

SDGs DISCLOSURE DEPENDENCY ON INFORMATION ASYMMETRY TO REDUCE FIRMS' STOCK VOLATILITY



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Abstract

Motivated by limited SDGs financing and largely symbolic corporate engagement in Indonesia, concerns arise regarding how SDGs disclosure relates to stock volatility. This study examines the effect of SDGs disclosure on stock volatility and the role of information asymmetry, with SDGs disclosure decomposed into depth, breadth, and concentration. This quantitative study uses firms in the ESGQ KEHATI Index over 2020–2024, resulting in 197 firm-year observations and analyzed using panel regression. The findings indicate that SDGs disclosure tends to reduce stock volatility, although this effect depends on information asymmetry. At the dimensional level, depth is associated with higher volatility, while breadth and concentration show an inverse relationship. These findings provide empirical insights into the role of SDGs disclosure in capital market dynamics and contribute to the limited literature in Indonesia.

INTRODUCTION

The SDGs 2030 introduced in 2015 outline 17 global objectives to address issues such as poverty, inequality, and climate change. However, their achievement is increasingly constrained by financial limitations worldwide, including Indonesia's funding gap of 24,000 trillion rupiah (Kemenpanrb, 2024; Leal Filho et al., 2023; UNDP, 2022). These challenges highlight the need for active participation from the private sector as part of the broader multi-stakeholder collaboration promoted by the SDGs (Dada, 2024; Rezaee et al., 2023). However, studies reveal that many firms engage with the SDGs only symbolically and have not embedded them into concrete strategies or comprehensive reporting. This is

reflected in the low proportion of companies that disclose meaningful SDGs KPIs or integrate them into their business strategies (Emma & Jennifer, 2021; Gutiérrez-Ponce & Wibowo, 2023; Montera & Falco, 2024; Ramos et al., 2022; Saeed et al., 2025; L. Scott & McGill, 2018). Such behavior can be considered rational, given the limited evidence on the benefits of SDGs implementation for firms, which discourages deeper adoption (Calabrese et al., 2021; Hummel & Szekely, 2022; Schönherr et al., 2017). In response to this gap, this study examines the potential benefits of SDGs implementation for private companies in Indonesia.

From a theoretical standpoint, firms' involvement in the SDGs can be seen as a strategy to secure public legitimacy (Deegan & Unerman, 2022). This raises questions about who constitute "the public" and which goals firms prioritize, both of which relate to underlying economic motives (Emma & Jennifer, 2021; Mestdagh et al., 2024; Rosamartina et al., 2022). SDGs disclosure is generally viewed as a positive signal by stakeholders, including investors and socially conscious consumers. It also enhances corporate reputation and may provide protection against future risks (Damas et al., 2025; Hummel & Szekely, 2022; Koch & Viererbl, 2022; Ouyang et al., 2023). For investors, risk is often reflected in stock volatility, which makes it harder to predict firm value and reduces market efficiency, potentially leading to financial losses (Bhowmik & Wang, 2020; He et al., 2023; Leo & Masdupi, 2022; Nirino et al., 2022; Sharma, Chawla, Dhankar, et al., 2025). As investor expectations regarding SDGs engagement continue to increase, corporate participation in the SDGs becomes more relevant in shaping stock volatility (Kemenpanrb, 2024; Muhmad & Muhamad, 2021; Rosamartina et al., 2022; SDGs Bappenas, 2025; UNDP, 2022).

To the best of the researcher's understanding, only limited studies have examined the relationship between SDGs disclosure and stock volatility (Sharma, Chawla, Dagar, et al., 2025), while most research focuses on its determinants (Bose et al., 2024; Dionisio et al., 2024) or financial outcomes such as stock market behavior, market value, and firm performance (Bose et al., 2024; Ramos et al., 2022; Saha et al., 2024; Sharma, Chawla, Dhankar, et al., 2025; X. Yang et al., 2024). In Indonesia, prior studies similarly focus on disclosure determinants and reporting levels among local firms (Gutiérrez-Ponce & Wibowo, 2023; Muskanan et al., 2024). To address these gaps, this study extends Sharma, Chawla, Dagar, et al. (2025) to the Indonesian context while refining the measurement of SDGs disclosure to better reflect investor evaluation. It uses three metrics – Depth, Breadth, and Concentration – to capture how disclosures are assessed, not only in terms of presence but also in terms of balance and richness (Rosamartina et al., 2022). This approach suggests that investors consider both the existence and the substance of disclosures (Delizar & Lidiyawati, 2025). Zafra-Gómez et al. (2025) support this view, arguing that binary measures fail to capture variation in firms' efforts to build legitimacy through more substantive content. For example, two firms discussing the same SDGs may appear identical under a binary system, even though they differ in depth or emphasis.

The effectiveness of SDGs in influencing stock volatility may decline in conditions of high information asymmetry (Sharma, Chawla, Dagar, et al., 2025). Based on Rational Decision Theory, investors make decisions by gathering information about the potential benefits and risks of an investment (Deegan & Unerman, 2022). In this context, SDGs disclosure can serve as a positive signal of a company's operational sustainability and help reduce market uncertainty (Nicolò et al., 2024). In markets characterized by high information asymmetry, firms may show different patterns. Limited baseline information, such as demand availability and performance expectations, reduces the effectiveness of SDGs-related policies by weakening performance signals, encouraging speculation, and increasing stock price volatility. As a result, investment decisions may rely on incomplete or inaccurate information (Tian et al., 2022). Under these conditions, herding behavior among institutional investors is also more likely to occur, further increasing idiosyncratic volatility (Zhai et al., 2024).

Volatility reflects uncertainty, which shapes risk perceptions and makes stock returns more variable (He et al., 2023; Nirino et al., 2022; Sharma, Chawla, Dagar, et al., 2025). Several studies suggest that investments in sustainability can reduce corporate risk, often measured by stock return volatility (He et al., 2023). Srivastava et al. (2024) show that companies reporting ESG tend to have lower stock volatility. This is supported by other studies indicating that stock volatility risk is lower in

firms that have resolved litigation issues and received clear regulatory penalties (Zaman et al., 2021). These findings support the argument that information related to the SDGs can influence investor confidence and, in turn, reduce stock volatility (Rosamartina et al., 2022; X. Yang et al., 2024). From a Signaling theory perspective, corporate transparency in disclosing SDGs achievements and commitments serves as a positive signal that increases trust among investors, consumers, and regulators, thereby reducing reputational and market risks associated with stakeholder distrust (Hummel & Szekely, 2022; Rosamartina et al., 2022).

According to Signaling Theory, investor evaluation of non-financial disclosure depends on how effectively the information is communicated (W. Scott & O'Brien, 2019). Firms can strengthen stakeholder engagement when they communicate in ways that align with stakeholder priorities (Lin et al., 2024). Rosamartina et al. (2022) identify three dimensions of SDGs disclosure that shape investor evaluation: Depth, Breadth, and Concentration. Depth reflects how extensively a company explains its SDGs involvement. For example, providing ten disclosures on SDG 1 indicates greater depth than providing only one. Firms that offer more detailed non-financial information tend to gain stronger investor confidence, which supports stock price stability (Nicolò et al., 2024; Yadav et al., 2024).

That said, this positive effect may reverse if Depth is not managed properly. Highly detailed disclosures can increase uncertainty when the information does not meet stakeholder expectations (Singhania & Gupta, 2024). More detailed reporting also invites greater stakeholder scrutiny, which increases external monitoring and raises perceived risk, potentially leading to higher volatility (Li et al., 2024). Harjoto & Wang (2024) further note that pressure from various stakeholders may push companies to disclose extensively despite weak actual performance, prompting investors to reassess their expectations and contributing to greater price fluctuations.

To reduce these risks, companies can expand Breadth, which reflects the number of SDGs covered. For example, covering more topics indicates higher Breadth. Broader disclosures increase information availability and allow investors to cross-check data more effectively (Zafra-Gómez et al., 2025). They also help reduce reputational damage when criticism arises regarding a specific SDG (Lin et al., 2024; Nicolò et al., 2024). Meanwhile, Concentration refers to the degree of focus on particular SDGs. For instance, prioritizing SDG 4 reflects higher Concentration. Clear prioritization improves alignment with investor expectations, which can reduce market risk and support price stability (Sarkar et al., 2023; Soni, 2023).

Rational Decision Theory suggests rational investors make decisions based on reliable information about potential gains and losses (Deegan & Unerman, 2022). In this context, the impact of SDGs disclosure on stock price fluctuations depends strongly on the availability and quality of information. In more transparent market conditions, SDGs disclosure provides clearer signals about operational sustainability, allowing investors to assess risks more accurately and supporting market stability (Nicolò et al., 2024). This, in turn, encourages more data-driven, and rational investment behavior.

However, when information asymmetry is high, the usefulness of SDGs disclosure declines because investors lack sufficient complementary information to make well-informed decisions. As noted by Deegan & Unerman (2022), non-financial data alone is not sufficient for investment evaluation. Uneven information availability creates uncertainty, encourages speculation, and increases volatility due to misguided investment decisions (Tian et al., 2022). Under these conditions, herding behavior tends to intensify, further increasing idiosyncratic volatility (Zhai et al., 2024). Conversely, strong SDGs performance can enhance trust and investor sentiment in more transparent markets. Firms that integrate SDGs into their core strategies often experience lower capital costs and more stable market outcomes (Zhang et al., 2022). Such integration signals long-term resilience and strengthens positive perceptions of firm value, particularly during periods of global economic uncertainty (Kharlanov et al., 2022).

This study proposes two main hypotheses and three sub-hypotheses. The research hypotheses and model (Figure 1) are presented below.

H₁: SDGs disclosure reduces firms' stock volatility.

H_{1a}: Depth of SDGs disclosure reduces firms' stock volatility.

H_{1b}: Breadth of SDGs disclosure reduces firms' stock volatility.

H_{1c}: Concentration of SDGs disclosure reduces firms' stock volatility.

H₂: High information asymmetry reduces the effectiveness of SDGs disclosure in reducing firms' stock volatility.

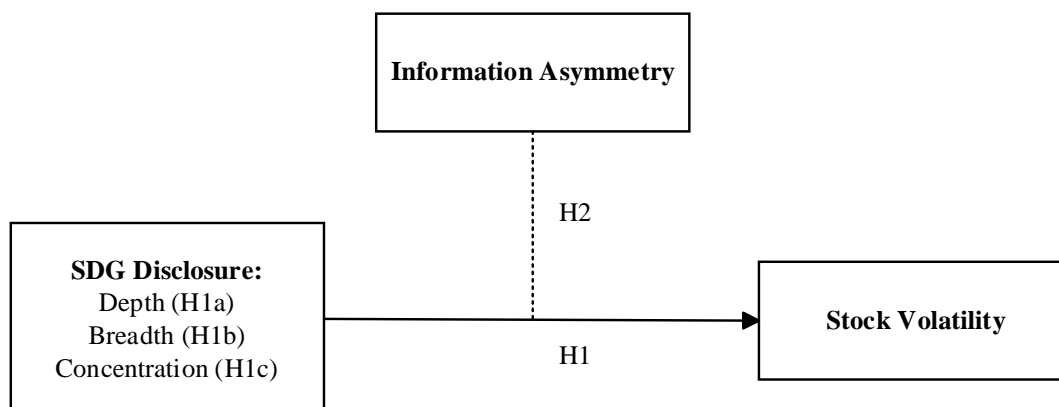


Figure 1. Proposed Research Model

METHOD

This study focuses on companies listed in the ESGQ KEHATI Index for the 2020–2024 period. The index is selected because it consists of firms with strong sustainability relevance and consistently high market liquidity. As part of the broader KEHATI Index, the ESGQ KEHATI includes companies recognized for superior ESG performance as well as solid operational and market outcomes. Since SDGs disclosure is closely related to a firm's positive ESG impact, companies with higher ESG performance were more likely to provide richer and more comprehensive SDGs disclosure data, making this index an appropriate population for the study. Based on the population data, 80 companies are identified from the ESGQ KEHATI index during the 2020-2024 period. However, not all companies are consistently listed each year, resulting in an unbalanced panel of 225 observations using a company-year unit of analysis.

The sample selection uses a non-probability, purposive sampling approach. This method is applied to select companies based on the relevance and completeness of the topic (Bougie & Sekaran, 2020). The sample criteria included in the following. First, companies published sustainability reports and annual reports that are accessible online, which were used to extract data on the variables. Second, companies had never been delisted from the IDX or classified under special monitoring for two periods or more during the observation period (e.g., listed in 2020, delisted in 2021, and relisted in 2022), to maintain consistency in investor perception. Third, the sustainability reports are presented in English or in bilingual format (Indonesian – English), as the NVivo software used for content analysis did not fully support Indonesian.

After careful examination, 197 firm-year observations are eligible for analysis, as shown in Table 1. This indicates that 28 observations are excluded, mainly due to accessibility issues stated in the first criterion (22 observations). No observations violate the second criterion, while 6 observations do not meet the third criterion. The exclusion of these six observations, although accessible, is considered acceptable. Based on Hair et al. (2019), the removal of observations not exceeding five percent (approximately 11 observations) should not affect the results. In addition, the use of bilingual reports helps reduce bias caused by language barriers. A report by KSEI indicated that foreign investors accounted for around 40 percent of Indonesia's Stock Market as of August 2025 (KSEI, 2025).

Table 1. Firms Eligible for Study's Sample

Ticker	Year	Ticker	Year
AALI	2021;2022	INKP	2020;2021
ACES	2020	INTP	2020;2021;2022;2023;2024
ADHI	2020	JPFA	2020;2021;2022;2023;2024
AKRA	2020;2021;2022;2023;2024	JSMR	2020;2021;2022;2023;2024
AMRT	2020;2021	KLBF	2020;2021;2022;2023;2024
ANTM	2020;2021;2022;2023;2024	LSIP	2020;2024
ASII	2020;2021;2022;2023;2024	MDKA	2024
ASSA	2020	MPMX	2022
AUTO	2024	MTEL	2023;2024
AVIA	2023;2024	MYOR	2024
BBCA	2020;2021;2022;2023;2024	NISP	2024
BBNI	2020;2021;2022;2023;2024	PGAS	2020;2021;2022
BBRI	2020;2021;2022;2023;2024	PGEO	2023;2024
BBTN	2020;2021;2022;2023;2024	POWR	2020;2022;2023;2024
BIRD	2023	PPRO	2020
BJBR	2020;2021;2022;2023	PRDA	2022;2023
BJTM	2020;2021;2023;2024	PTPP	2020;2021;2022
BMRI	2020;2021;2022;2023;2024	PWON	2021;2023
BNII	2020;2021	SCMA	2020;2021;2023;2024
BSDE	2020;2021;2022	SIDO	2020;2021;2023;2024
CMRY	2024	SILO	2022;2023;2024
CPIN	2020;2021;2022	SMBR	2021;2022
CTRA	2022;2023;2024	SMGR	2021;2022;2023;2024
DMAS	2021;2024	SMSM	2022;2023;2024
DRMA	2023;2024	SSMS	2022;2023;2024
DSNG	2020;2021;2022;2023;2024	TAPG	2023
ELSA	2020;2021	TBIG	2023
EMTK	2020;2021;2022;2023	TINS	2021;2022
ESSA	2024	TLKM	2020;2021;2022;2023
EXCL	2022;2023	TPIA	2021
HEAL	2022;2023;2024	ULTJ	2024
ICBP	2021;2022;2023;2024	UNTR	2020;2021;2022;2023;2024
IMPC	2021;2022	UNVR	2020;2021;2022;2023;2024
INCO	2020;2021;2022;2023;2024	WIKA	2020;2021;2022

This study applies a quantitative and associative design to examine the relationships among the constructed variables. Firm risk serves as the primary outcome and is proxied by stock volatility, measured as the standard deviation of weekly stock returns, where higher deviation indicates greater volatility and increased risk (He et al., 2023; Sharma, Chawla, Dagar, et al., 2025). Depth, Breadth, and Concentration of SDGs disclosure follow the measurement approach of Rosamartina et al. (2022), while information asymmetry is proxied using Amihud Illiquidity as recommended by Będowska-Sójka et al. (2022). Several control variables are included. Firm size is controlled because larger firms generally possess stronger capabilities that help enhance market confidence (Galeazzo et al., 2023). Financial pressure (DER and DAR) is added since high leverage may signal difficulty in meeting obligations (Zimon et al., 2022). Profitability (ROA) is controlled to capture investors' differing responses to firms

with varying performance (Prastiwi et al., 2025). Pandemic effects are also controlled by classifying 2020–2022 as pandemic years and 2023–2024 as post-pandemic years, based on government publications. All variable measurements appear in Table 2.

Table 2. Variable Measurement

Variable	Measurement
Dependent Stock Volatility	$\hat{\sigma}^{annual}{}^{it+1} = \sqrt{\frac{1}{t-1} \sum_{t=1}^t (r_{i,t}^{(w)} - \bar{r}_{i,t}^{(w)})^2}$ <p>it = Firm year w = return (Sharma, Chawla, Dagar, et al., 2025)</p>
Independent SDGs Disclosure	$Depth_{it} = \frac{\sum_{j=1}^m SDG_{jit} \frac{\sum_{i=1}^n SDG_{jit}}{\sum_{j=1}^m \sum_{i=1}^n SDG_{jit}}}{\sum_{j=1}^m SDG_{jit}}$ $Breadth_{it} = \sum_{j=1}^m \left[\frac{\sum_{i=1}^n SDG_{jit}}{\sum_{i=1}^n SDG_i} \right]$ $Concentration_{it} = 1 + \frac{1}{m} - \left(\frac{2}{m^2 \bar{y}} \right) (y_1 + 2y_2 + \dots + my_m)$ <p>SDG_{jit} = Specific SDGs at i firm and t year m = Each SDGs (Rosamartina et al., 2022)</p>
Moderator Information Asymmetry	$Illiq_{it} = \frac{1}{n} \sum_{i=1}^n \frac{ R_{it} }{P_{it} * V_{it}}$ <p>n = Total period it = firm year (Będowska-Sójka et al., 2022)</p>
Control Financial Pressure	$DER = \frac{Total\ Liability}{Total\ Equity}$ <p>(Brigham & Houston, 2019; Hsu & Liao, 2022)</p> $DAR = \frac{Total\ Liabilities}{Total\ Equity}$ <p>(Hsu & Liao, 2022)</p>
Profitability	$ROA = \frac{Net\ Income}{Total\ Assets}$ <p>(Ghuslan et al., 2021)</p>
Firm Age	$Financial\ year - Legal\ establishment\ year$ <p>(Gista dan Prastiwi, 2022; Tyasari dan Ruliana, 2021; Zimon dkk., 2022)</p>
Firm Size	$Ln(Total\ Assets)$ <p>(Ghuslan et al., 2021; Gu et al., 2023)</p>

Data on SDGs disclosure are obtained from sustainability reports, while weekly stock prices from December 21, 2019, to October 9, 2025, are retrieved using the STOCKHISTORY function in Microsoft Excel 365. Financial data is collected from firm’s yearly audited financial reports. The SDGs disclosure variable is measured using keyword-list-based content analysis derived from Hummel & Szekely (2022) and Rosamartina et al. (2022), covering Depth, Breadth, and Concentration. Depth is coded by counting keyword frequency to reflect how extensively firms discuss specific SDGs topics, whereas Breadth and Concentration use binary coding, assigning a value of 1 when keywords present and 0 when absent to capture coverage and emphasis. Keyword lists, search rules, and examples are provided in Table 3 and 4. After coding, keyword scores for each SDG are summed and converted into

disclosure values using the formula in Table 2. Principal Component Analysis is then applied to extract a single SDGs disclosure factor, using a communality above 0.5 and factor loadings of at least 0.6 (Field, 2019). Before panel regression testing, all variables are winsorized at the 1st and 99th percentiles, followed by diagnostic procedures including the Breusch–Pagan LM test, the Hausman test, multicollinearity checks, and autocorrelation assessment. Regression models (1), (2), and (3) are used to answer H₁, H_{1a-1c}, and H₂ sequentially, as specified below.

$$\text{Volatility}_{it} = a + \beta_1 \text{SDG Disclosure}_{it} + \beta_2 \text{Information Asymmetry}_{it} + \beta_3 \text{DER}_{it} + \beta_4 \text{DAR}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{Firm Age}_{it} + \beta_7 \text{Firm Size}_{it} + e \quad \dots\dots\dots(1)$$

$$\text{Volatility}_{it} = a + \beta_1 \text{Depth}_{it} + \beta_2 \text{Breadth}_{it} + \beta_3 \text{Concentration}_{it} + \beta_4 \text{Information Asymmetry}_{it} + \beta_5 \text{DER}_{it} + \beta_6 \text{DAR}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{Firm Age}_{it} + \beta_9 \text{Firm Size}_{it} + e \quad \dots\dots\dots(2)$$

$$\text{Volatility}_{it} = a + \beta_1 \text{SDG Disclosure}_{it} + \beta_2 \text{Information Asymmetry}_{it} + \beta_3 \text{SDG Disclosure}_{it} * \text{Information Asymmetry}_{it} + \beta_4 \text{DER}_{it} + \beta_5 \text{DAR}_{it} + \beta_6 \text{ROA}_{it} + \beta_7 \text{Firm Age}_{it} + \beta_8 \text{Firm Size}_{it} + e \quad \dots\dots\dots(3)$$

Table 3. SDGs Disclosures' Keywords

Goals	Keywords
SDGs 1	poverty; "extreme poverty"; "living in poverty"; "social protection"; "equal rights to economic resources"; "extreme events"; "low income"; "poor customer"; "poor people"; "poor person"
SDGs 2	hunger; nutrition; "end hunger"; malnutrition; "agricultural productivity"; "sustainable food production"; "livestock gene banks"; hungry; famine; undernourishment; "food security"; "affordable food"; "food safety"; "food price";
SDGs 3	"health care"; healthy; "mortality rate"; "maternal mortality"; "neonatal mortality"; "communicable diseases"; "diseases epidemic"; cancer; polio; alcohol; drug; "road traffic accidents"; "reproductive health"; "health services"; "air pollution"
SDGs 4	education; "primary education"; "secondary education"; "childhood development"; "early childhood"; "equal access to education"; "information and communications technology skills"; "gender disparities in education"; literacy; numeracy; skill; "skilled workforce"; training
SDGs 5	discrimination; "violence against women"; "genital mutilation"; "domestic work"; "equal opportunities for leadership"; "reproductive rights"; "gender equality"; "gender discrimination"; gender; parity; "women equality"; "women rights"; "gender pay"; "equal pay"; "equal remuneration"; "workplace harassment"; "female leader"; "female manager"; "equal opportunity"
SDGs 6	"clean water"; "water scarcity"; sanitation; "affordable drink water"; "affordable drinking water"; "basic drink water"; "basic drinking water"; "water efficiency"; "water access"; "water relate ecosystem"; "water relate biodiversity"; "water ecosystem"; "water biodiversity"; "fresh water"; "water pollution"; "water withdrawal"
SDGs 7	"reliable energy services"; "energy efficiency"; "international support"; "clean energy"; "solar power"; "wind power"; "thermal power"; "renewable energy"; "electricity access"; "electricity availability"; "electricity reliability"
SDGs 8	"child labour"; "economic productivity"; "unemployment"; "compulsory labor"; "GDP growth"; "safe working environment"; "forced labour"; "economic inclusion"; "job creation"; "development-oriented policies"; "forced labor"; "skilled workforce"; "resource efficiency"; "youth not in employment"; "child labor"; employment; "sustainable tourism"; "domestic financial"; slavery; unemployed; "decent work"; "labor standard"; "economic growth"; "compulsory labour"
SDGs 9	"technological legacy"; "clean process development"; "sustainable industrialization"; research; "resource use efficiency"; entrepreneurship; "environment investment"; "resilient infrastructure"; "socially responsible investment"; innovation; "sustainable infrastructure"; "sustainable investment"; "access to financial service"; "research and development"; "technological progress"
SDGs 10	"racial discrimination"; "equal remuneration"; inclusion; "economic inequality"; "religious discrimination"; "greater equality"; "income growth"; "voting rights"; "equal opportunity"; diversity; "economic inclusion"; "sexual discrimination"; "global wealth"; "regulation of global financial markets"; "income inequality"; "social inclusion"; "equal opportunity"

SDGs 11	“healthy community”; “adequate housing”; “public space”; “sustainable building”; disaster; “affordable house”; “natural heritage”; slum; “transport system”; “sustainable community”; “air quality”; “cultural heritage”; “human settlement”; “healthy city”; “sustainable city”; “sustainable urbanization”
SDGs 12	“sustainable sourcing”; recycle; “responsible consumption”; “integrated report”; “efficient resources”; “product label”; “natural resources”; “sustainable practices”; “material recycling”; “citizenship education”; chemical; “resource efficiency”; “product labelling”; “sustainable consumption”; recycling; “food waste”; “sustainable production”
SDGs 13	“renewable energy”; adaptation; “carbon emission”; CO2; “energy efficiency”; “greenhouse gas”; mitigation; “low carbon”; ghg; “sustainable energy”; “global warming”; “natural disaster”; “climate change”
SDGs 14	“marine resource”; spill; “coastal habitat”; “marine biodiversity”; ocean; “coastal ecosystem”; “water discharge”; “marine ecosystem”; “coastal biodiversity”; acidification; “illegal fishing”; “fish stock”; “life below water”; “marine pollution”; “ocean acidification”; “over fishing”
SDGs 15	“genetic diversity”; “aichi target”; deforestation; biodiversity; “natural habit”; conservation; “mountain ecosystem”; “loss biodiversity”; forest; “biological diversity”; “fiber sourcing”; “terrestrial ecosystem”; “natural habitat”; ecosystem; species; “land remediation”; “traded wildlife”; “alien species”; desertification; “life on land”; biodiversity; “forest degradation”
SDGs 16	freedom; corruption; justice; “developing countries in international organization”; transparency; bribery; torture; exploitation; law; “illicit arm”; security; peace; crime; violence; abuse; “human right”; “legal identity”
SDGs 17	“technology cooperation”; “improve domestic capacity”; “north south cooperation”; “global partnership for sustainable development”; “development assistance”; “policy for sustainable development”; “south south cooperation”; “environmental technologies”; “measurements of progress”; “cross-country partnership”; “long-term debt sustainability”; “macroeconomic stability”; “technology and innovation for developing countries”; partnerships; “investment promotion”; “sustainable development indicators”; “transparent and simple imports”; “export of developing countries”; “trading system”; “global partnership”; “policy coherence”; “developing countries”

Search settings as follows:

Find : Exact match

Spread to : Narrow context

Table 4. Search Result Examples (keyword is printed in bold)

SDGs No.	Firm Year	Search Results
SDGs 3	AALI 2021	“..., offered scholarships and provided health care through at-plantation polyclinics (polibun) and integrated service posts (posyandu)...”
	BBNI 2021	“For employees who work at BNI offices, we provide healthy , clean, and nutritious lunches which are supplemented with vitamins...”
SDGs 9	AALI 2021	“The Company also conducts research collaborations with tropical peat experts from several universities to obtain the best inputs in peatland management...”
	AKRA 2022	“To improve its business and operational aspects, the Company is sustainably strengthening its business through innovation to the information technology platform that monitors the movement, inventory position, and end-to-end product planning...”
SDGs 12	ANTM 2021	“b. The wealth of Indonesia’s Natural Resources shall be managed not only for our own good and the welfare of the surrounding population, but also for the prosperity of all Indonesian...”
	AVIA 2024	“12. Melakukan pengendalian limbah padat non-B3 melalui 3R (Reduce, Reuse, Recycle) ...”
SDGs 15	AALI 2021	“These include implementing all or almost all activities under the commitments for No Burning, Reducing Greenhouse Gas (GHG) Emissions, Conservation of Peatland and Responsible Sourcing. With regards to support to plasma and independent smallholders, Respect for Human Rights and No Deforestation, the Company has achieved most of the activities, while some others are still ongoing and leading toward completion...”
	JPFA 2020	“Even though our operational areas are not located in conservation areas, we support the preservation of biodiversity through our conservation efforts...”

RESULTS

Table 5 presents the descriptive statistics for each variable. Descriptive statistics are used in this study to provide an overview of the central tendency and distribution of key variables, allowing readers to understand their general characteristics before further analysis. These statistics also help identify potential anomalies or patterns in the data that may influence the interpretation of subsequent empirical results.

Table 5. Descriptive Statistics

Variable	N	Mean	Std. Dev	Min.	Max	Correlation (With SDGs Disclosure)
SDGs_Disclosure	197	-1.52e ⁻⁰⁷	0.997446	-1.47674	4.00874	1.000
Depth	197	5.992357	0.710475	3.23754	7.310374	0.7900
Breadth	197	4.77526	1.07127	1.213538	7.015347	0.9128
Concentration	197	0.331269	0.073067	0.229436	0.637604	0.8731
Information Asymmetry	197	3.908e ⁻⁰⁵	5.478e ⁻⁰⁵	3.079e ⁻⁰⁸	2.001e ⁻⁰⁴	-0.1574
DER	197	0.559114	0.644898	3.27E-05	4.110484	-0.2782
DAR	197	0.183582	0.160674	2.85E-05	0.692583	-0.2117
Firm Size	197	31.54714	1.648125	28.61295	35.42552	-0.1460
Firm Age	197	49.761	18.675	18	89	-0.1417
ROA	197	0.06902	0.066336	-0.02864	0.348851	-0.1385
Volatility	197	0.039823	0.019767	0	0.126056	-0.0840

The SDGs disclosure index has a mean close to 0, a standard deviation of 0.997, and ranges from -1.4767 to 4.0087. The average Depth score is 5.99, with a standard deviation of 0.71 and a range of 3.24–7.31, suggesting that firms provide sufficient detail in describing their SDGs-related actions. Breadth has a mean of 4.78, a standard deviation of 1.07, and ranges from 1.21 to 7.02, reflecting relatively diverse coverage of SDGs themes, although not all potential SDGs areas are fully covered. Concentration averages 0.331, with a standard deviation of 0.074 and a range of 0.229–0.638, indicating that companies tend to prioritize certain SDGs that are considered most relevant to their operations. Information asymmetry has a mean of 3.908e⁻⁰⁵ and a relatively large standard deviation of 5.478e⁻⁰⁵, indicating noticeable variation across firms and suggesting uneven information distribution among market participants. The leverage ratios, DER and DAR, average 0.56 and 0.18, indicating moderate capital structures. Firm size averages 31.55 (log assets), while profitability at around 6 percent reflects generally healthy financial conditions. Stock volatility averages 0.0398, with a standard deviation of 0.0198 and a maximum of 0.126, indicating low to moderate price fluctuation across the sample. SDGs Disclosure is highly correlated with its indicators (Depth, Breadth, and Concentration), supporting its robustness as a single factor to represent firm's SDGs disclosure. In addition, SDGs_Disclosure shows a negative correlation with Volatility, indicating its potential effect on stock volatility.

Table 6. Factor Analysis Criteria

Factor	Communalities	KMO and Bartlett's Test
Depth	0,887	
Breadth	0,915	0,766 (<0,01)
Concentration	0,888	

Table 6 shows that the data meet the requirements for factor analysis. The Kaiser – Meyer – Olkin (KMO) value of 0.766, along with a Bartlett's Test significance below 0.01, indicates that the correlations among variables are sufficient and appropriate for extraction into latent factors. Following

Kaiser (1974), a KMO above 0.70 falls within the “middling-good” category, indicating that the sample adequacy and correlation structure support both exploratory and confirmatory factor analysis. The significant Bartlett’s Test ($p < 0.01$) also confirms that the correlation matrix is not an identity matrix, demonstrating meaningful relationships among Depth, Breadth, and Concentration (Field, 2019). Communalities analysis further supports this result. Depth has a communality of 0.887, Breadth 0.915, and Concentration 0.888, with an average of approximately 0.897. Values above 0.50 indicate acceptable representation, while those exceeding 0.80 reflect strong construct measurement and a stable factor solution (Hair et al., 2019). These results indicate that Depth, Breadth, and Concentration form a robust set of indicators for the SDGs disclosure construct.

Table 7. Factor Loading and Variance

Factor	PCA			CFA		
	Loadings	% Variance	Eigenvalue	Loadings	AVE	Composite Reliability
Depth	0.942			0.905		
Breadth	0.956	89.657	2.690	0.948	0.874	0.924
Concentration	0.942			0.905		

Factor analysis in Table 7 shows that all three dimensions load strongly onto a single latent factor, with loadings of 0.942, 0.956, and 0.942. These values exceed the commonly accepted threshold of 0.71 in social science research, indicating excellent measurement quality (Hair et al., 2019). Factor loadings close to 1 indicate that each indicator explains a large proportion of variance in the underlying construct and reflects a strong and consistent relationship with the SDGs disclosure dimension being measured. The single-factor solution explains 89.657% of the total variance, meaning that nearly all variance from the three indicators is captured by this factor. This proportion exceeds general guidelines suggesting that 50–60% variance is sufficient to represent a construct (Field, 2019). Approximately 88% of each indicator’s variance is absorbed by the factor, confirming that the indicators provide a strong empirical representation of SDGs disclosure. The high sum of squared loadings corresponds to the eigenvalues (2.69 for the first factor and 0.181 for the second), which aligns with the 89.657% variance result. The CFA results in Table 3 further validate these findings, as all dimensions load above 0.7, the AVE exceeds 0.5, and the CR surpasses 0.7, demonstrating a valid and reliable construct (Hair et al., 2022).

Table 8. Model Testing and Assumptions Check

Tests	P	Action Taken
Breusch-Pagan LM	0.0004	Panel data is used instead of OLS
Hausman	0.0000	Fixed effect is preferred
Wooldridge test for autocorrelation	0.0245	Robust clustered standard error
Modified Wald test	0.0000	
VIF Multicollinearity test	2.53	No action as it is below concern (<5)

The model assumptions test are presented at Table 8. The Breusch-Pagan LM test shows a significant result ($p = 0.000$), rejecting the null hypothesis that the random effect variance is zero and justify the use of panel data. This finding indicates variation across entities, making the panel model more appropriate as it captures firm-level heterogeneity that pooled OLS cannot (Baltagi, 2021). The fixed effect model is selected based on the Hausman test, indicating the presence of time-invariant difference across firms. Furthermore, the Wooldridge and Modified Wald tests indicate the presence of autocorrelation and heteroskedasticity, as shown by significance levels below 0.05. To address these issues, robust regression is applied, as it can handle both heteroskedasticity and autocorrelation (Baltagi, 2021). Meanwhile, the VIF test shows a value of 2.53, indicating that multicollinearity is at an acceptable level and does not pose a serious problem for model estimation. This value remains well below the common threshold of 5 – 10.

Table 9. Panel Data Results (Robust Standard Error Clustered by Firm)

	Coeff.	Robust Std. error	t	P	Conf. interval	
					5%	95%
Panel A (R Sq. 41.26%)						
SDGs Disclosure	-.0039765	.0021146	-1.88	0.032**	-.0081962	.0002432
Information Asymmetry	61.40877	29.3906	2.09	0.020**	2.760749	120.0568
<i>Controls</i>						
Firm Size	-.0185169	.0111669	-1.66	0.051*	-.0408001	.0037662
DER	.0023717	.0078578	0.30	0.382	-.0133083	.0180517
DAR	.0049416	.0404851	0.12	0.452	-.0758452	.0857283
ROA	-.0000103	3.73e ⁻⁰⁶	-2.76	0.004**	-.0000177	-2.86e ⁻⁰⁶
Firm Age	-.0073652	.0018306	-4.02	0.000***	-.0110181	-.0037123
Pandemic	-.0023677	.0041337	-0.57	0.285	-.0106164	.0058809
Const.	.4203896	.09289	4.53	0.000***	.2350306	.6057487
Panel B (R Sq. 42.59%)						
SDGs Disclosure	-.0022046	.0021244	-1.04	0.152	-.0064437	.0020345
Information Asymmetry	39.82059	28.47462	1.40	0.084*	-16.99962	96.6408
SDGs Disclosure*Information Asymmetry	59.44077	34.77703	1.71	0.046**	-9.955704	128.8372
<i>Controls</i>						
Firm Size	-.0284751	.0151946	-1.87	0.033**	-.0587954	.0018452
DER	.0000637	.0089787	0.01	0.497	-.0178529	.0179803
DAR	.0143984	.0387579	0.37	0.356	-.0629418	.0917386
ROA	-.0009119	3.72e ⁻⁰⁶	-3.19	0.001***	-.0000193	-4.44e ⁻⁰⁶
Firm Age	-.0066868	.0019775	-3.38	0.001***	-.0106329	-.0027407
Pandemic	-.0020908	.0041518	-0.50	0.308	-.0103756	.006194
Const.	.3860411	.1003282	3.85	0.000***	.1858392	.5862429
Panel C (R. Sq. 43.39%)						
Depth	.0105512	.0047515	2.22	0.015**	.0010698	.0200326
Breadth	-.0072614	.0042567	-1.71	0.047**	-.0157554	.0012327
Concentration	-.0663756	.0296238	-2.24	0.014**	-.125489	-.0072622
Information Asymmetry	59.35849	29.2441	-2.03	0.023**	1.002802	117.7142
<i>Controls</i>						
Firm Size	-.0167232	.0111965	-1.49	0.070*	-.0390655	.0056191
DER	.0020815	.0077498	0.27	0.395	-.0133831	.017546
DAR	.0004596	.0347349	0.01	0.445	-.0688528	.0697719
ROA	-.0000152	6.55e ⁻⁰⁶	-2.32	0.012**	-.0000282	-2.11e ⁻⁰⁶
Firm Age	-.0073448	.0018209	-4.03	0.000***	-.0109784	-.0037112
Pandemic	-.0026676	.0039848	-0.67	0.253	-.0106192	.005284
Const.	.4421285	.0948538	4.66	0.000***	.2528507	.6314063

*, **, *** stands for significant at 10%, 5%, and 1%.

Table 9 presents the main regression results. Panel A shows that SDGs disclosure has a negative coefficient with a significant p-value ($\beta = -.0039765$ $p = 0.032$). This result indicates that SDGs disclosure reduces firm stock volatility by .398 per cent for each unit increase in disclosure. This finding indicates a negative and significant relationship at the 95% confidence level, thus accepting Hypothesis 1. Information asymmetry shows a positive and significant coefficient ($\beta = 61.40877$ $p = 0.020$). Most control variables do not show significant effects ($p > 0.05$), except for ROA and firm age, which have negative coefficients. This suggests a market adjustment to performance expectations and financial risk. Panel B shows that interaction between SDGs disclosure and information asymmetry is positive and significant ($\beta = 59.44077$ $p = 0.046$), indicating that the effect of SDGs disclosure on stock volatility weakens as information asymmetry increases. This result is also supported by the graphical analysis in Figure 1. The effect of SDGs disclosure varies across different levels of information asymmetry, proxied at ± 1 standard deviation and at the mean. Based on these results, Hypotheses 2 is supported. Panel C shows that the Depth of SDGs disclosure increases stock volatility significantly ($\beta = .0105512$ $p = 0.015$). Conversely, Breadth and Concentration reduce volatility with at 5% significance level (Breadth $\beta = -.0072614$; $p = 0.047$; Concentration $\beta = -.0663756$ $p = 0.014$). These results support H1_b and H1_c but do not support H1_a. An increase in Depth raises stock volatility by approximately 1.055 percent, while increases in Breadth and Concentration reduce stock volatility by approximately 0.726 percent and 6.637 percent, respectively.

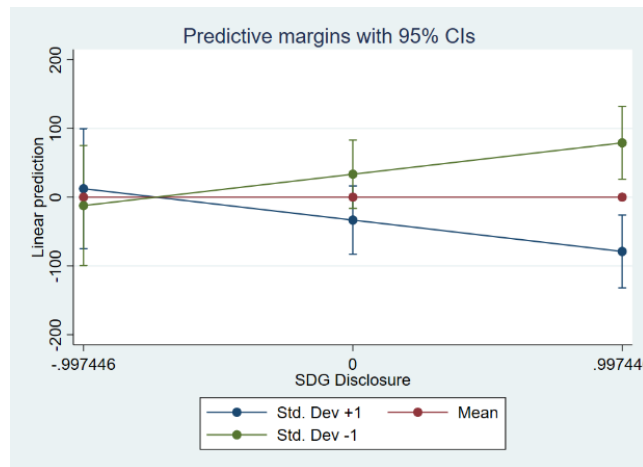


Figure 2. Simple Moderation Plot Between SDGs Disclosure and Information Asymmetry at ±1 Std. Dev and at Mean

Table 10. Model Testing and Assumptions Check

	Coeff.	Robust Std. error	t	P	Conf. interval	
					5%	95%
Panel D (R Sq. 56.48%)						
SDGs_Disclosure	.004339	.003132	1.39	0.085*	-.0019108	.0105888
Information Asymmetry	.0499462	.007384	6.76	0.000***	.0352115	.064808
SDGs_Disclosure*Information Asymmetry	.0115628	.004236	2.73	0.004**	.0031101	.0200155
<i>Controls</i>						
Firm Size	-.0033567	.0091644	-0.37	0.358	-.021644	.0149305
DER	.0107026	.0078658	1.36	0.089*	-.0049934	.0263986
DAR	-.0284643	.0364706	-0.78	0.219	-.1012403	.0443116
ROA	-7.81e-06	2.94e-06	-2.65	0.005**	-.0000137	-1.93e-06
Firm Age	-.0056544	.0014786	-3.82	0.000***	-.008605	-.0027038
Pandemic	-.0030081	.0034787	-0.86	0.195	-.0099497	.0039334
Const.	.3027816	.0759642	3.99	0.000***	.1511973	.4543658
Panel E (R Sq. 42.72%)						
SDGs_Disclosure	-.0020374	.0020082	-1.01	0.157	-.0060446	.0019698
Information Asymmetry	39.14431	28.61715	1.37	0.088*	-17.96034	96.24895
SDGs_Disclosure*Information Asymmetry	61.90318	35.00071	1.77	0.041**	-7.939636	131.746
<i>Controls</i>						
Firm Size	-.027658	.0148035	-1.87	0.033**	-.0571979	.0018818
DER	.00037	.0090786	0.04	0.484	-.017746	.018486
DAR	.013854	.0392983	0.35	0.363	-.0645646	.0922726
ROA	-.0000116	3.66e-06	-3.16	0.001***	-.0000189	-4.27e-06
Firm Age	-.006766	.0019837	-3.41	0.001***	-.0107245	-.0028076
Pandemic	-.0020982	.0041819	-0.50	0.309	-.0104431	.0062467
Const.	.390048	.1006506	3.88	0.000***	.189203	.5908931
Panel F (R. Sq. 26.02%)						
SDGs_Disclosure	-.0129321	.0058479	-2.21	0.014**	-.0243937	-.0014705
SDGs_Disclosure _{t-1}	.0009377	.0040066	0.23	0.408	-.006915	.0087904
Information Asymmetry	18.17751	21.26764	0.855	0.1963	-81.5451	65.19008
SDGs_Disclosure*Information Asymmetry	48.37123	25.18566	1.92	0.027**	-26.835	98.5775
<i>Controls</i>						
Firm Size	-.0432561	.024034	-1.80	0.036**	-.0903618	.0038497
DER	-.0182121	.012889	-1.41	0.079*	-.0434741	.0070499
DAR	.0509679	.0645813	0.79	0.215	-.0756092	.177545
ROA	6.12e-06	4.73e-06	1.29	0.098*	-3.15e-06	.0000154
Firm Age	.0035281	.0027021	1.31	0.096*	-.0017679	.0088241
Pandemic	.0127539	.004202	3.04	0.001***	.0045181	.0209897
Const.	-.1363589	.1371388	-0.99	0.160	-.4051461	.1324282

	Coeff.	Robust Std. error	t	P	Conf. interval	
					5%	95%
Panel G – High (Low) Sized Firm						
SDGs_Disclosure*Information Asymmetry	1.456792 (.9002181)	.0676138 (.1142368)	21.55 (7.88)	0.000*** (0.000)***	1.324271 (.6763182)	1.589313 (1.124118)
<i>Controls</i>						
DER	-.0693301 (.0644049)	.0860826 (.252589)	-0.81 (0.25)	0.211 (0.400)	-.2380488 (-.430661)	.0993886 (.5594704)
DAR	-.0094562 (-1.51769)	.3553558 (1.028594)	-0.03 (-1.48)	0.490 (0.70)*	-.7059408 (-3.5337)	.6870284 (.4983131)
ROA	-.0001939 (-.00012)	.0000582 (.000278)	-3.33 (-0.72)	0.000*** (0.237)	-.0003079 (-.000744)	-.0000798 (.0003452)
Firm Age	.0007051 (- .011956)	.0022471 (.0061427)	0.31 (-1.95)	0.377 (0.026)**	-.0036991 (-.023994)	.0051093 (.000085)
Pandemic	.0621743 (.1182532)	.0591496 (.0792297)	1.05 (1.49)	0.147 (0.068)*	-.0537568 (-.037034)	.1781054 (.2735406)
<i>Const.</i>	-.1604991 (.9363221)	.128614 (.2845558)	-1.25 (3.29)	0.106 (0.000)***	-.4125779 (.378603)	.0915797 (1.494041)

*, **, *** stands for significant at 10%, 5%, and 1%.

This study also conducts four additional analyses to address robustness and endogeneity concerns, as presented in Table 10. Panel D tests an alternative proxy for information asymmetry using total trading volume divided by total shares outstanding (Muslim & Setiawan, 2021). The moderating effect remains significant at 5 percent level ($\beta = .0115628$ $p = 0.004$). Panel E applies factor analysis as an alternative extraction method for SDGs disclosure. The moderating effect remains significant ($\beta = 61.90318$ $p = 0.041$). To address endogeneity, lagged SDGs disclosure is used, considering the potential influence prior disclosure on current stock volatility. The results in Panel F show that SDGs disclosure at $t-1$ does not significantly affect stock volatility, indicating no endogeneity issue arising from prior disclosure. Finally, Panel G examines whether firm size influences the moderating effect between SDGs Disclosure and Information Asymmetry. Firms are divided into high-sized and low-sized groups based on the mean. The results show that both groups experience a similar moderating effect.

DISCUSSION

Firms hold responsibility not only toward investors but also toward other stakeholders (Kumari et al., 2022; Treepongkaruna et al., 2025). Disclosures related to the SDGs are considered an important requirement, and meeting this expectation can reduce stock volatility by increasing transparency and trust between companies and stakeholders (Srivastava et al., 2024). Research shows that companies providing comprehensive SDGs disclosures send a strong signal of commitment to sustainability and good governance, thereby strengthening investor confidence and reducing perceived risk (Nicolò et al., 2024). This aligns with Signaling theory, supporting the role of SDGs disclosure as positive signal in investor decision-making (W. Scott & O'Brien, 2019). Firms that maintain strong stakeholder engagement through clear SDGs reporting tend to build a more positive reputation, attract broader investor interest, and exhibit lower share price volatility (Mestdagh et al., 2024; Pinheiro et al., 2023). High-quality sustainability disclosure has also been shown to attract institutional investors with a focus on sustainable investment, thereby supporting the stability of share value (Azuma & Higashida, 2024; Hummel & Szekely, 2022).

As demands for accountability in social responsibility continue to increase, effective SDGs disclosure can help reduce the risk of adverse public reactions, which often trigger share price fluctuations (Rezaee et al., 2023; Vaio et al., 2023). Companies that communicate their SDGs their SDGs activities more openly tend to have lower idiosyncratic risk, as they are better able to meet investor expectations and reduce potential conflicts and uncertainty (Malik & Kashiramka, 2025). High-quality disclosure can also strengthen dividend expectations and provide greater certainty regarding income flows for investors, thereby reducing market uncertainty (Malik & Kashiramka,

2025). In this context, strong sustainability reporting serves as an effective risk management tool, helping firms maintain investor confidence and support market resilience (Kumari et al., 2022; Treepongkaruna et al., 2025).

However, the Depth of SDGs disclosure tends to increase stock volatility. More detailed reporting raises expectations and increases pressure from investors, regulators, customers, and the public for companies to fulfil their stated commitments. Harjoto & Wang (2024) note that such pressure may lead firms to expand disclosures to reduce information asymmetry, even when actual performance does not fully match what is reported. Although intended to improve transparency, gaps between disclosed information and actual outcomes can create doubt, prompting investors to reassess their expectations and causing sharper price movements. Highly detailed disclosures also invite closer scrutiny from external parties, which increases perceived risk and contributes to volatility (Li et al., 2024). As stakeholders gain deeper insight into operational risks associated with sustainability practices, stock prices become more sensitive to these risk assessments rather than purely financial indicators. Singhania & Gupta (2024) show that ESG reporting can increase stakeholder risk perception, particularly when disclosures fall short of expectations. When more detailed reporting reveals inconsistencies or raises concerns about credibility, investors may demand higher risk premiums, which further increases stock volatility.

In contrast, the Breadth and Concentration of SDGs disclosure are shown to reduce stock volatility by providing clearer, wider, and more structured information to the market. Breadth reflects how extensively firms integrate multiple SDGs into strategies and policies, which strengthens reputation and provides investors with broader insight into cash flow prospects, risk exposure, and governance quality (Lin et al., 2024; Nicolò et al., 2024; Rosamartina et al., 2022). This reduces information asymmetry, narrows uncertainty about firm fundamentals, and leads to more stable price movements (Fonou-Dombeu et al., 2022; Pham & Nguyễn, 2022). Concentration further lowers volatility by reducing investor disagreement and dispersion in analyst forecast. More focused and material information helps align market perceptions, while communication minimizes differences in interpretation (Kanagaretnam et al., 2024).

Broad yet targeted reporting also limits opportunities for private information arbitrage, as dense institutional investor networks reduce informational advantages that often drive idiosyncratic volatility (Kim et al., 2022; Zhai et al., 2024). When disclosures remain comprehensive but focused on issues most relevant to firm operations, markets can evaluate risks more efficiently. This expands the investor base, improves liquidity, and lowers capital costs (X. Yang et al., 2024; Y. Yang & Li, 2024). Evidence shows that well-balanced SDGs reporting improves signal clarity, reduces information asymmetry and bid-ask spreads, and supports overall market stability (Pham & Nguyễn, 2022; Wang et al., 2024).

The second hypothesis, which states that information asymmetry reduces the effectiveness of SDGs disclosure in lowering stock volatility, is supported. When information is widely accessible, SDGs disclosure plays a stronger role in reducing volatility, as investors are better able to evaluate risks and corporate performance. Transparent reporting also sends a positive signal about operational sustainability and financial stability, which enhances market confidence and reduces uncertainty (Nicolò et al., 2024). However, this effect weakens when information is limited, as investors find it more difficult to distinguish genuinely committed firms from those engaging in symbolic reporting. Under these conditions, SDGs disclosure may encourage speculation and intensify price fluctuations, as investment decisions rely less on reliable information (Tian et al., 2022). Herding behavior among institutional investors may also increase, further raising idiosyncratic volatility (Zhai et al., 2024). Firms with strong SDGs performance tend to receive more favorable market responses in more transparent environments, as SDGs integration helps reduce capital costs and strengthen market appeal (Zhang et al., 2022). Aligning sustainability initiatives with strategic objectives also supports long-term adaptability and enhances corporate reputation, particularly during periods of economic uncertainty (Kharlanov et al., 2022).

CONCLUSION

This study extends the literature on Sustainable Development Goals (SDGs) disclosure by examining its association with stock volatility in the Indonesian context, an area that has received relatively limited attention. The findings indicate that SDGs disclosure is negatively associated with stock volatility, suggesting that increased transparency is linked to lower market risk and reduced information asymmetry. At the dimensional level, Depth is positively associated with volatility, while Breadth and Concentration show negative associations, indicating that the structure and focus of disclosure influence market responses. These results suggest that firms need to design SDGs disclosures that are relevant and clearly structured so that they can effectively support transparency and investor confidence. From an investor perspective, the evaluation extends beyond the mere presence of SDGs disclosure to include its quality and substance, which may influence short-term market reactions.

This study has several limitations. First, the sample is restricted to firms reporting in both English and Indonesian, which may limit the representativeness of the findings. Second, the study addresses endogeneity using lagged variables without incorporating instrumental variable approaches. Third, the reliance on a self-constructed SDGs index may affect the generalizability of the results. Future research may address these limitations by expanding the sample scope, applying alternative identification strategies, and examining the role of SDGs disclosure across different industries and stakeholder groups.

REFERENCES

- Azuma, K., & Higashida, A. 2024. Climate Change Disclosure and Evolving Institutional Investor Saliency: Roles of the Principles for Responsible Investment. *Business Strategy and the Environment*, 33(4), 3669–3686. <https://doi.org/10.1002/bse.3649>
- Baltagi, B. H. 2021. *Econometric Analysis of Panel Data* (Sixth). Springer. <http://www.springer.com/series/10099>
- Będowska-Sójka, B., Echaust, K., & Just, M. 2022. The asymmetry of the Amihud illiquidity measure on the European markets: The evidence from Extreme Value Theory. *Journal of International Financial Markets, Institutions and Money*, 78. <https://doi.org/10.1016/j.intfin.2022.101563>
- Bhowmik, R., & Wang, S. 2020. Stock market volatility and return analysis: A systematic literature review. In *Entropy* (Vol. 22, Number 5). MDPI AG. <https://doi.org/10.3390/E22050522>
- Bose, S., Khan, H. Z., & Bakshi, S. 2024. Determinants and consequences of sustainable development goals disclosure: International evidence. *Journal of Cleaner Production*, 434. <https://doi.org/10.1016/j.jclepro.2023.140021>
- Bougie, R., & Sekaran, U. 2020. *Research Methods For Business: A Skill Building 7 ed.* (8th ed.). Wiley Publisher.
- Brigham, E. F., & Houston, J. F. 2019. Fundamentals of Financial Management. In *Health Care Management Review* (15th ed., Vol. 2, Number 4). Cengage Learning.
- Calabrese, A., Costa, R., Gastaldi, M., Levialedi Ghiron, N., & Villazon Montalvan, R. A. 2021. Implications for Sustainable Development Goals: A framework to assess company disclosure in sustainability reporting. *Journal of Cleaner Production*, 319(August), 128624. <https://doi.org/10.1016/j.jclepro.2021.128624>
- Dada, B. I. 2024. Sustainable Development Goals Reporting by Listed Companies in an Emerging Economy-Evidence From Nigeria. *African Journal of Accounting and Financial Research*, 7(1), 49–65. <https://doi.org/10.52589/ajaf-3daelqsz>
- Damas, D., Rahardja, L., Lawita, F., & Victoria, N. 2025. Greenhouse Gas Emission and The SDGs: How Environmental Performance Shape Corporate Value. *JRAK*, 17(2), 278–296. <https://doi.org/10.23969/jrak.v17i2.25379>
- Deegan, C., & Unerman, J. 2022. *Financial Accounting Theory* (european). McGraw-Hill Education.
- Delizar, G. A. A., & Lidiyawati. 2025. Carbon Emission Disclosure and Eco-Efficiency on Firm Value: Analysis of Indonesian Energy Companies Moderated by Foreign Ownership. *Socio-Economic*

- and Humanistic Aspects for Township and Industry*, 3(3), 643–650. <https://doi.org/10.59535/sehati.v3i3.545>
- Dionisio, M., de Souza Junior, S. J., Paula, F., & Pellanda, P. C. 2024. The role of digital social innovations to address SDGs: A systematic review. In *Environment, Development and Sustainability* (Vol. 26, Number 3, pp. 5709–5734). Springer Science and Business Media B.V. <https://doi.org/10.1007/s10668-023-03038-x>
- Emma, G. M., & Jennifer, M. F. 2021. Is SDG reporting substantial or symbolic? An examination of controversial and environmentally sensitive industries. *Journal of Cleaner Production*, 298, 126781. <https://doi.org/10.1016/j.jclepro.2021.126781>
- Field, A. 2019. Discovering Statistics Using IBM SPSS Statistics. In *Sustainability (Switzerland)* (4th ed., Vol. 11, Number 1). Sage Publication, Inc.
- Fonou-Dombeu, N. C., Mbonigaba, J., Olarewaju, O. M., & Nomlala, B. C. 2022. Earnings Quality Measures and Stock Return Volatility in South Africa. *Future Business Journal*, 8(1). <https://doi.org/10.1186/s43093-022-00115-x>
- Galeazzo, A., Miandar, T., & Carraro, M. 2023. SDGs in corporate responsibility reporting: a longitudinal investigation of institutional determinants and financial performance. *Journal of Management and Governance*, 1–24. <https://doi.org/10.1007/s10997-023-09671-y>
- Ghuslan, M. I., Jaffar, R., Saleh, N. M., & Yaacob, M. H. 2021. Corporate governance and corporate reputation: The role of environmental and social reporting quality. *Sustainability (Switzerland)*, 13(18). <https://doi.org/10.3390/su131810452>
- Gista, S. A., & Prastiwi, D. 2022. Pengaruh Corporate Social Responsibility Terhadap Profitabilitas Dan Reputasi Perusahaan Pada Perusahaan Perbankan Yang Terdaftar Di BEI Periode 2018–2020. *Owner*, 6(3), 1584–1593. <https://doi.org/10.33395/owner.v6i3.956>
- Gu, X., Hasan, I., & Lu, H. 2023. Institutions and Corporate Reputation: Evidence from Public Debt Markets. *Journal of Business Ethics*, 183(1), 165–189. <https://doi.org/10.1007/s10551-021-05020-x>
- Gutiérrez-Ponce, H., & Wibowo, S. A. 2023. Sustainability Reports and Disclosure of the Sustainable Development Goals (SDGs): Evidence from Indonesian Listed Companies. *Sustainability (Switzerland)*, 15(24). <https://doi.org/10.3390/su152416919>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. 2019. Multivariate Data Analysis. In *Cengage Learning EMEA* (Eight, Vol. 87, Number 4). Cengage Learning EMEA.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. 2022. *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd editio). Sage Publication, Inc. International Educational Professional Publisher. <https://doi.org/10.1080/1743727x.2015.1005806>
- Harjoto, M. A., & Wang, Y. 2024. Economic Policy Uncertainty and Environmental, Social and Governance (ESG) Disclosure: The Moderating Effects of Board Network Centrality and Political Connections. *Corporate Governance*, 24(7), 1547–1576. <https://doi.org/10.1108/cg-08-2023-0349>
- He, G., Liu, Y., & Chen, F. 2023. Research on the impact of environment, society, and governance (ESG) on firm risk: An explanation from a financing constraints perspective. *Finance Research Letters*, 58. <https://doi.org/10.1016/j.frl.2023.104038>
- Hsu, Y. L., & Liao, L. K. (Connie). 2022. Corporate governance and stock performance: The case of COVID-19 crisis. In *Journal of Accounting and Public Policy* (Vol. 41, Number 4). Elsevier Inc. <https://doi.org/10.1016/j.jaccpubpol.2021.106920>
- Hummel, K., & Szekely, M. 2022. Disclosure on the Sustainable Development Goals—Evidence from Europe. *Accounting in Europe*, 19(1), 152–189. <https://doi.org/10.1080/17449480.2021.1894347>
- Kaiser, H. F. 1974. An Index of Factorial Simplicity. *Psychometrika*, 39, 31–36. <https://doi.org/https://doi.org/10.1007/BF02291575>
- Kanagaretnam, K., Li, W., Shi, G., & Zhou, Z. 2024. Ambiguity of Tone in Annual Reports and Bank Risk Taking. *Accounting and Finance*, 65(1), 935–970. <https://doi.org/10.1111/acfi.13353>

- Kemenpanrb. 2024. *Indonesia Capai 62,5 Persen Target SDGs 2030, Tertinggi di Asia*. <https://www.menpan.go.id/site/berita-terkini/berita-daerah/indonesia-capai-62-5-persen-target-sdgs-2030-tertinggi-di-asia>
- Kharlanov, A. S., Bazhdanova, Y. V., Kemkhashvili, T. A., & Сапожникова, Н. Г. 2022. The Case Experience of Integrating the SDGs Into Corporate Strategies for Financial Risk Management Based on Social Responsibility (With the Example of Russian TNCs). *Risks*, 10(1), 12. <https://doi.org/10.3390/risks10010012>
- Kim, T., Kyung, H., & Ng, J. 2022. Top Management Team Incentive Dispersion and Earnings Quality*. *Contemporary Accounting Research*, 39(3), 1949–1985. <https://doi.org/10.1111/1911-3846.12778>
- Koch, T., & Viererbl, B. 2022. Buffer or Backfire? Effects of Corporate Social Responsibility Activities in Organizational Crises. *Journal of International Crisis and Risk Communication Research*, 5(2), 123–154. <https://doi.org/10.30658/jicrcr.5.2.2>
- KSEI. 2025. *Statistik Pasar Modal Indonesia Agustus 2025*.
- Kumari, P., Makhija, H., Sharma, D., & Behl, A. 2022. Board Characteristics and Environmental Disclosures: Evidence From Sensitive and Non-Sensitive Industries of India. *International Journal of Managerial Finance*, 18(4), 677–700. <https://doi.org/10.1108/ijmf-10-2021-0547>
- Leal Filho, W., Viera Trevisan, L., Simon Rampasso, I., Anholon, R., Pimenta Dinis, M. A., Londero Brandli, L., Sierra, J., Lange Salvia, A., Pretorius, R., Nicolau, M., Paulino Pires Eustachio, J. H., & Mazutti, J. 2023. When the alarm bells ring: Why the UN sustainable development goals may not be achieved by 2030. *Journal of Cleaner Production*, 407(April). <https://doi.org/10.1016/j.jclepro.2023.137108>
- Leo, S. A., & Masdupi, E. 2022. The Influence of Profitability, Capital Structure, Stock Risk, dan Company Reputation on The Value of Corporation. *Journal of International Business, Management and Finance Studies*. <https://journal.worldofpublication.com/index.php/jibmfs/>
- Li, L., Saat, M. M., Khatib, S. F. A., Chu, P., & Sulimany, H. G. H. 2024. Navigating the Impact: A Comprehensive Analysis of ESG Disclosure Consequences Through Systematic Review. *Business Strategy & Development*, 7(2). <https://doi.org/10.1002/bsd2.382>
- Lin, W. L., Chong, S. C., & Wong, K. K. S. 2024. Sustainable development goals and corporate financial performance: Examining the influence of stakeholder engagement. *Sustainable Development*. <https://doi.org/10.1002/sd.3259>
- Malik, N., & Kashiramka, S. 2025. Unlocking Dividend Potential Through the Power of Sustainable Disclosures: Moderating Role of Financial Constraints. *Business Strategy and the Environment*, 34(3), 3086–3113. <https://doi.org/10.1002/bse.4139>
- Mestdagh, B., Van Liedekerke, L., & Sempiga, O. 2024. A Drivers Framework of Organizational SDG Engagement. In *Sustainability (Switzerland)* (Vol. 16, Number 1). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/su16010460>
- Montera, R., & Falco, S. E. D. 2024. Reaching the SDGs by 2030: At What Point Is Italy? Evidence From Firms at the Regional Clusters' Level. *Sinergie Italian Journal of Management*, 42(1), 189–213. <https://doi.org/10.7433/s123.2024.08>
- Muhmad, S. N., & Muhamad, R. 2021. Sustainable business practices and financial performance during pre- and post-SDG adoption periods: a systematic review. *Journal of Sustainable Finance and Investment*, 11(4), 291–309. <https://doi.org/10.1080/20430795.2020.1727724>
- Muskanan, M. W., Tilt, C., Rao, K., & Whait, R. 2024. Contributing to Indonesia's SDG achievement: disclosures of regional-owned enterprises. *Journal of Public Budgeting, Accounting & Financial Management*, 37(2), 273–295. <https://doi.org/10.1108/JPBAFM-06-2023-0104>
- Muslim, A. I., & Setiawan, D. 2021. Information asymmetry, ownership structure and cost of equity capital: The formation for open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 1–17. <https://doi.org/10.3390/joitmc7010048>
- Nicolò, G., Zampone, G., Iorio, S. D., & Sannino, G. 2023. Does SDG Disclosure Reflect Corporate Underlying Sustainability Performance? Evidence From UN Global Compact Participants. *Journal of International Financial Management and Accounting*, 35(1), 214–260. <https://doi.org/10.1111/jifm.12194>

- Nicolò, G., Zampone, G., Sannino, G., & Polcini, P. T. 2024. Sustainable Development Goals Disclosure and Analyst Forecast Quality. *Journal of Applied Accounting Research*, 26(6), 1–25. <https://doi.org/10.1108/jaar-07-2023-0223>
- Nirino, N., Battisti, E., Ferraris, A., Dell'Atti, S., & Briamonte, M. F. 2022. How and when corporate social performance reduces firm risk? The moderating role of corporate governance. *Corporate Social Responsibility and Environmental Management*, 29(6), 1995–2005. <https://doi.org/10.1002/csr.2296>
- Ouyang, Z., Lv, R., & Liu, Y. 2023. Can corporate social responsibility protect firm value during corporate environmental violation events? *Corporate Social Responsibility and Environmental Management*, 30(4), 1942–1952. <https://doi.org/10.1002/csr.2465>
- Pham, H., & Nguyễn, N. M. 2022. Information Disclosure and Bank Risk-Taking: Empirical Evidence From Vietnam. *Journal of Eastern European and Central Asian Research (Jeecar)*, 9(4), 617–627. <https://doi.org/10.15549/jeecar.v9i4.954>
- Pinheiro, A. B., Mazzo, G. G., Lopes, G., & Branco, M. C. 2023. A Bird's Eye View: Uncovering the Impact of Stakeholder Pressure on Sustainable Development Goal Disclosure. *Sustainability*, 15(23), 16156. <https://doi.org/10.3390/su152316156>
- Prastiwi, A., Atmini, S., Pusposari, D., Martika Sari, Y., & Christinawati Putri, F. 2025. The Reciprocal Relationship Between Profitability and Corporate Social Responsibility Disclosure. *JRAK*, 17(2), 414–427. <https://doi.org/10.23969/jrak.v17i2.29561>
- Ramos, D. L., Chen, S., Rabeu, A., & Rahim, A. B. A. 2022. Does SDG Coverage Influence Firm Performance? *Sustainability (Switzerland)*, 14(9). <https://doi.org/10.3390/su14094870>
- Rezaee, Z., Homayoun, S., Rezaee, N. J., & Poursoleyman, E. 2023. Business Sustainability Reporting and Assurance and Sustainable Development Goals. *Managerial Auditing Journal*, 38(7), 973–996. <https://doi.org/10.1108/maj-10-2022-3722>
- Rosamartina, S., Giustina, S., Domenico, D. F., Pasquale, D. V., & Angeloantonio, R. 2022. Digital reputation and firm performance: The moderating role of firm orientation towards sustainable development goals (SDGs). *Journal of Business Research*, (152), 315–325. <https://doi.org/10.1016/j.jbusres.2022.07.025>
- Saeed, M. M., Mohammed, S. S., Adeniyi, A., & Osei, M. 2025. The Impact of Corporate Governance on the Contribution of Listed Firms to Sustainable Development Goals (SDGs) Disclosures in Ghana. *Sustainable Development*, 33(3), 4676–4688. <https://doi.org/10.1002/sd.3367>
- Saha, S., Hasan, A. R., Islam, K. R., & Priom, M. A. I. 2024. Sustainable Development Goals (SDGs) practices and firms' financial performance: Moderating role of country governance. *Green Finance*, 6(1), 162–198. <https://doi.org/10.3934/GF.2024007>
- Sarkar, S., Madhusoodanan, M. S., & Datta, A. 2023. Role of Environmental, Social, and Governance in Achieving the Sustainable Development Goals: A Special Focus on India. *Environmental Progress & Sustainable Energy*, 42(6). <https://doi.org/10.1002/ep.14204>
- Schönherr, N., Findler, F., & Martinuzzi, A. 2017. Exploring the interface of CSR and the Sustainable Development Goals. *Transnational Corporations*, 24(3), 33–47. <https://doi.org/10.18356/cfb5b8b6-en>
- Scott, L., & McGill, A. 2018. *From promise to reality: Does business really care about the SDGs?* www.pwc.com/sdgreportingchallenge
- Scott, W., & O'Brien, P. 2019. *Financial Accounting Theory*. Pearson. <https://books.google.co.id/books?id=Gw8cvgEACAAJ>
- SDGs Bappenas. 2025. *Indoensia Perkuat Peran Global Melalui VNR 2025 di HLPF PBB*. <https://sdgs.bappenas.go.id/indonesia-perkuat-peran-global-melalui-vnr-2025-di-hlpf-pbb/#>
- Sharma, R., Chawla, S., Dagar, V., Kagzi, M., & Rao, A. 2025. SDG adoption and firm risk: The impact of ESG performance, investor confidence, and agency cost. *International Review of Economics and Finance*, 101. <https://doi.org/10.1016/j.iref.2025.104205>
- Sharma, R., Chawla, S., Dhankar, N., & Dagar, V. 2025. Regional firm's market value with 5Ps for sustainability: Evidence from India. *Journal of Environmental Management*, 377. <https://doi.org/10.1016/j.jenvman.2025.124697>

- Singhania, M., & Gupta, D. 2024. Impact of Environmental, Social and Governance (ESG) disclosure on firm risk: A meta-analytical review. In *Corporate Social Responsibility and Environmental Management* (Vol. 31, Number 4, pp. 3573–3613). <https://doi.org/10.1002/csr.2725>
- Soni, T. K. 2023. Demystifying the Relationship Between ESG and SDG Performance: Study of Emerging Economies. *Investment Management and Financial Innovations*, 20(3), 1–12. [https://doi.org/10.21511/imfi.20\(3\).2023.01](https://doi.org/10.21511/imfi.20(3).2023.01)
- Srivastava, A., Assaf, R., Pandey, D. K., & Kumar, R. 2024. Stock price crash risk research: current trends and future directions. *Journal of Risk Finance*, 25(5), 723–750. <https://doi.org/10.1108/JRF-12-2023-0331>
- Tian, X., Zhang, Z., Zhang, C., & Gao, M. 2022. Investor Attention, Analysts Coverage and Idiosyncratic Volatility Puzzle: Based on Behavioral Perspective. *International Journal of Emerging Markets*, 19(7), 1804–1838. <https://doi.org/10.1108/ijoem-02-2021-0289>
- Trepongkaruna, S., Sarajoti, P., & Korphaibool, V. 2025. Unlocking Synergies: Sufficiency Economy Philosophy for Sustainability. *Business Strategy and the Environment*, 34(3), 3446–3468. <https://doi.org/10.1002/bse.4151>
- Tyasari, A. A., & Ruliana, P. 2021. Model Komunikasi Corporate Dalam Membangun Citra Perusahaan. *Caraka Indonesian Journal of Communications*, 2(1), 27–42. <https://doi.org/10.25008/caraka.v2i1.54>
- UNDP. 2022. *The role of the private sector in achieving the SDGs*. <https://sdgfinance.undp.org/news-events/role-private-sector-achieving-sdgs>
- Vaio, A. D., Varriale, L., Lekakou, M., & Pozzoli, M. 2023. SDGs Disclosure: Evidence From Cruise Corporations' Sustainability Reporting. *Corporate Governance*, 23(4), 845–866. <https://doi.org/10.1108/cg-04-2022-0174>
- Wang, Y., Albitar, K., & Chbib, I. 2024. Connecting the Dots: A Systematic Review of Corporate Social Responsibility, Information Asymmetry, and Economic Implications. *Corporate Social Responsibility and Environmental Management*, 31(5), 5012–5031. <https://doi.org/10.1002/csr.2843>
- Yadav, S., Samadhiya, A., Kumar, A., Luthra, S., & Pandey, K. K. 2024. Environmental, Social, and Governance Reporting and Missing (M) Scores in the Industry 5.0 Era: Broadening Firms' and Investors' Decisions to Achieve Sustainable Development Goals. *Sustainable Development*, 33(3), 3455–3477. <https://doi.org/10.1002/sd.3306>
- Yang, X., Chen, Z. H. J., Feng, Y., Gao, X., & Koedijk, K. G. 2024. Corporate SDG performance and investor trading behavior. *Finance Research Letters*, 66. <https://doi.org/10.1016/j.frl.2024.105659>
- Yang, Y., & Li, X. 2024. Market Reaction to ESG Information Disclosure a Case Study of Midea Group. *Advances in Economics Management and Political Sciences*, 122(1), 6–13. <https://doi.org/10.54254/2754-1169/122/20242319>
- Zafra-Gómez, J. L., Olmo, J. C., Garrido-Rodríguez, J. C., & López-Hernández, A. M. 2025. The Politics of Transparency: Analyzing Online Information Disclosure in Spanish Municipalities. *Politics and Policy*, 53(3). <https://doi.org/10.1111/polp.70043>
- Zaman, R., Bahadar, S., & Mahmood, H. 2021. Corporate irresponsibility and stock price crash risk. *International Review of Finance*, 21(3), 786–820. <https://doi.org/10.1111/irfi.12296>
- Zhai, X., Ma, H., Zhang, Y., Wang, P., & Toh, M. Y. 2024. Institutional Investor Network and Idiosyncratic Volatility of Stocks. *Economics and Politics*, 36(3), 1261–1288. <https://doi.org/10.1111/ecpo.12289>
- Zhang, D., Wang, C., & Dong, Y. 2022. How Does Firm ESG Performance Impact Financial Constraints? An Experimental Exploration of the COVID-19 Pandemic. *European Journal of Development Research*, 35(1), 219–239. <https://doi.org/10.1057/s41287-021-00499-6>
- Zimon, G., Arianpoor, A., & Salehi, M. 2022. Sustainability Reporting and Corporate Reputation: The Moderating Effect of CEO Opportunistic Behavior. *Sustainability (Switzerland)*, 14(3). <https://doi.org/10.3390/su14031257>