHATI during the study period did not vary too much.

Table 4: Descriptive statistics result

Variable	Mean	Median	Standard Dev.	Min Value	Max. Value
Environmental (E)	4,71	4	2,9	0	10
Social (S)	8,77	9	3,6	2	17
Governance (G)	14,27	15	0,9	12	15
Board Gender Diversity (%)	9,46%	9,09%	11,00%	0,00%	66,67%
ROA _{t+1} (%)	5,75%	3,95%	7,35%	-16,63%	46,29%
Tobin's Q (%)	2,09	1,27	2,66	0,76	23,29
CS (Rp Million)	27.947.743	14.431.211	41.913.043	294	239.205.000
DER (%)	83,26%	54,32%	98,38%	0,00%	639,85%
SG (%)	9,85%	7,36%	26,40%	58,44%	128,34%
ATO	0,77	0,52	0,70	0,04	3,85
TA (Rp Million)	46.361.236	23.508.586	66.815.935	798	367.311.000
LEV	2,90	2,36	1,92	1,09	15,41
DY (%)	2,32%	1,88%	1,88%	0,00%	13,36%

Source: processed by the author

For social score (S), average is at 8.77 out of 17 social subitems provided for content analysis. This shows that most companies implement social subitems disclosure according to standards. Median is very close to the mean, with score of 9, indicating symmetrical data. Standard deviation is at 3.6, which is smaller than the average, indicating scores of social dimensions of nonfinancial companies in ESGKSKEHATI during study period did not vary too much.

For governance score (G), the average is at 14.27 out of 15 subitems provided for content analysis. This shows that almost all companies have carried out disclosure of governance dimension according to standards. Median is at the maximum score of 15, indicating that more than half of the sample have implemented all governance subitems. Standard deviation is at 0.9, much smaller than the average which indicates that the scores of corporate governance dimensions at ESGKSKEHATI during study period hardly varied. This may be due to the focus of stakeholders who have considered governance dimension since years ago before 2017 and government regulation that can be explained by institutional theory.

For the moderating variable specifically board gender diversity, average is at 9.46% which indicates the composition of women on the board. Median is close to the average at 9.09%, indicating that majority of sample companies have very little or no women on their boards. Standard deviation is 11%, which is higher than the average indicating that board gender diversity of nonfinancial companies in ESGKSKEHATI during the study period varied. This shows that there are companies that already paid more attention at women's ability to carry out supervisory function of the company.

For the dependent variable ROA_{t+1} , average is at 5.75% with median 3.95%. A good ROA is above 5%, but it is advisable to compare one company with another in the same sector. Standard deviation of ROA_{t+1} is higher with 7.35% which indicates high variation between companies. For Tobin's Q, average is at 2.09 which indicates that the majority of companies have a higher market value than recorded assets (>1). Median of Tobin's Q is 1.27. The standard deviation of Tobin's Q is 2.66, higher than the average indicating high variation between firms.

4.2 Hypothesis Testing

Summary of each hypothesis testing result can be seen in Table 5, followed by analysis of each finding. Regression was done using EViews software and using two-tailed hypotheses testings

Table 5: Hypothesis testing results

Hypothesis	P-values	F-stat Prob.	Adjusted R-squared	Hypothesis supported/Not supported
H1: Environmental dimension practices have significant positive impact on ROA_{t+1}	0.3299	0.0002	10.51%	Not supported
H2: Social dimension practices have significant positive impact on ROA_{t+1}	0.3534			Not supported

H3: Governance dimension practices have significant positive impact on ROAt+1	0.5011			Not supported
H4: Environmental dimension practices have significant positive impact on Tobin's Q	0.3572			Not supported
H5: Social dimension practices have significant positive impact on Tobin's Q	0.2081	0.1830	1.64%	Not supported
H6: Governance dimension practices have significant positive impact on Tobin's Q	0.9360			Not supported
H7: Boardgender diversity strengthens relationship between ESGdimension practices and ROAt+1 of ESGSKEHATI index companies	E: 0.9496 S: 0.0054 G: 0.7751		S, non-moderated: 18,24% S, moderated: 13,8%	Supported only in social dimension
H8: Boardgender diversity strengthens relationship between ESGdimension practices and Tobin's Q of ESGSKEHATI index companies	E: 0.2893 S: 0.0133 G: 0.9526		S, non-moderated: 5,44% S, moderated: 7,39%	Supported only in social dimension

H9:			
COVID-19 strengthens relationship between ESG dimension practices and ROA _{t+1} of ESGSKEHATI index companies	E: 0.8980 S: 0.1792 G: 0.9505		Not supported

H10:			
COVID-19 strengthens relationship between ESG dimension practices and Tobin's Q of ESGSKEHATI index companies	E: 0.5715 S: 0.0075 G: 0.0889	S, non-moderated: 5,45% S, moderated: 9,23%	Supported only in social dimension

Source: processed by the author

From the results of hypothesis testing above, it can be implied that partially, ESG dimension has no significant impact to ROA_{t+1}. However simultaneously, ESG dimension has significant impact on ROA_{t+1}. This result aligned with the research by (Rahman et al., 2023) which stated that as a whole construction, ESG has impact on financial performance proxied by ROA and Tobin's Q. This research was conducted on 255 nonfinancial companies listed on stock exchanges in developing countries such as Pakistan during period 2016 to 2020. This result can also be explained by legitimacy theory. Regarding Tobin's Q, ESG dimension partially and simultaneously has no impact on Tobin's Q. No impact shown of partial ESG dimension to financial performance may be explained by greenwashing theory. Mateo-Márquez et al. (2022) in their research stated that information increase related to environmental aspect provided by firm was actually questioned by public. This is due to greenwashing practices where firms were found to provide misleading information regarding their environmental activities, hence gave bad signal to shareholders. Further, Huang et al. (2022) explained that greenwashing behavior was impacted significantly by neighbor firm in the same area. This finding is related to mimetic isomorphism theory.

For moderating variable specifically board gender diversity, the only relationship proven from ESG dimension is social dimension with ROA_{t+1} and Tobin's Q. As for ROA, it is found that board gender diversity weakens relationship of social dimension with ROA_{t+1}, shown from lower adjusted R-square in moderated condition. This finding is not consistent with result presented by Nguyen & Thai (2022) that proved that board gender diversity positively associated with better CSR performance, in which we expect better financial performance as well. However, this finding is consistent with research by Yarram & Adapa (2022), in which stated that there is negative association between gender diversity and corporate risk-taking activities. This corporate risk-taking has positive relationship with CSR performance in which we should expect better financial performance as a result. For Tobin's Q, board gender diversity strengthens relationship of social dimension with Tobin's Q, shown from increased adjusted R-square in moderated condition. This supports previous result of board gender impact on financial performance such as Jain (2022) and Safiullah et al. (2022) that its relationship can also be explained by signaling theory.

For moderating variable specifically COVID-19, it is found that COVID-19 strengthens relationship between social dimension and Tobin's Q, shown from increased adjusted R-square in moderated condition. It is consistent with finding by Broadstock et al. (2021) which concluded that during the COVID-19 period, ESG scores actually had a positive impact on short-term returns (which are related to market value) of stocks in China. Published social activities may also provoke shareholders and market view regarding company focus during crisis condition, which can influence their action to buy a particular company share. This phenomenon can be explained by signaling theory.

5. CONCLUSIONS, IMPLICATIONS, SUGGESTIONS AND LIMITATIONS OF THE RESEARCH

5.1 Conclusions

The purpose of this study is to empirically examine impact of ESG dimension on financial performance of 39 nonfinancial companies listed on the ESGSKEHATI index during the period 2017 to 2021. In addition, this study also aims to examine the moderating effect of board gender diversity and COVID-19 to the relationship mentioned before. ESG dimension scores obtained from content analysis of sustainability reports and annual reports, while board gender diversity was obtained from Thomson-Reuters and annual reports.

Based on the results of regression analysis obtained in this study, each ESG dimension partially has no significant impact on ROA_{t+1} and Tobin's Q. However, ESG dimension simultaneously has a positive significant impact on ROA_{t+1} . The other findings show that board gender diversity does not moderate relationship between environment (E) and governance (G) variables with ROA_{t+1} , but weakens relationship between social variables (S) and ROA_{t+1} . Board gender diversity does not moderate the relationship between environmental variables (E) and governance (G) with Tobin's Q, but strengthens the relationship between social variables (S) and Tobin's Q.

Next moderating variable tested was COVID-19, where it was found that COVID-19 did not moderate relationship between each environmental (E), social (S), and governance (G) dimension on ROA_{t+1} . It is also found that COVID-19 does not moderate relationship between environmental (E) and governance (G) dimension with Tobin's Q, but COVID-19 strengthened the relationship between the social (S) dimension and Tobin's Q.

5.2 Implications, Suggestions, and Research Limitations

This research gives implications to other nonfinancial companies outside of ESGSKEHATI index, that ESG dimension simultaneously gives impact to company financial performance the year after. It also gives insight to government that ESG as a whole matters and board gender diversity can especially strengthen relationship of social dimension to CFP. Government can also suggest better approach for company's strategy if pandemic condition ever happens again.

For firms' ESG management in the future, to alleviate bad signal regarding greenwashing issues received by shareholders, firms need to ensure each ESG dimension practices is really implemented. Further, media exposure of corporate actions may help, aligning with research by Yue & Li (2023) where they stated that media attention can prevent firm greenwashing behavior. With this, positive signal from public can slowly be generated.

The limitation of this study is data collection method used for each ESG dimension is content analysis, there may be subjective judgments in the process. Suggestion for future research is using Thomson-Reuters score with unbalanced panel data analysis especially for other ESG indexes.

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