



# Sustainability Reporting as a Catalyst: Investigating the Mediating Path Between Corporate Characteristics and SDGs

Luluk Muhimatul Ifada <sup>1✉</sup> and Lathfia Arrosikha Chafsya <sup>2</sup>

<sup>1</sup>Department of Accounting, Faculty of Economics, Universitas Islam Sultan Agung, Indonesia

<sup>2</sup>Student of Master of Accounting, Department of Accounting, Faculty of Economics, Universitas Islam Sultan Agung, Indonesia

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## ABSTRACT

**Purpose :** The research examines how LQ45 companies in Indonesia support sustainable practices by disclosing their SDGs.

**Method :** The method used is a panel data regression method: random effect. Using 131 samples unbalanced panel data from 2019 to 2022, this research uses 17 SDGs developed by the UN as its SDGs disclosure index.

**Findings :** The results show that LQ45 companies in Indonesia contribute more through company activities in accordance with SDG 8. This research also shows that SDGs disclosure gradually increased during the research sample period. In addition, this research finds that firm age and sustainability reporting have a positive influence on SDGs disclosure, while firm size does not affect SDGs disclosure.

**Novelty :** The research using Sustainability Reporting as a mediation to find the most effective strategy towards SDGs. This research also fulfilling the lack of empirical research on SDGs in developing countries since SDGs have become a global concern recently.

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## INTRODUCTION

Sustainable development has become a key concept in business and policy that reflects development in overcoming critical environmental issues (Apostu & Gigauri, 2023). Corporate sustainability refers to a company's responsibility to all stakeholders, which involves the entire community and the surroundings in which it is executed (Al-Qudah & Houcine, 2023). Globally, each country or region has different developments. Some countries have developed very well, whereas other countries are still in the early phases of development even could be considerably left (Gunawan et al., 2020). Companies have recently begun to participate in international agendas to achieve sustainable development (Pranugrahaning et al., 2023). Environmental sustainability has been considered an investment revolution (Khan et al., 2021) the objective of this study is to simultaneously investigate the effects of green innovation practices concerning the sustainable development goals (SDG and a major component of state development in most developed and developing countries (García-Arango et al., 2023).

The United Nations (UN) in 2015 proposed a new set of goals which are known as the Sustainable Development Goals (also known as the SDGs) in order to eliminate global inequality and enhance living standards worldwide consisting of a framework for achieving global sustainability from 2016 to 2030 (Elalfy et al., 2021). Statistics Indonesia on Human Development Index 2018 ranked Indonesia 116 out of 189 countries, and around 10.12% of the population lives below the poverty line (Gunawan et al., 2020). Furthermore, Indonesia's is needed to participate on the achieving the United Nations Sustainable Development Goals on environmental issues (Winarsih et al., 2022). This shows that it is necessary to conduct in-depth research on sustainable development and implementation of SDGs in Indonesia.

As of 2023, Indonesia's Human Development Index (HDI) has improved to 74.39, reflecting advancements in health, education, and living standards. In the context of the Sustainable Development Goals (SDGs), Indonesia has made significant progress, achieving 62% of the evaluable SDG indicators, positioning it among the most progressive countries in this regard. These improvements align with Indonesia's commitment to integrating SDGs into its national policies, focusing on key areas such as poverty eradication, quality education, gender equality, clean

\* E-mail: [luluk.ifada@unissula.ac.id](mailto:luluk.ifada@unissula.ac.id)

Address: Kampus 1 UNISSULA, Jl. Raya Kaligawe Km 10, Sekaran, Kecamatan Gading, Semarang, Jawa Tengah, Indonesia

energy, sustainable economic growth, and climate action. However, despite these achievements, challenges remain in ensuring comprehensive SDG implementation, particularly in addressing environmental concerns, economic disparities, and governance issues. The role of businesses, particularly publicly listed companies with strong financial influence, is crucial in accelerating SDG adoption (Anand et al., 2021).

Prior studies have examined the effect of SDGs to enhance corporate sustainability and increase corporate legitimacy. According to legitimacy theory, companies adopt global sustainability frameworks to maintain their legitimacy (Elalfy et al., 2021). According to Vijayvargy et al. (2017), firm size is potential to influence company practices, strategies, environmental performance, and company environmental activities. Larger firm size and older firm age tend to disclose more environmental information (Ghosh et al., 2023). There is limited literature regarding the relationship between firm size and firm age and sustainable development practices. Investigating these variables is crucial because firm size and firm age are key corporate characteristics that influence sustainability performance, strategic decision-making, and stakeholder engagement. Larger firms typically have more resources to implement sustainable practices, while older firms accumulate experience in managing environmental and social responsibilities. The latest study found a positive relationship between firm size and firm age to SDGs (Al-Qudah & Houcine, 2023; Ghosh et al., 2023), while other studies found the opposite (Kaawaase et al., 2022; Krasodomaska et al., 2023; Wahyuningrum et al., 2022).

This study is necessary since there is a lack of research studies on SDGs performance in Southeast Asian Countries, especially in developing countries such as Indonesia because its limited implementation (Muhardi et al., 2020). Governance arrangements in Indonesia have not been effective, so companies need to develop the SDGs regulations and governance structures to contribute to UN SDGs (Sari et al., 2022). Developing countries tend to experience difficulties in implementing SDGs due to inadequate readiness (Pramono et al., 2023). In addition, Bose & Khan (2022) revealed that companies in developing countries report higher SDGs compared to companies in developed countries. Therefore, to fill this gap, the study contributes to the prior literature by examining whether firm size and firm age affect SDGs in Indonesian firms listed on LQ45 index.

Prior study has shown firm size has led to a positive impact on SDGs (Al-Qudah & Houcine, 2023; Elalfy et al., 2021; Ghosh et al., 2023; Orazalin & Mahmood, 2018; Vijayvargy et al., 2017; Amanda & Na, 2024) and firm age has a positive impact on SDGs (Ditta & Mahmood, 2021). However, the relationship between these two variables is disagreeing the other studies. Firm size does not affect the disclosure of company SDGs (Wahyuningrum et al., 2022) and firm age was also found not to affect the disclosure of SDGs (Kaawaase et al., 2022).

This study aims to examine the relationship between firm size and firm age towards the SDGs. This study emphasizes prior research on SDGs by providing empirical data on the impact of firm size and firm age on SDGs using the latest data sets, and it contributes to the existing literature by investigating whether firm size and firm age have a significant effect on SDGs on the LQ45 index. This study focuses on companies listed in the LQ45 index because they represent leading firms in the Indonesian capital market. Companies included in this index have high market capitalization and liquidity, making them more attractive to investors and subject to greater public scrutiny. Due to their significant role in the economy, these companies are expected to set an example in sustainability practices and SDGs disclosure. Policymakers and decision-makers can use the research findings in developing strategies, investment plans, and national regulations that assist companies to achieve sustainability.

The novelty of this study lies in its exploration of Sustainability Reporting as a mediating variable between firm size, firm age, and SDGs disclosure, which has not been extensively examined in previous research, especially in the context of developing countries like Indonesia. Unlike prior studies that focused solely on the direct impact of firm characteristics on sustainability practices, this research introduces a mediating mechanism to better understand how companies integrate sustainability strategies. Moreover, this study provides empirical evidence using the latest dataset from LQ45 companies (2019-2022), filling the gap in SDGs disclosure research in emerging markets. Given the increasing global emphasis on sustainable business practices, this study contributes by offering insights into the role of corporate characteristics and sustainability reporting in achieving the SDGs, particularly for firms in highly regulated and publicly scrutinized markets.

According to legitimacy theory, there is a contract between the company and the local community, and the company has to establish legitimacy by achieving the community's expectations (Shamil et al., 2014). Legitimacy theory suggests that firms should adhere to societal expectations, norms, and rules for corporate sustainability (Lu et al., 2015). Legitimacy affects companies hence they need to optimize environmental performance and disclose their environmental information (Ifada et al., 2023). To avoid the social contract violation, companies must ensure their activities are constrained by social norms and show their activities do not violate any social norms to be accepted by the public (Anyigbah et al., 2023). Good company's reputation and environmental performance tend to increase their competitiveness and attract stakeholders (Ifada & Jaffar, 2023). Therefore, all company sectors are required to develop activities and performance measurement indicators related to environmental and social standards (Suhendi et al., 2022) and implement business rules to maintain legitimacy and improve company image (Elalfy et al., 2021).

Environmental issues still being an important topic in global economy (Ifada et al., 2021). Furthermore, environmental issues are a major challenges for companies. Environmental problems affect company activities and cause pollution to the community around the company as a result of company activities (Ifada & Indriastuti, 2021). So, it is important to have the right institutional framework and decision-making mechanism to overcome

environmental problems (Ifada et al., 2024). The growing over international environmental issues affect companies required to pay attention not only to financial performance but also non-financial performance such as responding to social and environmental (Al-Qudah & Houcine, 2023). Companies with higher social and environmental impacts or established in areas with high incentives to disclose environmental and social issues ought to more efforts to legitimize their role and required to report greater SDGs (Elalfy et al., 2021). Legitimacy theory tends to be reactive to stakeholder expectations (Elalfy et al., 2021) such as the adoption of SDGs by the UN discussed in this study.

Firm size is a crucial determinant in enhancing the quality of sustainability reporting. Larger companies are more visible to the public and face greater scrutiny from stakeholders, necessitating a more comprehensive disclosure of sustainability-related information (Orazalin & Mahmood, 2018). According to legitimacy theory, firms seek to align their activities with societal norms and expectations to maintain legitimacy (Suchman, 1995). Consequently, larger firms are expected to disclose more sustainability information to comply with regulatory pressures and public interest demands (Elalfy et al., 2021). Several studies support this notion, finding that firm size positively influences sustainability reporting due to increased stakeholder pressure and regulatory requirements (Rosati & Faria, 2019; Ifada et al., 2024).

Similarly, firm age plays a role in shaping sustainability reporting practices. Older firms accumulate more experience in sustainability management and stakeholder engagement, making them more likely to disclose extensive sustainability-related information (Orazalin & Mahmood, 2018). Through the lens of legitimacy theory, older companies have established reputations and are more inclined to maintain their legitimacy by complying with sustainability disclosure norms (Bridges & Eubank, 2020). Previous studies indicate that firm age positively affects sustainability disclosure, as older firms tend to be more aware of sustainability issues and adopt long-term strategies for responsible corporate practices (Amidjaya & Widagdo, 2020). This study suggests the following hypothesis:

**H<sub>1</sub>: There is a positive relationship between firm size and sustainability reporting**

**H<sub>2</sub>: There is a positive relationship between firm age and sustainability reporting**

Companies play a crucial role in achieving the Sustainable Development Goals (SDGs), particularly through their commitment to corporate sustainability. Larger firms are better positioned to integrate SDGs into their business strategies due to their extensive resources and stronger regulatory oversight (Elalfy et al., 2021). Furthermore, they are motivated to align their sustainability efforts with SDGs to enhance corporate reputation, minimize agency conflicts, and gain competitive advantages (Ifada et al., 2024). Studies have found that firm size is positively correlated with SDG adoption, as larger firms face greater societal and market expectations to contribute to sustainable development (Rosati & Faria, 2019; Al-Qudah & Houcine, 2023; Octavina et al., 2024).

Firm age also plays a significant role in SDG integration. Older firms tend to have well-established corporate governance structures and a historical commitment to sustainability, making them more likely to align with SDGs (Bridges & Eubank, 2020). These firms have accumulated knowledge and experience in managing sustainability issues and are more inclined to integrate SDGs into their long-term strategic planning. Empirical evidence supports this perspective, demonstrating that older firms are more engaged in sustainability initiatives compared to younger firms (Alsayegh et al., 2023). Based on this, the following hypothesis was developed:

**H<sub>3</sub>: There is a positive relationship between firm size and SDGs**

**H<sub>4</sub>: There is a positive relationship between firm age and SDGs**

Sustainability reporting (SR) plays a crucial role in corporate transparency by enabling firms to disclose their economic, environmental, and social performance, aligning their business practices with societal expectations in accordance with legitimacy theory (Orazalin & Mahmood, 2018). Through structured reporting, companies can measure, manage, and communicate their contributions to the Sustainable Development Goals (SDGs), ensuring better accountability and strategic alignment with sustainability objectives (Nicolò et al., 2023). Firms with strong sustainability reporting practices are more likely to integrate SDGs into their corporate governance, as transparency reduces information asymmetry and strengthens legitimacy. Additionally, sustainability reporting enhances corporate reputation, attracts responsible investors, and fosters long-term business resilience (Amidjaya & Widagdo, 2020). Prior research has confirmed the positive influence of sustainability reporting on various corporate outcomes, including corporate governance (Ifada & Saleh, 2023) and financial performance (Laskar, 2018). While theoretical perspectives suggest a strong connection between sustainability reporting and SDGs (Ditta & Mahmood, 2021), empirical research on this relationship remains limited (Alsayegh et al., 2023). Therefore, this study proposes the following hypothesis:

**H<sub>5</sub>: There is a positive relationship between sustainability reporting and SDGs**

Based on legitimacy theory, larger and older firms face greater pressure to disclose sustainability information to maintain legitimacy. Larger firms are subject to higher public scrutiny and regulatory expectations, making sustainability reporting a strategic tool to enhance transparency, mitigate reputational risks, and strengthen stakeholder relationships (Elalfy et al., 2021). Older firms, with their accumulated experience in sustainability management,



tend to adopt more comprehensive sustainability reporting as a means to reinforce their long-term commitment to sustainable development (Orazalin & Mahmood, 2018). Prior studies suggest that sustainability reporting helps firms align with global sustainability standards, fostering corporate accountability and improving stakeholder trust (Amidjaya & Widagdo, 2020; Ditta & Mahmood, 2021).

Sustainability reporting serves as a crucial link between firm characteristics and SDG integration by promoting transparency and reducing information asymmetry (Rosati & Faria, 2019). Empirical evidence indicates that firms with structured sustainability reporting are more likely to integrate SDGs into their corporate strategies, thereby reinforcing their contributions to economic, social, and environmental sustainability (Alsayegh et al., 2023). Thus, sustainability reporting is expected to mediate the relationship between firm size, firm age, and SDGs, acting as a bridge that connects corporate sustainability efforts with global development objectives.

By incorporating sustainability reporting as a mediating variable, this study aims to provide a deeper understanding of how firm characteristics shape sustainability practices. The mediating role of sustainability reporting is critical because it reflects a firm's commitment to sustainability beyond financial performance, reinforcing the company's long-term alignment with SDGs. Therefore, this study also added the mediating effect of sustainability reporting and formulated with the following hypothesis:

**H<sub>6</sub>: Sustainability Reporting Mediates the Relationship Between Firm Size and Sustainable Development Goals**

**H<sub>7</sub>: Sustainability Reporting Mediates the Relationship Between Firm Age and Sustainable Development Goals**

## RESEARCH METHODS

This research uses quantitative techniques by collecting sustainability reports and annual report from Indonesia Stock Exchange (IDX) and the official website of Indonesian firms listed in the LQ45 index from 2020 to 2022. The selection of LQ45 companies as the research sample is based on their high market capitalization, liquidity, and investor attractiveness, making them key players in Indonesia's capital market. Companies listed in the LQ45 index are considered industry leaders with strong financial performance and a high level of public scrutiny. As such, these firms are expected to set an example in sustainability practices, SDGs disclosure, and corporate governance.

The relevance of this study to LQ45 companies lies in the increasing demand for transparency and accountability from investors, regulators, and stakeholders. Given their significant influence on Indonesia's economy, LQ45 firms face greater pressure to adopt sustainability reporting (SR) and align their business strategies with SDGs. However, despite their prominence, variations still exist in the extent to which these companies disclose sustainability information, particularly regarding SDGs and GRI reporting. This study aims to investigate whether firm age influences SDGs disclosure through sustainability reporting, addressing the gap in understanding how experienced firms in LQ45 contribute to sustainable development. The data were collected through manual content analysis (Alsayegh et al., 2023). based on sustainability reports and annual reports. The literature study method also used in this research which involves collecting data from journals and articles related to firm size, sustainability reports, and SDGs.

Table 1 presents the distribution of the research sample, outlining the selection process of LQ45 companies from 2019 to 2022. Initially, the population consisted of 180 firm-year observations from 45 companies over four years. However, several exclusion criteria were applied to ensure data reliability, resulting in a final sample of 131 firm-year observations. Specifically, 25 companies were excluded for not publishing sustainability reports, 12 companies were removed due to the absence of SDGs-related disclosures, and another 12 companies were eliminated for not reporting Global Reporting Initiative (GRI) information. This rigorous selection process ensures that the dataset used in this study is relevant, accurate, and aligned with the research objectives. Meanwhile, Table 2 describes the variables and indicators used in this study, including firm size, firm age, sustainability reporting, and SDGs disclosure, along with their respective measurement references. These tables serve as the foundation for the empirical analysis, ensuring a structured and transparent approach to data collection and variable definition.

This study used statistical descriptive tests to examine the data collected to determine the extent to which companies in the LQ45 index fulfill the SDGs goals. Some tests such as normality and multicollinearity tests also

**Table 1.** Distribution of Research Sample

Description	Number
Population: Companies in the LQ45 Index for the 2019-2022 period (45 x 4)	180
Companies that do not publish a sustainability report	25
Companies that do not provide SDGs informatio	12
Companies that do not provide GRI information	12
Total research sample	131

**Table 2.** Research Variables and Indicators

Variable	Indicator	Reference
Sustainable Development Goals	SDG = Number of Disclosed Items / 17 Disclosure Items SDGs	(Gunawan et al., 2020; Khan et al., 2021; Lehenchuk et al., 2023)
Firm Size	Size = ln (Total Assets)	(Aggarwal & Singh, 2019; Arena et al., 2023)
Firm Age	Firm Age = Current Year - Establishment Year	(Orazalin & Mahmood, 2018)
Sustainability Reporting	GRI = GRI Disclosure Average Score / 122 Total Items GRI 2021	(Amidjaya & Widagdo, 2020; Anyigbah et al., 2023; Ditta & Mahmood, 2021)

conducted before running the regression analysis test. This study used panel data for four years. Therefore, panel data regression analysis methods were carried out. To test the effect of intervening variables, this study used the Sobel test. The regression equation in this study is shown by equation 1 and 2.

$$SR_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 AGE_{it} + \varepsilon \quad \dots\dots\dots 1$$

$$SDGs_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 AGE_{it} + \beta_3 SR_{it} + \varepsilon \quad \dots\dots\dots 2$$

where:

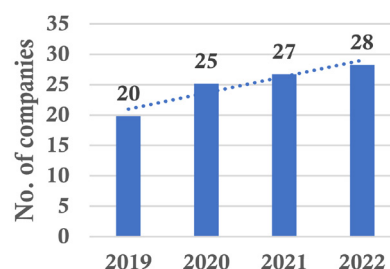
- SR : Sustainability Reporting;  
SDGs : Sustainable Development Goals;  
SIZE : Firm Size;  
AGE : Firm Age;  
 $\alpha$  : Constanta;  
 $\beta_1, \beta_2$  : Independent Variables Unidentified Parameters;  
 $\varepsilon$  : Standard Error;  
i : Firm; and  
t : Period.

## RESULTS AND DISCUSSIONS

By using 131 samples from LQ45 indexed companies from 2019 to 2022, the result found that every year LQ45 companies in Indonesia are increasingly aware of the need for disclosure of company SDGs due to the increasing number of companies that disclose SDGs (Figure 1). Following legitimacy theory, the increasing percentage of SDGs disclosure in LQ45 companies from 2019 to 2022 indicates a growing awareness and commitment to sustainable business practices. This trend reflects the rising pressure from stakeholders, including investors, regulators, and the public, for greater corporate transparency in sustainability initiatives (Ifada et al., 2023). The gradual increase in SDGs disclosure suggests that companies are recognizing the importance of aligning their operations with global sustainability goals to enhance their reputation and maintain legitimacy.

Additionally, the influence of regulatory developments and the adoption of global sustainability frameworks, such as the Global Reporting Initiative (GRI) and Task Force on Climate-related Financial Disclosures (TCFD), have encouraged firms to integrate SDGs into their reporting structures. The higher disclosure rates also indicate a shift in corporate priorities, where sustainability is no longer viewed as an optional corporate responsibility but as a strategic necessity to remain competitive in the market. Al-Qudah & Houcine (2023) This trend aligns with global movements towards ESG (Environmental, Social, and Governance) integration, where companies that proactively disclose their sustainability initiatives gain stronger investor confidence and public trust.

The results show that the five most disclosed Sustainable Development Goals (SDGs) among LQ45 compa-



**Figure 1.** SDGs Disclosure on LQ45 from 2019 - 2022  
Source: Author analysis

**Table 3.** Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Sustainable Development Goals	131	72.88	21.61	23.53	100.00
Firm Size	131	30.03	4.24	20.87	35.23
Firm Age	131	54.62	32.58	7	163
Sustainability Reporting	131	54.10	16.52	25.68	95.08

nies in Indonesia varied slightly over the years. In 2022, the most frequently disclosed SDGs were SDG 8 (Decent Work and Economic Growth), SDG 3 (Good Health and Well-being), SDG 7 (Affordable and Clean Energy), SDG 13 (Climate Action), and SDG 4 (Quality Education) (Ferrero-Ferrero et al., 2023). In 2021, the top disclosed SDGs were relatively similar, with SDG 8, SDG 3, and SDG 13 remaining dominant, while SDG 12 (Responsible Consumption and Production) and SDG 9 (Industry, Innovation, and Infrastructure) also appeared prominently. In 2020, SDG 13 and SDG 12 gained significant attention due to the growing focus on environmental sustainability during the COVID-19 pandemic, alongside SDG 8 and SDG 3, which remained among the most disclosed (Fonseca & Carvalho, 2019). In 2019, SDG disclosure was lower overall, but the most frequently reported goals included SDG 8, SDG 12, SDG 9, and SDG 4 (Zampone et al., (2024). This trend suggests that while SDG 8 (Economic Growth and Employment) consistently received the highest disclosure across all years, the focus on other SDGs evolved based on global and local economic conditions, regulatory changes, and corporate sustainability strategies.

Based on the results of the study, the disclosure of SDGs in each goal has increased from 2019 to 2022. The most widely expressed goal by LQ45 companies from 2019 to 2022 is SDG 8. This shows that the company pays great attention and contributes to this goal. The company strives to create a healthy and decent working environment for all employees and realize economic growth for the company and the country through employment and investment.

The least disclosed Sustainable Development Goals (SDGs) among LQ45 companies from 2019 to 2022 were SDG 2 (Zero Hunger) and SDG 14 (Life Below Water). This limited disclosure indicates that companies perceive these goals as less directly relevant to their core business activities. SDG 2 (Zero Hunger) primarily focuses on food security, nutrition, and sustainable agriculture, which are typically considered governmental responsibilities rather than corporate obligations (PwC, 2018). As a result, companies outside the agriculture and food sectors may not prioritize this goal in their sustainability reporting. Meanwhile, SDG 14 (Life Below Water), which emphasizes marine conservation, is often overlooked because many LQ45 companies do not operate in industries directly affecting marine ecosystems.

Additionally, sustainability initiatives related to marine conservation tend to be less visible and less demanded by stakeholders, leading companies to focus on SDGs that offer greater financial and reputational benefits, such as economic growth (SDG 8) and climate action (SDG 13). The lack of clear regulatory requirements and incentives for reporting on SDG 2 and SDG 14 may further contribute to their low disclosure rates. This pattern suggests that while companies are increasingly adopting sustainability practices, they tend to prioritize SDGs that align with their industry-specific impacts and stakeholder expectations. In accordance with Gunawan et al. (2020) that the less disclosed goals by companies in Indonesia are SDGs 14, 2, and 17. Contributions to SDG 14 are also underappreciated by companies in Malaysia (Sachs et al., 2021). PwC (2019) also observed that SDGs 14 and 15 were the least expressed goals in countries.

Based on statistical descriptive data (Table 3), the SDGs disclosure among LQ45 companies has an average value of 72.88%, with a minimum of 23.53% and a maximum of 100%, indicating that while some companies fully disclose their SDG-related initiatives, others provide minimal information. In terms of firm size, the average company size (measured as the natural logarithm of total assets) is 30.03, with a minimum of 20.87 and a maximum of 35.23, showing significant variation in the financial capacity of firms to support sustainability initiatives. Meanwhile, firm age (measured as the difference between the current year and the year of establishment) has an average of 54.62 years, with the youngest company being 7 years old and the oldest 163 years old. These statistics suggest that while older and larger firms generally have the capacity and resources to enhance sustainability reporting, the extent of SDGs disclosure still varies across companies, potentially influenced by industry differences, corporate policies, and external regulatory pressures.

**Table 4.** Multicollinearity Test

Variable	Model I		Model II	
	VIF	1/VIF	VIF	1/VIF
AGE	1.01	0.992228	1.12	0.895782
SIZE	1.01	0.992228	1.08	0.925273
SR	-	-	1.17	0.857815
Mean VIF	1.01		1.12	

**Table 5.** Regression Results

Variables	Model I	Model II
SIZE	-2.168 (0.760)	1.453** (0.024)
AGE	8.788*** (0.000)	0.185** (0.032)
SR		0.296*** (0.001)
Constant	-111.6	2.629
Observations	131	131
R-squared	0.510	
Number of ID	47	47
Hausman test	0.0000	0.1990
Chow test	0.0000	
Lagrange Multiplier test		0.0000

p-value in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6.** Sobel Test

	Model I	Model II
A	-2.167761	8.788141
S <sub>a</sub>	7.08807	0.8369434
B	0.2959044	0.2959044
S <sub>b</sub>	0.0909615	0.0909615
Sobel Test	-0.30449	3.107365

Table 4 presents the multicollinearity test results for Model I and Model II, evaluated using the Variance Inflation Factor (VIF). A VIF value below 10 indicates that there is no serious multicollinearity issue among the independent variables. In Model I, the VIF values for AGE and SIZE are both 1.01, with an average VIF of 1.01, suggesting that multicollinearity is not a concern in this model. In Model II, the VIF values for SR, AGE, and SIZE are 1.17, 1.12, and 1.08, respectively, with a mean VIF of 1.12. These values are still well below the threshold of 10, confirming that there is no multicollinearity issue in Model II either. Thus, based on the multicollinearity test, all independent variables in both models are statistically independent, meaning that they do not exhibit excessive correlation, ensuring the validity of the regression analysis.

Table 5 shows the results of the regression test, this study used an unbalanced sample of panel data from 2019 to 2022. Three different panel data regression methods were carried out to obtain the best model, namely the common effect, fixed effect, and random effect models (Rizkallah, 2023). In model I, the result of the Hausman test is 103.16 with a probability value of 0.0000 and the result of the Chow test obtained is 5.39 with a probability value of 0.0000. To determine the most appropriate panel data regression model, this study conducted three model selection tests: Chow test, Hausman test, and Lagrange Multiplier test. For Model I, the Chow test result was 5.39 with a p-value of 0.0000, leading to the selection of the Fixed Effect Model as the most suitable model. Meanwhile, for Model II, the Chow test resulted in a p-value greater than 0.05, indicating that the Pooled OLS model is preferable over the Fixed Effect model. However, the Hausman test result (p-value = 0.1990) suggests that the Random Effect Model is more appropriate than the Fixed Effect Model. Additionally, the Lagrange Multiplier (LM) test (p-value = 0.0000) confirmed that the Random Effect Model is superior to the Pooled OLS model. Therefore, the most appropriate model used in Model II is the Random Effect Model.

Table 6 presents the Sobel test results for Model I and Model II, which assess the significance of the mediation effect in the proposed models. The Sobel test examines whether the indirect effect of the independent variable on the dependent variable through a mediator is statistically significant. In Model I, the Sobel test statistic is -0.30449, indicating a weak or non-significant mediation effect. Conversely, Model II shows a Sobel test statistic of 3.107365, suggesting a significant mediation effect since the value is relatively high. The values of A and S<sub>a</sub> (coefficients and standard errors of the first path) and B and S<sub>b</sub> (coefficients and standard errors of the second path) further support the stronger mediation role in Model II compared to Model I. These results indicate that mediation is more pronounced in Model II, likely due to stronger relationships among the variables in that model.

### Firm Size and Sustainability Reporting

The results of model I show that SIZE has an insignificant value because its significance value is 0.760 or has no effect on SR. This contradicts legitimacy theory which states that larger companies will disclose more sustainability information to increase legitimacy. According to Wahyuningrum et al. (2022), companies with larger sizes tend to have a desire to hide information containing relevant values to avoid political cost pressures in laws and tax increases as well as pressure to carry out social responsibility. Therefore, the company's management prefers to disclose information voluntarily and as necessary. In addition, sustainability reporting in Indonesia is also still voluntary, so some companies still consider sustainability reporting not something that must be published. The results of this study are in line with the research of Dissanayake et al. (2019) and Haladu & Bin-Nashwan (2022), that the size of the company does not affect the breadth of information reported in sustainability reports. In addition,



Wahyuningrum et al. (2022) also found that company size did not have a significant influence on sustainability reports. These results reinforce Ezhilarasi & Kabra (2017), that companies with larger sizes will spend less money on environmental protection and other disclosure practices.

### **Firm Age and Sustainability Reporting**

AGE has a significance value of 0.0000 or has a positive and significant effect on SR. This means that the older the company, the higher the level of disclosure related to environmental information in sustainability reports. The results of this study are in line with Correa-Garcia et al. (2020) and Siahaan et al. (2020) that there is a positive relationship between company age and sustainability reporting. According to Correa-Garcia et al. (2020), a company's age can help companies improve sustainability quality and voluntary disclosure practices on sustainability reports. In accordance with legitimacy theory, company age becomes a significant factor in influencing the quality of sustainability reports because older companies tend to have better sustainability practices because they have wider experience (Orazalin & Mahmood, 2018). It also adds that older companies tend to report more sustainability information.

### **Firm Size and SDGs**

The results of model II showed that SIZE had a significance value of 0.024 or had a positive and significant effect on SDGs. That is, the size of the company has a significant positive effect on the disclosure of the company's SDGs. Following the concept of legitimacy theory, companies with larger sizes have a higher potential to integrate SDGs than companies with smaller sizes (Elalfy et al., 2021). The results of this study are in line with the results of Al-Qudah & Houcine's (2023) which found that the larger the size of the company, the stronger the relationship between corporate social responsibility and the company's economic performance. In addition, Lau & Wong (2023) found that the size of the company has a positive influence on the implementation of SDGs and has a positive impact on the extent of integration of SDGs into corporate sustainability management. Rosati & Faria (2019) also found that SDGs disclosure is related to larger company sizes.

### **Firm Age and SDGs**

AGE has a significance value of 0.032 or has a positive and significant effect on SDGs. This is in line with Bridges & Eubank (2020), that older companies have more awareness of the importance of paying attention to sustainable development issues compared to companies with a younger age. Companies with older age have experience in dealing with stakeholders, one of which is by prioritizing corporate sustainability through the disclosure of SDGs. The results of this study support the opinion of Al-Qudah & Houcine (2023) that the company's characteristics lead to sustainable development goals. In addition, Melloni et al. (2020) also found that company age is an important major factor in determining SDGs disclosure.

### **Sustainability Reporting and SDGs**

SR has a significance value of 0.001 or has a positive and significant effect on SDGs. This proves that sustainability reports play an important role for organizations to contribute to the company's sustainable development (Orazalin & Mahmood, 2018). The results of this study are also in line with the legitimacy theory that disclosure of detailed sustainability information can improve company's reputation, increase legitimacy, reduce information asymmetry, and improve corporate image. This research supports previous research, namely Ditta & Mahmood (2021) that sustainability reports have a positive impact on sustainable development goals. In line with this, Rosati & Faria (2019) revealed that disclosure of information related to environment and sustainability can be a form of support for companies in planning, implementing, measuring, and communicating their contribution to the SDGs. According to Lau & Wong (2023), promoting SDGs disclosure through sustainability reporting can influence the business world to contribute to sustainable development.

### **Sustainability Reporting Mediates the Relationship Between Firm Size and Sustainable Development Goals**

The Sobel test results in Model I yielded a value of -0.3045 ( $< 1.96$ ), indicating that sustainability reporting (SR) does not mediate the relationship between firm size (SIZE) and Sustainable Development Goals (SDGs). These findings suggest that firm size does not influence a company's SDGs contribution through sustainability reporting. From a theoretical perspective, this result contradicts legitimacy theory, which posits that larger firms should disclose more sustainability-related information to maintain legitimacy and align with societal expectations (Elalfy et al., 2021). Larger firms are often subject to greater scrutiny and are expected to demonstrate transparency in their sustainability initiatives. However, the absence of a mediating effect suggests that firm size influences SDGs disclosure through other mechanisms, such as direct corporate policies or strategic CSR initiatives, rather than through sustainability reporting.

These findings align with Wahyuningrum et al. (2022), who argue that large firms may prefer selective disclosure strategies, avoiding extensive sustainability reporting to minimize potential regulatory and political costs. Additionally, given that sustainability reporting in Indonesia is still largely voluntary, some large firms may not view



it as a crucial mechanism for communicating their sustainability efforts. This perspective is supported by studies like Dissanayake et al. (2019) and Haladu & Bin-Nashwan (2022), which found no significant relationship between firm size and sustainability disclosure practices.

### Sustainability Reporting Mediates the Relationship Between Firm Age and Sustainable Development Goals

The Sobel test results in Model II yielded a value of 3.1074 ( $> 1.96$ ), indicating that sustainability reporting (SR) significantly mediates the relationship between firm age (AGE) and Sustainable Development Goals (SDGs). This suggests that older firms not only directly influence SDGs disclosure but also do so indirectly through sustainability reporting. From a theoretical perspective, this finding aligns with legitimacy theory, which posits that older companies have greater institutional experience, stakeholder relationships, and a deeper understanding of sustainability expectations. As firms age, they accumulate experience in addressing environmental, social, and governance (ESG) concerns, leading to more comprehensive sustainability reporting that enhances their legitimacy (Orazalin & Mahmood, 2018). The mediating effect of sustainability reporting suggests that older firms use structured disclosures as a strategic tool to communicate their sustainability efforts and reinforce their commitment to SDGs (Ditta & Mahmood, 2021).

This finding is consistent with prior research. Correa-Garcia et al. (2020) and Siahaan et al. (2020) found a positive association between firm age and sustainability reporting, arguing that older firms have developed reporting practices over time to meet stakeholder expectations. Melloni et al. (2020) also emphasized that firm age plays a crucial role in shaping corporate sustainability policies, as older firms tend to have well-established frameworks for ESG disclosure.

### CONCLUSIONS

This study found that firm size does not influence sustainability reporting, contradicting legitimacy theory, which suggests that larger firms disclose more sustainability information to enhance legitimacy. However, firm size positively affects SDGs disclosure, indicating that larger companies may prioritize SDGs reporting in annual reports rather than detailed sustainability reports. In contrast, firm age significantly influences both sustainability reporting and SDGs disclosure, implying that older firms, with greater experience and awareness, tend to provide more extensive sustainability disclosures. Additionally, sustainability reporting mediates the relationship between firm age and SDGs disclosure but does not mediate the relationship between firm size and SDGs disclosure, reinforcing the role of corporate experience in sustainability practices.

This study has several limitations, including the use of a sample limited to LQ45 companies from 2019 to 2022, a reliance on manual content analysis that may introduce subjectivity, and an absence of sectoral comparisons in SDGs disclosure. Future research should consider expanding the sample to other indices in the Indonesia Stock Exchange, validating SDGs and sustainability reporting measurements with independent experts, and incorporating qualitative methods to gain deeper insights. Additionally, further studies could explore stakeholder characteristics as a potential moderating variable in SDGs disclosure and assess corporate compliance with sustainability reporting regulations in Indonesia.

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