“Analyzing the quality disclosure of Global Reporting Initiative G4 sustainability report in Indonesian companies”

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ANALYZING THE QUALITY DISCLOSURE OF GLOBAL REPORTING INITIATIVE G4 SUSTAINABILITY REPORT IN INDONESIAN COMPANIES

Abstract

The establishment of a company cannot be separated from its environmental and social factors. Sustainability reports start from those applied to current companies because there are forms of corporate accountability to stakeholders and community considerations of the company to provide social responsibility. This study finds out and empirically proves that there are differences in each Global Reporting Initiative (GRI) G4 indicator in the company's sustainability report in each industry classification. The authors investigate the dominant indicators in each industry classification based on sustainability reports. The data are obtained from 28 GRI G4-based company sustainability reports in 2016 and 2017. The analytical method in the study is the K-means clustering analysis. The results of study indicate the differences in GRI G4 in 2016 and 2017. The researchers find out that the dominant indicator expressed in the financial industry is an economic indicator. Meanwhile, in the mining, transportation and infrastructure industries, basic and chemical industries etc. the dominant indicators to be disclosed are environmental indicators. This research provides a theoretical basis for sustainability and environmental reporting, particularly in the context of developing countries. It is expected that this study should also inform business practitioners as well as policymakers vis-à-vis sustainability reporting in practice.

Keywords sustainability, environmental reporting, voluntary disclosure, cluster analysis

JEL Classification Q56, Q01

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INTRODUCTION

Environmental damage has become a serious problem in recent years. Many companies exploit natural resources and human resources to increase their profits. Damage arising from the production of automatic goods or services will increase so that taxes and fees for cleanliness, health, and environmental budget will also continue to increase. There are demands from the public for companies to provide social responsibility. A concept introduced by Elkington (1988), i.e. people, planet, and profit, is called the triple bottom line concept that measures the success of a company. The concept is a term known as sustainability, where the company can survive as long as possible and is called the long-life company.

Many companies in the world are required to provide accountability reports. Compilation of sustainability reports is important because there are disclosure principles and standards that reflect the overall level of company's activity. Reports do not only focus on financial aspects as in financial statements. Stakeholders are also particularly interested in understanding how the firm's approach and performance

are sustainable in various aspects, especially economic, environmental, and social aspects, including the potential to create corporate value through sustainable management.

From this, the company needs to make a sustainability report that functions as a form of corporate accountability to stakeholders in the form of a report. Sustainability report is a report issued by a company or organization regarding the economic, environmental, and social impacts in daily activities (GRI G4, 2013). Sustainability reporting itself is still voluntary, which means there are no rules that require the companies to issue sustainability reports. The fastest growth rate for sustainability reporting is in the Asian region, where it has seen double the level of GRI reporting in the past five years. In this case, many benefits are given from the existence of a sustainability report, while the benefits provided are cost savings, expenditure due to increased energy and water consumption, good reputation for the company, employee satisfaction in working in the company, and building a reliable supply chain system (John, 2017).

In Indonesia, sustainability reporting is still voluntary in contrast to such reporting as annual reports and financial reports. According to the Global Reporting Initiatives (GRI), at the end of 2016, 120 companies in Indonesia published sustainability reports according to the Global Reporting Initiatives (GRI). In fact, in 2015, there were only 63 companies. Not all companies that report sustainability reports are in the same industry. In Indonesia, there are hundreds of companies listing on the IDX, but not all publish sustainability reports because they are still voluntary.

For this reason, we are interested in researching and proving the notion that in each of the industrial classifications, the quality of disclosure of sustainability reports is different according to the GRI G4 indicator. Central to this research, are there differences in the quality of disclosure in each of the GRI G4 indicators in the sustainability reports of public companies in each industry? Moreover, what indicators become dominant and are expressed in each industry? This research is intended to shed light on the theme of sustainability disclosure. This research is also expected to provide the information for companies in carrying out sustainable and responsible performance as well as establishing regulations in company's operations.

The structure of this paper is as follows. Section 1 discusses the background, problems, purposes, and objectives of the research. Section 2 contains the theory and literature review as the basis for this research, including previous studies and hypotheses formulation. Section 3 elaborates the research framework, population and sample, including research models, operationalization of variables, and testing methods. Section 4 analyzes the research results and implications for the research model presented. Final section concludes the results as well as presents the limitations and suggestions.

1. THEORETICAL BACKGROUND AND LITERATURE REVIEW

Stakeholder theory shows that the firm is not only responsible for the welfare of the company but also must have social responsibility, taking into account the interests of all parties affected by the company's strategic actions or policies. The success of a company depends on its ability to balance the various interests of stakeholders (Lako, 2011). Stakeholders are all internal and external parties that have a direct or indirect influential relationship with the firm. Firms should pay attention to their stakeholders because they are the parties who both influence on and are being influenced by the policies and action taken by the firm. If the firm does not take care of its stakeholders, it is likely to reap protests and eliminate the stakeholders' legitimacy (Adams, 2002).

Legitimacy theory states that an organization can only survive if the community in which it is located feels that the firm performs based on a system of value that is commensurate with the value

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system that is owned by the community. Thus, organizations continually strive to act in accordance with the boundaries and norms in society, so that their activities are accepted according to the perceptions of external parties (Deegan, 2002). The rationale for this notion is that the firm will continue to exist if the community acknowledges that the firms operates within a similar value system. Legitimacy theory encourages and unarguably promotes the firms to make sure that their performance and activities are acceptable to the society.

Firms utilize their reports to describe the image of environmental responsibility so that they are accepted and supported by society. With the acceptance of the community, the value of the firm is expected to raise, so that it can increase profits. This can simulate and attract the investors in making the investment decisions. Regarding the legitimacy theory, it can be said that this study considers the image of the company from the point of view of society. Social and environmental activities carried out by the company to the community are a form of corporate responsibility (corporate social responsibility) to build a good corporate image and can also encourage or increase profits for the company.

Meanwhile, according to Elkington (1997), sustainability report means the report that contains both financial and non-financial information regarding its social and environmental activities that can help them to grow sustainably. According to GRI (2013), sustainability report is a practice in measuring and disclosing the company's activities, a commitment to external and internal stakeholders regarding the firm performance in realizing the new development agenda.

At present, the implementation of sustainable reporting in Indonesia is regulated by the Law No. 23/1997 concerning environmental management and regulations issued by the Indonesia Stock Exchange regarding the procedures and requirements for listing and financial reporting standards (PSAK). The companies need sustainable reporting guidelines that are accepted nationally. For this purpose, a national agency, the NCSR (National Center for Sustainability Reporting) is needed. The main users of the SR include the community, investors, social responsibility, banks, government institutions, and management and employees. SR benefits are based on the GRI framework, namely: (1) as an organizational performance testing technique with regard to norms, laws, standard performance, and voluntary initiatives; (2) demonstrating managerial commitment to sustainability, and (3) comparing firm performance at all times. GRI-based sustainability reports are currently used by many companies.

Sustainability report is voluntary and complimentary but completely separated from the firm's financial statements in its submission (Iman, 2019). The World Business Council for Sustainable Development (WBCSD) explains the benefits of SR, among others: providing the information to stakeholders and improving the company's prospects, and helping to realize the transparency; help establish an image as a tool that contributes to increasing market share, brand value, as well as long-term consumer loyalty; a reflection of how the company manages the risks; a stimulus of leadership thinking and competitive performance; developing and facilitating the implementation of a management system that is better in managing the environmental, economic, and social impacts.

The principle of reporting plays an important role in achieving the transparency and must therefore be applied by all organizations when preparing the sustainability reports. One of the initial images used by companies in developing SR is to adopt an accounting method called the triple bottom line. Companies that want sustainability must pay attention to "3P." The company must be able to fulfill the welfare of the people contribute to maintaining the environmental preservation (planet), and pursue the profit (Iman, 2019).

The sustainability report disclosure is guided by the Global Reporting Initiative (GRI) report. GRI was published in 2006, but improvements were suggested by the board of directors and the latest version was published in 2013 (GRI G4). The guidelines for this disclosure are divided into two parts: (1) General Standard Disclosures (containing Strategies and Analysis, Organizational Profiles, Identified Material Aspects and Boundaries, Stakeholder Engagement, Report Profiles, Governance, Ethics and Integrity) and (2) Standard Disclosures Special (con-

tains Disclosures of Management Approaches, Indicators, Categories: Economy, Category: Environment, Category: Social).

According to the Law No. 5/1984, industry is an economic rush that processes raw materials, semi-finished materials or finished goods, goods with a plus value or finished goods with a higher value for use, including busy design and industrial engineering. Classification is made based on raw materials, labor, products, raw materials, business orientation, production processes, goods produced, capital, management subjects, and organizational methods. Meanwhile, industrial classification based on Minister of Industry Decree No. 19/M/I/1986 issued by the Ministry of Industry and Trade is as follows basic chemical industry (IKD), basic metal and electronic machinery industry (IMELDE), various industries (AI), small industries (IK), and tourism industry.

From the statement above, to show that industry has carried out management activities from the viewpoint of economic, environmental, and social impacts, it is necessary to disclose in the sustainability report to build the firm's image and perception in each of the industry classifications. In GRI-based economic, environmental, and social disclosures, companies can present information on all indicators of what impacts are expressed through the index in the closing section of the report or present impact information directly without an index in the report commonly referred to as GRI reporting citing.

Research on sustainability reporting (SR) is still rarely done, but in recent years empirical research related to the sustainability reporting (SR) has grown rapidly from various types of sectors and variables. For example, Roca (2012) analyzes the disclosure of indicators in the company's sustainability report. This research is a case study of a company in Canada. The indicators were determined through content analysis in the year 2008 reports. The study showed that 585 different indicators were used in the report. As many as 31 out of 94 reports disclose the special GRI-based standards.

For instance, Tarigan (2014) reexamined the relationship between sustainability report disclosure and financial performance. This study uses the companies that consistently publish sustainability reports, and, second, this study uses all measures of financial performance that include asset management, profitability, leverage, liquidity, and market. The samples used were 54 observations from companies that consistently published sustainability reports. Similarly, Marwati (2015) tested and analyzed the impact of liquidity, return on assets, company size as well as earnings per share (EPS) on such disclosure. The sample used is a non-financial company registered on the Indonesian Stock Exchange (IDX), which issues the sustainability reports in accordance with the GRI standard in the 2009–2013 period, and found 12 companies. The data analysis technique is the classical assumption test.

Moreover, True (2015) examined the disclosure of sustainability report (SR) on the performance and value of the company guided by the Global Reporting Initiative (GRI). Population data were taken from the companies that publish sustainability reports and are publicly listed on the Indonesian Stock Exchange from 2006 to 2013. The results of this study indicate that disclosure of sustainability reports does not have a significant relationship with company performance and company value. Then, disclosure of economic performance, environmental performance, and social performance of sustainability reports also does not have a significant relationship with company performance and company value.

Similarly, Utama (2016) tested the effect of sustainability report (SR) disclosure as a moderating variable on the intellectual capital (IC) on firm performance based on 21 Indonesian publicly listed companies and registered at the national center for Indonesian SR chapter. This study uses the published model of the value-added coefficient intellectual (VAIC) to determine the company's IC. The result shows that VAIC has a positive effect on ROA and ROE. This means high ROA and ROE of the companies are associated with more VAIC. In addition, VAIC has no effect on GM. The results of the moderated analysis also show that disclosure has a positive effect on ROA and ROE, but has no effect on GM. Sustainability reporting disclosure became a pure moderator on ROA while being a pseudo moderator.

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Jusmarni (2016) examined the relationship between the sustainability report indicator and the company's market value and asset management ratio. Independent in this research is the sustainability report disclosure, which is divided into economic, environmental, and social performance indicators and measured using the SRDI index. The sample of this study is 15 companies that publish sustainability reports three years in a row. As a result, sustainability reporting in the economic and environmental aspects has a significant positive impact on the market value ratio and asset management ratio, while the sustainability reporting in the social aspect is not significantly positive in increasing market value and asset management.

Lastly, Puspitandari (2017) obtained the evidence regarding the effect of sustainability report disclosure and each aspect of sustainability report on the performance of banks in Indonesia that issued GRI-based sustainability reports. The samples are 13 companies each year, and for 3 years there are 39 sustainability reports. The results show that sustainability report disclosure has a significant positive impact on banking performance, so it can be viewed that the increasing sustainability report disclosure will improve the banking performance, besides, disclosure of economic, environmental, and social performance aspects has a significant positive effect on banking performance, so it can be concluded that increasing disclosure of economic, environmental, and social performance aspects will also improve the banking performance.

The sustainability report for which disclosure is guided by the Global Initiative or GRI with the most recent reporting basis, GRI G4, which regulates the disclosure of indicators that are covered in 3 categories, namely economic categories, environmental categories, and social categories. Through cluster analysis, companies will be classified into relatively homogeneous groups, called clusters. In this case, relatively homogeneous companies show that they are a group that reports GRI G4-based economic, environmental, and social information.

Companies publicly listed on the Indonesian Stock Exchange (IDX) are the subjects of this study originating from various industrial sectors, such as finance, mining, transportation and infrastructure, various industries, and basic industries and chemistry, so that this difference enables the data processing systems in the research to detect and generate information about the differences in objects between the clusters produced. Therefore, based on this explanation, the hypotheses can be formed as follows:

H1: There are differences in the quality of disclosure on each GRI G4 indicator in the sustainability report of companies listed on the IDX in 2016–2017 in each industry characteristic.

H2: There is a disclosure of the dominant indicators in the sustainability report on the financial industry classification.

H3: There is a disclosure of the dominant indicators in the sustainability report on the classification of the mining industry.

H4: There is a disclosure of the dominant indicators in the sustainability report on the classification of the transportation and infrastructure industries.

H5: There is a disclosure of the dominant indicators in the sustainability report on various industry classification.

H6: There is a disclosure of the dominant indicators in the sustainability report on the classification of basic and chemical industries.

2. RESEARCH METHODOLOGY

This research is focused on the disclosure of all indicators in the GRI G4, namely in the economic, environmental, and social categories, to compare the industries that have been grouped based on their classification. The indicators used in this study are 91. This research refers to all aspects, namely economic, environmental, and social impacts, in the GRI standard 4. Each indicator represents the aspects of the disclosure of indicators used as data processing materials for research.

The research method used in this study is descriptive quantitative analysis, namely by finding the

information about the existing circumstances and defining them as clearly as possible to achieve the research objectives. This research begins by providing the values for each indicator in GRI G4 based on the company's sustainability report. This value indicates a challenge or benefit for each indicator. Furthermore, industrial classification carried out into sectors in this type of industry was continued by the classification of companies into relatively homogeneous groups (clusters).

This study uses 6 (six) variables, which are the aspects of the GRI G4 disclosure indicators, specifically, in sustainability, namely economic, environmental, and social reports (including the sub-categories of employment practices and work convenience, human rights, community/society, and responsibility for product). Next we divide the sample into 5 (five) industry classifications: mining (including coal, oil and gas, metals and other minerals, and rocks), finance (banks, financial institutions, securities companies, and insurance), and transportation and infrastructure (energy, toll roads, ports, airports and the like, telecommunications, transportation, and non-building construction), as well as various industries (automotive and components, textiles and garments, footwear, cables, electronics), and basic and chemical industries (cement, ceramics, porcelain and glass, metals and the like, chemicals, plastic and packaging, animal feed, wood and its processing, and pulp and paper).

Cluster analysis begins with the formulation of the problem, or the selection of indicators that will be used for cluster formation. The set of indicators that will be selected must describe the objects. There are 6 (six) variables identified as company KPIs in disclosure of environmental impacts, with statements on a scale where 0 = there is absolutely no disclosure in the GRI G4 indicator, 1 = disclosure in the GRI G4 indicator included in each variable, the company is perceived as having a challenge and 2 = if the company feels it finds benefits in conducting or disclosing the GRI G4 indicator.

Second, to measure the distance or similarity between pairs of objects that are most commonly used is Euclidean distance or its square value. The Euclidean distance is the root of the sum of squares of differences or deviations in the values for each indicator.

Third, the selection of clustering procedures using non-hierarchy, often called K-means clustering. The method used is the optimizing partitioning method, where objects are then reassigned to the cluster to optimize a comprehensive criterion. Non-hierarchical procedures or K-means clustering were chosen to find out the preferences of researchers about the desired cluster, so that in the non-hierarchical procedure, the number of clusters and the selection of arbitrary clusters must be stated/predetermined. In addition, non-hierarchical procedures are more beneficial if the object or case or observation has a large number of samples.

Fourth, determining the number of clusters based on the selection of cluster procedures, namely non-hierarchy and considering the objectives of the research. We identified the indicators of economic, environmental, and social impacts, which become the priorities of the industry classification. We analyzed the clusters in each industry or as a whole that are obtained based on data processing in SPSS automatically.

Finally, interpreting and profiling the clusters includes the study of centroids, namely the average value of the objects contained in the cluster on each indicator. Centroid values allow the researchers to decipher each cluster by giving a name or label. The cluster profiling stage is made based on information obtained from the results of data testing for each cluster formed. Then it was developed so that information on economic, environmental, and social disclosure was dominant in each of the industrial sectors.

The research sample was taken by purposive sampling method from the data population of companies listed on the Indonesian Stock Exchange (IDX). The purposive sampling method itself is a sampling method taking into account the selection criteria: being publicly listed and having released their sustainability reports in 2016 and 2017, respectively. As many as 53 companies that publish sustainability reports and are listed on the Indonesia Stock Exchange were found, but of the 53 companies, only 30 companies have published the sustainability reports in 2016 and 2017, respectively.

The data in this study were taken from secondary data or indirect data taken through the sustain-

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ability report of firms listed on the Indonesian Stock Exchange between 2016 and 2017. The firm's sustainability report is obtained through the company's official websites and the related websites, and website of the Indonesia Stock Exchange. Researchers also conduct the library studies by reading books, scientific works, theses, the internet and studying the literature contained in the libraries or in other sources that aim to gather the information that is relevant to the topic or problem that is the object of research.

We conducted cluster analysis, which is a technique for classifying the objects into homogeneous or relatively homogeneous groups. This group is called a cluster. The collected data are then processed by using the non-hierarchy or K-means clustering procedure and then explaining the results obtained objectively and systematically. The output produced in the form of a final cluster center shows that the cluster pairs are truly separated. Using an ANOVA/*F*-test, objects were systematically entered in the clusters to maximize the differences in clustering of each indicator. The greater the value of *F* and (sig < 0.05), the greater the difference in indicators on the cluster formed.

Furthermore, we conducted the advanced data processing such as analyzing each cluster's output to determine the number of memberships per cluster, membership cluster output to provide the information about objects or cases that have been classified into each cluster and distance or similarity between pairs of objects, final output cluster centers to determine whether or not there are differences in the dominant indicators in each cluster, and output iteration history to get the right number of iterations and the minimum distance between cluster centers from the iteration results.

3. RESULTS AND ANALYSIS

The population and research sample in this study were taken from publicly listed companies in Indonesia. This analysis uses purposive sampling by looking at sustainability reports of the companies listed on the Indonesian Stock Exchange (IDX). Data were selected by 53 companies that published the sustainability reports, then the companies that issued sustainability reports for two consecutive years, namely in 2016 and 2017, were selected. We got the results of 30 companies. Next we classify in 7 types of industries, and cross out 2 companies from the agricultural classification and consumer goods industry. Finally, we obtained a sample of 28 companies with 5 industrial fields.

Table 1. Sample companies

No.	Companies	Industry/sector
1	Astra	Various industries
2	United Tractor	Various industries
3	Pupuk Indonesia	Basic and chemical industry
4	Indocement	Basic and chemical industry
5	Holcim	Basic and chemical industry
6	Perusahaan Gas Negara	Basic and chemical industry
7	Bank BJB	Finance
8	Bank Jateng	Finance
9	BRI Syariah	Finance
10	CIMB Niaga	Finance
11	Bank Permata	Finance
12	Maybank	Finance
13	BCA	Finance
14	Mandiri Syariah	Finance
15	BNI	Finance
16	BNI Syariah	Finance
17	Bukit Asam	Mining
18	Indo Tambangraya	Mining
19	Pertamina	Mining
20	Raya Megah	Mining
21	PT AKR	Mining
22	PT Antam	Mining
23	Garuda Indonesia	Transportation and infrastructure
24	Pembangkitan Jawa-Bali	Transportation and infrastructure
25	Total Bangun Persada	Transportation and infrastructure
26	PT Jasa Marga	Transportation and infrastructure
27	PT Wijaya Karya	Transportation and infrastructure
28	PT Wijaya Karya Beton	Transportation and infrastructure

The ANOVA test results to test the differences in disclosure on each indicator are shown in the following table. In general, in all industries, the quality of disclosure of the GRI indicator in the sustainability report has differences, indicated by a significance value of less than 0.005 on the indicator.

In economic indicators, there are 4 out of 9 indicators, which are different in their disclosure, namely EC5, EC6, EC8, and EC9. In environmental indicators, there are 26 out of 34 indicators, which are different in their disclosure, namely EN1, EN2, EN4, EN7, EN9, EN10, EN11, EN12, EN13, EN15,

Table 2. ANOVA/*F*-test results

GRI Indicators	Cluster		Error		*F*	Sig.
	Mean square	Df	Mean square	Df		
EC1	0.062	4	0.286	51	0.215	0.929
EC2	1.300	4	0.556	51	2.337	0.068
EC3	0.798	4	0.530	51	1.506	0.214
EC4	1.800	4	0.713	51	2.524	0.052
EC5	6.883	4	0.412	51	16.698	0.000
EC6	1.354	4	0.251	51	5.393	0.001
EC7	1.649	4	0.732	51	2.252	0.076
EC8	2.350	4	0.509	51	4.618	0.003
EC9	7.579	4	0.366	51	20.707	0.000
EN1	3.225	4	0.587	51	5.491	0.001
EN2	7.240	4	0.451	51	16.038	0.000
EN3	0.362	4	0.582	51	0.622	0.649
EN4	1.302	4	0.279	51	4.667	0.003
EN5	1.442	4	0.744	51	1.939	0.118
EN6	1.959	4	0.770	51	2.543	0.051
EN7	6.631	4	0.504	51	13.165	0.000
EN8	1.065	4	0.705	51	1.510	0.213
EN9	1.709	4	0.566	51	3.018	0.026
EN10	2.813	4	0.749	51	3.757	0.009
EN11	3.327	4	0.522	51	6.373	0.000
EN12	3.377	4	0.550	51	6.142	0.000
EN13	2.678	4	0.888	51	3.015	0.026
EN14	1.833	4	0.749	51	2.446	0.058
EN15	2.793	4	0.838	51	3.332	0.017
EN16	2.982	4	0.727	51	4.104	0.006
EN17	0.611	4	0.257	51	2.375	0.064
EN18	2.517	4	0.604	51	4.169	0.005
EN19	2.057	4	0.838	51	2.453	0.058
EN20	3.604	4	0.608	51	5.928	0.001
EN21	0.181	4	0.427	51	0.423	0.791
EN22	6.542	4	0.432	51	15.136	0.000
EN23	7.745	4	0.415	51	18.681	0.000
EN24	0.438	4	0.512	51	0.855	0.497
EN25	8.242	4	0.338	51	24.377	0.000
EN26	3.195	4	0.443	51	7.217	0.000
EN27	4.602	4	0.454	51	10.141	0.000
EN28	1.350	4	0.493	51	2.736	0.039
EN29	5.875	4	0.570	51	10.311	0.000
EN30	3.015	4	0.505	51	5.966	0.001
EN31	3.901	4	0.561	51	6.953	0.000
EN32	2.373	4	0.637	51	3.726	0.010
EN33	0.729	4	0.094	51	7.741	0.000
EN34	6.238	4	0.519	51	12.015	0.000
LA1	1.401	4	0.694	51	2.020	0.106
LA2	4.363	4	0.676	51	6.453	0.000
LA3	5.184	4	0.517	51	10.019	0.000
LA4	1.462	4	0.579	51	2.526	0.052
LA5	3.806	4	0.692	51	5.502	0.001
LA6	0.937	4	0.688	51	1.360	0.261
LA7	0.981	4	0.668	51	1.467	0.226
LA8	2.298	4	0.804	51	2.857	0.033
LA9	0.973	4	0.977	51	0.996	0.418
LA10	2.829	4	0.638	51	4.437	0.004
LA11	3.142	4	0.738	51	4.257	0.005
LA12	2.684	4	0.679	51	3.953	0.007
LA13	1.408	4	0.842	51	1.673	0.171
LA14	3.092	4	0.681	51	4.538	0.003
LA15	0.729	4	0.094	51	7.741	0.000

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Table 2 (cont.). ANOVA/*F*-test results

GRI Indicators	Cluster		Error		*F*	Sig.
	Mean square	Df	Mean square	Df		
LA16	0.947	4	0.955	51	0.992	0.421
HR1	2.160	4	0.614	51	3.521	0.013
HR2	3.382	4	0.281	51	12.052	0.000
HR3	6.738	4	0.568	51	11.858	0.000
HR4	4.062	4	0.767	51	5.296	0.001
HR5	5.078	4	0.425	51	11.940	0.000
HR6	4.084	4	0.373	51	10.949	0.000
HR7	3.000	4	0.462	51	6.494	0.000
HR8	4.229	4	0.408	51	10.368	0.000
HR9	0.000	4	0.000	51	0.000	0.000
HR10	5.915	4	0.460	51	12.854	0.000
HR11	1.848	4	0.146	51	12.620	0.000
HR12	2.546	4	0.338	51	7.530	0.000
SO1	3.484	4	0.655	51	5.316	0.001
SO2	0.750	4	0.383	51	1.955	0.116
SO3	4.254	4	0.573	51	7.429	0.000
SO4	3.040	4	0.815	51	3.731	0.010
SO5	2.434	4	0.598	51	4.073	0.006
SO6	3.892	4	0.305	51	12.761	0.000
SO7	1.760	4	0.645	51	2.729	0.039
SO8	3.393	4	0.870	51	3.902	0.008
SO9	1.518	4	0.312	51	4.865	0.002
SO10	1.639	4	0.094	51	17.417	0.000
SO11	4.665	4	0.227	51	20.587	0.000
PR1	4.215	4	0.411	51	10.248	0.000
PR2	4.303	4	0.620	51	6.935	0.000
PR3	1.711	4	0.689	51	2.482	0.055
PR4	3.503	4	0.649	51	5.396	0.001
PR5	0.615	4	0.912	51	0.674	0.613
PR6	2.388	4	0.471	51	5.075	0.002
PR7	3.740	4	0.603	51	6.201	0.000
PR8	1.529	4	0.860	51	1.777	0.148
PR9	3.768	4	0.752	51	5.011	0.002

EN16, EN18, EN19, EN20, EN22, EN23, EN25, EN26, EN27, EN28, EN29, EN30, EN31, EN32, EN33, and EN34.

In the social indicators of the sub-category of labor practices and the convenience of work, there are 4 out of 16 indicators, which are different in their disclosure, namely LA11, LA12, LA14, and LA15. In the sub-category of human rights, there were 11 out of 12 indicators, which were revealed differently, namely HR1, HR2, HR3, HR4, HR5, HR6, HR7, HR8, HR10, HR11, and HR12, while in the sub-category of society, there are 10 out of 11 different indicators, namely SO1, SO3, SO4, SO5, SO6, SO7, SO8, SO9, SO10, and SO11.

Meanwhile, in the sub-category of responsibility for the product, there are 6 out of 9 indicators, which are different in their disclosure, namely in PR1, PR2, PR4, PR6, PR7, and PR9. Thus, it can be said that the research hypothesis *H1*, which states that there are differences in the quality of disclosure in indicators of sustainability reports in 5 industry fields, is accepted.

Next, we conducted a clustering test without following a hierarchical process called K-means clustering. Each object that has been inputted will be assigned or combined to the classification of the closest cluster center automatically by the system. The central classification will be updated until stopping criteria are reached. The next stage is to do clustering in each industry and find membership clusters with the smallest distance values as findings as in the following table.

Table 3. Cluster membership

Industry	Case number	Cluster	Distance
Finance	1	1	6.174
	2	1	7.219
	3	1	6.158
	4	1	5.993
	5	2	7.163
	6	1	6.657
	7	2	4.883
	8	2	6.751
	9	2	7.557
	10	2	6.540
	11	2	5.213
	12	2	5.110
	13	2	5.346
	14	2	5.346
	15	2	6.606
	16	2	7.779
	17	2	5.439
	18	2	5.863
	19	2	5.649
	20	2	5.499
Mining	1	1	5.033
	2	1	4.865
	3	2	7.767
	4	2	7.724
	5	2	6.967
	6	2	7.520
	7	2	6.393
	8	2	6.556
	9	2	7.880
	10	2	7.781
	11	2	7.845
	12	1	7.937
Transportation and infrastructure	1	2	6.314
	2	2	6.598
	3	2	7.225
	4	2	7.038
	5	2	7.178
	6	2	7.014
	7	1	5.257
	8	1	5.129
	9	1	4.469
	10	1	4.356
	11	1	5.161
	12	1	4.652
Various industries	1	1	4.822
	2	1	4.822
	3	2	4.123
	4	2	4.123
Basic and chemical industries	1	1	4.330
	2	1	4.330
	3	2	8.168
	4	2	7.706
	5	2	5.390
	6	2	5.720
	7	2	5.482
	8	2	5.452

In the financial sector, the most dominant cluster indicator in cluster 2 is case number 7, namely CIMB Niaga in 2016 with a distance of 4.883. This shows that the quality of disclosure of sustainability indicators at CIMB Niaga is reported more evenly on each indicator, but with the same quality of disclosure. While in the mining sector, the most dominant cluster indicator in cluster 1 is case number 2, Bukit Asam in 2017 with a distance of 4.865. This indicates that the sustainability indicators are more evenly distributed, but with the same quality of disclosure.

In the infrastructure and transportation sectors, the most dominant cluster indicator in cluster 1 is case 10, namely PT AKR. In 2017, the data distance is 4.356, indicating that sustainability indicators are more evenly distributed, but with the same quality of disclosure. As for the various industries, it can be seen that membership clusters that are the most dominant in cluster 2 are cases 3 and 4, namely United Tractors in 2016 and 2017 with a distance of 4.123 for both. This shows the sustainability indicators more evenly, but with the same quality of disclosure. Finally, in the basic and chemical industry sectors, it can be seen that the cluster indicators dominant in cluster 1 are cases 1 and 2, namely Pupuk Indonesia in 2016 and 2017 with distance of 4.330 for both. This implies that it is a more equitable indicator of sustainability, but with the same quality of disclosure.

As seen in the final cluster table, the largest number in the financial industry is seen on EC3, EC7, EC8, LA12, and SO4 indicators. As for the mining industry, the dominant indicators disclosed are EC3, EC4, EC7, EC8, EC9, EN2, EN5, EN7, EN13, EN15, EN16, EN20, EN22, EN23, EN26, EN29, EN32, LA2, LA3, LA5, LA8, LA10, LA13, LA14, HR3, HR4, HR7, HR10, SO1, SO6, SO9, PR1, and PR2. But the EC3 indicator has a uniform value in clusters 1 and 2 compared to other indicators, which have the highest value only in one cluster.

As for the infrastructure and transportation sectors, the largest dominant numbers are EC1, EC4, EC5, EC7, EC8, EN2, EN6, EN7, EN23, EN29, EN34, LA3, LA10, LA13, HR3, HR4, HR10, and SO1 indicators. Meanwhile, in the various industries, the dominant indicators expressed are in EC3, EN22, EN23, EN25, EN29, LA8, LA10, SO1,

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Table 4. Final cluster

Indicator	Finance		Mining		Transportation and infrastructure		Various industries		Basic and chemical industries	
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2
EC1	1.60	1.80	2.00	1.56	2.00	1.67	1.50	1.50	1.00	1.17
EC2	0.00	0.53	0.67	1.22	0.67	0.50	0.00	0.50	1.00	0.33
EC3	2.00	1.33	2.00	2.00	1.33	2.00	2.00	2.00	2.00	1.33
EC4	1.40	1.07	2.00	1.33	2.00	1.67	2.00	0.00	2.00	1.33
EC5	1.40	0.27	1.33	0.44	0.00	2.00	1.00	0.00	2.00	0.00
EC6	0.40	0.00	1.33	0.00	0.00	0.67	0.00	0.00	0.00	0.00
EC7	2.00	0.93	2.00	1.56	2.00	1.33	1.00	2.00	2.00	1.33
EC8	2.00	1.20	2.00	1.78	2.00	1.33	2.00	1.00	1.00	2.00
EC9	1.60	0.40	2.00	0.67	0.00	1.33	0.00	1.50	2.00	0.00
EN1	1.60	0.07	0.67	0.89	0.00	0.67	2.00	0.00	1.00	1.17
EN2	0.40	0.00	2.00	1.11	0.00	2.00	1.50	0.00	1.00	1.33
EN3	1.40	1.27	1.67	1.56	0.50	1.67	2.00	1.50	1.50	1.50
EN4	0.00	0.00	1.00	0.44	0.00	0.00	1.00	0.00	1.00	0.17
EN5	0.20	0.87	2.00	1.00	0.00	0.67	2.00	1.50	2.00	1.33
EN6	1.80	1.07	1.33	1.33	1.67	2.00	1.00	2.00	2.00	0.67
EN7	1.00	0.27	2.00	0.56	0.00	2.00	1.00	2.00	2.00	0.67
EN8	1.00	0.93	1.33	1.44	1.00	1.83	0.00	1.50	2.00	1.00
EN9	1.40	0.00	0.00	1.33	0.00	1.50	0.00	0.00	1.00	0.33
EN10	0.00	0.13	0.00	1.89	0.00	1.33	0.00	2.00	2.00	0.83
EN11	0.00	0.00	0.67	1.33	0.00	0.67	0.00	0.00	2.00	0.67
EN12	0.20	0.00	1.67	0.78	0.00	0.67	1.00	2.00	2.00	1.00
EN13	0.40	0.80	2.00	1.33	0.00	1.33	2.00	0.00	2.00	1.33
EN14	0.00	0.00	1.00	1.56	0.00	1.00	0.00	0.00	1.00	1.33
EN15	1.20	0.40	2.00	0.89	0.67	0.67	1.00	2.00	2.00	1.67
EN16	0.60	0.27	2.00	1.11	0.00	0.67	2.00	0.00	1.50	1.17
EN17	0.00	0.13	1.33	0.11	0.00	0.00	1.00	0.00	0.00	0.00
EN18	0.40	0.20	1.67	0.89	0.00	0.00	2.00	1.50	0.50	1.67
EN19	1.60	0.40	0.33	1.33	0.67	1.17	1.00	2.00	2.00	1.50
EN20	1.20	0.27	2.00	1.00	0.33	1.00	1.00	0.00	2.00	0.17
EN21	0.00	0.00	0.67	0.44	0.00	0.33	0.00	0.00	1.00	0.67
EN22	0.80	0.27	2.00	1.33	0.00	1.17	2.00	2.00	1.50	0.33
EN23	1.20	0.40	2.00	1.44	0.00	2.00	2.00	2.00	2.00	1.33
EN24	0.00	0.00	0.67	1.00	0.67	0.00	0.00	0.00	0.00	0.33
EN25	0.80	0.00	0.67	0.67	0.00	1.67	2.00	2.00	2.00	0.67
EN26	0.00	0.00	2.00	0.89	0.00	0.67	2.00	0.00	0.00	0.00
EN27	0.80	0.07	1.00	0.89	0.33	1.33	1.50	1.00	0.00	0.33
EN28	0.00	0.27	1.33	0.22	0.00	0.67	0.00	0.00	2.00	0.17
EN29	1.60	0.00	2.00	1.56	0.67	2.00	2.00	2.00	2.00	0.83
EN30	1.20	0.40	0.33	0.33	0.00	1.00	1.50	0.00	1.00	0.67
EN31	1.20	0.13	1.33	0.56	0.00	1.83	0.00	0.00	2.00	1.00
EN32	0.20	0.13	2.00	1.11	0.00	0.00	2.00	0.00	2.00	0.33
EN33	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	1.00	0.00
EN34	1.20	0.00	1.67	1.33	0.50	2.00	1.00	0.00	2.00	0.00
LA1	1.00	0.73	1.67	1.44	0.67	1.17	0.00	1.00	2.00	1.00
LA2	1.80	0.33	2.00	1.22	0.67	1.83	2.00	1.00	2.00	0.33
LA3	1.60	0.00	2.00	0.56	0.00	2.00	0.00	0.00	0.00	0.67
LA4	0.80	0.27	1.33	0.22	0.00	0.67	0.00	0.00	0.00	0.67
LA5	0.40	0.40	2.00	0.67	0.00	1.67	0.00	2.00	1.00	1.00
LA6	0.80	0.73	0.33	1.67	1.67	1.00	1.00	2.00	1.50	1.33
LA7	0.80	0.00	0.67	0.44	1.33	0.50	0.00	0.00	1.00	0.83
LA8	1.20	0.93	2.00	1.11	1.33	1.00	2.00	2.00	2.00	2.00
LA9	1.60	1.20	0.67	1.00	0.67	1.33	0.00	0.50	0.00	1.67

Table 4 (cont.). Final cluster

Indicator	Finance		Mining		Transportation and infrastructure		Various industries		Basic and chemical industries	
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2
LA10	1.80	1.87	2.00	1.11	0.33	2.00	2.00	2.00	2.00	0.33
LA11	1.20	0.27	0.67	0.67	0.00	1.33	2.00	1.00	1.00	0.67
LA12	2.00	0.40	0.67	0.44	0.67	0.67	1.00	0.00	1.00	0.00
LA13	1.60	1.20	2.00	1.56	0.50	2.00	1.00	0.00	2.00	1.33
LA14	0.20	0.53	2.00	0.44	0.67	0.67	1.00	1.00	2.00	0.00
LA15	0.00	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LA16	1.20	0.80	2.00	0.89	1.33	0.00	0.00	1.00	0.00	0.00
HR1	1.20	0.40	0.00	0.22	0.00	0.67	0.00	2.00	2.00	0.00
HR2	0.20	0.00	1.33	0.00	0.00	1.33	1.00	0.00	1.00	0.00
HR3	1.60	0.53	2.00	0.67	0.67	2.00	1.00	2.00	2.00	0.67
HR4	1.20	0.80	2.00	1.33	0.67	2.00	0.00	1.00	2.00	0.67
HR5	0.80	0.00	1.33	0.44	0.00	0.67	1.00	1.00	2.00	0.67
HR6	1.20	0.00	1.33	0.22	0.00	0.67	0.00	0.00	2.00	0.33
HR7	0.40	0.27	2.00	0.22	0.00	1.33	0.50	0.00	0.00	0.00
HR8	0.00	0.00	1.33	0.44	0.00	1.33	2.00	0.00	2.00	0.00
HR9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HR10	0.20	0.00	2.00	0.22	0.67	2.00	2.00	1.00	2.00	0.00
HR11	0.00	0.00	1.33	0.00	0.00	0.67	0.00	0.00	0.00	0.00
HR12	0.40	0.00	1.33	0.00	0.00	0.67	1.00	0.00	2.00	0.00
SO1	2.00	0.80	2.00	1.56	1.33	2.00	2.00	2.00	1.00	1.00
SO2	0.40	0.13	0.33	0.44	0.33	0.33	0.00	0.00	1.00	0.67
SO3	1.60	0.40	1.33	0.67	0.00	1.33	1.00	2.00	2.00	0.67
SO4	2.00	0.93	1.33	0.67	0.33	1.33	0.00	2.00	2.00	0.00
SO5	1.40	0.67	1.33	1.00	0.00	1.33	0.00	2.00	2.00	0.00
SO6	0.80	0.00	2.00	0.11	0.00	0.67	0.00	0.00	2.00	0.33
SO7	0.00	0.53	1.33	0.44	0.00	1.00	0.00	0.00	2.00	0.00
SO8	1.20	0.53	1.33	0.78	1.33	1.67	2.00	2.00	2.50	0.33
SO9	0.60	0.00	2.00	0.22	0.00	0.00	0.00	0.00	1.00	0.00
SO10	0.00	0.00	1.33	0.00	0.00	0.00	0.00	0.00	1.00	0.00
SO11	0.00	0.00	2.00	0.00	0.00	1.00	1.00	0.00	2.00	0.00
PR1	0.00	0.00	2.00	0.22	0.00	1.17	1.00	2.00	1.00	0.33
PR2	0.80	0.27	2.00	0.67	0.00	1.33	0.00	1.00	2.00	0.33
PR3	1.60	0.27	1.33	0.22	0.00	0.67	0.00	1.00	0.00	0.67
PR4	1.60	0.40	1.33	0.44	0.00	0.67	1.00	1.00	2.00	0.17
PR5	1.60	1.27	1.33	0.89	1.67	1.83	1.00	1.00	1.50	0.67
PR6	1.20	0.00	1.67	0.56	0.00	0.67	1.00	0.00	0.00	0.17
PR7	1.20	0.27	1.33	0.44	0.00	1.33	0.00	1.00	1.00	0.33
PR8	1.60	0.93	1.33	0.00	0.67	0.67	2.00	2.00	0.00	0.17
PR9	1.60	0.40	1.33	0.44	0.67	0.67	2.00	2.00	2.00	0.33

SO8, PR8, and PR9. In the basic and chemical industry sectors, it appears that the dominant indicators are EC3, EC4, EC5, EC7, EC9, EN5, EN6, EN7, EN8, EN10, EN11, EN12, EN13, EN15, EN19, EN20, EN23, EN25, EN28 , EN29, EN31, EN32, EN34, LA1, LA2, LA8, LA10, LA13, HR1, HR3, HR4, HR5, HR6, HR8, HR10, HR12, SO3, SO4, SO5, SO6, SO7, PR2, PR4, and PR9. However, at the LA8 indicator, the values obtained are the same in both clusters 1 and 2.

To sum up, it can be concluded that in the financial industry, the dominant indicators are economic variables, namely:

- EC3: coverage of organizational obligations for defined benefits;
- EC7: development and impact of infrastructure investment and services provided;
- EC8: indirect economic impacts.

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Whereas in the mining sector, environmental variables dominate more, especially on indicators:

- EN2: material used for recycled material input;
- EN5: energy intensity;
- EN7: energy reduction in products and services:
- EN13: protected habitat;
- EN15: direct greenhouse gas emissions;
- EN16: intensity of greenhouse gas (GHG) emissions;
- EN20: emission of Ozone-Depleting Substances (ODS);
- EN22: significant air emissions;
- EN23: total weight of waste based on type and method of construction;
- EN26: habits associated significantly affected by wastewater;
- EN29: report of fines and non-monetary sanctions due to non-compliance with environmental laws and regulations;
- EN32: percentage of screening of new suppliers using the environmental criteria.

As expected, in the transportation and infrastructure sectors, the dominant variable is the environment, i.e.:

- EN2: percentage of recycled material input material;
- EN6: comparison of senior management employed from the community;
- EN7: energy reduction in products and services;
- EN23: total weight of waste based on type and method of construction;
- EN29: report of fines and non-monetary sanctions due to non-compliance with environmental laws and regulations;
- EN34: number of complaints by environmental impacts.

Meanwhile, in various industrial sectors, the dominant variable is also the environment, which is on indicators:

- EN22: significant air emissions;
- EN23: total weight of waste based on type and method of construction;
- EN25: the total weight of waste transported, imported, exported;
- EN29: report of fines and non-monetary sanctions due to non-compliance with environmental laws and regulations.

Finally, in the basic industrial and chemical sectors, environmental variables are also dominant, namely on indicators:

- EN5: energy intensity;
- EN6: comparison of senior management employed from the community;
- EN7: energy reduction in products and services;
- EN8: total water withdrawal based on source;
- EN10: total volume of water recycled;
- EN11: operational locations owned, adjacent to protected areas;
- EN12: significant impact of activities, products and services on biodiversity;
- EN13: protected habitat;
- EN15: direct greenhouse gas emissions;
- EN19: emission reduction (GHG);

- EN20: Ozone-depleting substances (ODS) emissions;
- EN23: total weight of waste based on type and method of construction;
- EN25: total weight of waste transported, imported, exported;
- EN28: product percentage those sold and their packaging reclaimed according to category;
- EN29: report of fines and non-monetary sanctions due to non-compliance with environmental laws and regulations;
- EN31: total expenditure on environmental protection;
- EN32: percentage of screening of new suppliers using environmental criteria;
- EN34: number of complaints by environmental impacts.

CONCLUSION

This study aims to find out and prove empirically that there are differences in the quality of disclosures of each indicator in sustainability reports of companies listed on the IDX whether it is dominant in each industry characteristic. The data used are derived from sustainability reports, with 28 companies studied during the 2016 and 2017 reporting periods.

The data were obtained and processed to carry out the tests on the problem using the cluster analysis methods, namely non-hierarchical procedures or K-means clustering. Based on the conducted study, it can be concluded that there are differences in the quality of disclosure on each GRI G4 indicator in the sustainability reports of companies listed on the IDX in 2016–2017 in each industry characteristic; the difference in indicators is 66 out of 91 indicators.

The dominant indicator expressed in the financial industry is an economic indicator. In the mining, transportation and infrastructure industries, various industries, and basic and chemical industries, the dominant indicators to be disclosed are environmental indicators. This is understandable, considering that the financial industry is being very focused on economic interests (e.g., Iman, 2018), while other industries are more closely related to environmental factors.

Of course, there are some limitations in this study. First and foremost, there are still very few companies in Indonesia that publish their sustainability reports. This is feared to interfere with a more comprehensive quantitative analysis. In addition, the companies` samples obtained are limited to five industrial sectors. Therefore, in further research it`s recommended to expand the reporting period and, if possible, make comparisons with other countries. Nevertheless, it is expected that the findings of this study can be a stepping stone to open horizons related to sustainability in the context of developing countries.

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