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Role of Size: The Influence of Green Innovation and SDG Disclosure on Corporate Financial Performance

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A B S T R A C T

This study seeks to fill a gap in the current literature by empirically investigating the impact of Green Innovation and Sustainable Development Goals (SDG) Disclosure on Corporate Financial Performance (CFP), with Firm Size serving as a moderating variable. The study employed purposive sampling to investigate 80 businesses listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The hypotheses were evaluated using multiple linear regression analysis across six distinct models. The results disclose multiple significant insights. Initially, neither green product innovation nor SDG disclosure exhibited a statistically significant effect on firm financial performance. Secondly, business size did not influence the association between green product innovation and green process innovation, on the one hand, and financial performance, on the other. Notably, green process innovation was observed to have an adverse impact on financial performance, indicating either cost burdens or short-term inefficiencies associated with its implementation. Nonetheless, business size positively influenced the association between SDG disclosure and financial success, suggesting that larger enterprises may derive more advantages from sustainability reporting due to enhanced stakeholder visibility and resource accessibility. These findings possess significant practical ramifications.

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INTRODUCTION

Corporate financial performance is a vital measure of organizational success, indicating operational efficiency and long-term sustainability. Traditional measurement approaches, including accounting-based metrics such as Return on Assets (ROA) and market-based metrics like Tobin's Q, provide unique perspectives on both short-term operational effectiveness and long-term market perceptions (Khan et al., 2021; Liang et al., 2022; Lin et al., 2024). Regulatory pressures for sustainable practices, such as green innovation and the disclosure of Sustainable Development Goals (SDGs), have been reinforced in Indonesia as a result of the government's commitment to achieve Net-Zero Emissions by 2060, as outlined in the Paris Agreement (Andrian et al., 2024). These initiatives aim to balance economic growth with environmental and social responsibilities; however, their impact on corporate financial performance remains unclear.

Green innovation, characterized by the creation of eco-friendly goods, processes, and systems, has arisen as a strategic solution to global sustainability concerns. Although it provides enduring advantages like operational efficiency and market growth, initial expenditures frequently burden short-term financial performance (Novitasari & Agustia, 2023; Tariq et al., 2019). Similarly, the declaration of SDGs, which is required by the Financial Services Authority Regulation (POJK No. 51/2017) in Indonesia, increases transparency but results in implementation expenses that may cancel out any immediate financial gains (Lawati & Hussainey, 2022). Various empirical studies have produced contradictory findings: some have found favourable relationships between environmentally friendly innovation and Tobin's Q. (Agustia et al., 2019), while others find no short-term financial benefits from SDG adoption (Lassala et al., 2021).

The size of the firm is a crucial moderating component in this context. Smaller enterprises exhibit greater agility in implementing green innovations, resulting in quicker financial returns. In contrast, larger corporations face increased public scrutiny, requiring them to provide comprehensive SDG disclosures to maintain their credibility. (Lin et al., 2019; Wahyuningrum et al., 2022). This dichotomy implies that the correlation between financial outcomes and sustainability initiatives is not linear but rather influenced by the scope of the organization.

This study analyses the direct effects of green innovation and SDG disclosure on financial performance, as measured by ROA and Tobin's Q, and investigates the moderating role of firm size in these relationships.

This research fills gaps in the current literature by examining Indonesia's distinct regulatory and economic environment, which emphasizes the need for swift decarbonization. It concurrently assesses green innovation and SDG disclosure, in contrast to earlier studies that analysed these elements separately, and incorporates firm size as a moderating variable, thereby addressing discrepancies in previous conclusions regarding the financial implications of sustainability.

By bridging these gaps, the study offers a nuanced understanding of how sustainability strategies intersect with organizational characteristics to influence financial performance in emerging markets.

LITERATURE REVIEW

A literature review identifies and addresses gaps in existing research, forming the theoretical foundation of a piece. This section will address the objective of the literature review. We will examine the methods for identifying suitable literature for a literature review and the management of this material.

According to the stakeholder theory, businesses are required to address environmental concerns in order to satisfy a wide variety of stakeholders, such as investors and communities for example (Hill & Jones, 1992). Green innovation, classified into product (eco-friendly goods) and process (resource-efficient processes), seeks to meet these objectives. Legitimacy theory posits that adoption frequently arises from compliance demands rather than strategic decisions, resulting in short-term financial strain (Dowling & Pfeffer, 1975). Investigations conducted in Indonesia indicate that the innovation of green products encounters limited market demand attributed to higher pricing, whereas process innovation involves significant initial expenses for the adoption of renewable energy, which in turn diminishes ROA and Tobin's Q (Novitasari & Agustia, 2023; Tariq et al., 2019). Based on the research results from (Yao et al., 2019), Green innovation, as well as product and process innovation, have a negative correlation with firm value (Tobin's Q) in the Chinese market. This is owing to high pricing, limited markets, and low customer knowledge of ecologically friendly items. Instead of focusing solely on short-term financial performance, innovation must be evaluated in the long term and in the context of capital markets. Based on this, we can conclude that green product innovation and green process innovation have a negative substantial influence; thus, the following hypothesis is proposed:

H1a: Green product innovation negatively affects corporate financial performance (ROA and Tobin's Q).

H1b: Green process innovation negatively affects corporate financial performance (ROA and Tobin's Q).

Legitimacy theory posits that SDGs disclosure may serve as a company's proactive endeavour to cultivate public confidence. By disclosing SDG-related actions, corporations can strengthen stakeholder relationships, thereby mitigating the risk of boycotts, demonstrations, or regulatory penalties and indirectly bolstering their financial performance. Revealing Sustainable Development Goals (SDGs) signifies a concrete dedication to global objectives (e.g., SDG 12: Responsible Consumption or SDG 13: Climate Action), thereby enhancing social legitimacy.

According to existing research, most studies on SDG disclosure and its impact on corporate financial performance yield positive results. One of them is a study by Lin et al. (2024), which demonstrates a form of firm involvement in the Sustainable Development Goals (SDGs) that results in favourable outcomes for the company's financial performance; however, the effect is significantly influenced by stakeholder impact. When compared to corporations that merely

report on the Sustainable Development Goals (SDGs) without actively participating in them, businesses that engage with stakeholders in SDG projects achieve the highest levels of company performance. Another study conducted by (Lawati & Hussainey, 2022) obtained the same results, indicating that SDG implementation has a favorable and significant impact on firm performance. According to the report, companies who are more upfront about SDG initiatives are more profitable. The findings are consistent with stakeholder theory, indicating that SDG openness boosts investor trust and firm reputation. Based on the results, the following hypothesis is made:

H2: SDG disclosure positively affects corporate financial performance (ROA and Tobin's Q).

Legitimacy theory posits that business scale enhances the correlation between green innovation and financial performance, as larger enterprises encounter more significant legitimacy concerns while simultaneously possessing superior risk management capacities. Large firms that adopt green innovation can generate more substantial social legitimacy effects due to heightened public scrutiny. For example, if a substantial corporation participates in greenwashing, it is more likely to encounter more significant social repercussions. Nonetheless, these companies possess a heightened ability to construct compelling sustainability narratives. Thus, the integration of green innovation and substantial business scale can lead to enduring legitimacy, thereby enhancing corporate financial performance.

Firm size can be a key determinant in innovation adoption. Large organizations have more financial resources to spend on green innovation efforts. These companies can use economies of scale to lower the expenses associated with implementing environmentally friendly practices. Furthermore, they face increased stakeholder pressure to implement sustainable practices, which may enhance their business reputation and, ultimately, financial performance. This perspective aligns with findings from (Mansour et al., 2024) who established that the size of the company has a beneficial moderating effect on the association between environmentally friendly innovation and financial performance? According to the findings of their research, larger firms appear to reap more significant benefits from implementing environmental innovation programs. Because of this, the following hypothesis is formulated based on the results that were obtained:

H3a: Firm size strengthens the negative effect of green product innovation on corporate financial performance.

H3b: Firm size strengthens the negative effect of green process innovation on corporate financial performance.

According to legitimacy theory, larger corporations are under greater pressure to disclose SDG-related information to maintain their credibility among stakeholders, which may ultimately enhance their financial performance. For these businesses, investing in SDG disclosure can be a strategic tool for enhancing financial performance through improved reputation and increased stakeholder trust. This theoretical framework is supported by empirical evidence from (Lassala et al., 2021), whose research has shown that the size of the firm

substantially influences the relationship between corporate financial performance and SDG initiatives. Consequently, as a result of the findings, the subsequent hypothesis is formulated:

H4: Firm size strengthens the positive effect of SDG disclosure on corporate financial performance.

METHODOLOGY

This study focuses on businesses listed on the Indonesia Stock Exchange between 2019 and 2023, operating across all industries except the banking sector. The selection of the samples is carried out using a method known as purposive sampling, which is based on the following criteria:

1) Companies that are listed in the Indonesian Stock Exchange, excluding the financial sector.
2) Companies that regularly file financial reports and sustainability reports in the period 2019-2023.
3) Companies that disclose at least 1 SDG in the period 2019-2023.

Table 1. Variable Measures

Variables		
Return on Assets	FPROA	Net Income divided by the book value of total assets at the end of the year
Tobin's Q	FPTOBIN	Total Market Value + Total Liabilities)/Total Assets
Independent Variables		
Green Product Innovation	GPRODUCT	Measurements using content analysis, if in the sustainability report it is stated that in carrying out product development or design, the company (1) chooses the product ingredients that produce the least amount of pollution and energy; (2) using the least amount of product ingredients; and (3) products are easily recycled, reused, and described.
Green Process Innovation	GPROCESS	Attainment of ISO 14001 certification (dummy = 1 if yes, 0 = otherwise.
SDG Disclosure	SDGD	1 = If the company discloses its alignment with SDGs in its sustainability report, 0 = if a company does not disclose its alignment with SDGs.
Moderation Variable		
Size	SIZE	Natural logarithm of a firm's total assets.
Control Variables		
Leverage	LEV	Total Debt/Total Equity
Liquidity	LIQ	Current Assets/Current Liabilities
Age	AGE	Natural logarithm of a firm's age.
Capital Expenditures	CAPEX	Natural logarithm of capital expenditures.

To evaluate company financial performance, this study examines operational performance as assessed by return on assets (ROA) and Tobin's Q. ROA measures the efficiency of a company's operational processes in generating profit from its assets. It is calculated by dividing a company's net income by its total assets (Khan et al., 2021). Tobin's Q is a ratio that compares a company's asset value to its replacement value.

Total shares outstanding are used to assess a company's market value, whereas book value is used to determine replacement value (A. E. B. Naibaho et al., 2025). The independent variable is Green Innovation, which will be divided into two categories: green product innovation and green process innovation. Green product innovation is quantified through content analysis, expressed as a ratio in the sustainability report (Husnaini & Tjahjadi, 2021). A dummy variable is used to quantify green process innovation. Green process innovation is measured by assigning a value of 1 to the company if it indicates that it has at least one ISO 14001 certification, and a value of 0 if it declares that it does not have any certifications (He & Jiang, 2019). SDG Disclosure is utilizing a dummy variable. If the corporation reveals its alignment with the SDGs, assign a value of 1; if the company does not disclose its alignment with the SDGs, assign a value of 0 (Beretta et al., 2024). The moderating variable of this study is company size, which is measured by using the natural logarithm of the value of assets (Gerged et al., 2023). Referring to previous studies, the control variables in this study are leverage (Zampone et al., 2024), liquidity (E. A. B. Naibaho & Simatupang, 2024), firm age (Srouji et al., 2023), and capital expenditures (A. E. B. Naibaho & Shahab, 2025). In Table 1, the operationalization of the variables used in this study is presented. It also provides an outline of the indicators and measurements used to evaluate the major constructs.

The following equations represent the panel data regression analysis approach that is used in this study:

Model 1:

$$FPROA = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 6CAPEX + \varepsilon$$

Model 2:

$$FPROA = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 3Size + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 6CAPEX + \varepsilon$$

Model 3:

$$FPROA = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 3Size + \beta 4GProduct*Size + \beta 4GProcess*Size + \beta 4SDGD*Size + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 7CAPEX + \varepsilon$$

Model 4:

$$FPTOBIN = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 6CAPEX + \varepsilon$$

Model 5:

$$FPTOBIN = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 3Size + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 7CAPEX + \varepsilon$$

Model 6:

$$FPTOBIN = \alpha + \beta 1GProduct + \beta 2GProcess + \beta 3SDGD + \beta 3Size + \beta 4GProduct*Size + \beta 4GProcess*Size + \beta 4SDGD*Size + \beta 4Lev + \beta 5Liq + \beta 6Age + \beta 6CAPEX + \varepsilon$$

(Description: FPROA: Return on Assets, FPTOBIN: Tobin's q, α: Constant, β: Beta, GProduct: Green Product Innovation, GProcess: Green Process Innovation, SDGD: SDG Disclosure, Size: Company Size, Lev: Leverage, Liq: Liquidity, Age: Company Age, CAPEX: Capital Expenditure, ε: Error term).

This research will employ ordinary least squares (OLS) regression for the primary analysis. The tests to be conducted include descriptive statistics, correlation analysis, classical assumption tests, coefficient of determination

analysis, the F-test for significance, and individual parameter significance tests (t-tests).

RESEARCH RESULTS AND DISCUSSION

Table 2 presents the descriptive statistics of the variables employed in this investigation. In this research, ROA, which assesses operational performance, indicates that the respondents exhibit values between -0.949 and 0.519, with a mean value of 0.037. Tobin's Q, which assesses market performance in this study, varies from 0.359 to 12.608, with a mean value of 1.479.

Table 2. Statistic Descriptive Results

Variable	Obs	Mean	Std. dev.	Min	Max
fproa	400	0.037403	0.1138124	-0.9488888	0.5995026
fptobin	400	1.478673	1.379576	0.3581882	12.60802
gproduct	400	1.8325	1.178097	0	3
gprocess	400	0.7625	0.4260841	0	1
sdgd	400	0.8375	0.3693709	0	1
size	400	16.55476	1.419072	12.96321	19.9145
lev	400	0.5186938	0.3055017	0.0480305	2.058333
liq	400	2.195862	2.092121	0.0529732	16.50699
age	400	3.663222	0.5285076	1.791759	4.762174
capex	400	12.6431	2.00621	5.958425	16.89209

On a scale ranging from 0 to 3, green product innovation receives an average score of 1.833, while green process innovation receives an average score of 0.763. Approximately 83.8% of companies have disclosed their connection with the Sustainable Development Goals (SDGs). Using the natural logarithm of total assets as a measure, the average size of the company is 16.555, and the leverage ratio is 0.519, indicating a moderate level of debt. As a reflection of the level of investment intensity, the average liquidity is 2.196, while the average capital expenditure equals 12.643.

Table 3. Pairwise Correlation Table

Variable	roa	tobin	gproduct	gprocess	sdgd
fproa	1				
fptobin	0.1387***	1			
gproduct	0.0251	-0.0688	1		
gprocess	0.0875*	-0.0952*	0.0404	1	
sdgd	0.0046	-0.1693***	0.2195***	0.0886*	1
size	0.0412	-0.2378***	0.2016***	0.1618***	0.2290***
lev	-0.5239***	0.0093	-0.0667	0.0086	-0.0841*
liq	0.2517***	0.0651	-0.0646	-0.1280**	-0.1057**
age	0.0142	0.0990**	0.1470***	0.0816	-0.0541
capex	0.2430***	-0.0825*	0.0713	0.2417***	0.1454***
Variable	**size**	**lev**	**liq**	**age**	**capex**
size	1				
lev	0.1200**	1			

liq	-0.1577***	-0.4518***	1		
age	0.0273	0.0712	0.0207	1	
capex	0.7092***	-0.1510***	-0.0423	-0.0496	1

*** p<0.01, ** p<0.05, *p<0.1

The correlation matrix for all variables included in this study is presented in Table 3, serving as an important diagnostic tool for identifying potential problems with multicollinearity. This research considers correlation coefficients with absolute values of 0.8 or above to be indicative of multicollinearity issues. The usual statistical norms do this. The findings presented in Table 3 demonstrate that none of the variable pairings surpass this threshold, which can be interpreted as confirmation that there is no significant multicollinearity among the variables investigated.

The variance inflation factor (VIF) test is also employed in this study, and its results are presented in Table 4. This test demonstrates that the explanatory variables are lower than the value of 10, which further indicates that there are no multicollinearity issues in Models 1, 3, 2, and 5.

Table 4. VIF Test Results

Model 1 & 3		
Variable	**VIF**	**1/VIF**
LEV	1.34	0.744534
LIQ	1.33	0.750197
CAPEX	1.12	0.896752
SDGD	1.10	0.909929
GPRODUCT	1.09	0.915417
GPROCESS	1.09	0.916061
AGE	1.05	0.949574
Mean VIF	1.16	

Model 2 & 5		
Variable	**VIF**	**1/VIF**
SIZE	2.48	0.402816
CAPEX	2.44	0.410179
LEV	1.50	0.668747
LIQ	1.33	0.750195
GPRODUCT	1.14	0.878326
SDGD	1.13	0.881753
GPROCESS	1.09	0.913444
AGE	1.06	0.946821
Mean VIF	1.52	

Model 3 & 6		
Variable	**VIF**	**1/VIF**
SDGD_SIZE	180.12	0.005552
GPRODUCT_SIZE	163.46	0.006118
SDGD	158.85	0.006295
GPRODUCT	151.93	0.006582
GPROCESS_SIZE	147.73	0.006769
GPROCESS	137.64	0.007265
SIZE	13.10	0.076346
CAPEX	2.48	0.403020
LEV	1.50	0.665073
LIQ	1.38	0.726681
AGE	1.10	0.908183
Mean VIF	87.21	

According to Table 4, the VIF values in Models 3 and 6 for the variables SDGD_SIZE, GPRODUCT_SIZE, SDG, GPRODUCT, GPROCESS_SIZE, GPROCESS, and SIZE were above 10, whilst other independent variables had VIF values less than 10, resulting in a mean VIF of 87.21, indicating multicollinearity difficulties in these models. However, after applying the centering transformation (x-mean) to the moderating variable SIZE and the interaction variables GPRODUCT_SIZE, GPROCESS_SIZE, and SDGD_SIZE, the mean VIF fell to 3.5 (below 10), thereby resolving the multicollinearity problem in Models 3 and 6, as shown in Table 5.

Table 5. VIF Test Results After Centering

Model 3 & 6		
Variable	**VIF**	**1/VIF**
SIZE_C	13.10	0.076346
SDGD_SIZE_C	7.41	0.134869
GPROCESS_SIZE_C	4.18	0.239315
GPRODUCT_SIZE_C	3.71	0.269414
CAPEX	2.48	0.403020
LEV	1.50	0.665073
LIQ	1.38	0.726681
SDGD	1.36	0.735580
GPRODUCT	1.16	0.859206
GPROCESS	1.15	0.869567
AGE	1.10	0.908183
Mean VIF	3.50	

Table 5 displays the results of the Shapiro-Wilk normality test for the dependent variables ROA and Tobin's Q. The test indicates statistically significant divergences from a normal distribution for both variables. Specifically, ROA produces a W-statistic of 0.730 ($p < 0.10$), whereas Tobin's Q presents a W-statistic of 0.573 ($p < 0.10$), both signifying non-normal distributions. Notwithstanding these findings, normality may be disregarded and assumed to be normally distributed, given the substantial sample size ($N > 200$), specifically 400 observations.

Table 6. Shapiro-Wilk Normality Test Results

Saphiro-Wilk W Test for normal data					
Variabel	**Obs**	**W**	**V**	**z**	**Prob>z**
FPROA	400	0.72986	74.367	10.253	0.00000
FPTOBIN	400	0.57325	117.484	11.341	0.00000

The Breusch-Pagan test is used in this study to determine whether the models contain heteroskedasticity. The results in Table 6 demonstrate no evidence of heteroskedasticity in Model 1, as the p-value (0.2496) is greater than the significance level of 0.05. This suggests that Model 1 satisfies the homoskedasticity assumption, and the residual variance is consistent across data.

Table 7. Heteroskedasticity Test Results

Breusch-Pagan/Cook Weisberg test for heteroskedasticity						
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
chi2(1)	479.43	474.16	418.61	72.26	166.05	197.41
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000

When the probability value is lower than the significance level of 0.1, as shown in Table 7, and the p-value is significantly lower than 0.05 (0.0000), this implies that the null hypothesis (H0), which posits that the variance is constant (homoscedasticity), is rejected. As a result, it is possible to conclude that heteroscedasticity is present in this research across all models, from 1 to 6.

This study employs robust standard error regression to address this issue, as the violation of classical regression assumptions may compromise the results of this investigation. This method is designed to address such violations by generating robust standard error estimates, ensuring that the results remain consistent and dependable in the face of these statistical challenges. By employing this methodology, the study's methodological rigor is fortified, and its conclusions are rendered more credible.

Table 8. Model Specification Test

Model 1		
Number of obs	=	400
F(7, 392)	=	14.16
Prob > F	=	0.0000
R-squared	=	0.3303
Root MSE	=	0.07371

Model 2		
Number of obs	=	400
F(8, 391)	=	13.96
Prob > F	=	0.0000
R-squared	=	0.3353
Root MSE	=	0.07352

Model 3		
Number of obs	=	400
F(11, 388)	=	10.67
Prob > F	=	0.0000
R-squared	=	0.3446
Root MSE	=	0.07329

Model 4		
Number of obs	=	400
F(7, 392)	=	3.23
Prob > F	=	0.0024
R-squared	=	0.0579
Root MSE	=	1.1481

Model 5		
Number of obs	=	400
F(8, 391)	=	6.69
Prob > F	=	0.0000
R-squared	=	0.1241
Root MSE	=	1.1084

Model 6		
Number of obs	=	400
F(11, 388)	=	4.88
Prob > F	=	0.0000
R-squared	=	0.1279
Root MSE	=	1.1103

The findings of the F-test, as presented in Table 8, with return on assets (ROA) serving as the dependent variable for Models 1, 2, and 3, and Tobin's Q

serving as the dependent variable for Models 4, 5, and 6, yield a probability value of 0.0000. In contrast, Model 4 generates a probability value of 0.0024. The significance level for this study is set at 0.10, and based on this, it is possible to conclude that all independent factors in Models 1 through 6 simultaneously influence the dependent variables (ROA and Tobin's Q).

Table 9. t-test Results

Model 1			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	-0.001466	0.315	H1a is rejected, GPRODUCT does not affect FPROA (sig=5%)
GPROCESS	0.1256	0.130	H1b is rejected, GPROCESS does not affect FPROA (sig=5%)
SDGD	-0.012358	0.170	H2 is rejected, SDG does not affect FPROA (sig=5%)
Model 2			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	-0.000287	0.464	H1a is rejected, GPRODUCT does not affect FPROA (sig=5%)
GPROCESS	0.011622	0.151	H1b is rejected, GPROCESS does not affect FPROA (sig=5%)
SDGD	-0.09108	0.230	H2 is rejected, SDG does not affect FPROA (sig=5%)
Model 3			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	-0.02419	0.2705	H1a is rejected, GPRODUCT does not affect FPROA (sig=5%)
GPROCESS	0.12030	0.2055	H1b is rejected, GPROCESS does not affect FPROA (sig=5%)
SDGD	-0.28300	0.0115	H2 is rejected, SDG has a significant negative effect on FPROA (sig=5%)
GPRODUCT_SIZE	-0.00150	0.262	H3a is rejected, SIZE is unable to moderate the effect of GPRODUCT on FPROA (sig=5%)
GPROCESS_SIZE	-0.00659	0.230	H3b is rejected, SIZE is unable to moderate the effect of GPROCESS on FPROA (sig=5%)
SDGD_SIZE	0.01714	0.010	H4 is accepted, SIZE strengthens the positive effect of SDG on FPROA (sig=5%)
Model 4			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	-0.035652	0.2095	H1a is rejected, GPRODUCT does not affect FPTOBIN (sig=5%)

GPROCESS	-0.28256	0.031	H1b is accepted, GPROCESS has a significant negative effect on FPTOBIN (sig=5%)
SDGD	-0.416312	0.0325	H2 is rejected, SDG has a significant negative effect on FPTOBIN (sig=5%)
Model 5			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	0.0203292	0.3235	H1a is rejected, GPRODUCT does not affect FPTOBIN (sig=5%)
GPROCESS	-0.327112	0.011	H1b is accepted, GPROCESS has a significant negative effect on FPTOBIN (sig=5%)
SDGD	-0.261949	0.1005	H2 is rejected, SDGD does not affect FPTOBIN (sig=5%)
Model 6			
Variable	**Coef**	**P>t (/2)**	**Explanation**
GPRODUCT	-0.0198009	0.4885	H1a is rejected, GPRODUCT does not affect FPTOBIN (sig=5%)
GPROCESS	0.1790638	0.4575	H1b is rejected, GPROCESS does not affect FPTOBIN (sig=5%)
SDGD	-2.616605	0.1175	H2 is rejected, SDG does not affect FPTOBIN (sig=5%)
GPRODUCT_SIZE	-0.0024388	0.4755	H3a is rejected, SIZE is unable to moderate the effect of GPRODUCT on FPTOBIN (sig=5%)
GPROCESS_SIZE	-0.0300838	0.3815	H3b is rejected, SIZE is unable to moderate the effect of GPRODUCT on FPTOBIN (sig=5%)
SDGD_SIZE	0.1476098	0.1295	H4 is rejected, SIZE is unable to moderate the effect of GPRODUCT on FPTOBIN (sig=5%)

The analysis of six regression models reveals several key findings regarding the relationship between SDG disclosure and corporate financial performance. First, the results demonstrate that green process innovation has a significant negative impact on financial performance when measured by ROA. This finding aligns with previous research by Xie et al., (2022), which stated that initial implementation of green process innovations often leads to declining financial performance due to high costs and risks. Similarly, Yao et al., (2019) suggested that green process innovation may reduce market expectations of

financial performance, potentially due to substantial upfront investments, uncertainty about innovation outcomes, and market unpreparedness from both economic and environmental awareness perspectives.

Conversely, firm size appears to strengthen the positive relationship between SDG disclosure and financial performance (ROA). This supports the findings of Lassala et al., (2021), who identified firm size as a moderating factor in the SDG-financial performance relationship. Larger firms typically possess greater resources to invest in sustainability practices, ultimately enhancing their financial outcomes. Mozas-Moral et al., (2021) similarly found that SDG commitments contribute to improved financial performance when supported by firm size, as companies can leverage their sustainability efforts as a marketable value proposition.

However, the findings show that neither green product innovation nor SDG disclosure has a major impact on financial performance. Furthermore, business size does not influence the association between green product/green process innovation and financial performance. These findings imply that, while certain sustainability measures (especially green process innovation) may initially impact financial performance, larger businesses may be better positioned to capitalize on SDG-related possibilities. The non-significant findings for green product innovation, as well as the lack of moderating effects, suggest the need for further exploration of the various contextual elements that influence these connections.

CONCLUSIONS

This study investigates the influence of green innovation and SDG disclosure on corporate financial performance, with firm size serving as a moderating variable. Using purposive sampling, the analysis incorporates 400 firm-year observations (80 companies). The key empirical findings are as follows:

1) Green product innovation shows no statistically significant effect on financial performance, whether measured by Return on Assets (ROA) or Tobin's q, leading to the rejection of the hypothesis.
2) Green process innovation negatively affects financial performance when measured by Tobin's q, but shows no significant impact when assessed via ROA.
3) SDG disclosure does not significantly influence financial performance under either ROA or Tobin's q, resulting in hypothesis rejection.
4) Firm size does not moderate the relationship between green product innovation and financial performance. Empirical evidence suggests that company size (large or small) does not alter this non-significant effect.
5) Similarly, firm size fails to strengthen the negative relationship between green process innovation and financial performance, indicating no differential impact based on company scale.
6) Firm size enhances the positive effect of SDG disclosure on financial performance measured by ROA. However, this moderating effect is absent when performance is evaluated using Tobin's q.

RECOMMENDATIONS

This study presents significant implications for various stakeholders: for companies, it recommends acknowledging the substantial short-term costs associated with green process innovation and investigating efficiency enhancements or government incentives to sustain profitability; for investors, it provides supplementary evaluation criteria for assessing corporate financial performance while advising caution regarding firms that heavily invest in green innovation without robust cost-management strategies; for future researchers, it acts as a reference for examining variables influencing financial performance, particularly through its analysis of diverse moderating factors; and for theoretical advancement, it enhances stakeholder theory by offering empirical evidence on the influence of Green Innovation and SDG Disclosure on Corporate Financial Performance, moderated by Company Size, thereby contributing to both practical decision-making and academic comprehension of the financial ramifications of sustainability initiatives.

On the other hand, this study identified several constraints that affected the research findings, and it is strongly recommended that future researchers address these deficiencies. At the outset, a significant number of Indonesian businesses lacked comprehensive sustainability and financial reports, and some of them underwent the process of listing or delisting during the observation period. As a result, the number of samples eligible for further analysis was reduced, which may affect the sample's ability to reflect the overall circumstances accurately. The second problem was that there were problems with the traditional assumption tests, notably heteroscedasticity.

Based on the research findings and current constraints, several suggestions can be made to enhance future investigations. First, extending the research period beyond five years would provide a more in-depth review of any long-term trends that may have emerged. Second, concentrating on a particular industry may result in a more profound understanding, as it enables a more precise investigation of the elements that are distinctive to that industry. Several industries, including mining, oil and gas, coal, manufacturing, and agribusiness, can be selected for future research due to the significant environmental pressures. By making these modifications, we can overcome the current restrictions and improve the outcomes of future studies.

ADVANCED RESEARCH

Future research should employ longitudinal and cross-country analyses to capture the delayed financial effects of green innovation and SDG disclosure, which may not appear in short-term performance indicators. Incorporating more detailed sustainability metrics such as emission intensity or energy efficiency could also clarify whether the quality of disclosure, rather than its mere presence, drives financial outcomes. Additionally, examining institutional pressures, industry environmental sensitivity, and differences between large and small firms would help reveal contextual factors that moderate the sustainability–performance relationship, offering a more comprehensive understanding for emerging markets.

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