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Implementation of GRI Standard in Sustainability Reports in Technology Sector Companies

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ABSTRACT

This study aims to analyse the application of the GRI Standards: Foundation 2021 by technology companies listed on the Indonesia Stock Exchange in 2024. The background of this research is based on the increasing demand for transparency in sustainability reporting, particularly in the technology sector, which has complex environmental and social impacts. The research method used is a descriptive qualitative approach with content analysis of company sustainability reports that refer to the GRI Standards. The results of the study show that, in general, companies have adopted GRI 1 at a fairly good level, especially in fulfilling the main concepts and reporting principles. However, there are still limitations in the consistency of claims regarding the use of standards, the depth of disclosure, and a low rate of external assurance implementation. These findings indicate that sustainability reporting in the technology sector remains largely structural and needs strengthening to become more substantive.

1. INTRODUCTION

In practice, companies have the task of compiling and reporting reports as a form of accountability for business activities that have been carried out. These reports will later be used as a basis for decision making by various parties, both internal and external, such as management, owners, investors, creditors, regulators, and the community. Over time, in terms of corporate accountability, reporting is no longer limited to financial aspects, but also includes non-financial information related to economic, social, and environmental impacts, known as Sustainability Reports (Christensen et al., 2021). As an empirical example, sustainability report disclosure is measured based on three main aspects: economic, environmental, and social, to see its effect on company performance (Violeta et al., 2025).

Theoretically, sustainability reports serve as a means of transparency and a mechanism for reducing information asymmetry between management and stakeholders (Sun et al., 2022). From the perspective of legitimacy theory and stakeholder theory, sustainability reporting is used by companies to show that their operational activities are in line with prevailing social values, norms, and expectations (OrtizCalle, 2022). Systematically organized and reliable information is expected to enhance the credibility of the company and serve as a basis for evaluating the quality of governance and sustainability performance.

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However, in the technology sector, preparing sustainability reports faces relatively more complex challenges. The International Telecommunication Union reports that the information and communication technology sector contributes to increased global energy consumption and emissions, particularly through the operation of data centers and cloud computing services, but the impact is still difficult to measure accurately due to limited available data. The World Bank also states that measuring the environmental impact of the digital sector still relies heavily on estimates, limiting the quality and comparability of technology companies' sustainability data. This situation shows that even though the technology sector is growing rapidly, the quality of sustainability reporting does not yet fully reflect the actual impact of companies' activities. The following are global estimates of ICT (Internet and Communication Technology) sector emissions in 2022.

Table 1. Global ICT Sector Emissions Data

Industry	Emissions 2022/2020 (million tCO ₂ e)			Change 2022/2020 %	Electricity (TWh)			Change 2022/2020 %
	2020	2021	2022		2020	2021	2022	
Telecommunications operators	135	134	133	-1%	239	255	258	8%
Colocation data centers	36	40	43	20%	89	100	109	22%
Cloud & content	22	27	32	46%	54	70	85	63%
Subtotal	193	201	208	8%	382	425	442	18%
% of world	0.6%	0.6%	0.6%		1.60%	1.70%	1.70%	
ICT Equipment	154	173	154	0.5%	282	329	311	10.6%
- PCs	62	71	65	4.8%	110	133	124	
- Smartphones	60	64	57	-5.1%	116	131	119	2.5%
- Network	32	38	33	2.4%	56	65	69	22.0%
Product use	222	215	205	-7.5%	430	442	430	-0.1%
- PCs	203	197	187	-7.9%	394	405	392	-0.5%
- Smartphones	19	18	18	-3.4%	36	37	38	4.3%
Subtotal	375	388	359	-4.2%	712	771	741	4.1%
% of world	1.2%	1.1%	1.0%		3.0%	3.0%		
TOTAL	568	589	567	-0.2%	1094	1196	1183	8.2%
% of world	1.8%	1.7%	1.7%		4.6%	4.7%		

Source: The World Bank and International Telecommunication Union, 2024

This situation needs to be analyzed scientifically because the limitations and inconsistencies in sustainability reporting have the potential to reduce the reliability of information used in decision-making. A number of studies show that companies tend to emphasize sustainability narratives without adequate supporting structures and disclosures, thereby increasing the risk of symbolic reporting. Therefore, evaluating the compliance of reporting with applicable standards is important to assess the extent to which sustainability reports truly meet the principles of relevance, completeness, and accuracy.

Based on these conditions, this study aims to analyze the implementation of GRI Standard 1: Foundation 2021 in technology sector companies listed on the Indonesia Stock Exchange (IDX) in 2024. Operationally, this study aims to assess the compliance of sustainability reports with GRI 1 requirements, identify structural challenges in sustainability reporting in the technology sector, and provide an empirical overview of the basic quality of sustainability reporting in this sector.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Sustainability Reporting Based on GRI Standards in the Technology Sector

Sustainability reporting, as explained by the Global Reporting Initiative (GRI) Standards, is a controlled and structured way for businesses to share information about their social, environmental, and economic impacts. These standards provide clear guidelines and measurement tools that cover things like economic performance, environmental effects, and social responsibilities, which help make businesses more accountable and open (Hartman & Painter-Morland, 2007). Legitimacy theory suggests that sustainability reporting helps companies stay in line with what society and rules expect, while stakeholder theory views it as a way to share important information with people affected by a company's actions (Dewa Made et al., 2024).

Previous research in Indonesia has examined how companies in environmentally significant sectors, such as manufacturing and plantations, use GRI Standards. A study of manufacturing firms listed on the Indonesia Stock Exchange found that their sustainability reports based on GRI Standards were not complete, as none of the companies provided all the required details. However, the quality of these reports has been getting better over time (Ananda et al., 2023). This study also found that larger companies were more likely to include more information in their GRI-based reports, showing that a company's resources and abilities influence how much sustainability data they share. Another study focused on plantation companies revealed that the average level of GRI disclosure was only 51.74%, with most companies only partially following the standards, especially when it came to economic and environmental topics (Apriwandi & Fahria, 2022). Other studies on GRI performance indicators in Indonesian companies also show that economic information is shared more frequently than social and environmental information.

Unlike other industries, there isn't much real-world information on how technology companies report their sustainability efforts. This is important because even though these companies may not have a direct impact on the environment like some others, they still use a lot of energy, manage large amounts of data, deal with electronic waste, and face social issues such as data privacy and digital inclusion. According to legitimacy theory, tech companies are facing greater pressure than ever to be transparent about their sustainability efforts to maintain public trust and remain credible, especially as concerns about digital ethics and environmental issues grow. Stakeholder theory also shows that being open about sustainability is essential for tech firms to meet the expectations of investors, regulators, users, and society. Most research has focused on industries like manufacturing and agriculture, meaning there's not enough information on how far tech companies in Indonesia are following GRI Standards for sustainability reporting, both in terms of how much they disclose and the quality of their reports.

RQ: How is the implementation of Global Reporting Initiative (GRI) Standards in the sustainability reports of technology sector companies in Indonesia?

3. RESEARCH METHOD

This study uses a qualitative approach with a descriptive method. The research subjects are 47 technology sector companies listed on the Indonesia Stock Exchange in 2024. This study specifically focuses on companies that compile sustainability reports using the Global Reporting Initiative (GRI) standards. Therefore, companies that do not use or refer to GRI standards in their sustainability reports are not included in the analysis.

The data used is secondary data obtained from companies' sustainability reports and annual reports. Data collection was carried out using documentation techniques by examining the contents of each company's sustainability report, which had been filtered based on the use of GRI standards. Data analysis was carried out using content analysis techniques by

comparing the disclosures in companies' sustainability reports with the provisions and principles in GRI Standard 1: Foundation 2021. This analysis aims to describe the general conditions of GRI standard implementation and the suitability of sustainability reporting in technology sector companies in 2024.

Table 2. standard analysis used by the company

Standar GRI	8
POJK No. 51/POJK.03/2017	36
Pedoman umum GCG Indonesia	1
Tidak bisa diakses	2
Total Perusahaan	47

Source: author's data processing, 2026

Table 3. companies that use GRI standards

No	KODE	NAMA PERUSAHAAN
1	MLPT	Multipolar Technology Tbk.
2	MTDL	Metrodata Electronics Tbk.
3	MCAS	M Cash Integrasi Tbk.
4	HDIT	Hensel Davest Indonesia Tbk.
5	BUKA	Bukalapak.com Tbk.
6	GOTO	GoTo Gojek Tokopedia Tbk.
7	AXIO	Tera Data Indonusa Tbk.
8	BELI	Global Digital Niaga Tbk.

Source: author's data processing, 2026

4. RESULTS

Table 4. Analysis of Company Conformity to GRI Standard 1: Foundation 2021

No	KODE	NAMA PERUSAHAAN	STANDAR YANG DIPAKAI	INDIKATOR PENILAIAN						TOTAL SKOR
				(a)	(b)	(c)	(d)	(e)	(f)	
1	MLPT	Multipolar Technology Tbk.	GRI 2021 with reference & POJK	2	3	3	4	3	4	19
2	MTDL	Metrodata Electronics Tbk.	GRI 2021 with reference	2	3	3	3	3	3	17

3	MCAS	M Cash Integrasi Tbk.	GRI 2021 with reference & POJK	2	3	4	4	3	4	20
4	HDIT	Hensel Davest Indonesia Tbk.	GRI 2021 with reference & POJK	2	2	3	3	2	2	14
5	BUKA	Bukalapak.com Tbk.	GRI 2021 with reference	3	3	3	2	1	2	14
6	GOTO	GoTo Gojek Tokopedia Tbk.	GRI 2021	3	3	3	3	3	2	17
7	AXIO	Tera Data Indonusa Tbk.	GRI 2021 with reference	3	2	3	2	1	2	13
8	BELI	Global Digital Niaga Tbk.	GRI 2021 opsi "In accordance"	3	3	3	3	3	3	18
TOTAL				20	22	25	24	19	22	132

Description:

(a) Claim for use of GRI standards

(b) Purpose and System of GRI Standards

(c) Key Concepts

(d) Reporting Principles

(e) External Assurance

(f) GRI Index

Score 1 = Not Conforming

Score 2 = Less Conforming

Score 3 = Conforming

Score 4 = Highly Conforming

Table 5. GRI 1 assessment percentage

ASSESSMENT INDICATOR	TOTAL ASSESSMENT SCORE (in percent)
CLAIM FOR USE OF GRI STANDARDS	75
OBJECTIVES AND SYSTEM OF GRI STANDARDS	79.2
KEY CONCEPTS	91.7
REPORTING PRINCIPLES	87.5
EXTERNAL GUARANTORS	66.7
GRI INDEX	79.2

Source: author's data processing, 2026

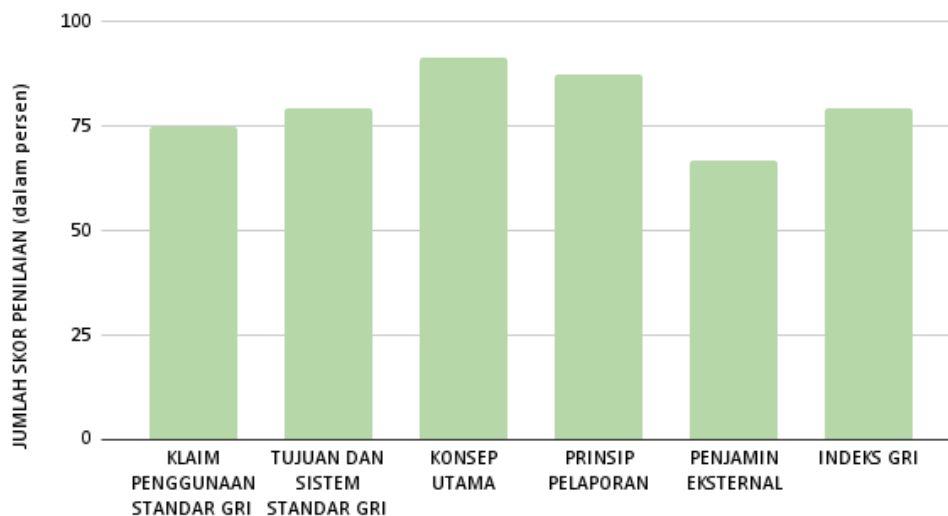
Description:

Compliance Level (%) = Actual Score/Maximum Score × 100%

Actual Score = Total assessment score

Maximum Score = Number of assessment indicators x Maximum score per indicator = 6 x 4 = 24

Persentasi Penilaian Standar GRI 1 2021



Source: author's data processing, 2026

Figure 1. Percentage of Compliance Level of GRI Standard 1 in 2021

The results of the study show that, in general, technology companies listed on the Indonesia Stock Exchange have adopted GRI Standard 1: Foundation 2021 at a relatively good level, although the depth and consistency of its implementation still varies. The average score for all assessment indicators is above 70 percent, indicating that sustainability reporting in the technology sector has met the basic framework for sustainable reporting set by the Global Reporting Initiative.

The indicator with the highest level of compliance is the GRI core concept, with an achievement rate of 91.7 percent. These findings show that most companies have understood and integrated the concepts of materiality, sustainability context, and reporting completeness into the structure of their sustainability reports. This is in line with the GRI (2021) view, which emphasizes that GRI 1 serves as the conceptual foundation for all thematic and sectoral standards. The high level of compliance with the main concept also reflects the efforts of technology companies to align sustainability reporting with stakeholder expectations, as explained in stakeholder theory that companies need to provide relevant information to groups affected by their operational activities (Freeman et al., 2021).

Furthermore, the reporting principle indicators also show a high level of compliance (87.5 percent). This indicates that companies have been relatively consistent in applying the principles of accuracy, balance, clarity, and comparability of information. However, content analysis shows that some companies still emphasize qualitative narratives over measurable quantitative disclosures, especially regarding environmental impact and digital energy consumption. This finding reinforces previous research results which state that technology sector companies tend to face data limitations in accurately measuring environmental impact, so that sustainability reporting has the potential to be symbolic (Silva & Branco, 2023).

On the indicators of GRI standard usage claims and GRI standard objectives and systems, the compliance rate ranged from 75 to 79.2 percent. Although most companies have stated their use of the 2021 GRI standards, not all of them explicitly explain the reporting approach used, whether "with reference" or "in accordance." This inconsistency has the potential to reduce the comparability between reports and diminish the credibility of sustainability information. From a legitimacy theory perspective, this condition can be

understood as an attempt by companies to gain social legitimacy without fully meeting the technical reporting requirements (Suchman, 1995; Deegan, 2019).

The indicator with the lowest achievement is external assurance, with a compliance rate of 66.7 percent. This finding shows that the majority of technology sector companies have not made external assurance an integral part of sustainability reporting. In fact, the existence of external assurance plays an important role in increasing the reliability and trust of report users, especially investors and regulators. Previous studies have confirmed that unaudited sustainability reports are more prone to managerial bias and greenwashing practices (Hummel & Schlick, 2016; Michelon et al., 2019).

Meanwhile, the GRI index indicator achieved 79.2 percent, indicating that most companies have mapped their disclosures against GRI standards. However, the quality of the GRI index still varies, particularly in terms of consistency of references and traceability of information. This reflects that although companies have formally met the administrative requirements of GRI 1, its substantial implementation still needs to be strengthened.

Overall, the results of this study indicate that the implementation of GRI 1 in the technology sector in Indonesia is at a fairly mature early stage in terms of structure, but still faces challenges in terms of verification, depth of disclosure, and methodological consistency. These findings are consistent with reports from the World Bank and the International Telecommunication Union, which state that the digital sector still faces data and methodological gaps in reporting sustainability impacts (World Bank, 2023; ITU, 2024). Thus, although GRI 1 has served as a basis for reporting, its effectiveness in reflecting the real impact of the technology sector still needs to be strengthened through regulation, standardization, and improved data quality.

5. CONCLUSION

This study shows that technology companies listed on the Indonesia Stock Exchange in 2024 have adopted GRI Standard 1: Foundation 2021 at a relatively good level, particularly in terms of fulfilling key concepts and reporting principles. However, the quality of sustainability reporting still faces limitations in terms of consistency in the use of standards, depth of disclosure, and low implementation of external assurance. These findings indicate that the application of GRI 1 in the technology sector is still structural in nature and does not yet fully reflect substantive reporting. Therefore, strengthening data quality, methodological transparency, and independent verification are important to improve the credibility of sustainability reporting in the technology sector.

Limitation

This study has several limitations that need to be considered when interpreting the results. First, the study only observed technology companies listed on the Indonesia Stock Exchange that produce sustainability reports based on GRI Standards, so the findings cannot be applied to other sectors or companies that use different reporting guidelines. Second, the analysis was conducted using secondary data from companies' sustainability reports and annual reports, so the quality of the research is highly dependent on the completeness, consistency, and transparency of the information provided by these companies. Third, the analysis technique used is qualitative and descriptive, so there is still an element of subjectivity on the part of the researcher in assessing the extent to which the disclosure is in accordance with GRI 1 indicators. In addition, this study does not take into account the views of stakeholders or the real impact of the application of GRI 1 on the sustainability performance of companies. Therefore, future research is expected to expand the sector coverage, use quantitative or mixed approaches, and include primary data to obtain a clearer picture of the quality of sustainability reporting.

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