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# INFLUENCING FACTORS ON SUSTAINABILITY REPORTING QUALITY BASED ON SUSTAINABLE DEVELOPMENT GOALS (SDGS) CONSIDERING COVID-19

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**Abstract.** In 2020, the major companies in the Asia Pacific region faced challenges in sustainability performance reporting, primarily attributed to disruptions caused by the COVID-19 pandemic. This crisis compelled companies to reassess their sustainability goals. This study aims to analyze the relationship between *corporate governance* and corporate characteristics such as industry type and government ownership of *sustainability reporting quality* based on *sustainable development goals* (SDGs) with a population of 200 companies in ASEAN countries, including Indonesia, Malaysia, Thailand, and the Philippines, listed on each country's stock exchange. The research sample consisted of 84 companies selected through purposive sampling. The hypothesis testing model employed a multiple linear regression method and utilized the panel data regression analysis approach. The findings indicate that the three corporate governance components examined in this research board independence, audit committee, and managerial ownership, along with government ownership do not exert a significant influence on sustainability reporting quality based on the seventeen SDGs goals. Furthermore, we believe that this research is very important to be carried out in Indonesia, given that environmentally sensitive industries face the risk of environmental damage and therefore need legitimacy to maintain their operations, demonstrated through sustainability report reporting.

**Keywords:** corporate governance, environmentally polluting industries, government ownership, sustainability reporting quality, sustainable development goals (SDGs).

**JEL Classification:** G34, M41, Q56.

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## 1. Introduction

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development Goals (SDGs), comprising 17 global goals and 169 expected targets achievable by 2030. Explicitly, the SDGs aim to address issues such as poverty, hunger, inequality, water and energy management, and urgently combat climate change. This agenda received approval from 193 countries, including ASEAN member nations. Within ASEAN, the ASEAN Economic Community (AEC) 2025 has been established as part of efforts to enhance the economic landscape in ASEAN countries.

The UN's 2030 Agenda has become a central issue in ASEAN's vision. Such an approach is essential for accelerating the achievement of the SDGs. The implementation of sustainable practices by companies in pursuit of the SDGs is evident in sustainability reports produced and disclosed by companies like That Alone (PWC, 2018). According to survey results, 72% of companies mention SDGs in their reports, with 60% highlighting it in Sustainability Reports

and 40% in annual reports. Sustainability reporting (SR) combines both financial and non-financial parameters. As per the Global Reporting Initiative (GRI), SR provides a comprehensive description of the economic, environmental, and social impacts resulting from a company's daily activities, demonstrating the company's commitment to a sustainable global economy.

Numerous companies worldwide have engaged in SR (Larrinaga & Bebbington, 2021; Ehnert et al., 2016; Junior et al., 2014). This reporting aids organizations in measuring and communicating economic, environmental, social, and governance performance. In 2021, the largest companies in the Asia Pacific region reported poor sustainability performance in 2020 due to disruptions caused by the COVID-19 pandemic. Analysis by Wang and Huang (2021) indicates that COVID-19 had a negative impact on the 17 SDGs, emphasizing the urgency of implementing the 2030 agenda. Moreover, COVID-19 has hit the entire world and resulted in a pandemic that affects health and has a global, regional, and domestic impact on social, economic,

and environmental conditions (United Nations, 2020). It forces the disclosure of the ESG (environmental, social, and governance) to be higher on the corporate agenda because companies are trying to convince stakeholders that management takes worker and community safety seriously. In addition, its impact has affected progress toward UN Sustainable Development Goals (UN SDGs) or agenda 2030 (Suriyankietkaew & Nimsai, 2021). According to an Eco-Business article in 2020, the largest companies in the Asia Pacific region experienced poor sustainability performance reporting 2020 due to the disruption caused by the COVID-19 pandemic, which forced companies to rethink their sustainability goals. Based on an analysis by Wang and Huang (2021), COVID-19 has negatively impacted the 17 SDGs, making the urgency of implementing the 2030 agenda a priority (Wang & Huang, 2021; Coccia, 2021).

In improving the quality of a business's sustainability reporting, the role of the company's internal staff is needed to facilitate sustainable business behavior (Thompson et al., 2022; Alam & Kabir, 2013; Wijayana & Kurniawati, 2018), for example, good corporate governance. Good corporate governance is essential for the financial sector, and if companies donot implement good corporate governance, it will lead to economic crises (Hopt, 2013). Previous studies have stated that pressure arising from corporate governance (CG) mechanisms can limit the possibility of short-term opportunistic behavior, such as preventing managers from using reports solely to legitimize poor Corporate Sustainability Performance (CSP). This will undoubtedly increase Sustainability Reporting Quality (Junior et al., 2014). ASEAN has an assessment of corporate governance called the ASEAN Corporate Governance Scorecard (ACGS). ACGS is part of the ASEAN Capital Market Forum (ACMF) initiative, the ASEAN capital market regulator forum, in measuring corporate governance with international standards for ASEAN countries (Wong et al., 2016).

To enhance transparency in SR reporting, governments and central banks in ASEAN have emphasized the importance of financing sustainability and urged financial institutions to incorporate Environmental, Social, and Governance (ESG) factors into their business operations. Quality sustainability reporting is crucial, especially considering environmental challenges. Faced with pressures related to environmental and social issues such as climate change, social inequality, and high poverty levels, investors and stakeholders increasingly demand companies to be accountable for the impacts of their decisions and activities on the environment and society (Manning et al., 2019). Therefore, transparent and high-quality sustainability reports are essential for management to increase investor and stakeholder confidence.

Improving the quality of business continuity reporting requires an internal role within the company to facilitate sustainable business practices. Good corporate governance is crucial for the financial sector, as the absence of it may lead to financial crises. Previous studies suggest that corporate governance mechanisms can limit opportunistic behaviors in the short term, preventing managers from

using reports solely to legitimize poor Corporate Sustainability Performance (CSP) (Nuskiya et al., 2021; Correa-Garcia et al., 2020; Dewi & Pitriasari, 2019).

ASEAN employs an assessment of corporate governance known as the ASEAN Corporate Governance Scorecard (ACGS). ACGS is part of the ASEAN Capital Market Forum's (ACMF) initiative, aiming to measure new corporate governance standards for ASEAN countries against international benchmarks.

**Table 1.** 2020 ACGS Rankings (source: Asian Corporate Governance Association, 2020)

No.	Country	Total (%)
1	Singapore	63.2
2	Malaysia	59.5
3	Thailand	56.6
4	Philippines	39.0
5	Indonesia	33.6

Table 1 show the survey conducted by the Asian Corporate Governance Association (ACGA, 2020) reveals that Malaysia has the highest Corporate Governance score among ASEAN emerging markets, with a score of 59.5, while Indonesia has the lowest score at 33.6%. In Indonesia, companies vary in their awareness of the importance of governance; some demonstrate very high awareness, while others still have insufficient awareness. Consequently, Indonesia lags far behind other ASEAN countries (Solomon, 2013). The implementation of governance mechanisms in listed Indonesian companies faces numerous challenges, one of which is the weak implementation of corporate governance, contributing to financial crises (Harijono & Tanewski, 2012).

Investor and stakeholder interest has compelled companies in Indonesia to enhance transparency in reporting sustainability. Transparent and high-quality sustainability reporting is crucial for building and maintaining investor and stakeholder confidence. The level of quality in sustainability reporting hinges on the openness of the report content. Investors particularly demand information related to Sustainable Development Goals (SDGs). Additionally, pressure from corporate governance is suspected to impact sustainability reporting quality.

This research will explore other factors suspected to affect Sustainability Reporting Quality (SRQ), such as government ownership and environmentally polluting industries, based on previous studies (Kumar et al., 2021; Adel et al., 2019; Tsalis et al., 2020). This research differs from Kumar et al. (2021), which uses ESG parameters in calculating sustainability reporting. Instead, this study focuses on the objective of Sustainable Development Goals (SDGs) and scores reporting continuity based on SDGs goals, mapped from the GRI standards. The research aims to address economic, social, and environmental challenges and compare the periods before and during the COVID-19 pandemic in four ASEAN emerging market countries with the highest GDP: Indonesia, Malaysia, Thailand, and the

Philippines. The study also includes members of the Network for Greening the Financial System (NGFS), a network of central banks and financial supervisors dedicated to accelerating green finance and developing the role of central banks in addressing climate change.

The primary objective of this research is to analyze the connection between corporate governance and company characteristics, such as industry type and government ownership, and Sustainability Reporting Quality based on SDGs. Given the background of the problem, the research aims to empirically demonstrate whether corporate governance, environmentally polluting industries, and government ownership influence Sustainability Reporting Quality based on SDGs for companies in ASEAN emerging markets before and during the COVID-19 pandemic, with control variables including firm size and GDP.

This study is structured to first explain the relationship between corporate governance, environmentally polluting industries, and government ownership of Sustainability Reporting Quality based on SDGs. Next, hypotheses are formulated concerning the stakeholders' interest in the company's continuity and management's responsibility to disclose information related to social and environmental issues. The research methodology involves a quantitative approach, utilizing linear regression analysis and panel data. The results will be presented based on empirical data, followed by a discussion of the findings. The study will conclude by addressing limitations and suggesting potential future research directions.

## 2. Literature review and hypothesis development

### 2.1. Literature review

**Agency Theory** An agency relationship can be information asymmetry (Boučková, 2015). Information asymmetry arises due to an imbalance of information held by one party (manager) compared to the other (shareholders). A manager has an authorized party to manage the company and will undoubtedly have more detailed information regarding the Company's operations and prospects than shareholders (Jensen & Meckling, 1976). Managers are obliged to provide information to shareholders regarding the company's condition. However, the information is sometimes inaccurate and does not reflect the company's actual state. This situation is called information asymmetry. The problem of information asymmetry can be addressed by parties who can align the interests of all stakeholders and management. This party is known as Corporate Governance. Corporate Governance can be a tool for principals to reduce agency problems caused by agents or management (Idawati, 2017). With the opening of information, agency problems will be diminished, and the company's value will also increase (Siagian et al., 2013). A sustainability report is one of the information disclosures stakeholders require (Amidjaya & Widagdo, 2020). From this explanation, it can be concluded that agency theory is the appropriate theory

to explain research on corporate governance.

**Legitimacy Theory** posits that a company does not exist in isolation but is instead interconnected with external entities such as the community and stakeholders (Dowling & Pfeffer, 1975). To gain legal legitimacy from the community, companies must adhere to and implement norms and regulations. Communication becomes a pivotal means for companies to meet external requests for information. Legitimacy Theory, as elucidated by Suchman (1995), emphasizes that management legitimacy is built on communication between the organization and its stakeholders. Sustainability Reporting is a vehicle for disclosing information about the environment, aligning with the expectations of external parties like the community, customers, and stakeholders.

In assessing sustainability reporting quality, researchers leverage Legitimacy Theory to support hypotheses involving variables such as environmentally polluting industries and government ownership. These variables are instrumental in helping companies obtain legitimacy and public approval to operate. Existing studies (Al-Shaer, 2020; Aditya & Sinaga, 2021; Cicchiello et al., 2021; Maali et al., 2021; Romero et al., 2019; Heizer et al., 2017) conclude that companies sensitive to the environment provide more information than those with minimal environmental impact. Government-owned companies are believed to have stronger sustainability reporting procedures (Muttakin & Subramaniam, 2015). Sustainability Reporting serves as a tool for companies to communicate the economic, social, and environmental impacts of their activities to the public. It reduces managerial opportunism and unethical income manipulation. However, the mere existence of a sustainability report does not guarantee information quality. Therefore, the establishment of standardized reporting is essential. The Global Reporting Initiative (GRI), established in 1999, is the most widely accepted reporting standard. GRI aims to facilitate understanding and communication of global impact regarding sustainability issues (GlobeScan & GRI, 2020).

The Sustainable Development Goals (SDGs), introduced by the United Nations in 2015, provide a framework for global sustainability objectives by 2030. In a PWC study (2018), approximately 60% of companies across different industries touched on the SDGs in their reports. Corporate Governance, as defined by the Organization for Economic Co-operation and Development (Elalfy et al., 2020) involves a series of connections between company management, the board of directors, shareholders, and other stakeholders. Good corporate governance is seen as essential for company success, especially in addressing social and environmental concerns. The subsequent sections of this paper delve into integrated reporting, environmental reputations, and their impact on comprehensive decision-making by non-professional investors. Hypotheses are formulated, and the experimental design is outlined. Statistical results are presented, followed by a discussion of the findings, including the study's limitations and potential avenues for future research.

Corporate Governance involves a complex network of relationships among company management, the board of directors, shareholders, and other stakeholders, as outlined by the Organization for Economic Cooperation and Development (OECD, 2015). It establishes the framework within which company objectives are defined, strategies for achieving those objectives are devised, and methods for monitoring performance are determined (Solomon, 2013). Solomon defines corporate governance as a system of internal and external checks and balances ensuring that companies fulfill their accountability to all stakeholders and operate in a socially responsible manner across all aspects of their business activities. There is a growing emphasis on good governance and sustainability within companies, with increasing pressure for adherence (Mahmood et al., 2018). Achieving corporate success is closely tied to practicing effective corporate governance and addressing social and environmental concerns (Setyahadi & Narsa, 2020).

Independent board representation is considered a fundamental component of corporate governance (Mahmood et al., 2018). Independent board members, often referred to as external directors, have no personal or professional ties to the company (Ong & Djajadikerta, 2020). Having an independent board helps segregate the responsibilities of management and control, striking a balance that mitigates opportunistic behavior among board members (Jensen & Meckling, 1976).

The establishment of an audit committee is a strategic initiative aimed at enhancing board oversight, improving the quality of financial reporting, reducing information asymmetry issues, boosting independence and objectivity, refining risk management functions, and enhancing financial decision-making processes (Buallay & Al-Ajmi, 2020). The audit committee also plays a critical role in monitoring and ensuring the accuracy of company disclosures, with a particular focus on information intended for external use (Tumwebaze et al., 2021; Roviqoh & Khafid, 2021).

Managerial ownership refers to the concentration of equity ownership among company managers, granting them the authority to influence organizational decisions (Olayinka, 2021). This power is held by managers, including commissioners and directors. The decision-making authority vested in management, combined with ownership of company shares, encourages decisions that enhance the company's value, ultimately benefiting shareholders. In the context of agency theory, managerial ownership serves as a mechanism to mitigate conflicts of interest between managers and stakeholders, thereby reducing agency costs. Shareholders typically seek transparency from management, including non-financial reports such as sustainability reporting, as part of their expectations (Olayinka, 2021).

## 2.2. Hypothesis development

### 2.2.1. Board independence and sustainability reporting quality

Stakeholder interest in the company's continuity underscores the importance of management's attention to and disclosure of information related to social and environmental issues. Implementation of good corporate governance fosters transparent information disclosure to investors, establishing a balance between shareholder interests. Aligned with agency theory, voluntary disclosure decisions by managers are motivated by the aim to fulfill stakeholder interests. The board's independence, according to Mahmood et al. (2018), plays a crucial role in reducing conflicts of interest between shareholders and management. Positive associations between board independence and sustainability reporting have been observed in studies by Adel et al. (2019), Ong and Djajadikerta (2020), and Wahyudi (2021). In contrast, Mahmood et al. (2018) and Olayinka (2021) found no influence of board independence on disclosure continuity. Based on this, the following hypothesis is proposed:

*H1: Board Independence has a positive influence on Sustainability Reporting Quality.*

### 2.2.2. Audit committee size and sustainability reporting quality

The audit committee serves as a monitor to ensure transparent and accurate disclosures by the company. Regulatory requirements in some countries mandate companies to have an audit committee with no fewer than three members. The size of the audit committee is perceived as an indicator of the company's monitoring quality. Studies by Mohammadi et al. (2021) and Dizar et al. (2018) indicate lower agency conflicts in companies with larger audit committee compositions. In line with agency theory, a well-composed audit committee can reduce theoretical asymmetry between the agent and the principal, enhancing the transparency of financial and non-financial information disclosed by the company. Thus, the following hypothesis is suggested:

*H2: Audit Committee Size has a positive influence on Sustainability Reporting Quality.*

### 2.2.3. Managerial ownership and sustainability reporting quality

Managerial ownership, representing the proportion of shares held by company managers (directors and commissioners), helps align the interests of managers with stakeholder interests. This alignment is crucial as managers make decisions to enhance the company's reputation and profitability for shareholders. Studies by Olayinka (2021) and Adel et al. (2019) found a positive and significant influence of boards' ownership on economic sustainability reporting. Based on this, the following hypothesis is formulated:

*H3: Managerial Ownership has a positive influence on Sustainability Reporting Quality.*

#### 2.2.4. Environmentally polluting industries and sustainability reporting quality

Environmentally polluting industries are companies that have a higher environmental impact compared to non-polluting companies. This certainly attracts attention from the surrounding community. To create a positive image to the public, polluting companies will adopt environmentally and socially responsible behavior accompanied by information disclosure. Legitimacy theory suggests that polluting companies have a high regulatory risk (Muttakin & Khan, 2014; Kouloukoui et al., 2019; Kumar et al., 2021). This theory also indicates that sustainability reporting will benefit companies subject to public pressure and legitimacy threats (Manning et al., 2019). If a company is pressured to disclose high-quality reports, the company will produce high-quality reports (Rudyanto & Siregar, 2018). This aligns with the research findings of Kumar et al. (2021), who examined the top 75 non-banking companies listed on the Indian Stock Exchange and found that environmentally polluting industries had a higher disclosure of sustainability information than non-polluting companies. Based on these descriptions, the researcher concludes the following hypothesis:

*H4: Environmentally Polluting Industries have a positive influence on Sustainability Reporting Quality.*

#### 2.2.5. Government ownership and sustainability reporting quality

Literature on reporting continuity highlights a connection between ownership type and reporting continuity levels. Government-owned companies are deemed more accountable to the public and demonstrate higher sustainability report quality. This is in line with legitimacy theory, suggesting that government-owned companies tend to practice better sustainability reporting. On the contrary, private companies are often driven more by the objective of maximizing shareholder profits. Several studies (Muttakin & Subramaniam, 2015; Jain & Lawrence, 2016; Khan et al., 2012; Kouloukoui et al., 2019; Aggarwal & Singh, 2019; Kumar, 2020; Boshnak, 2021; Kumar et al., 2021) found that government ownership has a positive influence on information continuity. Based on this, the hypothesis is proposed:

*H5: Government Ownership has a positive effect on Sustainability Reporting Quality.*

### 3. Research methodology

Companies worldwide are increasingly acquainted with sustainability reports as they have become the primary focus for various business sectors. Investor and stakeholder interests have driven companies to enhance transparency in their sustainability reporting. Transparency in sustainability reporting is deemed necessary to build and sustain investor and stakeholder confidence. The quality of sustainability reporting hinges on the transparency of the

report content, and one critical piece of information investors seek is related to the Sustainable Development Goals (SDGs). Additionally, there is suspicion that factors or pressures from corporate governance may influence sustainability reporting quality. This research also explores other factors suspected to impact Sustainability Reporting Quality (SRQ), such as government ownership and involvement in environmentally polluting industries.

#### 3.1. Object of study

This research targets companies in ASEAN Emerging Markets countries, specifically Indonesia, Malaysia, Thailand, and the Philippines, listed on the respective stock exchanges. The sampling method employed is non-probability sampling, utilizing purposive sampling techniques with specific criteria. Companies included in the top 50 ASEAN CG Scorecard Assessment in 2019 in each country, with complete sustainability reports guided by GRI standards and annual reports from 2018 to 2020, constitute the sample. The research aims to analyze the influence of corporate governance, measured by board independence, audit committee size, and director ownership, as well as company characteristics like environmentally polluting industries and government ownership on sustainability reporting quality concerning Sustainable Development Goals (SDGs). To achieve this, the researcher uses data from 2018 to 2019 for the non-COVID period and 2020, a year impacted by the COVID-19 pandemic in Indonesia, Malaysia, Thailand, and the Philippines.

#### 3.2. Population and sampling techniques

Data collected for this research encompassed sustainability reports from the period 2018–2020, guided by GRI Standards. The annual reports from 2018 to 2020 covered a population of 200 companies in ASEAN countries, specifically Indonesia, Malaysia, Thailand, and the Philippines, all of which are included in the emerging markets and listed on the stock exchanges of their respective countries for this study. The sample selection was conducted using a non-probability sampling method employing a purposive sampling technique with specified criteria, resulting in a sample size of 84 companies for this research. The distribution of the sample is as follows: 29 companies from Indonesia, 24 from Thailand, 18 from the Philippines, and 13 from Malaysia.

#### 3.3. Variable operationalization

This research comprises several variables: Sustainability Reporting Quality (Y); Board Independence (X1), Audit Committee Size (X2), Managerial Ownership (X3), Environmentally Polluting Industry (X4), Government Ownership (X5), and COVID-19 (X6). The operational definitions and measurements for each variable are outlined in Table 2.

Table 2 shows Dependent and Independent Variables. This research utilizes Sustainability Reporting Quality (SDGs goals) as the dependent variable. The measurement

**Table 2.** Variable measurements (source: processed by the researcher, 2022)

Variables	Label	Measurements	References
Independent variable			
Board Independence	BRDIND	One-Tier System <i>Independent Director = The number of Independent Directors</i> The number of directors Two-tier System <i>(The number of Independent Directors / The number of Directors) × 100% + (The number of Independent Commissioners / The number of Commissioners) × 100%</i>	Adel et al. (2019)
Audit Committee Size	ACSIZE	The number of audit committee members	Mohammadi et al. (2021)
Managerial Ownership	MANOWN	The proportion of shares in circulation held by management	Adel et al. (2019)
Environmentally Polluting Industry	E,P	Dummy: 1 if company including industries that are sensitive to environment, 0 otherwise	Kumar et al. (2021)
Government ownership	GO	shares owned by all agency government and BUMN from the total shares issued issuer.	Muttakin and Subramaniam (2015)
COVID-19	COV	Sustainability reporting scores based on SDGs goals	
Control Variable			
Firm Size	SIZE	Ln (Total Assets)	Kumar et al. (2021)
GDP Per Capita	GDP	GDP Per Capita in Indonesia, Malaysia, Thailand and the Philippines in 2020	Alam and Kabir (2013)
Dependent variable			
Sustainability Reporting Quality	SR	Sustainability reporting scores based on SDGs goals	Elalfy et al. (2020)

of sustainability reporting aligns with the mapping from GRI standards, and a subsequent evaluation will assign a score of 1 if a company discloses and 0 if otherwise. The independent variables in this study include corporate governance, measured through three components: board independence, audit committee size, and managerial ownership. Additionally, the variable of Environmentally Polluting Industry is employed to assess how companies operate, identifying whether their operations fall within environmentally sensitive industries. Sensitive industries in this study encompass Basic Materials, Industrials, Energy, and Utilities, due to their potential impact on the environment. The third independent variable, Government Ownership, is measured by the proportion of shares owned by government agencies and state-owned enterprises (BUMN) out of the total shares issued by the issuer. To ensure that the influence of independent variables on the dependent variable is not influenced by external factors, this research introduces control variables. The control variables used in this study are firm size and GDP growth.

### 3.4. Data processing and analysis techniques

Data analysis involves activities such as grouping, tabulating, and presenting data based on the variables studied. Additionally, calculations are performed to address the problem formulation and test the proposed hypotheses (Sugiyono, 2015). In this research, statistical calculations using E-Views 9 are employed as the data processing method. The study utilizes linear regression analysis and panel data, examining several companies over a three-year

period, from 2018 to 2020. Subsequently, the analysis encompasses descriptive statistical methods, normality tests, classical assumption tests, and hypothesis tests.

#### 3.4.1. Descriptive statistics

Descriptive statistics entails the analysis of data by presenting information without drawing general conclusions. The objective is to portray statistical data using parameters such as average (mean), minimum, maximum, and standard deviation values of the variables under study (Sugiyono, 2015).

#### 3.4.2. Analysis of regression equations and coefficients of determination

The hypothesis testing model in this research adopts the multiple linear regression method with the panel data regression analysis approach. This method is employed to analyze the significant influence of the dependent variable while incorporating several control variables. The regression equation in this study is bifurcated into two parts – one for the period before COVID-19 and another for the period during COVID-19. The following presents the regression equation.

##### Regression Model I (2018–2019)

$$SRQ = a_{0it} + a_1 BRDIND_{it} + a_2 ACSIZE_{it} + a_3 MANOWN_{it} + a_4 EPI_{it} + a_5 GO_{it} + a_6 Size_{it} + a_7 GDP_{it} + e_{it}$$

##### Regression Model II (2019–2020)

$$SRQ = b_{0it} + b_1 BRDIND_{it} + b_2 ACSIZE_{it} + b_3 MANOWN_{it} + b_4 EPI_{it} + b_5 GO_{it} + b_6 COV_{it} + b_7 Size_{it} + b_8 GDP_{it} + e_{it}$$

where: SR = Sustainability Reporting Quality score based on SDGs goals; BRDIND = Board Independence; ACSIZE = Quantity Audit Committee; MANOWN = Percentage of share ownership of directors and/or commissioners; EPI = Environmentally Polluting Industries; GO = Government Ownership; Size = Firm Size; GDP = GDP per capita of Indonesia, Malaysia, the Philippines and Thailand; COV = COVID-19 Pandemic Dummy. 1 if 2020, 0 if 2018 and 2019.

### 3.4.3. Panel data regression analysis

The panel data regression analysis model is a combination of cross-section and time series data (Gujarati & Porter, 2010). In carrying out panel data regression analysis, there are three approaches used, namely Common Effect, Fixed Effect, and Random Effect.

#### 3.4.3.1. Chow test

The Chow test is a test that compares the most appropriate model between the common effect model and the fixed effect model (Gujarati & Porter, 2010) using the statistical F test. The hypothesis used by Chow test:

- $H_0$ : Using the common effect model.
- $H_1$ : Using a fixed effect model.
- $H_0$  is accepted if the Chi-Square cross-section value is  $> 0.05$ .  $H_0$  is rejected if the Chi-Square cross-section value  $< 0.05$ .

#### 3.4.3.2. Hausman test

The Hausman test is a test that compares the most appropriate model between the Fixed Effect model and the Random effect model (Gujarati & Porter, 2010) using the statistical F test. The hypothesis used by the Hausman test:

- $H_0$ : Using random effect model.
- $H_1$ : Using a fixed effect model.
- $H_0$  is accepted if the Random cross section value is  $> 0.05$ .  $H_0$  is rejected if the Random cross section value is  $< 0.05$ .

#### 3.4.3.3. Lagrange multiplier test

The Lagrange multiplier test is a test to determine between random effect model (REM) or common effect model (CEM) (Sugiyono, 2015). The hypotheses and decision bases used in the Lagrange Multiplier test are:

- $H_0$ : If the probability of chi-square  $< 0.05$  it means that the right model to use is Random Effect Model (REM).
- $H_1$ : If the probability of chi-square  $> 0.05$  means that the right model to use is the Common Effect Model (CEM).

### 3.4.4. Classical assumption test

This test was carried out to investigate whether the regression model can describe significant and representative correlations or relationships. The classic regression assumptions that must be met include.

#### 3.4.4.1. Normality test

The normality test aims to test whether, in the regression model, the disturbing or residual variables have a normal or close-to-normal distribution (Gujarati & Porter, 2010). The normality test for this research is based on the Jarque-Bera test with the condition that the significance value is  $> 5\% / 0.05$ . If the normality test results have a value of  $< 5\% / 0.05$ , it can be concluded that the data in the study are not normally distributed.

#### 3.4.4.2. Multicollinearity test

The multicollinearity test was carried out to test whether, in the regression model, there was a correlation between the independent variables (Gujarati & Porter, 2010). A regression model is said to be good if it does not show a correlation between independent variables. Apart from that, the multicollinearity test can also be seen from the correlation coefficient value of each variable. Data that has a correlation value  $< 0.8$  is data that is free from multicollinearity.

#### 3.4.4.3. Autocorrelation test

The autocorrelation test aims to test whether there is a correlation between variables and the current period in the linear regression model. Autocorrelation arises because there are consecutive observations over time-related to each other (Gujarati & Porter, 2010). Problems arise because the residuals are not independent from one observation to another. A regression model is said to be good if it is free from autocorrelation. This can be found by looking for time series data. To determine whether there is autocorrelation or not, include carrying out the Durbin-Watson Test (DW test) with the following conditions:

- If  $d$  is less than  $d_L$  or greater than  $(4-d_L)$  then the null hypothesis is rejected, which means there is autocorrelation.
- If  $d$  lies between  $d_U$  and  $(4-d_U)$ , then the null hypothesis is accepted, which means it does not exist autocorrelation.

#### 3.4.4.4. Heteroscedasticity test

The heteroscedasticity test aims to test whether, in the regression model, there is an inequality of variance from the residuals of one observation to another (Gujarati & Porter, 2010). This test is carried out to detect whether there is a heteroscedasticity problem in the regression model. A regression model is said to be good if it is free from heteroscedasticity problems. This heteroscedasticity test uses the Levene test with the following conditions:

- If the test results are above the significance level ( $r > 0.05$ ), it means that there is no heteroscedasticity.
- If the test results are below the significance level ( $r < 0.05$ ), it means that there is heteroscedasticity.



### 3.5. Hypothesis testing techniques

#### 3.5.1. Partial effect test (t-Test)

Testing was carried out to test the influence of each independent variable individually on the dependent variable (Gujarati & Porter, 2010). If the coefficient is equal to zero, then the independent variable does not have a significant influence on the dependent variable. On the other hand, if the regression coefficient is not equal to zero, then there is a significant influence between the independent variable and the dependent variable. Testing is carried out by looking at significant values, the following decision criteria are used:

- If Sig < 0.05, then Ho is rejected and Ha is accepted.
- If Sig > 0.05 then Ho is accepted and Ha is rejected.

#### 3.5.2. Simultaneous signification test (F Test)

The F test is carried out to test whether the model used is significant or not, and whether the model can be used to predict the effect of the independent variable on the dependent variable (Gujarati & Porter, 2010). If the probability value of the F statistic is <0.05 then all independent factors are said to have a simultaneous effect on the dependent variable.

#### 3.5.3. Coefficient of determination (R2)

The coefficient of determination is used to measure how much a model can predict differences in the dependent variable. The coefficient of determination value is ex-

pressed between 0 and 1. A low R2 value indicates that the ability of the independent variables to explain variations in the dependent variable is very limited. If the value is close to 1, it indicates that the independent variable provides almost all the information needed to predict the dependent variable (Gujarati & Porter, 2010).

## 4. Result

### 4.1. Descriptive statistics

The data characteristics of the sample used in this study are elucidated in the descriptive statistics analysis presented in the table (Table 3).

Table 3 show presents descriptive statistics for 163 observations, revealing the dependent variable in this study, Sustainability Reporting Quality (SRQ). The mean score for SRQ is 39.6% before the COVID-19 period and increases to 42.2% during the COVID-19 period. This signifies a rise in the average disclosure of companies' continuity reports in alignment with the seven Sustainable Development Goals (SDGs) during the COVID-19 period. Notably, the highest disclosure occurred in the pre-COVID-19 era, specifically by Clairvoyant Work from Indonesia, scoring 0.8707. Conversely, the lowest disclosure was observed in Thailand Capital from Thailand, scoring 0.0145. During the COVID-19 reporting period, The Siam Cement company from Thailand recorded the highest disclosure with a score of 0.871, while Muangthai Capital from Thailand reported the lowest, scoring 0.0048. The mean value in

**Table 3.** Statistics descriptive study (source: processed by the researcher, 2022)

First Regression Model – Before COVID-19						
Variables	Mean	Median	Max	Min	Std. Dev.	Observations
SRQ	0.396996	0.376800	0.870700	0.014500	0.161564	163
BRDIND	0.458773	0.440000	0.830000	0.190000	0.130454	163
air conditioning	3.766871	3,000000	8,000000	3,000000	1.091892	163
MANOW	2.052583	0.010000	67.535000	0.000000	9.194223	163
EPI	0.355828	0.000000	1,000000	0.000000	0.480239	163
GO	7.477975	0.000000	70,000000	0.000000	19.827940	163
SIZE	8.572712	8.812000	12.213000	4,305000	1.645065	163
GDP	8.595055	8.327000	9.344000	8,087000	0.449161	163
Second Regression Model – During COVID-19						
SRQ	0.422795	0.400000	0.871000	0.004800	0.156694	163
BRDIND	0.465521	0.460000	0.860000	0.200000	0.136052	163
air conditioning	3.736196	3,000000	8,000000	3,000000	1.087688	163
MANOW	2.067895	0.010000	67.586000	0.000000	9.427155	163
EPI	0.361963	0.000000	1,000000	0.000000	0.482049	163
GO	7.536626	0.000000	70.700000	0.000000	19.951360	163
COVID	0.503067	1,000000	1,000000	0.000000	0.501531	163
SIZE	8.604585	8.832360	12.225120	4.370176	1.640279	163
GDP	8.592114	8.327291	9.344244	8.156321	0.429905	163

both regressions is higher than the median, indicating that, on average, the companies examined in this research are adept at presenting sustainability reports in line with the SDGs' objectives.

#### 4.2. Panel data analysis

In this study, a dummy variable is employed for the environmentally polluting industries variable. Consequently, it is not possible to conduct the Chow and Hausman tests due to the proximity of singular matrices during the fixed effect model test. Therefore, this study proceeds with testing using Lagrange Multipliers (LM). The following are the results of the second LM regression test in this study.

**Table 4.** The results of Lagrange Multipliers (LM) test (source: processed by the researchers using Eviews 9, 2022)

Panel A – Regression Model I – Before COVID-19			
Test Hypothesis			
	Cross-section	Time	Both
Breusch-Pagan	38.11013	0.773054	38.88319
	(0.0000)	(0.3793)	(0.0000)
Panel B – Regression Model II – After COVID-19			
Test Hypothesis			
	Cross-section	Time	Both
Breusch-Pagan	55.07688	1.012384	56.08927
	(0.0000)	(0.3143)	(0.0000)

Table 4 reveals that the Breusch-Pagan cross-section probability for both regressions is 0.0000. This value is less than 0.05, signifying the rejection of H<sub>0</sub> and the acceptance of H<sub>a</sub>. Therefore, the model utilized is a random effects model.

#### 4.3. Hypothesis testing

The t-statistical test was employed in this research to examine the evidence supporting the hypotheses formulated based on the sampled data. This test involves a comparison between the t-statistic probability score and the significance level ( $\alpha$ ) set at 0.05 or 5%. If the P-Value is less than 0.05 and the regression coefficient aligns with the direction hypothesized by the researcher, then the null hypothesis (H<sub>0</sub>) is rejected.

Table 5 illustrates the factors influencing sustainability reporting quality before the Covid pandemic. Only the variable "Environmentally Polluting Industries" exhibits a significant influence. In contrast, other variables, such as corporate governance measured by board independence, audit committee size, directors' ownership, government ownership, and the impact of Covid, demonstrate no effect on sustainability reporting quality. Similarly, the control variables, Company Size and GDP per capita, also show no significant impact.

Table 6 illustrates the factors influencing sustainability reporting quality before the Covid pandemic. Variables

**Table 5.** The results of partial regression model test 1 – before the COVID-19 pandemic (source: processed by the researcher using Eviews 9, 2022)

Variables	Coefficient	Std. Error	t-Statistics	Prob.	Conclusion
C	-0.0640	0.3450	-0.1855	0.8531	–
BRDIND	0.0187	0.0816	0.2295	0.8188	UNSIGN
air conditioning	0.0049	0.0097	0.5029	0.6158	UNSIGN
MANOW	-0.0001	0.0015	-0.0852	0.9322	UNSIGN
EPI	0.0925	0.0432	2.1410	0.0338	SIGN
GO	0.0024	0.0015	1.5474	0.1238	UNSIGN
SIZE	-0.0038	0.0095	-0.4043	0.6865	UNSIGN
GDP	0.0492	0.0390	1.2598	0.2096	UNSIGN
GDP	0.0191	0.0394	0.4864	0.6274	UNSIGN

**Table 6.** The results of partial regression model test 2 – during COVID-19 pandemic (source: processed by the researcher using Eviews 9, 2022)

Variables	Coefficient	Std. Error	t-Statistics	Prob.	Conclusion
C	0.2157	0.3530	0.6110	0.5421	–
BRDIND	-0.0012	0.0008	-1.4900	0.1383	UNSIGN
air conditioning	0.0056	0.0098	0.5710	0.5688	UNSIGN
MANOW	-0.0017	0.0012	-1.4281	0.1553	UNSIGN
EPI	0.0917	0.0347	2.6452	0.0090	SIGN
GO	0.0009	0.0008	1.1256	0.2621	UNSIGN
COVID	0.0278	0.0098	2.8459	0.0050	SIGN
SIZE	0.0033	0.0101	0.3304	0.7415	UNSIGN
GDP	0.0191	0.0394	0.4864	0.6274	UNSIGN

such as Environmentally Polluting Industries and Covid exhibit an impact, while other variables, including corporate governance (measured by board independence, audit committee size, and directors' ownership) and government ownership, show no significant effect on sustainability reporting quality. Similarly, the control variables, Company Size and GDP per capita, also demonstrate no significant.

## 5. Discussion

### 5.1. Impact of board independence on sustainability reporting quality based on SDGs

The results of the hypothesis test regarding the connection between board independence and sustainability reporting quality indicate no significant impact, both before the COVID-19 pandemic and during the pandemic, in contrast to previous studies (Adel et al., 2019; Madona & Khafid, 2020; Ekaputri & Eriandi, 2022). These findings contradict the hypothesis formulated based on theory and earlier research. According to Agency theory, the voluntary disclosure of company information is motivated by managers to fulfill the interests of stakeholders, thereby

promoting the disclosure of sustainability reports. However, this hypothesis was rejected due to the test results revealing an insignificant relationship between the variables, aligning with the findings of other studies (Michelon & Parbonetti, 2012; Majeed et al., 2015; Mahmood et al., 2018; Olayinka, 2021). These studies did not find a significant correlation between sustainability reporting and the presence of an independent board, particularly in transitional countries where corporate information is still primarily based on financial reporting. Another reason for the lack of significant influence of the independent board on sustainability reporting may be attributed to its role primarily as a regulatory compliance requirement, rendering its impact on reporting negligible. Additionally, the proportion of independent boards may not be sufficient to have a substantial impact on decision-making, as other factors like board competency play an equally important role.

### 5.2. Impact of audit committee on sustainability reporting quality based on SDGs

Consistent with the findings of Wahyudi (2021), which revealed no significant connection between the audit committee and the disclosure of sustainability reports, this lack of association may be attributed to the use of proxies in measuring the audit committee. Specifically, the measurement was based on the quantity of audit committee members within the company sample. Regulatory bodies in each country stipulate a minimum of three members for the audit committee, as reflected in the descriptive statistics results of this study. The minimum value for the audit committee in both regressions is 3, with an average of 3.76 for the first regression and 3.73 for the second regression. This suggests that adherence to the regulatory requirement regarding the number of audit committee members may be more of a formality for companies, potentially diminishing the effectiveness of the audit committee's role. Consequently, it is inferred that the mere size of the audit committee cannot serve as a reliable benchmark for assessing the quality of reporting continuity.

### 5.3. The effect of managerial ownership on sustainability reporting quality based on SDGs

Managerial ownership constitutes a portion of the executive body within a company, holding shares and exerting influential roles in decision-making. The results of the hypothesis test indicate an insignificantly positive influence of managerial ownership on sustainability reporting quality both before and during the COVID-19 pandemic. These findings align with previous research by Al Amosh and Khatib (2021) and Lagasio and Cucari (2019), which similarly found that managerial ownership does not significantly impact corporate ESG disclosures. This lack of influence could stem from the potentially negative impact of conflicting interests on the governance of a well-

established company. In instances where the company's owner, who is also the manager, makes decisions based on personal interests, they may not prioritize the sustainability agenda and associated concerns. Another reason for the non-significant influence of managerial ownership on reporting continuity is the prevalence of management in the sample that does not hold managerial shares in the company. This is supported by descriptive statistical results, revealing an average managerial ownership of only 2.05% before the COVID-19 pandemic and 2.06% during the COVID-19 pandemic in the sampled companies.

### 5.4. Impact of environmentally polluting industries on sustainability reporting quality based on SDGs

The test results reveal a significantly positive correlation between environmentally polluting industries and sustainability reporting quality, focusing on the disclosure of the seven Sustainable Development Goals (SDGs) in ASEAN emerging market countries, both before and during the COVID-19 pandemic. This outcome aligns with the hypothesis formulated based on existing theory and prior research. Legitimacy theory suggests that companies operating in environmentally sensitive industries face increased environmental risks, necessitating legitimacy to sustain their operations. Legitimacy can be attained by transparently disclosing their activities through sustainability reporting. This finding resonates with the results of a study conducted by Kumar et al. (2021), which observed that environmentally polluting industries tend to disclose more information about continuity compared to non-polluting companies. Although the sample in this study is predominantly composed of industries sensitive to the environment, the hypothesis results indicate that environmentally sensitive industries exhibit higher levels of reporting continuity than their non-sensitive counterparts.

### 5.5. Impact of government ownership on sustainability reporting quality based on SDGs

Previous literature has suggested a connection between government ownership and reporting continuity. The majority ownership by the government provides it with substantial influence to shape corporate policies, encouraging the disclosure of sustainability reports. Kumar et al. (2021) asserted that government ownership positively influences sustainability reporting because government-owned companies tend to prioritize public accountability and address legitimacy issues, leading to better sustainability practices compared to privately-owned companies, which may prioritize profit maximization. However, the regression results in this research indicate that government ownership does not significantly influence sustainability reporting, both before and during the COVID-19 pandemic.

These findings align with the research conducted by Adiatma (2018), who found no significant relationship

between government ownership and sustainability reporting. One reason for this lack of significant connection is the proxy used, namely the proportion of shares owned by the government, which remained stable throughout the study years while reporting continuity scores experienced changes. Therefore, it is suggested that other factors may be more influential. Another reason for the non-significant impact of government ownership on sustainability reporting is that the companies in this study tended to report sustainability aligned with the seven SDGs goals quite effectively. This is supported by the descriptive statistics results for the sustainability reporting variable, which obtained an average score above the median, indicating that both government-owned and non-government-owned companies demonstrated good practices in reporting continuity, aligning with the objectives of the SDGs.

## 6. Managerial implications

This study contributes to the literature on reporting continuity in the ASEAN emerging markets by presenting test results on the correlation between corporate governance, company characteristics, and the quality of sustainability reporting based on the seven SDGs. The study's results indicate a lack of significance in the connection between the management system of companies and the disclosure of sustainability reports. This suggests that the presence of an independent board, an audit committee, and ownership by the management does not necessarily translate into a proactive stance on the company's non-financial reports, as these entities may still primarily focus on profit maximization. Consequently, there is a need for companies to enhance their commitment to disclosing sustainability reports, and regulators should intensify their oversight of corporate sustainability practices.

Moreover, despite the assumption that government ownership reflects a greater concern for public accountability and legitimacy, the study found no significant link between government ownership and the quality of sustainability reporting. This indicates that the government should be more attentive to the sustainability reporting quality of the companies under its ownership. Given the increasing importance of environmental, social, and governance (ESG) issues, especially in light of crises such as declining biodiversity and the widespread climate crisis, companies are urged to better understand their contributions to sustainability. Leaders are advised to be accountable to investors, lenders, insurers, customers, and consumers. Additionally, the COVID-19 pandemic has accelerated the implementation of the 2030 agenda, as evidenced by the positive relationship found in this study between the pandemic and the quality of sustainability reporting. Therefore, companies across the board need to enhance their sustainability practices by mobilizing their executive management, particularly the board, to promote reporting continuity.

## 7. Conclusions, limitations, and recommendations

### 7.1. Conclusions

This study aimed to analyze the connection between corporate governance and company characteristics, such as industry type and government ownership, concerning sustainability reporting quality based on the Sustainable Development Goals (SDGs). The results of this study reveal that the three components of corporate governance examined – board independence, the audit committee, managerial ownership, and government ownership – do not exert a significant influence on sustainability reporting quality based on the seven SDGs. However, the variables that demonstrated a significant positive impact on sustainability reporting quality were environmentally polluting industries, differentiating between those sensitive to environmental concerns and those that are insensitive. Industries sensitive to the environment are more likely to face risks that could harm the environment, necessitating legitimacy to continue their operational activities, which is achieved through the reporting of continuous reports.

The control variables used in this research, namely firm size and GDP per capita, also did not show a significant relationship with sustainability reporting quality based on the seven SDGs.

### 7.2. Limitations and recommendations

The sample utilized in this research comprises only companies listed in the top 50 ASEAN Corporate Governance Scorecards for 2019. The researcher recommends expanding the sample by including companies beyond the top 50 ASEAN CG Scorecard to broaden the study's results. In this study, samples were drawn from four ASEAN countries as a collective entity; the researcher further suggests conducting a separate analysis for each country to capture country-specific nuances. Additionally, the research focused on only three components of corporate governance. Future researchers are encouraged to explore other corporate governance components or employ comprehensive scorecards such as the ASEAN CG Scorecards. Furthermore, incorporating additional audit committee components, such as the committee's capabilities measured by financial expertise, could provide a more comprehensive understanding of the audit committee's impact on sustainability reporting quality. The study's timeframe is limited to 2018–2020, and future researchers are advised to extend the research period to enhance the understanding of variable relationships. The regression results in this study yielded a relatively low adjusted square percentage, indicating that there are likely other factors influencing sustainability reporting based on the seven SDGs. Therefore, the researcher recommends introducing other independent variables, such as company characteristics and additional governance traits, to provide a more comprehensive analysis.

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