The Effect of Corporate Sustainability Performance on Financial Performance: Business Risk as Moderating Variable

Dea Tiara Monalisa Butar-Butar[1,*], Vivian[2], Mariska Ramadana[3]

[1,2] Accounting, Universitas Internasional Batam, Jl. Gajah Mada, Baloi–Sei Ladi, Tiban Indah, Kec. Sekupang, Kota Batam, Kepulauan Riau 29426, Indonesia. (Telp: 0778-7437111)
e-mail: 2242109.vivian@uib.edu, mariska@uib.ac.id.

*Korespondensi: e-mail: dea@uib.ac.id

Diterima: 27-01-2026 ; Review: 27-02-2026; Disetujui: 06-06-2026

Cara sitasi: Butar-Butar, D. T. M., Vivian, Ramadana M. 2026. The Effect of Corporate Sustainability Performance on Financial Performance: Business Risk as Moderating Variable. Balance Vocation Accounting Journal. Vol 10 (1): halaman. 34 - 52

Abstrak: Penelitian ini bertujuan untuk menguji hubungan antara Corporate Sustainability Performance (CSP) dan Financial Performance (FP) serta menjelaskan peran Business Risk (BR) dalam memoderasi hubungan tersebut. Penelitian menggunakan pendekatan kuantitatif dengan data panel dari 88 perusahaan yang tergabung dalam indeks ESG Leaders di Bursa Efek Indonesia (BEI) selama periode 2019 - 2023 dan dianalisis menggunakan model regresi untuk menguji dampak interaksi antara Business Risk dan Corporate Sustainability Performance terhadap Financial Performance. Hasil penelitian menunjukkan bahwa Corporate Sustainability Performance berpengaruh positif terhadap Financial Performance serta interaksi antara Business Risk dan CSP memoderasi kinerja keuangan perusahaan. Penelitian ini berkontribusi pada literatur dengan mengungkapkan bagaimana risiko bisnis memengaruhi hubungan antara kinerja keberlanjutan dan kinerja keuangan perusahaan di berbagai sektor industri. Selain itu, temuan ini mengindikasikan pentingnya penerapan strategi keberlanjutan sebagai upaya peningkatan kinerja keuangan dengan mempertimbangkan tingkat risiko bisnis yang dihadapi, serta menunjukkan bahwa praktik keberlanjutan dapat memberikan nilai tambah bagi perusahaan dan pemangku kepentingan apabila didukung oleh manajemen risiko yang tepat.

Kata kunci: Kinerja Keberlanjutan Perusahaan, Kinerja Keuangan, Risiko Bisnis.

Abstract: *This study investigates how Corporate Sustainability Performance (CSP) influences Financial Performance (FP) and examines the moderating role of Business Risk in this relationship. Using a quantitative research design, the analysis is conducted on 88 firms listed in the IDX ESG Leaders Index of the Indonesia Stock Exchange over the 2019–2023 period. Multiple regression techniques are employed to assess the impact of sustainability initiatives on corporate financial outcomes. The findings reveal that CSP exerts a positive and statistically significant effect on financial performance. In addition, Business Risk is found to strengthen financial outcomes, while its interaction with CSP demonstrates a moderating influence on the sustainability–performance relationship. This research contributes to the sustainability literature by illustrating how varying levels of business risk shape the financial benefits of sustainability practices across industries. The results also emphasize the importance of integrating sustainability strategies with effective risk management to enhance firm value and long-term performance.*

Keywords*: Corporate Sustainability Performance, Financial Performance, Business Risk.*

1. Introduction

The intensification of global business competition has increased the pressure on firms to maintain long-term viability and performance. In response to this dynamic environment, sustainability reporting has attracted growing attention, particularly as investors increasingly favor companies that adopt responsible business practices (Butar Butar et al., 2025).Corporate sustainability performance has become a major focus in the business world in recent years due to increasing pressure from stakeholders, including investors, consumers, government institutions, and society. This has encouraged companies to actively disclose their sustainability performance, which encompasses environmental, social, and governance (ESG) aspects. Some studies report a positive impact on financial performance, while others indicate a negative effect. (Tarigan & Semuel, 2015) (Buallay, 2019)

From a stakeholder perspective, companies can enhance financial performance by developing sustainability practices that foster positive relationships with stakeholders and strengthen competitive advantage (Pranesti et al., 2022) (Buallay, 2019). Firms that implement sustainability initiatives also generate positive impacts on society through improvements in environmental, social, and governance outcomes. Nevertheless, this approach continues to generate debate, as the costs associated with sustainability implementation may reduce short-term profitability (Tarigan & Semuel, 2015). Moreover, corporate sustainability performance may be influenced by business risk. Business risk refers to the uncertainties faced by companies in conducting operations, such as market, technological, and regulatory risks, which may hinder the achievement of sustainability performance.

Research on corporate sustainability performance and its impact on financial performance has become increasingly relevant due to growing awareness of sustainability amid economic uncertainty and global market dynamics. Although many studies have explored this relationship, the results remain inconclusive. Some findings suggest that sustainability performance enhances financial outcomes through increased customer loyalty and operational efficiency, while others argue that the significant costs of sustainability initiatives can suppress profitability. Furthermore, the role of business risk as a moderating factor in the relationship between sustainability performance and

financial performance has received limited attention and requires further investigation. This gap highlights the need for deeper understanding of this dynamic.

This study is expected to contribute to the literature by enhancing understanding of the relationship between sustainability performance and financial performance within the context of business risk. The findings are anticipated to assist companies in designing optimal sustainability strategies that not only achieve sustainability objectives but also maximize financial performance. In addition, the results may serve as a reference for policymakers and stakeholders in evaluating and supporting corporate sustainability practices while considering the potential influence of business risk(Kalash, 2023).

Research examining the link between corporate sustainability performance, business risk, and financial performance is rooted in contemporary sustainability frameworks that promote the alignment of financial goals with broader social and environmental responsibilities. Within this perspective, many empirical studies reveal that organizations demonstrating high levels of sustainability commitment are more likely to record stronger financial results. Evidence provided by (Laskar et al., 2017) supports the existence of a favorable association between sustainability performance and corporate financial outcomes. These findings indicate that firms prioritizing sustainability initiatives are able to strengthen their corporate image and build long-term customer trust, which in turn contributes to improved profitability (Alshehhi et al., 2018).

The linkage between sustainability performance and corporate financial outcomes is influenced by institutional conditions and broader economic environments, particularly regulatory structures and public policy orientations. Empirical studies indicate that firms operating within governance frameworks that actively encourage sustainable practices are more likely to obtain superior financial benefits than those in less supportive settings. Government incentives and sustainability-oriented regulations have been shown to amplify the financial returns associated with sustainability initiatives by fostering greater corporate investment in responsible business practices. (Martínez Turégano & García Herrero, 2018)

Recent research has also identified factors that may moderate or mediate the relationship between sustainability performance and financial performance. For

example, firm size, industry characteristics, and marketing strategies can affect the magnitude of sustainability's impact on financial outcomes. A study by (Landi et al., 2022) highlights that larger firms with greater resources are better able to manage sustainability-related risks effectively, thereby achieving greater financial benefits compared to smaller firms.

H1. Corporate Sustainability Performance berpengaruh significant positif terhadap Financial Performance

The first hypothesis suggests that higher levels of corporate sustainability performance are associated with stronger financial outcomes. Firms that actively adopt sustainability-oriented practices are viewed by stakeholders—including investors, customers, and the broader community—as socially and environmentally responsible, which enhances corporate image, trust, and long-term loyalty. In addition, sustainability initiatives contribute to greater operational effectiveness by optimizing resource use, such as minimizing energy consumption and production waste, thereby reducing costs and increasing revenue generation. Together, these mechanisms support improved financial performance (Tsai & Wu, 2022).

H2. Business Risk berpengaruh signifikan positif terhadap Financial Performance

The second hypothesis emphasizes the role of business risk in influencing The third hypothesis argues that business risk plays a moderating role in the relationship between corporate sustainability performance and financial performance. The magnitude of the sustainability–performance linkage is expected to differ depending on the level of risk faced by firms. When exposure to regulatory, legal, and reputational risks is relatively low, sustainability initiatives are likely to generate stronger financial benefits. Conversely, in environments characterized by heightened economic volatility or market disturbances, the positive financial effects of sustainability performance may weaken (Barauskaite & Streimikiene, 2021).

This review underscores the complex and dynamic nature of the relationship between corporate sustainability performance and financial performance, encompassing direct, inverse, and moderating effects that merit careful consideration. To deepen insight into this association, future studies should further explore the mechanisms and contextual influences that shape financial outcomes. Scholars are encouraged to adopt more comprehensive analytical approaches when evaluating the impact of sustainability

initiatives on firm performance. The use of advanced econometric methods and longitudinal datasets is expected to yield richer understanding of how sustainability practices influence financial results across industries and economic settings. Continued investigation in this area will help address existing research gaps and offer meaningful managerial guidance for the effective implementation of sustainability strategies.

2. Methodology

2.1 Theoretical Framework

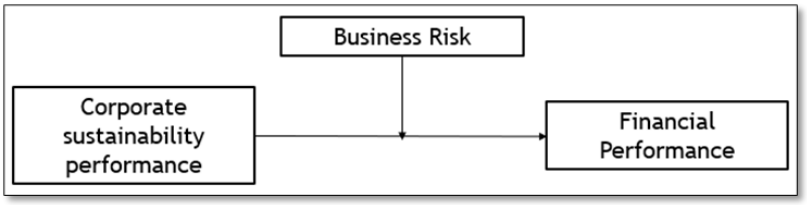


Figure 1. Theoretical Framework

Drawing on the conceptual framework, Corporate Sustainability Performance is positioned as the primary explanatory variable influencing Financial Performance. The research model also integrates Business Risk as a moderating factor that alters the strength of the association between sustainability performance and corporate financial outcomes.

2.2 Research Paradigm

This study draws on a sample of 88 firms listed on the Indonesia Stock Exchange (IDX) that are included in the ESG Leaders Index for the 2019–2023 period. The sampled companies represent a wide range of industries operating within Indonesia, reflecting different levels of business risk in a developing market environment.

Corporate Sustainability Performance is designated as the explanatory variable and is measured using the ESG Index issued by the Indonesia Stock Exchange. Financial Performance serves as the outcome variable and is captured by Return on Assets (ROA), calculated as net income divided by total assets to reflect a firm's efficiency in generating profits from its resources. Business Risk functions as the moderating variable and is measured through earnings volatility, defined as earnings before interest and taxes relative to total assets, following (Kalash, 2020).

3. Result and Discussion

3.1 Regression Analysis

Table 1. Sample Distribution based on SIC

SIC	Freq.	Percent	Cum.
Consumer Noncylicals	65	14.77	14.77
Consumer Cylicals	40	9.09	23.86
Financials	60	13.64	37.50
Energy	75	17.05	54.55
Infrastructure	40	9.09	63.64
Basic Materials	75	17.05	80.68
Transportation&Logistics	10	2.27	82.95
Industrials	10	2.27	85.23
Property and Real Estate	25	5.68	90.91
Technology	20	4.55	95.45
Healthacare	20	4.55	100.00
Total	440	100.00	

Based on industry classification using the Standard Industrial Classification (SIC) system, the study comprises 440 firm-year observations distributed across various industry sectors. The Energy and Basic Materials sectors represent the largest proportion of the sample, accounting for 17.05%, indicating the dominance of resource-based companies in the dataset. This is followed by the Consumer Non-Cyclicals and Financials sectors, which account for 14.77% and 13.64%, respectively. This distribution suggests that the sample covers a wide range of industries with diverse operational characteristics and varying levels of business risk.

Variations in industry characteristics can shape the relationship between Corporate Sustainability Performance, Business Risk, and Financial Performance, as each sector differs in operational risk, asset composition, and sustainability obligations. (Hawawini et al., 2003) emphasize that corporate performance is influenced not only by firm-specific attributes but also by the industrial environment in which companies operate, underscoring the relevance of sectoral effects in cross-firm analysis.

To account for these differences, industry classification based on the Standard Industrial Classification (SIC) system is incorporated as a control variable. This approach allows the effects of sustainability performance and business risk on financial outcomes to be assessed more precisely, ensuring that the estimated relationships reflect general patterns across sectors rather than industry-specific biases.

3.2 Descriptive Statistics

Table 2. Statistic Descriptive

	N	Mean	Std. Dev	Min	Max
CSP	440	0.363	0.282	0.000	1.000
FP	440	0.062	0.082	-0.145	0.390
BR	440	0.083	0.099	-0.114	0.468
CSPxBR	440	0.035	0.059	-0.025	0.310

A total of 440 firm-year observations drawn from 88 companies listed on the Indonesia Stock Exchange for the 2019–2023 period form the basis of the descriptive analysis. The mean score of Corporate Sustainability Performance (CSP) stands at 0.363, accompanied by a standard deviation of 0.282, indicating substantial variation in sustainability adoption across the sample. CSP values extend from 0.000 to 1.000, demonstrating that some firms have yet to implement sustainability initiatives, whereas others have fully embedded such practices within their business operations.

Financial Performance (FP) records a mean value of 0.062 with a standard deviation of 0.082, suggesting that, on average, the sampled firms display modest financial outcomes alongside notable variability. The FP values range from −0.145 to 0.390, indicating that certain companies experienced financial losses, whereas others achieved relatively strong performance levels.

With respect to the moderating variable, Business Risk (BR) shows an average value of 0.083 and a standard deviation of 0.099, indicating substantial dispersion in risk exposure among the sampled firms. Such differences may stem from sectoral characteristics, as industries differ in operational complexity and inherent risk structures. Supporting this perspective, (Zsigmondová et al., 2025) eport that business risk varies significantly not only between companies but also across different industries.

The interaction measure between Corporate Sustainability Performance and Business Risk (CSP×BR) reports a mean of 0.035 with a standard deviation of 0.059, indicating notable differences in the extent to which business risk alters the sustainability–financial performance relationship across firms. The observed values vary from −0.025 to 0.310, suggesting that business risk may either amplify or reduce the financial effects of sustainability initiatives. These findings are consistent with the arguments(Nguyen & Nguyen, 2020), who highlight that firm-specific conditions and

external environments play a critical role in shaping the financial outcomes of sustainability practices.

3.3 Correlation Test

Pearson Correlation

Table 3. Pearson Correlation

	CSP	FP	BR	CSPxBR
CSP	1.000			
FP	0.169***	1.000		
	(0.000)			
BR	0.167***	0.755***	1.000	
	(0.000)	(0.000)		
CSPXBR	0.536***	0.559***	0.792***	1.000
	(0.000)	(0.000)	(0.000)	

***p*-values in parentheses**
*** $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$**

The Pearson correlation results demonstrate a positive and statistically significant relationship between Corporate Sustainability Performance (CSP) and Financial Performance (FP), suggesting that firms with higher sustainability involvement tend to achieve stronger financial outcomes. This finding aligns with sustainability theory, which emphasizes that the strategic implementation of environmental, social, and governance (ESG) practices enhances stakeholder trust, including that of investors and shareholders. Increased confidence promotes better access to capital, stronger investor loyalty, and improved operational stability. Moreover, sustainability-oriented actions contribute to financial improvement by strengthening stakeholder engagement, reinforcing corporate reputation, and increasing organizational transparency. Prior studies indicate that socially responsible business practices positively affect both profitability and market value (Itan et al., 2024). Sustainability initiatives also assist firms in reducing risk exposure and improving cost efficiency, thereby supporting long-term financial performance. Consequently, these results confirm Hypothesis 1, indicating that Corporate Sustainability Performance has a positive and significant influence on Financial Performance.

The interaction variable CSP×BR shows a positive and significant correlation with Corporate Sustainability Performance (CSP), Financial Performance (FP), and Business Risk (BR), reflecting the inherent association between the moderating variable and its constituent variables. This result is statistically reasonable, as the interaction

term is constructed directly from sustainability performance and business risk. Importantly, all correlation coefficients among the main variables remain below critical multicollinearity thresholds, indicating that the research model is free from excessive correlation issues and suitable for moderating regression analysis.

The findings are consistent with the work of (Butar-Butar & Indrianto, 2024) which emphasize that risk-related factors, operating through enterprise risk management mechanisms, play a crucial role in moderating the association between firm attributes and financial performance. The findings indicate that business risk may either amplify or diminish the impact of strategic variables on corporate financial outcomes. Consequently, the significant CSP×BR correlation observed in this study offers empirical evidence supporting the role of business risk as a moderating factor in the relationship between Corporate Sustainability Performance and Financial Performance.

Spearman Correlation

Table 4. Spearman Correlation

	CSP	FP	BR	CSPxBR
CSP	1.0000			
FP	0.1721*	1.0000		
BR	0.1448*	0.8387*	1.0000	
CSPXBR	0.6410*	0.5788*	0.7077*	1.0000

The Spearman correlation results reveal a pattern of relationships consistent with the previous Pearson correlation analysis, indicating that Corporate Sustainability Performance (CSP) has a positive and significant association with Financial Performance (FP). This finding suggests that firms with higher levels of sustainability performance tend to achieve superior financial outcomes. The results provide preliminary evidence that sustainability practices create economic value through enhanced corporate reputation, improved operational efficiency, and increased investor confidence. These findings are in line with (Xu & Zhu, 2024) who demonstrate that ESG performance significantly improves firm financial outcomes by strengthening innovation capabilities and operational strategies.

In addition, the positive relationship between Corporate Sustainability Performance (CSP) and Business Risk (BR) suggests that firms actively engaged in sustainability practices tend to operate in more complex and risk-intensive business environments, often associated with long-term investments, regulatory compliance, and industry-specific exposure. Furthermore, the interaction variable CSP×BR exhibits

positive and significant correlations with CSP, FP, and BR, reflecting the inherent linkage between the moderating variable and its constituent components. All correlation coefficients remain below multicollinearity thresholds, indicating that the model is free from excessive correlation and suitable for moderating regression analysis.

These findings suggest that the influence of sustainability performance on financial outcomes differs according to the level of business risk encountered by firms. This observation is supported by (Shrestha et al., 2025) who demonstrate that the link between ESG performance and financial results is shaped by industry-specific characteristics and firm-level conditions. Consequently, business risk reinforces its role as a key factor capable of intensifying or diminishing the sustainability–financial performance relationship.

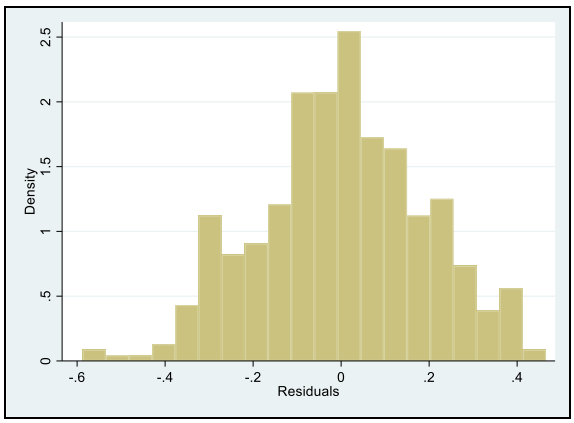
Classical Assumption Test

Normality Test

Table 5. Normality Result

Variable	Obs	Pr (skewness)	Pr(Kurtosis)	Adj chi2(2)	Prob>chi2
Residu	440	0.5011	0.2274	1.92	0.3836

Figure 2. Normalitas Result



The normality test using the Skewness and Kurtosis method shows a chi-square probability value of 0.3836, which exceeds the 0.05 significance level. This result indicates that the residuals of the regression model are normally distributed, thereby satisfying the normality assumption. In addition, the residual histogram displays a bell-shaped pattern, further supporting that the residual data approximate a normal

distribution. With the normality assumption fulfilled, the regression coefficient estimates can be considered reliable for hypothesis testing in this study.

Multicollinearity Test

Table 6. Multicollinearity

	CSP	FP	BR	CSPxBR
CSP	1.0000			
FP	0.1686	1.0000		
BR	0.1672	0.7554	1.0000	
CSPxBR	0.5363	0.5586	0.7915	1.0000

The multicollinearity test based on the correlation matrix indicates that all correlation coefficients among the variables are below the commonly accepted critical threshold of 0.8, suggesting no strong correlation among the independent variables. This result implies that the regression model is free from multicollinearity issues, and each variable contributes independent information to the analysis.

Autocorrelation Test

Table 7. Autocorrelation

	Dwstat
Durbin-Watson d-statistic (18, 440)	.8793092

The Durbin–Watson test results show a statistic value of 0.879, indicating a tendency toward positive autocorrelation in the model residuals. However, as this study employs panel data and estimates the regression using robust standard errors clustered at the firm level, potential autocorrelation issues are methodologically addressed. Consequently, the regression coefficient estimates remain reliable for hypothesis testing purposes.

Heteroscedasticity Test

Table 8. Autocorrelation

	Constant Variance
Chi 2 (1)	14.70
Prob > chi2	0.0001

The heteroskedasticity assessment reveals a probability value (Prob > χ^2) of 0.0001, which falls below the 5 percent significance threshold, indicating the presence of heteroskedasticity in the regression residuals. To address this issue, the analysis employs robust standard errors clustered at the firm level to account for potential

violations of the homoskedasticity assumption. As a result, the estimated regression parameters remain dependable for hypothesis evaluation.

Regression Analysis of Equations (MRA)

Regression Analysis of Equations (MRA) Model 1

Table 9. Multiple Regression Analysis (MRA) Model 1

FP	Coefficient	Robust std. err.	t	P>|t|	[95% conf. interval]	
CSP	.0415205	.0136256	3.05	0.002	.0147411	.0683
FIRMSZ	.0019034	.0003134	6.07	0.000	.0012874	.0025194
SIC						
Consumer Cylicals	-.0277145	.014213	-1.95	0.052	-.0556485	.0002195
Financials	-.0899053	.0134651	-6.68	0.000	-.1163695	-.0634412
Energy	-.0170084	.0165874	-1.03	0.306	-.049609	.0155921
Infrastructure	-.0521147	.013559	-3.84	0.000	-.0787633	-.025466
Basic Materials	-.0452149	.01375	-3.29	0.001	-.0722389	-.0181909
Transportation&Logistics	-.0765284	.0144936	-5.28	0.000	-.1050139	-.048043
Industrials	-.0082962	.0205915	-0.40	0.687	-.0487664	.0321741
Property and Real Estate	-.012246	.0269156	-0.45	0.649	-.0651453	.0406534
Technology	-.1060438	.0240784	-4.40	0.000	-.1533671	-.0587205
Healthacare	-.013475	.0171359	-0.79	0.432	-.0471536	.0202036
TAHUN						
2020	-.015471	.0113306	-1.37	0.173	-.03774	.006798
2021	-.0028516	.0118147	-0.24	0.809	-.03774	.006798
2022	-.0003336	.0124362	-0.03	0.979	-.0247754	.0241083
2023	-.0195888	.011593	-1.69	0.092	-.0423735	.0031959
Cons	.0402712	.0135234	2.98	0.003	.0136927	.0668498

The regression results show a probability value of 0.002 with a coefficient of 0.0415, indicating that Corporate Sustainability Performance (CSP) has a positive and statistically significant effect on Financial Performance (FP). This finding is consistent with stakeholder theory, which posits that effective sustainability practices strengthen firm relationships with stakeholders, enhance corporate reputation and transparency, improve access to financing, and foster customer and investor loyalty, all of which cumulatively contribute to improved financial outcomes.

Empirical evidence from (Xu & Zhu, 2024) indicates that ESG performance contributes significantly to financial improvement by enhancing operational efficiency and optimizing resource utilization, thereby supporting the positive association between

sustainability initiatives and firm outcomes. In addition, Shrestha et al. (2025) show that firms with stronger ESG ratings tend to achieve higher profitability and benefit from lower capital costs as a result of improved risk management practices. These findings further substantiate the close link between sustainability performance and financial success. Consequently, the regression analysis offers robust empirical confirmation of Hypothesis 1, demonstrating that Corporate Sustainability Performance exerts a positive and statistically significant influence on Financial Performance.

Moreover, firm size, incorporated as a control variable, exhibits a positive and statistically significant influence on Financial Performance (FP), suggesting that larger firms benefit from greater resource availability and operational resilience, which support stronger financial outcomes. Industry effects, captured through SIC dummy variables, further account for variations in financial performance, underscoring the importance of controlling for sectoral differences when examining the relationship between sustainability performance and corporate financial results.

Regression Analysis of Equations (MRA) Model 2

Table 10. Multiple Regression Analysis (MRA) Model 2

FP	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
CSP	.0208023	.0094362	2.20	0.028	.0022566	.039348
BR	.6323275	.0709952	8.91	0.000	.4927949	.7718602
FIRMSZ	-.0002301	.0002497	-0.92	0.357	-.0007208	.0002606
SIC						
Consumer Cylicals	.0180784	.0090346	2.00	0.046	.0003219	.035835
Financials	-.0104438	.0094362	-1.11	0.269	-.0289897	.008102
Energy	-.0028508	.0068201	-0.42	0.676	-.0162548	.0105533
Infrastructure	-.0046336	.0071554	-0.65	0.518	-.0186967	.0094296
Basic Materials	-.0184897	.0071753	-2.58	0.010	-.0325918	-.0043875
Transportation&Logistics	.0017581	.0103727	0.17	0.865	-.0186283	.0221445
Industrials	.0068911	.0092672	0.74	0.458	-.0113225	.0251046
Property and Real Estate	.0381402	.0219738	1.74	0.083	-.0050467	.0813271
Technology	-.08563	.0312164	-2.74	0.006	-.1469822	-.0242777
Healthacare	-.0133486	.006887	-1.94	0.053	-.0268843	.000187
TAHUN						
2020	-.0069019	.0081564	-0.85	0.398	-.0229324	.0091285
2021	-.0020637	.0082538	-0.25	0.803	-.0182857	.0141583
2022	-.0090328	.0094722	-0.95	0.341	-.0276492	.0095837
2023	-.0090325	.0099946	-0.90	0.367	-.0286757	.0106108

Cons	.019893	.0077598	2.56	0.011	.0046422	.0351439

The regression analysis reports a probability value of 0.000 and a coefficient of 0.632, indicating that Business Risk (BR) exerts a positive and statistically significant influence on Financial Performance (FP). This suggests that firms exposed to higher levels of business risk tend to generate stronger financial results after accounting for sustainability performance. These outcomes are consistent with the findings of (Xu & Zhu, 2024) , who demonstrate that ESG performance enhances corporate financial success through improved operational efficiency, optimized resource utilization, and strengthened stakeholder confidence.

The regression model incorporates industry and time fixed effects, demonstrating that the impacts of sustainability performance and business risk on financial performance remain stable after controlling for sectoral and temporal variations. Consequently, the findings offer empirical validation for Hypothesis 2, confirming that Business Risk exerts a positive and statistically significant influence on Financial Performance.

Persamaan Mutiple Regression Analysis (MRA) Model 3

Table 11. Multiple Regression Analysis (MRA) Model 3

FP	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
CSP	.0572156	.0189102	3.03	0.003	.0200499	.0943814
CSPxBR	-.3397996	.1758298	-1.93	0.054	-.6853723	.0057732
BR	.7677898	.0882719	8.70	0.000	.5943017	.9412778
FIRMSZ	.0001052	.000348	0.30	0.763	-.0005788	.0007892
LEV	-.0370303	.0126826	-2.92	0.004	-.0619564	-.0121042
SIC						
Consumer Cylicals	.0149816	.0087325	1.72	0.087	-.0021811	.0321444
Financials	-.007256	.0088166	-0.82	0.411	-.024584	.010072
Energy	-.003274	.0069228	-0.47	0.636	-.01688	.010332
Infrastructure	-.0005191	.0067881	-0.08	0.939	-.0138603	.0128221
Basic Materials	-.0216783	.0071918	-3.01	0.003	-.0358129	-.0075438
Transportation&Logistics	.0113663	.0100065	1.14	0.257	-.0083004	.0310329
Industrials	.0035506	.0094425	0.38	0.707	-.0150075	.0221087
Property and Real Estate	.0378264	.0220792	1.71	0.087	.0055677	.0812205
Technology	-.0887959	.0311554	-2.85	0.005	-.1500282	-.0275637
Healthacare	-.0135167	.0067894	-1.99	0.047	-.0268604	-.0001729
TAHUN						
2020	-.0055264	.0080365	-0.69	0.492	-.0213212	.0102683
2021	-.0016726	.0081316	-0.21	0.837	-.0176544	.0143091

2022	-.0096027	.0093909	-1.02	0.307	-.0280593	.0088539
2023	-.0093751	.009521	-0.98	0.325	-.0280875	.0093372
Cons	.0133072	.0086386	1.54	0.124	-.0036709	.030285

The interaction term between Corporate Sustainability Performance (CSP) and Business Risk (BR) yields a probability value of 0.054 with a coefficient of −0.339, indicating the presence of a moderating effect. Despite this interaction, CSP continues to demonstrate a positive and statistically significant influence on Financial Performance (FP), with a coefficient of 0.0572 and a probability value of 0.003. This outcome confirms that sustained sustainability initiatives contribute to improvements in corporate financial outcomes. Moreover, Business Risk (BR) exhibits a positive and significant effect on FP, as reflected by a coefficient of 0.7678 and a probability value of 0.000. This suggests that firms operating in higher-risk environments tend to generate greater financial returns, consistent with the high risk–high return principle in financial theory.

he interaction effect between Corporate Sustainability Performance and Business Risk (CSP×BR) yields a negative coefficient of −0.3398 and is statistically significant at the 10 percent level (p = 0.054), indicating that business risk weakens the relationship between sustainability performance and financial performance. This finding suggests that while sustainability initiatives generally contribute positively to financial outcomes, their impact becomes less pronounced as firms encounter higher levels of risk. In high-risk environments, organizations may prioritize short-term financial stability and risk control over long-term sustainability investments, thereby reducing the financial gains associated with CSP. This interpretation aligns with (Xu & Zhu, 2024), who argue that the influence of ESG performance on financial success varies across firm-specific conditions and external contexts. Consequently, the regression results validate Hypothesis 3, confirming the moderating role of Business Risk in the relationship between Corporate Sustainability Performance and Financial Performance.

Regression Analysis of Equations (MRA) Model 1, 2, 3

Table 12. Multiple Regression Analysis (MRA) Model 1, 2, 3

	(1) FP	(2) FP	(3) FP
CSP	0.042***	0.021**	0.057***
	(3.05)	(2.20)	(3.03)
FIRMSZ	0.002***	-0.000	0.000
	(6.07)	(-0.92)	(0.30)

BR		0.632***	0.768***
		(8.91)	(8.70)
CSPXBR			-0.340*
			(-1.93)
LEV			-0.037***
			(-2.92)
_cons	0.040***	0.020**	0.013
	(2.98)	(2.56)	(1.54)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
F	11.625	59.561	57.514
r2_a	0.192	0.633	0.649
N	440	440	440

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The estimation results from Model 1 show that Corporate Sustainability Performance (CSP) exerts a positive and statistically significant influence on Financial Performance (FP), with a coefficient of 0.042 at the 1 percent significance level. This finding indicates that improvements in sustainability-related practices are associated with stronger corporate financial outcomes. In addition, firm size, included as a control variable, demonstrates a positive and significant effect on financial performance, suggesting that larger firms benefit from greater resource availability in generating financial returns.

The results obtained from Model 2, which incorporates Business Risk (BR), indicate that BR has a positive and statistically significant effect on Financial Performance (FP), with a coefficient of 0.632 at the 1 percent significance level. This suggests that firms exposed to higher levels of business risk tend to achieve greater financial returns, consistent with the high risk–high return principle. At the same time, Corporate Sustainability Performance (CSP) continues to demonstrate a positive and significant influence on financial performance, with a coefficient of 0.021 at the 5 percent significance level, confirming the stability of the sustainability–performance relationship.

Furthermore, Model 3 introduces the interaction term CSP×BR. The results show that CSP continues to exert a positive and significant effect on FP (coefficient = 0.057, $p < 0.01$), and BR also remains positive and significant (coefficient = 0.768, $p < 0.01$). However, the interaction variable CSP×BR has a negative coefficient of −0.340 and is significant at the 10% level ($p < 0.10$), indicating that Business Risk moderates the

relationship between CSP and FP in a weakening manner. This suggests that although sustainability practices generally enhance financial performance, their financial benefits tend to diminish when firms operate under higher business risk conditions.

Overall, the R^2 value increases substantially from 0.192 in Model 1 to 0.649 in Model 3, demonstrating that the inclusion of business risk and the interaction term significantly improves the model's explanatory power in capturing variations in corporate financial performance.

The Multiple Regression Analysis (MRA) equations are specified as follows:

Model 1 : $FPit = \alpha + \beta 1CSPit + Control\ Variables it + e$

Model 2 : $FPit = \alpha + \beta 1CSPit + \beta 2BRit + Control\ Variables it + e$

Model 3 : $FPit = \alpha + \beta 1CSPit + \beta 2BRit + \beta 3(CSP\ X\ BR)it + Control\ Variables it + e$

4. Conclusion

This research investigates the impact of Corporate Sustainability Performance (CSP) on Financial Performance (FP), while also examining the moderating role of Business Risk among firms listed in the IDX ESG Leaders Index on the Indonesia Stock Exchange over the 2019–2023 period. The findings reveal that CSP exerts a positive and statistically significant influence on corporate financial outcomes, indicating that the effective adoption of sustainability practices generates economic value through enhanced corporate reputation, stakeholder confidence, customer loyalty, and operational efficiency. Additionally, Business Risk is shown to have a positive effect on Financial Performance, consistent with the high risk–high return principle, whereby firms exposed to greater levels of risk tend to achieve higher financial returns.

Furthermore, the moderation regression results reveal that Business Risk weakens the relationship between CSP and FP, suggesting that the financial benefits of sustainability performance tend to decline when firms operate under higher business risk conditions. This finding emphasizes that although sustainability practices generally contribute positively to financial performance, their effectiveness is highly dependent on the firm's risk environment. Therefore, companies need to integrate sustainability strategies with balanced risk management to maximize long-term value creation. This study implies that sustainability should not be viewed merely as an ethical obligation but as a strategic financial approach that must be aligned with the firm's risk profile.

References

Alshehhi, A., Nobanee, H., & Khare, N. (2018). The impact of sustainability practices on corporate financial performance: Literature trends and future research potential. *Sustainability (Switzerland)*, *10*(2). https://doi.org/10.3390/su10020494

Barauskaite, G., & Streimikiene, D. (2021). Corporate social responsibility and financial performance of companies: The puzzle of concepts, definitions and assessment methods. *Corporate Social Responsibility and Environmental Management*, *28*(1), 278–287. https://doi.org/10.1002/csr.2048

Buallay, A. (2019). Between cost and value: Investigating the effects of sustainability reporting on a firm's performance. *Journal of Applied Accounting Research*, *20*(4), 481–496. https://doi.org/10.1108/JAAR-12-2017-0137

Butar-Butar, D. T. M., & Indrianto, D. (2024). The Effectiveness of The Board of Directors' Performance and The Moderation Effect of Corporate Risk Management on The Company's Financial Performance. *Global Financial Accounting Journal*, *7*(2), 274. https://doi.org/10.37253/gfa.v7i2.8883

Butar Butar, D. T. M., Winny, W., & Ramadan, M. (2025). The Effect of Board Effectiveness on Firm Performance with Sustainability Disclosure as Mediating Variable. *Accounting and Finance Studies*, *5*(1), 095–105. https://doi.org/10.47153/afs51.14332025

Hawawini, G., Subramanian, V., & Verdin, P. (2003). Is performance driven by industry - or firm-specific factors? A new look at the evidence. *Strategic Management Journal*, *24*(1), 1–16. https://doi.org/10.1002/smj.278

Itan, I., Giovani, M., & Butar-Butar, D. T. M. (2024). Corporate Social Responsibility and Company Performance: The Role Of Board Characteristics. *Gorontalo Accounting Journal*, *7*(1), 116–124. https://doi.org/10.32662/gaj.v7i1.3372

Kalash, I. (2020). Environmental Disclosure: Determinants and Effects on Financial Performance? An Empirical Evidence from Turkey. *Sosyoekonomi*, *28*(46), 95–115. https://doi.org/10.17233/sosyoekonomi.2020.04.05

Kalash, I. (2023). Do agency costs and business risk affect the corporate sustainability–financial performance relationship? *Journal of Economic and Administrative Sciences*. https://doi.org/10.1108/JEAS-07-2023-0172

Landi, G. C., Iandolo, F., Renzi, A., & Rey, A. (2022). Embedding sustainability in risk management: The impact of environmental, social, and governance ratings on corporate financial risk. *Corporate Social Responsibility and Environmental Management*, *29*(4), 1096–1107. https://doi.org/10.1002/csr.2256

Laskar, N., Chakraborty, T. K., & Maji, S. G. (2017). Corporate Sustainability Performance and Financial Performance: Empirical Evidence from Japan and India. *Management and Labour Studies*, *42*(2), 88–106. https://doi.org/10.1177/0258042X17707659

Martínez Turégano, D., & García Herrero, A. (2018). Financial Inclusion, Rather Than Size, Is the Key To Tackling Income Inequality. *Singapore Economic Review*, *63*(1), 167–184. https://doi.org/10.1142/S0217590818410047

Nguyen, T. T. T., & Nguyen, C. H. L. (2020). Corporate social responsibility and firm financial performance: A literature review. *Science & Technology Development Journal - Economics - Law and Management*, *4*(3), First. https://doi.org/10.32508/stdjelm.v4i3.579

Pranesti, A., Larasati, K. S., & Widiyanti, A. (2022). Kinerja Keterlanjutan dan Nilai Perusahaan: Sebuah Kajian Teoritis. *Jurnal Ilmiah Universitas Batanghari Jambi*, *22*(3), 1624. https://doi.org/10.33087/jiubj.v22i3.2622

Shrestha, C., Andrikopoulos, P., & Park, J. S. (2025). ESG rating and financial performance in the emerging markets: The moderating effects of cross-listing and industry type. *Research in International Business and Finance*, *77*(PA), 102916. https://doi.org/10.1016/j.ribaf.2025.102916

Tarigan, J., & Semuel, H. (2015). Pengungkapan Sustainability Report dan Kinerja Keuangan. *Jurnal Akuntansi Dan Keuangan*, *16*(2), 88–101. https://doi.org/10.9744/jak.16.2.88-101

Thi Pham, P. M., & Thi Dao, B. T. (2022). A meta-analysis of risk taking and corporate performance. *Cogent Business and Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2064263

Tsai, H. J., & Wu, Y. (2022). Changes in Corporate Social Responsibility and Stock Performance. *Journal of Business Ethics*, *178*(3), 735–755. https://doi.org/10.1007/s10551-021-04772-w

Xu, Y., & Zhu, N. (2024). The Effect of Environmental, Social, and Governance (ESG) Performance on Corporate Financial Performance in China: Based on the Perspective of Innovation and Financial Constraints. *Sustainability (Switzerland)* , *16*(8). https://doi.org/10.3390/su16083329

Zsigmondová, A., Ormos, M., & Zsigmond, T. (2025). Analysis of idiosyncratic risks of listed companies in the V4 countries in 2010–2020. *Accounting and Financial Control*, *6*(1), 92–106. https://doi.org/10.21511/afc.06(1).2025.09