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Sustainable Development Goals in Corporate Reporting: Analysis of Economic, Social, and Environmental Disclosure (Survey among Public Listed Companies in Indonesia)

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ABSTRACT

This research purpose was to describe the disclosure of the Sustainability Development Goals (SDG) in Indonesian companies' corporate reporting to further analyse sustainability issues. This study employed a descriptive, quantitative method. This research collected data from 443 Indonesian publicly listed companies divided into nine types of industries. This study classified 17 SDG targets into three sustainability-related performance indicators: Economic, Social, and Environmental. The data were analysed using descriptive statistics, Analysis of Variance, and cluster analysis. This research found that: (1) the disclosure of the SDG items in corporate reporting is still low at 38%; (2) SDG disclosure made by the company still focused more on the economic theme of sustainability, rather than environmental or social; (3) there are significant differences among industries in terms of economic disclosure, but there are no differences in terms of environmental and social disclosure; (4) there are five clusters formed by the cluster analysis, and the general cluster descriptions indicate that only 15% of the companies have good disclosure quality in terms of Economic, Social and Environmental issues, and around 24% of the companies still have no or few disclosures of sustainability-related issues. This implies that Indonesian companies still face a significant challenge in promoting corporate reporting to satisfy investors' need for sustainability.

Keywords: Sustainability Development Goals, Corporate Reporting, Economic, Social, Environmental, Indonesia

JEL Classifications: Q01, E16, Q56, M41

1. INTRODUCTION

The United Nations 2030 Agenda for Sustainable Development has introduced a new sustainability paradigm that challenges companies. According to this, in pursuing sustainable development, companies must face a complex system of sustainable development goals (SDGs) that are divided into 17 primary goals, 169 targets, and 244 indicators (Calabrese et al., 2021). The sustainability principle in business requires corporate performance to be measured, disclosed, and accounted for using three dimensions: Economic, social, and environmental (Gunawan et al., 2022). Recently, the topic of voluntary non-financial environmental,

social, and governance (ESG) disclosure has been growing rapidly and significantly, attracting much attention from academic researchers and capital market participants (Tsang et al., 2023).

One environmental issue that continues to be the most important in sustainability is climate change. Efforts to mitigate carbon emissions, adapt to climate change, and invest in renewable energy are gaining increasing global attention. Carbon emission disclosure is an issue that began to develop in various countries related to the impact of climate change on organizational survival, Indonesia is no exception. A company's carbon emissions disclosure can be found in its annual report and sustainability report. Governments

that are aware of environmental problems resulting from company activities tend to pressure companies to be more responsible for the environment (Hermawan et al., 2018). This finding is in line with research showing that regulatory pressure has a significant relationship with environmental disclosure (Huang and Kung, 2010). To respond to these pressures, companies can pursue social disclosure of the environment to gain support from stakeholders and legitimacy from the community (Luo et al., 2013). Pressure from regulators is one of the major factors that keeps companies concerned about the environment and social disclosure (Peng et al., 2015). Disclosure of the environment will also increase the value of the company and assist in the company's ongoing development (Hermawan et al., 2018).

In the past 10 years, CSR has drawn much attention from the corporate community throughout the world, with no difference in Indonesia. CSR is one of the tools companies use to achieve their sustainability goals in economic, social, and environmental contexts. This includes corporate responsibility towards broader social and environmental interests rather than just focusing on economic aspects. In practice, strong integration of CSR into business strategies can help create a more holistically sustainable company. However, there is still a debate over the CSR issue in Indonesia. Research has proven that companies in Malaysia and Thailand are more aware of Corporate Social Disclosure (CSD) than companies in Indonesia (Supriyono et al., 2015; Pratama et al., 2021). This is one piece of evidence supporting this claim. Since CSD techniques are undervalued and prioritize money waste, they are still surprisingly uncommon in this country.

A small number of listed companies in Indonesia publish sustainability reports, and we found the reports to have a low level of readability. This means that the information provided in the disclosure is very difficult for the targeted users to decipher and understand. This is supported by data from Ernst and Young Indonesia, until 2017, only 30% of the top 100 companies in terms of market capitalization, listed on the Indonesian Stock Exchange, issued sustainability reports, and according to OJK, since 2016, only 9% of the companies listed on the Indonesian Stock Exchange published sustainability reports (Adhariani and Toit, 2020).

The Sustainable Development Goals (SDGs) provide private sector businesses with the flexibility to select and prioritize corporate sustainability challenges and align strategies with particular or pertinent sustainability goals (Adams, 2017). However, companies encounter several challenges when trying to adjust to this novel swift, complicated sustainability scenario, where there are goals, targets, and indicators. Achieving SDGs is hindered by a fundamental difficulty: Limited knowledge of the actual impact of sustainability practices on SDGs (Schönherr et al., 2017).

Several regulations have been enacted to encourage social responsibility and sustainability practices in Indonesia, such as Law No. 25/2007 on Capital Investment, Law No. 40/2007 on Limited Liability Companies, and Government Regulation No. 47/2012 on Corporate Social and Environmental Responsibility. Although these regulations require all listed companies in Indonesia to report on corporate social responsibility (CSR) activities, a report on

company CSR activities alone is not considered a sustainability report. With growing awareness of sustainability issues worldwide, the issuance of POJK 51/2017 is expected to boost the practice of sustainability and enhance the number of companies providing sustainability reports as a form of accountability to stakeholders (Adhariani and Toit, 2020). The field of non-financial and sustainability reporting is well established, with many international reporting frameworks and approaches available; however, there are still no standard reporting principles and procedures to publish progress (Opferkuch et al., 2021). To embrace this new trend, it is important to assess the caliber of sustainability reports that various businesses generate prior to the regulation's implementation. The initiatives launched by a small number of companies are not criticized in this assessment. This is meant to stimulate more initiatives to raise the quality of reporting.

Thus far, a great deal of research has been conducted in Indonesia on sustainability reporting, with particular attention paid to the relationship and impact of various financial and economic measures (Burhan and Rahmanti, 2012; Firmialy et al., 2019; Tarigan and Samuel, 2014; Utami, 2015; Elsharif, 2023). Additionally, investment appeal has been linked to sustainability reports (Fitriasari and Kawahara, 2018), governance issues, and sustainability reports are related (Amidjaya and Widagdo, 2019), and several factors influence their creation of sustainability reports (Almilia, 2010; Gunardi et al., 2016; Gunawan et al., 2022). However, no comprehensive study has analyzed SDG reporting and sustainability as a sustainability practice in Indonesia. With this research, we hope to evaluate the quality of SDG reports published by companies in Indonesia. This includes aspects such as completeness, transparency, and relevance of reported information related to SDGs goals, which not only focus on economic aspects but also on social aspects, especially environmental aspects. In addition, companies were grouped based on their industry in their sustainability report disclosure. For example, the type of company that is sensitive to the environment (e.g., oil and gas, chemical, mining and metals, and forestry products) will be different from the type of company that is not sensitive. As an important characteristic of the company in responding to OJK regulations, its response in preparing sustainability reporting will be examined (Gunawan et al., 2022).

Researchers in many fields are paying increasing attention to SDG reporting. By reporting on the SDGs, companies can improve the management of their efforts towards achieving global goals (Ordonez-Ponce and Khare, 2020). The experience gained and know-how developed during reporting practices may be a starting point for understanding the sustainability commitment of companies and their contribution to SDGs. Sustainability reports are mostly published under the Global Reporting Initiative (GRI) standard, which presents a comprehensive set of measures to assess companies' contribution to SDGs (Szennay et al., 2019). Therefore, GRI guidelines can help businesses report their impact on SDGs.

Many companies prioritize economic sustainability because it directly affects their financial performance and shareholder value. Economic sustainability often includes aspects, such as revenue growth, cost reduction, and profitability, which are of primary concern to investors and shareholders. It is important

to recognize that the shift toward a more balanced SDG disclosure may take time, but with concerted efforts from various stakeholders, companies can become more accountable for their environmental and social impacts, ultimately contributing to a more sustainable future. Based on this background that has been explained, this research aims to describe the disclosure of sustainability development goals (SDG) in company reporting in Indonesia to further analyze sustainability issues. The contribution of this research is to demonstrate the connection between the SDG disclosure undertaken and the sustainability performance of companies, which is divided into economic, social, and environmental performance. This research is expected to elucidate the importance of companies disclosing SDG components in their annual reports because, in addition to explaining the sustainability performance of the company, it can also support the achievement of Sustainable Development Goals in Indonesia.

This study consists of five parts. The first section discusses the research motivation and issues; the second section reviews the literature and conceptual framework; the third section describes the research method and design; the fourth section presents and discusses the results; and the fifth section concludes the article with theoretical and practical recommendations.

2. LITERATURE REVIEW

2.1. Sustainable Development Goals

In 2015, The United Nations (UN) established member nations to work together to address challenging sustainable development (SD) concerns by 2030. The business sector must create momentum for sustainable development goals (SDGs) by linking its social and environmental initiatives to the UN's global framework for economic growth, environmental protection, and social well-being (Calabrese et al., 2021). The 2030 Agenda emphasizes various stakeholders' roles in implementing the SDGs, including the private sector, ranging from microenterprises to cooperatives, to multinationals (United Nations, 2015). The adoption of SDGs has encouraged businesses to create new business models that exploit innovative solutions, partnerships, financing, and market opportunities (Madsen, 2020; Rosati and Faria, 2019). By offering transparent, contextualized descriptions of value-creation processes and preserving an organization's right to exist in society, SDGs serve as a communication tool to show how value is created and safeguarded by businesses for all stakeholders (Adams, 2017).

The role of business in addressing Sustainable Development is not novel, with the private sector leveraging investment capital and other resources towards social and environmental issues (Porter and Kramer, 2011). Therefore, communicating how value is created for stakeholders is a fundamental part of SER used by firms to maintain long-term competitiveness, increase reputation, pre-empt regulation, accrue legitimacy, and preserve public trust and their license to operate (Schaltegger et al., 2012). In particular, there is an opportunity for accountants, in practice and academia, to broaden their vision for accounting and accountability beyond solely the financial accountability of organizations, serving corporate and capital market interests, to consider how it can further SD, including SDGs (Hopper, 2019). This role is starting to be explored in various

contexts, starting from the combination of new technology and accounting practices with the SDGs, to sovereign wealth funds, climate change, economic stability, SDGs, and infrastructure investment with the SDGs (Di Vaio and Varriale, 2020).

The disclosure of SDGs is part of the sustainability report. Sustainability reporting is a new term widely used to explain the communication of companies' effects on social, environmental, and economic performance (United Nations Development Programme, 2022). Sustainability reports are also referred to as "triple bottom-line reports" (profits, people, and planet). Many large companies publish such reports, especially companies that are socially environmentally sensitive, such as oil and gas, mining, chemical, automotive, computers, and electronics (Choi and Hong, 2022).

Sustainability reports have various definitions, according to Elkington (1997), a sustainability report means a report that contains not only financial performance information but also non-financial information consisting of information on social and environmental activities that enable the company to grow sustainably (sustainable performance). Currently, the implementation of sustainability reports in Indonesia is supported by government regulations such as the Limited Liability Company (PT) Law number 40 of 2007 (Tarigan and Semuel, 2014).

Sustainability reports should consist of objective information that allows stakeholders to make reliable evaluations of the organization's non-financial performance, including (but not limited to) social and environmental aspects (Gray, 2006). A corporation may assist investors and other stakeholders in setting its performance in context by providing aims, benchmarks, and commitments in a sustainability report. Reporting on sustainability performance could potentially provide numerous benefits for a company, including increased credibility, reduced legal risks, improved supplier relationships, increased access to capital, and increased ethical behavior along the supply chain (Paun, 2018).

A corporate sustainability report can also be known by several other titles, such as Sustainability Report, CSR Report, Integrated Report, Environment, Social and Governance (ESG) Disclosure, or Environmental Report. Some researchers argue, however, that no organization producing sustainability reports can give equal billing to each of the components of the TBL (Gray et al., 2014) and that the expression "sustainability reporting" is moving further away from the form of sustainability put forward (Hahn and Kühnen, 2013).

Research on corporate sustainability has demonstrated that to cope with emerging sustainability challenges, organizations require a specific set of capabilities to go beyond mere regulatory compliance (Wu et al., 2013). Therefore, sustainability reporting can be utilized as the main driver facilitating changes toward corporate sustainability within a company (Adams and McNicholas, 2007). Initiatives such as the "Reporting on the SDGs Action Platform" have been established to encourage businesses to integrate SDGs into their reporting processes. Attracting the attention of sustainability, accounting, and finance professionals,

SDGs are broadly endorsed for systematic use in reporting, given that they offer a vehicle for evidence of how value is created and protected for stakeholders (Bebbington and Unerman, 2018).

Empirical studies on the prevalence of SDG disclosures have found that only a small proportion of companies typically undertake substantive SDG disclosures in their reporting, with initial adoption typically related to factors such as company size, level of intangible assets, greater commitment to sustainability frameworks, and external assurance (Rosati and Faria, 2019). SDG disclosure is still in its infancy, with only 23% of SDG disclosures including performance indicators, indicating that reporting is rarely supported by evidence of action or monitoring (Scott and McGill, 2019). There may be an aspiration and action gap, given that, although 60% of companies expressed an intention to use SDG disclosures to support impact measurement, only 18% did so, with even fewer (around 3%) appearing to quantitatively disclose SDG performance targets (Bebbington and Unerman, 2018). These findings show that there is still a way to go before SDG disclosures mature, that is, they contain detailed, measurable, and thus comparable information.

With comprehensive disclosure, it is easier for reporting users, such as investors, to effectively make important decisions that affect the achievement of SDGs. Innovations to help companies develop their reporting are needed (Schaltegger et al., 2017), but so far, SDGs are known to have only a minimal impact on the content and structure of reports. To help report preparers produce effective disclosures, guidance has been created that has the potential to address complexity (Topple et al., 2017; Scharenberg et al., 2021). Therefore, companies must be certain that SDG disclosure is worthy of adoption (Schaltegger et al., 2017).

SDG reporting is the practice of companies publicly expressing their commitment to meeting the demands of the 2030 Agenda (Rosati and Faria, 2019; GRI, 2018; Al Amosh & Khatib, 2021). The experience and knowledge developed during reporting practices can be a starting point for understanding a company's sustainability commitments and their contribution to the SDGs (Szennay et al., 2019). The sustainability reporting process aims to provide input to stakeholders regarding "how the reporting organization works with sustainable development." (Isaksson, 2019) The private sector has not been able to identify the tools needed to assess its contribution to the SDGs, and has only focused on a limited number of SDGs (Scott and McGill, 2019). Many companies are committed to the SDGs, but they neglect how to assess their efforts to meet the SDGs because of a lack of reporting guidelines (Di Vaio and Varriale, 2020). The important role of sustainability reporting as a driver of action and strategy is focused on the SDGs.

Factors such as company size, industry membership, and perceived company impact play an important role in a company's decision to publish sustainability reports and incorporate SDGs into them (Rosati and Faria, 2019). The GRI principles, which are generally acknowledged and increasingly adopted by organizations to convey their sustainability goals and contributions to the SDGs, are the basis upon which most sustainability reports are prepared

(Isaksson, 2019; Rosati and Faria, 2019). GRI guidelines are very suitable for SDG reporting because they are structured on the triple bottom line (TBL) and show a series of specific indicators that can be easily linked to SDG goals and targets.

However, these guidelines require additional effort to adapt and complement SDG indicators. In fact, the GRI (2018) points out the need for more substantial efforts to address gaps when there are no relevant indicators for specific targets and a lack of sector-specific guidance. Furthermore, in 2019, PwC noted that reporting companies are highly adept at using standard sustainability indicators; however, these programs are not effective in demonstrating alignment with SDG goals, making it difficult to link their activities to the 2030 agenda (Scott and McGill, 2019). During 2015-2020, several studies highlighted the need for frameworks, methods, and indicators to better understand the contribution of corporate sustainability activities to the SDGs. Aligning business approaches to SDGs with Integrated Reporting can redirect investment flows to maximize value creation and enhance knowledge of the impact of business activities on sustainable development. It can assist organizations in reducing risk, identifying opportunities, and delivering long-term innovative solutions and technologies to address sustainable development (Adams, 2017).

Additionally, it is worth underlining that sustainability research continues to identify challenges for corporate sustainability reporting. In recent years, the United Nations (UN) Sustainable Development Goals (SDGs) have become a globally recognized framework for societies to progress towards SD (United Nations, 2015). Thus, companies align their sustainability initiatives and targets with the SDG agenda (Rosati and Faria, 2019). Several previous studies have shown that, despite high awareness of the SDG framework, there are still significant differences in the range of quantity and quality of data reported by companies for each SDG (Opferkuch et al., 2021). In response, several reporting initiatives including the "GRI Standards" and the "Integrated Reporting Framework" have published additional materials supporting companies to integrate the SDGs into their organizations' internal goal-setting processes. The analysis of sustainability reports to evaluate corporate commitment and operationalization of SDGs has become a rapidly growing area of research and highlights the potential of reporting initiatives to influence the development of corporate responses to emerging sustainability challenges (Tsalis et al., 2020).

2.2. SDG and ESG Relationship

With the increasing awareness of the importance of ESG activities to corporate sustainability in recent decades, global investors and other stakeholders have placed greater emphasis on corporate non-financial ESG information provided by companies or non-financial rating agencies (Tsang et al., 2023). Due to the lack of reporting guidelines and the low level of comparability across ESG information provided by organizations, it is crucial to investigate the feasibility of such disclosure processes to boost credibility by using internal or external mechanisms.

In general, the relationship between ESG disclosure and investor decision-making depends on how the disclosure is presented

(Christensen et al., 2021; Dhaliwal et al., 2011; Khan et al., 2016). One area of interest is the relationship between ESG disclosures and financial statements. ESG disclosures may be included as part of a firm's financial statements or created as a standalone report. Compared with the ESG information provided in financial statements, standalone ESG reports are more comprehensive and contain much more detail (Dhaliwal et al., 2011). Stand-alone ESG reports provide incrementally useful information to investors. Firms that voluntarily publish standalone ESG reports tend to exhibit superior ESG performance (Christensen, 2016; Puroila and Mäkelä, 2019).

The SDGs concept has become a universal guide for measuring the impacts of ESG investment strategies. Consequently, investors support sustainable development by expanding their portfolios. At the macro level, combining SDGs with ESG considerations can serve as a common communication medium for articulating investment strategy processes and company operating needs. As a result, SDGs can strengthen the ESG framework by addressing consistency in the analysis of the timing and level of internalization of risks and the realization of opportunities within companies. At the micro level, signatories to the United Nations also believe that a sustainable financial system must contribute to every business unit or company (Mirekel, 2023).

To facilitate implementation and monitoring, the 17 goals and 169 targets of the TPB/SDGs were grouped into the following four pillars:

1. Social development pillars include Goals 1, 2, 3, 4 and 5
2. Economic development pillars include Goals 7, 8, 9, 10 and 17
3. Environmental development pillars include Goals 6, 11, 12, 13, 14, and 15
4. Legal and governance development pillar includes Goal 16.

Even though it is divided into pillars, in implementation, the four pillars are interrelated and support each other (Bappenas, 2018). There is no universal consensus on the exact way to break down the 17 SDG components into three ESG components, as different approaches can be used depending on the goals, industry, and framework used by companies or experts. However, some experts and organizations have proposed breaking SDGs into ESG components based on their perspectives. One common approach used by some experts is as follows:

1. Environment (environmental - E):
SDGs that are directly related to environmental issues, nature conservation, and climate change will be included in Component E (environmental). These included SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Production and Consumption), SDG 13 (Action to Address Climate Change), SDG 14 (Life below Water), and SDG 15 (Life on Land).
2. Social (social - S):
SDGs that focus on social issues, human welfare, and inequality tend to be included in the social (S) component. These include SDG 1 (No Poverty), SDG 2 (No Hunger), SDG 3 (Health and Well-Being), SDG 4 (Quality Education), SDG

5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 10 (less inequality), and SDG 16 (Peace, Justice, and Strong Institutions).

3. Governance (governance - G):
SDGs that focus on governance, international cooperation, and policy are included in component G (governance). These include SDG 9 (Industry, Innovation, and Infrastructure), SDG 16 (Peace, Justice, and Strong Institutions), and SDG 17 (Partnerships for the Goals).

For disclosures related to the economic environment, as outlined in the sustainability concept proposed by the Global Reporting Initiative, a study conducted by the Association of Chartered Certified Accountants (ACCA) divides the 17 SDG themes in corporate reporting into economic, social, and environmental performance as follows:

1. Environment
 - a. SDG 6 (clean water and sanitation),
 - b. SDG 7 (affordable and clean energy),
 - c. SDG 12 (responsible production and consumption),
 - d. SDG 13 (action to address climate change),
 - e. SDG 14 (life below water),
 - f. SDG 15 (life on land).
2. Social
 - a. SDG 4 (quality education),
 - b. SDG 5 (gender equality),
 - c. SDG 10 (lesser inequality),
 - d. SDG 11 (sustainable cities and communities),
 - e. SDG 16 (peace, justice and strong institutions),
 - f. SDG 17 (partnerships for the goals).
3. Economy
 - a. SDG 1 (no poverty),
 - b. SDG 2 (no hunger),
 - c. SDG 3 (health and well-being)
 - d. SDG 8 (decent work and economic growth)
 - e. SDG 9 (industry, innovation, and infrastructure).

However, it should be noted that many organizations and experts also understand the overlap between these three ESG components, and some SDGs may be considered relevant to more than one aspect of ESG. Therefore, this understanding should be considered a general guide and not a fixed rule. More detailed and specific ESG assessments are usually required for companies or organizations that wish to integrate SDGs into their sustainability strategies, according to their context.

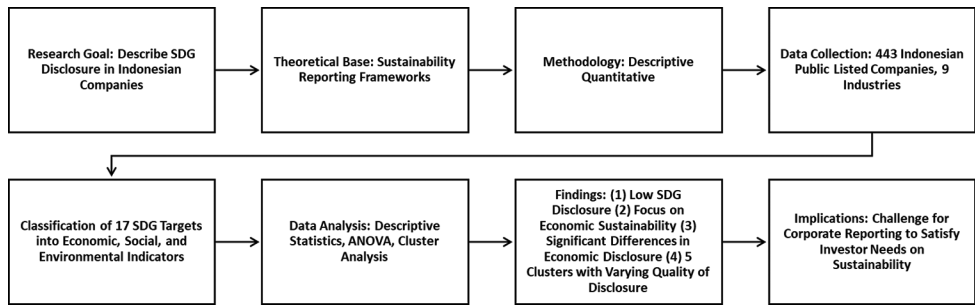
2.3. Conceptual Framework

This research starts with the issue of sustainability, which is not yet optimal in Indonesia; to answer this problem, a conceptual framework is built that combines SDG theory in relation to SDG reporting, SDG and ESG Relationship, and statistical methods to analyze and understand the current condition of SDG disclosure in Indonesian companies. The conceptual framework of this research is shown in Figure 1.

3. METHODOLOGY

This study employed a descriptive, quantitative method. Quantitative research presents data in the form of numbers as

Figure 1: Conceptual framework



the result of this research. Descriptive research is a method for researching the status of a human group, object, condition, thought, or current event. The descriptive method is used to create a systematic, factual, and accurate picture or description of the existing phenomena. Quantitative descriptive research describes variables, as they are supported by data in the form of numbers produced from actual conditions (Sugiyono, 2019).

The purposive sampling method was used to obtain samples from companies in Indonesia listed on the Indonesia Stock Exchange, both private and state-owned, which publish SDGs disclosure on a stand-alone basis. This research collected data from 435 publicly listed Indonesian companies from 2016 to 2018, divided into nine types of industries. The types of industries are as follows: (1) agriculture; (2) mining; (3) Basic Industries; (4) Miscellaneous Industries; (5) Consumer Goods; (6) Property and Real Estate; (7) infrastructure; (8) finance; and (9) Trade, Service and Investment. This study classified 17 SDG targets into three sustainability-related performance indicators: Economic, Social, and Environmental.

The main variable in this research is the disclosure of SDGs representing ESG in companies. This study categorizes the 17 goals of the SDGs to represent the 3-sustainability performance of companies in the economic, social, and environmental fields. The division of the 17 SDG goals into the 3-sustainability performance of companies is presented in Table 1.

Data were collected by means of a literature study using the annual reports of the companies along with a matrix, as shown in the appendix 1. Data analysis was conducted quantitatively descriptively using the following statistics:

1. Descriptive statistics included the data’s average, standard deviation, maximum, and minimum values. Descriptive statistics will explain the overall condition of SDG item disclosure, followed by displaying the condition of SDG item disclosure per industry according to the industry classification used on the Indonesia Stock Exchange. After presenting the SDG data overall, descriptive statistics will explain the categorization of SDG components into sub-components of sustainability performance, namely economic, social, and environmental. Descriptive statistics display data on economic, social, and environmental performance, both overall and per industry group. Differences were tested to compare the value of sustainability-related performance between industries in the study and to test whether there

Table 1: Variable operationalization

Sustainability -related performance	SDG component
Economic	SDG 1 (no poverty), SDG 2 (no hunger), SDG 3 (health and well-being) SDG 8 (decent work and economic growth) SDG 9 (industry, innovation, and infrastructure)
Social	SDG 4 (quality education), SDG 5 (gender equality), SDG 10 (lesser inequality), SDG 11 (sustainable cities and communities), SDG 16 (peace, justice and strong institutions), SDG 17 (partnerships for the goals)
Environmental	SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 12 (responsible production and consumption), SDG 13 (action to address climate change), SDG 14 (life below water), SDG 15 (life on land)

SDG: Sustainability development goals

was any significant difference between sustainability-related performance every year in each industry. The difference test to compare the value of sustainability-related performance between industries was carried out using the One-Way Analysis of Variance (ANOVA) test, and sustainability-related performance was compared every year using repeated measures ANOVA (Hair et al., 2019).

2. Cluster analysis to identify clusters based on sustainability-related performance. The researcher sorted companies into several clusters using hierarchical and non-hierarchical cluster analyses. The researcher assigned each company to several clusters with four sustainability disclosure components as the main characteristics of the clusters. To determine the number of clusters, the researcher used Ward’s Hierarchical Method; the number of clusters formed using Ward’s method was processed further using Non-Hierarchical Analysis using the K-means method to find the final cluster solutions (Hair et al., 2019).

4. RESULTS

4.1. Descriptive Statistics

Table 2 shows the disclosure of SDG components in companies’ annual reports from companies during the years 2016-2018. The table shows that during the 3 years, on average, companies never disclosed more than six items related to SDGs in their

annual reports. This result indicates that the percentage of SDG disclosures was 38.84%. The standard deviation for each year also showed a similar tendency, almost reaching four SDG items. This indicates that the conditions of SDG disclosure in annual reports are diverse. This is also evidenced by companies that do not disclose any SDG items at all (0%) and companies that disclose 16 out of 17 SDG items or 94.12% in their annual reports. Table 2 shows that Indonesian companies in the observed year are still in the process of understanding and integrating SDGs into their annual reports. Furthermore, Table 3 explains the disclosure of SDG components according to industry group each year.

As Table 3 shows, the mining sector has the highest level of SDG disclosure. This is reasonable considering that the mining sector is an extractive sector that can have negative consequences on the environment and social impacts. However, from an economic perspective, Indonesia has abundant natural resources, making mining a clear economic potential capable of driving its growth. The agricultural sector had the lowest level of disclosure. Nevertheless, the standard deviation in the agricultural sector, which is close to the average SDG disclosure, indicates that the practice of SDG disclosure in the agricultural sector varies significantly. The standard deviation in other sectors generally also

shows figures that are quite close to the average value, implying that the industry sectors in Indonesia have not yet fully disclosed all the SDG items. Some studies suggest that this may be due to a lack of awareness of the importance of SDG disclosure in companies' annual reports (Elalfy et al., 2021; Pendse et al., 2023).

Table 4 describes the percentage of disclosures of SDG items per year for each SDG goal category. These data were obtained by comparing the number of annual reports from companies that disclose a particular SDG item with a total of 17 SDG items. Further details can be found in Table 4.

Table 4 indicates that SDG Theme 3 is discussed by all companies in the sample. SDG 3 is related to the regulation of health and well-being. This section will have significant value because discussions related to health and well-being are generally mandated by applicable stock exchange authorities. Indonesia already has regulations that require companies to ensure that all employees participate in social security programs. Indonesia SFAS 7 also mandates discussions on key management compensation, which is part of the well-being of employees. Additionally, CSR activities conducted by companies often focus on themes related to health and well-being, such as providing scholarships, facilitating health assistance, and providing welfare facilities. Theme SDG 4, related to education, is also widely discussed by companies because many companies contribute to various educational assistance programs for the community or their employees. The lowest level of disclosure was found in Theme SDG 14. Not all operating companies have the same exposure to water, so only companies with high water dependence, for example, raw materials or processing liquid waste, will disclose Theme SDG 14. Theme SDG 16, related to peace and strong institutions, is also relatively

Table 2: SDG component disclosure rate (in aggregate)

Statistics	Year		
	2016 (%)	2017 (%)	2018 (%)
Mean	6.51 (38.27)	6.62 (38.92)	6.69 (39.32)
Standard deviation	3.97 (23.37)	3.99 (23.47)	3.99 (23.47)
Max	16 (94.12)	16 (94.12)	16 (94.12)
Min	0 (0.00)	0 (0.00)	0 (0.00)

SDG: Sustainability development goals

Table 3: SDG component disclosure per industry

Sectors	Year					
	Mean			Std Dev		
	2016 (%)	2017 (%)	2018 (%)	2016 (%)	2017 (%)	2018 (%)
Agriculture	5.563	5.563	5.875	4.501	4.501	4.485
	32.72	32.72	34.56	26.48	26.48	26.38
Mining	8.964	8.964	9.036	4.069	4.168	4.141
	52.73	52.73	53.15	23.93	24.52	24.36
Basic industries	6.418	6.582	6.600	3.876	3.952	3.966
	37.75	38.72	38.82	22.80	23.25	23.33
Miscellaneous industries	6.500	6.500	6.531	2.652	2.652	2.664
	38.24	38.24	38.42	15.60	15.60	15.67
Consumer goods	7.536	7.786	7.929	3.854	3.938	3.999
	44.33	45.80	46.64	22.67	23.16	23.53
Property and real estate	7.111	7.333	7.296	3.622	3.598	3.611
	41.83	43.14	42.92	21.31	21.16	21.24
Infrastructure	6.109	6.239	6.261	4.280	4.164	4.155
	35.93	36.70	36.83	25.18	24.50	24.44
Finance	5.935	5.974	6.078	4.108	4.123	4.090
	34.91	35.14	35.75	24.17	24.25	24.06
Trade, service, and investment	6.020	6.131	6.232	4.015	4.040	4.080
	35.41	36.07	36.66	23.62	23.76	24.00
ANOVA test results (F Sig)	2.345	2.419	2.301			
	0.018*	0.015*	0.020*			
Friedman test results (Chi-square, sig)				37.039		
				0.000*		

*Significant at $\alpha=5\%$. SDG: Sustainability development goals, ANOVA: Analysis of variance

low in disclosure because this theme is related to peace and justice, where many companies are confused in interpreting compliance, and many perceive that Theme SDG 16 is the responsibility of

the government (Acuti et al., 2020). In general, there is also a significant increase in disclosure every year, as evidenced by the Friedman test results showing a significant difference between the extent of disclosure in 2016, 2017, and 2018.

Table 4: Percentage number of companies disclosing SDG items

SDG component	2016 (%)	2017 (%)	2018 (%)	Mean (%)
1	57.93	57.79	57.56	57.76
2	56.78	56.43	57.56	56.93
3	81.61	79.91	80.81	80.78
4	63.22	62.75	63.21	63.06
5	16.32	15.80	16.03	16.05
6	23.22	22.80	23.93	23.32
7	33.56	33.41	34.31	33.76
8	37.93	39.05	39.05	38.68
9	45.98	45.82	46.73	46.18
10	58.62	58.01	57.79	58.14
11	14.02	14.45	14.90	14.46
12	41.61	41.99	42.21	41.94
13	46.67	47.86	47.86	47.46
14	7.59	7.22	7.67	7.49
15	32.64	33.86	33.86	33.45
16	9.89	9.71	9.93	9.84
17	22.99	22.80	23.02	22.94
Friedman test results	8.912 (0.000)*			

*: Significant at $\alpha=5\%$. SDG: Sustainability development goals

Table 5 explains the condition of the SDG item disclosure related to sustainability, divided into three aspects: economic, social, and environmental. Table 5 indicates that companies' sustainability disclosures still focus on economic themes, with an average value of around 56%, whereas for social and environmental themes, the values are still in the range of 30-32%. However, it is important to note that the standard deviation in each category of economic, social, and environmental disclosures is relatively close to its average value, indicating that there is still variation in disclosure practices among companies. Further details can be found below.

Table 6 explains the condition of sustainability-related SDG item disclosure and classifies it into nine types of industries. Further details can be found in Table 6.

Table 6 provides extensive explanations of sustainability performance disclosure in various industrial sectors in Indonesia. Table 6 indicates that the phenomenon observed in Table 5

Table 5: Sustainability-related performance based on SDG score

Statistics	Economy performance			Social performance			Environmental performance		
	2016 (%)	2017 (%)	2018 (%)	2016 (%)	2017 (%)	2018 (%)	2016 (%)	2017 (%)	2018 (%)
Mean	2.802	2.841	2.869	1.851	1.869	1.883	1.853	1.906	1.933
	56.05	56.83	57.38	30.84	31.15	31.38	30.88	31.76	32.22
Std. Dev	1.541	1.547	1.533	1.407	1.420	1.426	1.702	1.697	1.709
	30.83	30.93	30.65	23.45	23.67	23.77	28.36	28.28	28.48

SDG: Sustainability development goals

Table 6: Sustainability related performance based on SDG score per industry

Sectors	Year								
	Economic performance			Social performance			Environmental performance		
	2016 (%)	2017 (%)	2018 (%)	2016 (%)	2017 (%)	2018 (%)	2016 (%)	2017 (%)	2018 (%)
Agriculture	2.750	2.750	2.810	1.563	1.560	1.690	1.250	1.250	1.380
	55.00	55.00	56.20	26.04	26.00	28.17	20.83	20.83	23.00
Mining	3.750	3.750	3.750	2.500	2.500	2.570	2.710	2.710	2.710
	75.00	75.00	75.00	41.67	41.67	42.83	45.17	45.17	45.17
Basic industries	2.636	2.730	2.730	1.582	1.600	1.620	2.200	2.250	2.250
	52.73	54.60	54.60	26.36	26.67	27.00	36.67	37.50	37.50
Miscellaneous industries	2.781	2.780	2.780	1.781	1.780	1.810	1.940	1.940	1.940
	55.63	55.60	55.60	29.69	29.67	30.17	32.33	32.33	32.33
Consumer goods	3.179	3.320	3.320	2.071	2.180	2.180	2.290	2.290	2.430
	63.57	66.40	66.40	34.52	36.33	36.33	38.17	38.17	40.50
Property and real estate	3.000	3.040	3.020	1.963	2.020	2.020	2.150	2.280	2.260
	60.00	60.80	60.40	32.72	33.67	33.67	35.83	38.00	37.67
Infrastructure	2.522	2.630	2.650	1.783	1.760	1.760	1.800	1.850	1.850
	50.43	52.60	53.00	29.71	29.33	29.33	30.00	30.83	30.83
Finance	2.610	2.620	2.690	1.909	1.910	1.920	1.420	1.440	1.470
	52.21	52.40	53.80	31.82	31.83	32.00	23.67	24.00	24.50
Trade, Service and investment	2.707	2.710	2.770	1.747	1.770	1.760	1.570	1.660	1.710
	54.14	54.20	55.40	29.12	29.50	29.33	26.17	27.67	28.50
ANOVA test results (F sig)	2.158	2.139	1.936	1.324	1.401	1.468	2.971	2.986	2.761
	0.030*	0.031*	0.053	0.230	0.194	0.167	0.003*	0.003*	0.006*
Friedman test results		18.796			6.426			23.407	
(Chi-square, sig)		0.000*			0.040*			0.000*	

*: Significant at $\alpha=5\%$. SDG: Sustainability development goals, ANOVA: Analysis of variance

occurs in all industry sectors in Indonesia, where sustainability disclosure is focused more on economic aspects than on social and environmental aspects. Table 6 shows that the mining industry has the highest disclosure values for all aspects of sustainability performance, including economic, social, and environmental factors. The consumer goods sector has the next highest disclosure value. The mining industry is highly exposed to natural and social environments, owing to its business processes (Pratama et al., 2022). The consumer goods industry produces daily necessities that naturally have a broad retail consumer market. The current changes in retail consumer behavior related to green lifestyles and physical and mental well-being will drive companies to disclose sustainability aspects more deeply (Nurrahman and Mita, 2022). The agricultural and basic industry sectors had the lowest disclosure rates. The agricultural sector was discussed in the previous section of this paper, while the basic industry sector generally has corporate consumer bases with low exposure to social and environmental performance, resulting in generally low disclosure rates (Emma and Jennifer, 2021; Haywood and Boihang, 2021).

Table 6 also shows that, although the disclosure of economic performance in various industry sectors has exceeded the other two sustainability domains, there is still disparity among industries, especially in 2016 and 2017. However, in 2018, the differences between the industries were no longer significant. This indicates that sustainability disclosures for economic aspects have matured and become a common practice for companies. There was no difference in social performance among industries from 2016 to 2018. This suggests that companies disclose their social performance consistently. However, a different scenario occurs in the disclosure of environmental performance, with significant differences among industries in all years. This indicates that companies in each industry are still not uniform in analyzing sustainability issues related to the natural environment. For policy formulation, companies can be further guided regarding the improvement of environmental performance disclosure, which is still low and highly variable, followed by enhancement in social environmental performance (Perello-Marin et al., 2022).

4.2. Cluster Analysis

The first stage of the cluster analysis is to determine the number of clusters that should be formed. The formed clusters should be based on an analysis grounded in objectivity. This study employed a hierarchical method to determine the optimal number of clusters that can be formed. The optimal clusters formed can be observed in the agglomeration cluster list based on the Ward method used by the researcher. The results are presented in Table 7.

As shown in Table 7, agglomeration decreases sharply up to the 5th cluster order, after which the decrease stabilizes at a value of 12%. This indicates that only five clusters have unique characteristics. Thus, it can be established that the formed clusters are 5. The second stage to be considered is that there should be no significant relationships among the cluster components. Therefore, a multicollinearity test will be conducted using the VIF test, revealing the sustainability disclosure of the economic, social, and environmental fields. The VIF test results showed

values below 10, indicating no significant relationships among the cluster components. Furthermore, after the clusters were formed, ANOVA was conducted to assess the significance of the formed cluster model. The results of all ANOVA tests show significance below 5%, indicating that the cluster model is a good fit and can be further analyzed. The results are shown in Table 8.

Based on the formed cluster profiles, the characteristics and profiles of each cluster can be described as follows.

1. Cluster 1: This cluster comprises the companies with the highest overall sustainability performance disclosure. However, in terms of social sustainability performance disclosure, these companies ranked second after Cluster 2. There are 63 companies in this category, dominated by companies in the trade, services, and investment sectors, financial sector, and mining sector. One interesting aspect of this cluster is the absence of representation in various industries. Nevertheless, Cluster 1 was the second lowest in terms of cluster membership after cluster 2. When looking at distribution by industry, almost 40% of mining companies fall into this category. This is not surprising, as mining companies are diligent in providing information about the environment, particularly regarding SDGs 12 and 14. Some banking and trading companies have also disclosed information related to the environment, particularly regarding SDGs 12, 13, and 14. Many banking and trading companies have proposed programs to combat climate change, such as paperless systems or conversion to digital systems (Gunawan et al., 2022; Susilowati et al., 2022).
2. Cluster 2: This cluster consists of companies with a high level of economic and social disclosure, but low environmental disclosure. This is the cluster with the lowest membership, comprising only 56 members. Looking at the distribution of members, a small fraction of all the industry sectors is represented in this cluster. The trade and service industries dominate the members of Cluster 2. Trading and service companies have disclosed a considerable amount of information related to social performance, especially SDGs 11 and 17. Trading and service companies have distribution and production networks disclosed in their annual reports, and

Table 7: Cluster agglomeration schedule

Cluster formed	Agglomeration number	Decrease (in number)	Decrease (%)
0	3032.210	-	-
1	1947.594	1084.616	35.77
2	1416.941	530.653	27.25
3	1059.294	357.647	25.24
4	848.396	210.898	19.91
5	742.489	105.907	12.48
6	657.222	85.267	11.48
7	579.008	78.214	11.90

Table 8: Cluster multicollinearity and ANOVA test

Component	VIF	ANOVA F-test	ANOVA .sig
Economy	1.688	259.584	0.000*
Social	1.700	190.080	0.000*
Environment	1.189	654.279	0.000*

*: Significant at $\alpha=5\%$. ANOVA: Analysis of variance

some trading and service companies form and develop various millennial or elderly community programs, as described in their annual reports (Manes-Rossi and Nicolo, 2022).

3. Cluster 3: This cluster comprises companies with a relatively high level of economic disclosure, but low social and environmental disclosures. There are 112 companies in this cluster, dominated by financial, trading, and service companies. This indicates that companies in these two sectors have diverse sustainability disclosure practices.
4. Cluster 4: This cluster contains companies with economic, social, and environmental performance disclosures that are not very high. It can be said that this cluster has a composition of economic, social, and environmental performance disclosure that is not too high but is evenly distributed in its composition. There are 64 companies in this cluster, and their members are dominated by basic industry and property sector companies. Both industries are not highly sensitive and are exposed to natural and social environments, so it is reasonable that their disclosure is not too high (Paun, 2018). There is also a small portion of the financial sector and trade and service sector companies included in this cluster.
5. Cluster 5: This cluster includes companies with the lowest economic, social, and environmental performance disclosure. This cluster has 136 companies, making it the cluster with the highest number of members. This undoubtedly indicates that the implementation of SDG concepts and sustainability during the study year was still weak. Many member companies in the basic industry, property, infrastructure, finance, trade, and service sectors are in this cluster. Members of this cluster are expected to improve their sustainability performance by benchmarking against clusters with better performance (Tsang et al., 2023).

Table 9 describes the profiles of the formed clusters and the distribution of Indonesian companies by industry type in each cluster.

5. DISCUSSION

Improving sustainability performance is important for companies. This is as important as improving a company's financial performance. Sustainability refers to the development that meets

the needs of the present without reducing the ability of future generations to meet their needs (Burhan and Rahmanti, 2012). The low level of SDG disclosure by companies can be attributed to a limited understanding of the importance of SDGs in their annual reports. On average, companies disclose <40% of the 17 items related to the SDGs in their annual reports. This may indicate that the understanding and integration of SDGs is still at an early stage. In addition, the quality of disclosure of sustainability reports in several countries, including Indonesia, still relies on compliance with regulations alone, but has not been fully adopted by companies in their daily business practices. In the future, a more integrated approach is needed so that sustainability reports become media with more power to determine the strategic direction of the company (Grana, 2018; Andriadi and Werastuti, 2022).

Better SDG disclosure in the mining industry could be due to a greater awareness of the negative impacts of mining operations on the environment and society. Because the mining industry is vulnerable to external pressures and has great economic potential, companies tend to be more open to their environmental and social impacts. An impact assessment should be one of the main priorities for sensitive companies, considering that this type of industry, such as mining activities, has a cumulative impact that can cause long-term changes in society, giving rise to multi-generational impacts on the local environment (Gunawan et al., 2022). Companies that provide transparent environmental disclosures can meet the demands of different stakeholder groups. In addition, it generates added value, improves the company's image, and ultimately achieves more sustainable business development (Huang and Kung, 2010).

Most companies continue to focus on the economic performance of disclosures. This could be caused by the pressure to meet the demands of stakeholders, such as regulators or investors, who pay more attention to economic aspects. Many stakeholders in Indonesia still expect economic information, rather than environmental and social disclosure. Thus, many companies tend to disclose their economic aspects. In this case, the government can be considered the main stakeholder for all companies without really considering the needs of other stakeholders, as there is limited information for disclosing the environmental and social aspects (Gunawan et al.,

Table 9: Cluster profile

Description	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Average score of companies in each cluster					
Economy	4.48	4.04	3.55	2.61	1.11
Social	3.6	3.65	1.6	1.43	0.77
Environmental	4.15	0.26	0.2	2.69	0.22
Total number of companies in each cluster by business sectors					
Agriculture	2	2	5	1	6
Mining	10	5	6	1	6
Basic industry	5	7	11	14	18
Miscellaneous industry	0	7	12	7	6
Consumer goods	4	4	10	4	6
Property	7	8	12	13	14
Infrastructure	6	6	10	7	17
Finance	13	6	21	10	27
Trade, service, investment	16	11	25	11	36
Total	63	56	112	68	136

2022). This may also indicate that companies are not fully aware of the importance of reporting their social and environmental performance. Thus, the reporting of environmental information disclosure by companies remains unsatisfactory. Most of the reported information was fragmented. Some possible reasons are that the term “developing countries” still applies to most Asian countries, where development and understanding of environmental protection are still lagging compared to Western countries. Local companies lack environmental awareness, coupled with low demand for environmental disclosure by stakeholders in general. Consequently, the corporate sector tends to exhibit lower levels of voluntary disclosure and is less willing to engage in such practices (Huang and Kung, 2010). Ambiguity and inconsistency between reporting approaches most likely results in companies not reporting environmental issues or describing practices related to waste management (Opferkuch et al., 2021).

Although there is an annual increase in disclosures, this increase is not rapid. This could be because companies are still in the initial stages of understanding SDG integration in their reporting. Companies may need more education, assistance, and guidance to implement and report sustainability performance more effectively. SDG assessment and management allow companies to identify the most appropriate strategies for sustainable development towards achieve the SDGs. The use of the Coverage and Commitment Index combined in a positioning matrix proves that some companies are becoming more concentrated on reporting several SDG indicators and focusing on reporting accuracy (Avcılar and Demirgüneş, 2017; Calabrese et al., 2021).

The largest cluster (cluster 3-5) indicates that many companies have poor sustainability disclosure performance. Other companies adopt a different strategy, namely, reporting as many SDG indicators as possible without discussing them in depth, for example, providing only a qualitative description or not stating future goals (Calabrese et al., 2021). To improve this, these companies need to improve their approach to reporting on sustainability performance. Benchmarking companies in better clusters, better education about the importance of the SDGs, and a focus on improving social and environmental performance can help them improve their sustainability disclosures. Companies that voluntarily engage in Integrated Reporting tend to achieve higher corporate financial performance (Albitar et al., 2020). It is important to remember that making a profit is not just a business goal, especially for companies. Caring for and being responsible for the environment is an important aspect of running a business to improve the company’s reputation, increase profitability, and provide benefits to all stakeholders. Therefore, apart from increasing profitability, companies must be responsible for managing sustainability. It is important for investors to be selective in making investment decisions. In addition to making investment decisions based on financial performance information, investors should also consider a company’s performance in managing sustainability. They must consider these nonfinancial aspects when making investment and lending decisions. Investing in profitable and socially responsible companies is better than investing in companies that have high profitability but ignore the environment (Burhan and Rahmanti, 2012).

6. CONCLUSION

The overall disclosure of SDGs in corporate reporting among Indonesian companies remains low, averaging around 38-39% over the observed years (2016-2018). Companies prioritize economic sustainability in their disclosures, with a significantly higher emphasis on economic factors in terms of environmental and social aspects. This inclination towards economic sustainability may be due to its direct link to financial performance and investor interest. While there are disparities among industries in economic disclosure, there are no significant differences in environmental and social disclosures. This suggests a need for more uniformity and awareness across industries. The cluster analysis revealed five distinct clusters with varying levels of sustainability performance. Notably, Cluster 1 exhibits the highest overall sustainability disclosure, while Cluster 5 lags significantly behind, indicating the weak implementation of SDGs in many companies.

The recommendation for regulators is that they need to increase awareness about the importance of SDG disclosure in corporate reports by providing appropriate incentives or sanctions. There is also a need to establish clearer binding standards for SDG disclosures to guide companies. It is also important to strengthen oversight mechanisms to ensure that companies strictly comply with SDG disclosure obligations. Meanwhile, the recommendation for companies as report preparers is that they need to provide training and education to their staff regarding the importance and effective methods of reporting SDG achievements. In addition, it is also important for companies to maintain a balance in disclosing economic, social, and environmental aspects.

Further research could carry out an in-depth analysis of the factors that influence SDG disclosure in certain sectors. We then investigated the influence of regulatory policies on changes in the level of SDG disclosure. Studies can also be conducted on the impact of SDG disclosures on business performance, investor opinion, and company image.

REFERENCES

- Acuti, D., Bellucci, M., Manetti, G. (2020), Company disclosures concerning the resilience of cities from the Sustainable Development Goals (SDGs) perspective. *Cities*, 99(1), 102608.
- Adams, C. (2017), *The Sustainable Development Goals, Integrated Thinking and the Integrated Report*. London: International Integrated Reporting Council.
- Adams, C.A., McNicholas, P. (2007), Making a difference: Sustainability reporting, accountability and. *Accounting, Auditing and Accountability Journal*, 20(3), 382-402.
- Adhariani, D., Toit, E.D. (2020), Readability of sustainability reports: Evidence from Indonesia. *Journal of Accounting in Emerging Economies*, 10(4), 621-636.
- Al Amosh, H., Khatib, S. (2022), Ownership structure and environmental, social and governance performance disclosure: The moderating role of the board independence. *Journal of Business and Socio-Economic Development*, 2(1), 49-66.
- Albitar, K., Hussainey, K., Kolade, N., Gerged, A. (2020), ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms. *International Journal of Accounting and*

- Information Management, 28(3), 429-444.
- Almilia, L.S. (2010), Financial and non financial factors influencing internet financial and sustainability reporting (IFSR) in Indonesia Stock Exchange. *Journal of Indonesian Economy and Business*, 25(2), 201-221.
- Amidjaya, P.G., Widagdo, A.K. (2020), Sustainability reporting in Indonesian listed banks: Do corporate governance, ownership structure and digital banking matter? *Journal of Applied Accounting Research*, 21(2), 231-247.
- Andriadi, K.D., Werastuti, D.N.S. (2022), A comprehensive study on the quality of sustainability reporting disclosure between Indonesia and other countries. *Accounting*, 8(1), 19-26.
- Avçılar, M.Y., Demirgüneş, B.K. (2017), Developing perceived greenwash index and its effect on green brand equity: A research on gas station companies in Turkey. *International Business Research*, 10(1), 222-239.
- Bappenas. (2018), Sekilas SDGs. Available from: <https://sdgs.bappenas.go.id/sekilas-sdgs> [Last accessed on 2023 Oct 23].
- Bebbington, J., Unerman, J. (2018), Achieving the United Nations sustainable development goals: An enabling role for accounting research. *Accounting, Auditing and Accountability Journal*, 31(1), 2-24.
- Burhan, A.H.N., Rahmanti, W. (2012), The impact of sustainability reporting on company performance. *Journal of Economics, Business, and Accountancy Ventura*, 15(2), 257-272.
- Calabrese, A., Costa, R., Gastaldi, M., Ghiron, N.L., Montalvan, R.A. (2021), Implications for sustainable development goals: A framework to assess company disclosure in sustainability reporting. *Journal of Cleaner Production*, 319(4), 128624.
- Choi, M., Hong, S. (2022), Another form of greenwashing: The effects of chaebol firms' corporate governance performance on the donations. *Sustainability*, 14(6), 3373.
- Christensen, D.M. (2016), Corporate accountability reporting and high-profile misconduct. *The Accounting Review*, 91(2), 377-399.
- Christensen, H.B., Hail, L., Leuz, C. (2021), Mandatory CSR and sustainability reporting: Economic analysis and literature review. *Review of Accounting Studies*, 26(3), 1176-1248.
- Dhaliwal, D.S., Li, O.Z., Tsang, A., Yang, Y.G. (2011), Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review*, 86(1), 59-100.
- Di Vaio, A., Varriale, L., 2020. SDGs and airport sustainable performance: Evidence from Italy on organisational, accounting and reporting practices through financial and non-financial disclosure. *Journal of Cleaner Production*, 249, 119431.
- Elalfy, A., Weber, O., Geobey, S. (2021), The sustainable development goals (SDGs): A rising tide lifts all boats? Global reporting implications in a post SDGs world. *Journal of Applied Accounting Research*, 22(3), 557-575.
- Elkington, J. (1997), The triple bottom line. *Environmental Management: Readings and Cases*, 2, 49-66.
- Elsherif, M. (2023), Green financing as a tool to mitigate climate change for sustainable development: An insight from Egypt. *International Journal of Economics and Financial Issues*, 13(3), 33-45.
- Emma, G.M., Jennifer, M.F. (2021), Is SDG reporting serious substantial or symbolic? An examination of controversial and environmentally sensitive industries. *Journal of Cleaner Production*, 298(1), 126781.
- Firmialy, S., Nainggolan, Y.A. (2018), Constructing the ideal SRI (sustainability reporting index) framework for Indonesian market: Combined perspectives from rating agencies, academics, and practitioners. *Social Responsibility Journal*, 15(5), 573-596.
- Fitriasari, D., Kawahara, N. (2018), Japan investment and Indonesia sustainability reporting: An isomorphism perspective. *Social Responsibility Journal*, 14(4), 859-874.
- Global Reporting Initiative (GRI). (2018), Sustainability Disclosure Database. Data Legend. Amsterdam: Global Reporting Initiative.
- Granà, F. (2018), Practicing integrated thinking: Towards a new era of corporate management accounting and reporting. In: *Sustainable Development Goals and Integrated Reporting*. London: Routledge, p28.
- Gray, R. (2006), Social, environmental and sustainability reporting and organisational value creation? Whose value? Whose creation? *Accounting, Auditing and Accountability Journal*, 19(6), 793-819.
- Gray, R., Adams, C.A., Owen, D. (2014), *Accountability, Social Responsibility and Sustainability: Accounting for Society and the Environment*. UK: Pearson.
- Gunardi, A., Febrian, E., Herwany, A. (2016), The implication of firm-specific characteristics on disclosure: the case of Indonesia. *International Journal of Monetary Economics and Finance*, 9(4), 379-387.
- Gunawan, J., Permatasari, P., Fauzi, H. (2022), The evolution of sustainability reporting practices in Indonesia. *Journal of Cleaner Production*, 358, 131798.
- Hahn, R., Kühnen, M. (2013), Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, 59, 5-21.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2019), *Multivariate Data Analysis*. 8th ed. London: Cengage.
- Haywood, L.K., Boihang, M. (2021), Business and the SDGs: Examining the early disclosure of the SDGs in annual reports. *Development Southern Africa*, 38(2), 175-188.
- Hermawan, A., Aisyah, I.S., Gunardi, A., Putri, W.Y. (2018), Going green: Determinants of carbon emission disclosure in manufacturing companies in Indonesia. *International Journal of Energy Economics and Policy*, 8(1), 55-61.
- Hopper, T. (2019), Stop accounting myopia: Think globally: A polemic. *Journal of Accounting and Organizational Change*, 15(1), 87-99.
- Huang, C.L., Kung, F.H. (2010), Drivers of environmental disclosure and stakeholder expectation: Evidence from Taiwan. *Journal of Business Ethics*, 96(3), 435-451.
- Isaksson, R. (2019), A proposed preliminary maturity grid for assessing sustainability reporting based on quality management principles. *The TQM Journal*, 31(3), 451-466.
- Khan, M., Serafeim, G., Yoon, A. (2016), Corporate sustainability: First evidence on materiality. *The accounting review*, 91(6), 1697-1724.
- Luo, L., Qingliang, T., Lan, Y.C. (2013), Comparison of propensity for carbon disclosure between developing and developed countries: A resource constraint perspective. *Accounting Research Journal*, 26, 6-34.
- Madsen, H.L. (2020), Business model innovation and the global ecosystem for sustainable. *Journal of Cleaner Production*, 247, 119102.
- Manes-Rossi, F., Nicolo, G. (2022), Exploring sustainable development goals reporting practices: From symbolic to substantive approaches-Evidence from the energy sector. *Corporate Social Responsibility and Environmental Management*, 29(5), 1799-1815.
- Mirekel. (2023), *Relevansi Hubungan ESG Dengan SDG*. Jakarta: MIREKEL.
- Nurrahman, K.A., Mita, A.F. (2022), Does environmental, social and governance (ESG) performance increase earnings informativeness? Evidence from ASEAN countries. *International Journal of Trade and Global Market*, 15(3), 363-376.
- Opferkuch, K., Caeiro, S., Salomone, R., Ramos, T.B. (2021), Circular economy in corporate sustainability reporting: A review of organisational approaches. *Business Strategy and the Environment*, 30(8), 4015-4036.
- Ordóñez-Ponce, E., Khare, A. (2020), GRI 300 as a measurement tool for the United Nations Sustainable Development Goals: Assessing the impact of car makers on sustainability. *Journal of Environmental*

- Planning and Management, 64, 47-75.
- Paun, D. (2018), Corporate sustainability reporting: An innovative tool for the greater good of all. *Business Horizons*, 61(6), 925-935.
- Pendse, M.K., Nerlekar, V.S., Darda, P. (2023), A comprehensive look at Greenwashing from 1996 to 2021: A bibliometric analysis. *Journal of Indian Business Research*, 15(1), 157-186.
- Peng, J., Sun, J., Luo, R. (2015), Corporate voluntary carbon information disclosure: Evidence from China's listed companies. *The World Economy*, 38(1), 91-109.
- Perello-Marin, M.R., Rodríguez-Rodríguez, R., Alfaro-Saiz, J.J. (2022), Analysing GRI reports for the disclosure of SDG contribution in European car manufacturers. *Technological Forecasting and Social Change*, 181(1), 121744.
- Porter, M.E., Kramer, M.R. (2011), The big idea: Creating shared value. How to reinvent capitalism – and unleash a wave of innovation and growth. *Harvard Business Review*, 89(1/2), 62-78.
- Pratama, A., Jaenudin, E., Anas, S. (2022), Environmental, social, governance-sustainability disclosure using international financial reporting sustainability standards S1 in Southeast Asian companies: A preliminary assessment. *International Journal of Energy Economics and Policy*, 12(6), 456-472.
- Pratama, A., Yadiati, W., Tanzil, N.D., Suprijadi, J. (2021), Integrated reporting in southeast Asia: Does value creation work? *Academic Journal of Interdisciplinary Studies*, 10(5), 57-77.
- Puroila, J., Mäkelä, H. (2019), Matter of opinion: Exploring the socio-political nature of materiality disclosures in sustainability reporting. *Accounting, Auditing and Accountability Journal*, 32(4), 1043-1072.
- Rosati, F., Faria, L.G.D. (2019), Business contribution to the Sustainable Development Agenda: Organizational factors related to early adoption of SDG reporting. *Corporate Social Responsibility and Environmental Management*, 26(1), 588-597.
- Schaltegger, S., Etzeberria, I.Á., Ortas, E. (2017), Innovating corporate accounting and reporting for sustainability - attributes and challenges. *Sustainable Development*, 25(2), 113-122.
- Schaltegger, S., Freund, F.L., Hansen, E.G. (2012), Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95-119.
- Scharenberg, K., Waltner, E.M., Mischo, C., Rieß, W. (2021), Development of students' sustainability competencies: Do teachers make a difference?. *Sustainability*, 13, 12954.
- Schönherr, N., Findler, F., Martinuzzi, A. (2017), Exploring the interface of CSR and the sustainable. *Transnational Corporations*, 24(3), 33-47.
- Scott, L., McGill, A. (2019), PwC - SDG Challenge. Available from: <https://www.pwc.com/gx/en/sustainability/SDG/sdg-2019.pdf> [Last accessed on 2023 Oct 23].
- Supriyono, E., Almasyhari, A.K., Suhardjanto, D., Rahmawati, S. (2015), The impact of corporate governance on corporate social disclosure: Comparative study in South East Asia. *International Journal of Monetary Economics and Finance*, 8(2), 143-161.
- Susilowati, E., Joseph, C., Vendy, V., Yuhertiana, I. (2022), Advancing SDG No 16 via corporate governance disclosure: Evidence from Indonesian and Malaysian fintech companies' websites. *Sustainability*, 14(1), 142113869.
- Szennay, Á., Szigeti, C., Kovács, N., Szabó, D. (2019), Through the Blurry looking glass-SDGs in the GRI reports. *Resources*, 8(1), 101.
- Tarigan, J., Semuel, H. (2014), Pengungkapan sustainability report dan kinerja keuangan. *Jurnal Akuntansi dan Keuangan*, 16(2), 88-101.
- Topple, C., Donovan, J.D., Masli, E.K., Borgert, T. (2017), Corporate sustainability assessment: MNE engagement with sustainable development and SDGs. *Transnational Corporations*, 24(3), 61-71.
- Tsalis, T.A., Malamateniou, K.E., Koulouriotis, D., Nikolaou, I.E. (2020), New challenges for corporate sustainability reporting: United Nations' 2030 Agenda for sustainable development and the sustainable development goals. *Corporate Social Responsibility and Environmental Management*, 27(4), 1617-1629.
- Tsang, A., Frost, T., Cao, H. (2023), Environmental, social, and governance (ESG) disclosure: A literature review. *The British Accounting Review*, 55, 101149.
- United Nations Development Programme. (2022), *SDG Guidebook*. Bangkok: UNDP.
- United Nations. (2015), *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: UN Publishing.
- Utami, W. (2015), Financial performance and the quality of sustainability disclosure based on global reporting initiative: Value relevances study in Indonesia Stock Exchange. *Mediterranean Journal of Social Sciences*, 6(5), 243-248.
- Wu, Q., He, Q., Duan, Y. (2013), Explicating dynamic capabilities for corporate sustainability. *EuroMed Journal of Business*, 8(3), 255-272.

APPENDIX

Appendix 1: SDG disclosure matrix

SDG component	Component name	Definition
1	No poverty	Any company activities provide infrastructure and financial assistance to disadvantaged communities outside the company.
2	No hunger	Any activities of the company that assist in the form of food and beverage facilities (short-term) or agricultural infrastructure and development related to agriculture to communities outside the company.
3	Good health and well-being	Company activities that benefit both the external community and internal employees, ensuring a healthy life (e.g., employee health programs, employee insurance programs, employee health and safety programs, the establishment of clinics and community healthcare facilities, and provision of free medical treatment to the community).
4	Quality education	Company activities that benefit both the external community and internal employees, ensuring good education and competency (e.g., internal or external scholarship programs, educational contributions to the community, establishment and activities of the company's educational foundation).
5	Gender equality	Company activities that benefit both the external community and employees, focusing on empowering women.
6	Clean water and sanitation	Company activities are directed towards the external community that focuses on providing clean water and adequate sanitation.
7	Affordable and clean energy	Company activities directed towards the external community or companies, emphasising energy efficiency, using alternative energy, and strengthening sustainable energy infrastructure (e.g., contributions/grants for renewable energy, use of renewable energy within the company).
8	Decent work and economic growth	Company activities are directed towards the external community or other companies that focus on creating a good working environment (for the company) and empowering SMEs (for the external community).
9	Industry, innovation and infrastructure	Company activities directed towards the external community or other companies related to the company's innovation in any field and public infrastructure development for the external community.
10	Reduce inequalities	Company activities are directed towards the external community to reduce economic inequality between the wealthy and the poor through various forms of assistance or contributions, infrastructure support in any field, scholarships, or services provided to the community.
11	Sustainable cities and communities	Company activities directed towards the external community related to the development of the areas surrounding the company and associated with sustainable energy use by the company or the community.
12	Responsible consumption and production	Company activities oriented towards providing environmentally friendly and sustainable products and services.
13	Climate action	Company activities both internally and in the community aimed at preventing environmental damage (e.g., use of environmentally friendly products, tree planting or environmental restoration CSR programs).
14	Life below water	Company activities in the external community aimed at preserving marine ecosystems (CSR programs in marine ecosystems).
15	Life on land	Company activities in the external community aimed at preserving terrestrial ecosystems (CSR programs in terrestrial ecosystems).
16	Peace, Justice, and strong institutions	Company activities internally related to combating corruption, enforcing governance within the company, and advocating law enforcement in society.
17	Partnerships for the goals	Company activities related to partnerships/collaborations with social community organisations focused on sustainability (e.g., CSR activities with national or international NGOs).

SDG: Sustainability development goals