



Indeks Pengungkapan Limbah Berbahaya Beracun (LB3) di Indonesia

DISCLOSURE INDEX OF HAZARDOUS TOXIC WASTE (LB3) IN INDONESIA

V. Wiratna Sujarwen¹, Siti Arifah^{2*}

¹Accounting Lecturer at Respati University, Yogyakarta, ²Students of the Doctoral Program in Economics, Faculty of Economics and Business, Sebelas Maret University, Surakarta; Accounting Lecturer at Tidar University, Magelang

¹nana_wiratna@yahoo.com, ²sitiarifah@untidar.ac.id

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ABSTRAK

Penelitian ini bertujuan menyusun indeks pengungkapan limbah bahan berbahaya beracun (LB3) di Indonesia, mengetahui perbedaan pengungkapan LB3 tidak tertimbang dan tertimbang pada perusahaan manufaktur dan migas, pengelola pertambangan mineral dan batubara (Minerba). Data yang digunakan adalah *accidental sampling*. Data sekunder yang digunakan adalah data pengungkapan LB3 perusahaan manufaktur dan pertambangan yang terdaftar di (BEI) tahun 2019 dengan menggunakan teknik *purposive sampling*. Metode penyusunan indeks menggunakan uji deskriptif dan uji t-test independent untuk mencari perbedaan pengungkapan LB3 tidak tertimbang dan tertimbang pada perusahaan manufaktur dan pertambangan yang terdaftar di BEI tahun 2019. Hasil penelitian ini berupa indeks pengungkapan LB3 sebanyak 21 item pengungkapan dengan bobot masing-masing. Hasil pengujian tidak berbeda tetapi nilai rata-rata pembobotan pengungkapan LB3 (0,2945) lebih tinggi dari nilai rata-rata pembobotan (0,283). Selisih indeks tidak tertimbang dan tertimbang adalah 0,0142, selisihnya sangat kecil sehingga secara statistic tidak terdapat perbedaan pengungkapan LB3 pada perusahaan manufaktur dan penambangan.

Kata kunci: Indeks pengungkapan LB3, tidak tertimbang, tertimbang

ABSTRACT

This research aimed to compile a toxic hazardous materials waste (LB3) disclosure index in Indonesia, knowing the difference between unweighted and weighted LB3 disclosures in manufacturing and oil and gas companies, mineral and coal mining management (Minerba). The data used was primary, sourced from FGD and questionnaires with the sampling technique used were accidental sampling. The secondary data used was the LB3 disclosure data of manufacturing and mining companies listed on the Indonesia Stock Exchange (IDX) in 2019 using purposive sampling techniques. The index preparation method used descriptive tests and independent t-test tests to look for differences in unweighted and weighted LB3 disclosures in manufacturing and mining companies. The results of this study in the form of LB3 disclosure index as many as 21 disclosure items with their respective weights. The test results were no different but the mean value of LB3 weighted disclosure (0.2945) was higher than the mean weighted value (0.283). The difference from the unweighted and weighted index is 0.0142, the difference is very small, so statistically there is no different LB3 disclosure in manufacturing companies and miners.

Keywords: LB3 disclosure index, unweighted, weighted.

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* Corresponding author :
Address: Universitas Tidar
E-mail: sitiarifah@untidar.ac.id

INTRODUCTION

Toxic Hazardous Material Waste (LB3) is a problem faced by all countries. The United Nations world organization conference in Sweden in 1972 on the environment became a milestone for several countries to commit to environmental preservation (Pramudianto, 2011). The milestone in the history of environmental problems in Indonesia began with the holding of a seminar on environmental management and national development by Padjadjaran University in Bandung on 15-18 May 1972. On 11 March 1982 it was formulated in law, namely Law No. 4 of 1982 concerning basic provisions on environmental management. In order to better guarantee legal certainty and provide protection for everyone's right to a good and healthy environment as part of the protection of the entire ecosystem, reforms have been made to the Law on environmental management.

Pollution and environmental damage not only have an impact on human survival now, but also threaten human survival in the future, so it is necessary to protect and manage the environment properly and consistently. In cases of environmental damage caused by LB3, companies in Indonesia have PT NTS, a waste management service company that has disposed of solid LB3 in unauthorized places, causing soil to be polluted with heavy metals (Gakum, 2020). The case of PT Green Environmental Mojokerto is a waste processing service that disposes of liquid and solid LB3 in the river without pre-processing so that local residents experience skin diseases (Mongabaya.co.id,). The case of PT Daya

Pratama Lestari was a textile company disposing of solid LB3 in a place that did not have a permit causing pollution of the Citarum River (Media Polri, 2020). There are still many other cases that have occurred in Indonesia due to the fact that the management of LB3 was not in accordance with procedures and did not even manage LB3.

Increasingly severe and dangerous damage require companies and the business world to be responsible for repairing and conserving nature. The Indonesian government regulates by making the following regulations:

1. Law Number 40 of 2007 concerning Limited Liability Companies which regulates the company's obligation to carry out corporate social responsibility or better known as Corporate Social Responsibility (CSR).
2. Government Regulation (PP) Number 47 of 2012 concerning social and environmental responsibility for Limited Liability Companies.

Many cases of LB3 pollution have caused environmental damage, for this reason, LB3 producing companies required to be responsible. There are two ways of corporate responsibility towards environmental issues. First, directly through products that can be recycled, reused, reduced sources of hazardous materials, and can be renewed. Second, indirectly through environmental disclosure which can increase environmental awareness and have an impact on reducing environmental problems (Nurleli & Faisal, 2017) . Companies need to realize the demands of

stakeholders by carrying out indirect responsibilities, namely by conducting environmental disclosures, especially LB3 (Branco & Rodrigues, 2008).

A survey conducted by the Indonesian Forum for the Environment (WALHI) in 2015 provided data that during 2011 there were 107 cases of environmental violations, in 2012 there were 118 cases, in 2013 until March there were 4 violations, the majority of which were caused by LB3. Of the number of violations, 70% led to widespread conflict. The emergence of this conflict is due to the low quality of social and environmental responsibility, as well as low environmental disclosure in annual reports conducted by companies (WALHI, 2015). In Indonesia, Sustainability reporting and environmental disclosure is still voluntary. There are no regulations that require it as is the case with financial reporting. However, almost 12% in 2017 of companies listed on the Jakarta Stock Exchange (IDX) have issued sustainability reports, most of which are based on the disclosure standards contained in the Global Reporting Index (GRI) (OJK, 2018).

The regulator has not yet established guidelines for environmental disclosure, especially guidelines for disclosure of LB3 for companies listed on the IDX. In guidelines such as GRI, LB3 disclosure items there are still very few, even though for active companies producing LB3, there are many regulations that are required by the government to manage LB3. Based on this, the preparation of LB3 disclosure items is indispensable. Researchers are interested in compiling guidelines for LB3 disclosure items as a reference for the government,

the Capital Market Supervisory Agency (BAPEPAM), and the Financial Services Authority (OJK) in making regulations for LB3 disclosure in company annual reports, so that companies listed on the Indonesia Stock Exchange (IDX) are uniform. In making LB3 disclosures, Researchers hope that the results of this index can be used as a guideline for companies in disclosing LB3 items in annual reports that have not been stipulated by regulators so far.

Legitimacy theory explains that there is a social contract between companies and communities that requires companies to behave in accordance with the system of values or norms that exist in the social system of society (Deegan et al., 2002). This social contract is a means for companies to adjust various company goals with community goals whose implementation is manifested in the form of corporate environmental responsibility. Companies processing raw materials will definitely produce LB3, so the company needs to enter into a contract with the community in the form of corporate responsibility in managing LB3. Phillips (2003) in his theory of legitimacy states that companies need legitimacy from stakeholders. The stakeholders in question are normative, namely that companies need to gain legitimacy from normative stakeholders (suppliers, consumers, local communities, shareholders, employees) where these stakeholders have a reciprocal relationship between stakeholders and the company.

These LB3 disclosure items are based on previous disclosure items such as GRI, disclosure items compiled by researchers such as (Clarkson et al., 2008; Setiadi, 2016;

Suhardjanto et al., 2007; Suhardjanto & Choiriyah, 2010; Wiseman, 1982) . Researchers combined special disclosure items about LB3, then each item was developed based on PP No. 101 of 2014 concerning the management of LB3, Minister of Environment and Forestry Regulation No. 55 of 2015 Test of LB3 characteristics, LHK Regulation Number 63 of 2016 LB3 Hoarding Test to obtain the LB3 disclosure index.

RESEARCH FOUNDATION

Stakeholder Legitimacy

The large number of cases of environmental pollution caused by the lack of disclosure cause companies to try to gain legitimacy from stakeholders, by means of a social contract between the company and stakeholders. The social contract is in the form of LB3 management according to government regulations. The management of LB3 that has been carried out by the company is then disclosed in the company's annual report. What the researcher conveyed is in accordance with the theory of legitimacy from (Phillips, 2003) which says that companies need to gain legitimacy through social contracts with normative stakeholders (suppliers, consumers, local communities, shareholders, employees), namely stakeholders who have a relationship with the company based on reciprocity. The company performs a direct moral obligation where the corporate moral responsibility is addressed to stakeholders based on the principle of stakeholder justice. The principle of stakeholder justice states that whenever a person or group of people voluntarily receives benefits from a

mutually beneficial cooperative scheme that requires sacrifice or contribution, a fair obligation is created between the company and stakeholders in proportion to the benefits received (Philip, 1997) .

Disclosure

Disclosure is disclosure of company information both quantitative (financial) and qualitative (company strategy), mandatory or voluntary, retrospective, prospective and action with the aim of increasing the effectiveness of disclosure and evaluating decisions (Healy & Palepu, 2001) . PSAK 60 (2019) explains that disclosure is a company activity to disclose information that allows users of financial statements to evaluate the nature and scope of risks arising from financial instruments to which the entity is exposed at the end of the reporting period.

Disclosure Index

The disclosure index method calculates the number of items and analyzes them with reference to an optimal list of benchmark items (such as the Global Reporting Initiative, GRI), this approach is considered the most appropriate. This method is considered a better measure of the level of environmental reporting in Indonesia than the alternative method, content analysis. Therefore, this study uses the disclosure index method. There are four types of disclosure index (Suhardjanto, 2008) as shown in the table below:

Table 1. Disclosure Index

Types	Disclosure Indices
1	Dichotomous, 01 measure and all items equally weighted

- 2 Dichotomous, 01 measures with differential weights
- 3 Range of scores (for instance 0-3 (Coy et al, 1993) and all items are equally weighted
- 4 Range of scores (for example a range from 0-3) with differential weight

Source: (Suhardjanto, 2008)

This study uses Dichotomous, 01 measures with differential weights, namely each LB3 item disclosed by the company is given a score of 1 and each LB3 item that is not disclosed by the company is given a score of 0. Then using people's opinions to get a score that corresponds to the level of importance according to the stakeholder expert in the field of LB3.

Hazardous and Toxic Waste (LB3)

According to PP 101 of 2014 concerning the management of LB3, it defines that Hazardous and Toxic Waste, abbreviated as LB3, are substances, energy and/or other components which due to their nature, concentration and/or amount, either directly or indirectly, can contaminate and/or damaging the environment, and/or endangering the environment, health, and the survival of humans and other living things. LB3 is a group of waste that can directly or indirectly pollute, endanger the environment, health and survival of humans and other living things (Zulkifli, 2016).

RESEARCH METHOD

Research Sample

The research conducted a Forum Discussion Group (FGD) by inviting practitioners in the field of LB3 namely 10 staff who handle company LB3 at the central ministry of environment and 8 academics teaching environmental accounting, 2 researchers who have researched Corporate Social Responsibility (CSR). Questionnaires were distributed to several parties totaling 35 respondents consisting of normative stakeholders namely suppliers, consumers, local communities, shareholders, employee each of 5 respondents plus academics 5 respondents, staff of the ministry of environment 5 respondents. The sampling technique used is accidental sampling. The secondary data used is LB3 disclosure data for manufacturing and mineral and coal companies registered on the IDX in 2019 using a purposive sampling technique.

Data and Data Sources

The data used in this study are primary and secondary data obtained from:

1. Forum discussion group (FGD) with the ministry of environment, academics in the field of environmental accounting, researchers on CSR topics to formulate LB3 disclosure items.
2. Distribution of questionnaires to respondents from suppliers, consumers, communities, shareholders, employees, the ministry of environment and academia how important LB3 disclosure items are.
3. Disclosure of LB3 of manufacturing and mineral and coal companies those listed on the IDX in 2019 were

obtained from the website www.idx.co.id.

The steps for compiling a weighted index for LB3 disclosure and testing with an independent sample t-test

The steps to obtain a weighted index of LB3 disclosures are as follows:

1. Combines LB3 disclosure items are from GRI, and incorporate the LB3 disclosure items compiled by Wiseman (1982); Suhardjanto et al., (2007); Clarkson et al., (2013); Suhardjanto & Choiriyah (2010); Setiadi (2016); Clarkson et al., (2008) as a guide in developing LB3 disclosure items.
2. LB3 disclosure items which the researchers have compiled based on step 1 are then discussed in FGDs with the staff of the ministry of environment, academics in the field of environmental accounting, researchers on CSR topics by looking at PP no 101 of 2014 concerning management of LB3, Minister of Environment and Forestry Regulation Number 55 of 2015 Testing the characteristics of LB3, Minister of Environment and Forestry Number 63 2016 LB3 Stockpiling Test.
3. The disclosure items that had been approved in the FGD were then made into a questionnaire and filled in by 35 respondents, namely normative stakeholders, the ministry of environment, and academics to respond to how important the LB3 disclosure items were using a Likert scale, namely 1 = very not very important, 2 = not very important, 3 = not important, 4 = neutral, 5 = important. 6=very important, 7=very important.
4. Based on the results of the questionnaires distributed to the respondents, they were tested for reliability and validity. Then the researchers carried out weighting and compiled a weighted index of LB3 disclosures.
5. After the disclosure index is compiled, then look for LB3 disclosure items in manufacturing and mineral and coal companies listed on the IDX in 2019 in an unweighed and weighted manner.
6. Conducting independent sample t-test for disclosing LB3 in an unweighed and weighted manner.

RESULTS AND DISCUSSION

LB3 Disclosure Index Compilation Results

LB3 disclosure items are in the form of the following LB3 disclosure item arrangement.

Table 2. LB3 Disclosure Items

No	Disclosure items	Researcher
1	LB3 type/code	Suhardjanto, et al (2007); LHK Regulation Number 55 of 2015 LB3 characteristic test, PP 101 of 2014
2	Total LB3 weight by type	Setiabudi (2016); GRI 4
3	Efforts to reduce LB3	Crakson, et al (2008); PP 101 of 2014
4	LB3 Storage	PP 101 of 2014

5	LB3 collection	PP 101 of 2014
6	Transport information LB3	Wiseman (1982); PP 101 of 2014
7	Utilization of LB3	PP 101 of 2015
8	LB3 recycling	Crakson, et al (2008); Clarkson, et al (2013)
9	LB3 processing	Clarkson, et al (2013); PP 101 of 2014
10	LB3 Hoarding	PP 101 of 2014; LHK Regulation Number 63 of 2016 Test for LB3 Hoarding
11	LB3 disposal method	Wiseman (1982); Crakson, et al (2008); Clarkson, et al (2013)
12	Total weight LB3 by disposal method	GRI4
13	Financing	PP 101 of 2014
14	LB3 percentage transported for international shipping	GRI4
15	Prevention of Environmental Pollution due to LB3	PP 101 of 2014
16	Emergency Response System in LB3 Management	PP 101 of 2014
17	coaching	PP 101 of 2014
18	Supervision	PP 101 of 2014
19	Total spill volume LB3	GRI4; Clarkson, et al (2013); Setiabudi (2016)
20	Causes of LB3	Clarkson, et al (2013)
21	LB3 treatment	Crakson, et al (2008)

Source: Data processed 2021

The researcher sorted the LB3 disclosure items into several guidelines that had been made before. Then the researchers held 2 face-to-face FGDs with 10 staff from the central ministry of environment, 8 academics in the field of environmental accounting, and 2 researchers on the topic of CSR. The implementation time will be 16.21 June 2021 at the Office of the Environment Service in Gg Loncang, Rogoyudan Sinduadi, Mlati sub-district, Sleman DIY. Apart from face-to-face, the FGD was also conducted online once on 28 June 2021. On the advice of central ministry of environment staff, academics and researchers that the basis of reference for disclosing LB3 is the points in PP no 101 of

2014 concerning management of LB3 namely as follows:

- a. LB3 determination
- b. LB3 deduction
- c. LB3 Storage
- d. LB3 collection
- e. LB3 transport
- f. Utilization of LB3
- g. LB3 processing
- h. LB3 Hoarding
- i. Dumping (Disposal) LB3
- j. LB3 cross-border movement
- k. Management of Environmental Pollution and Environmental Damage and Recovery of Environmental Functions
- l. Emergency Response System in LB3 Management
- m. Coaching

- n. Supervision
- o. Financing

The results of the FGD included 21 items for disclosing LB3, all of which are included in the points contained in PP No. 101 of 2014 concerning the management of LB3. According to practitioners, these points must in fact be implemented by companies that produce LB3, namely manufacturing companies, mineral and coal companies, and hospitals. They argue that this obligation should be conveyed in the company's annual report. The results of

the questionnaire that has been filled out by the respondents are in the attachment.

The distribution of questionnaires to 35 respondents consist of 25 normative stakeholders each 5 respondents namely suppliers, consumers, communities, shareholders, and employees. There are 5 staffs from the ministry of environment who handle LB3, 5 academics. Respondents responded to 21 questions about how important LB3 disclosure items are in the company's annual report. The results of the respondents' answers were then calculated so that a weighted index of LB3 disclosure was presented as follows:

Table 3. LB3 Disclosure Weighted Index Results

Code	Information	Total	Ratings	Waited Index
P1	LB3 type/code	207	4,721	0991
P2	Total LB3 weight by type	206	4,698	0987
P3	Efforts to reduce LB3	219	4,994	1,049
P4	LB3 Storage	208	4,743	0.996
P5	LB3 collection	208	4,743	0.996
P6	Transport information LB3	196	4,470	0939
Q7	Utilization of LB3	220	5.017	1,054
Q8	LB3 recycling	220	5.017	1,054
Q9	LB3 processing	220	5.017	1,054
P10	LB3 Hoarding	197	4,493	0.943
P11	LB3 disposal	200	4,561	0.958
p12	Total weight LB3 by disposal method	197	4,493	0.943
p13	Financing	209	4,766	1,001
p14	Percentage of LB3 transported for international shipments	194	4,424	0.929
p15	Prevention of Environmental Pollution due to LB3	220	5.017	1,054
p16	Emergency Response System in LB3	215	4,903	1030
p17	Management	204	4,652	0.977
p18	coaching	211	4,812	1010
p19	Supervision	211	4,812	1010
p20	Total spill volume LB3	214	4,880	1025
p21	Causes of LB3	210	4,789	1006
	LB3 treatment	210	4,789	1006
		4386	100,023	21,004

208,857 4,763

Source: Data processed 2021

The questionnaire containing responses to how important the 21 items of LB3 disclosure were filled out by 35 respondents was then added up for each question, then a rating value was obtained,

from the rating value a weighted index was obtained. The 21 weighted index items are then arranged in the following order from largest to smallest.

Table 4. LB3 Disclosure Weighted Index Results

Code	Information	Total	Ratings	Weighted Index
Q7	Utilization of LB3	220	5.017	1,054
Q8	LB3 recycling	220	5.017	1,054
Q9	LB3 processing	220	5.017	1,054
p15	Prevention of Environmental Pollution due to LB3	220	5.017	1,054
P3	Efforts to reduce LB3 Emergency Response System in LB3	219	4,994	1,049
p16	Management	215	4,903	1030
p20	Causes of LB3	214	4,880	1025
p18	Supervision	211	4,812	1010
p19	Total spill volume LB3	211	4,812	1010
p21	LB3 treatment	210	4,789	1006
p13	Financing	209	4,766	1,001
P4	LB3 Storage	208	4,743	0.996
P5	LB3 collection	208	4,743	0.996
P1	LB3 type/code	207	4,721	0991
P2	Total LB3 weight by type	206	4,698	0987
p17	coaching	204	4,652	0.977
P11	LB3 disposal	200	4,561	0.958
P10	LB3 Hoarding	197	4,493	0.943
p12	Total weight LB3 by disposal method	197	4,493	0.943
P6	Transport information LB3	196	4,470	0939
p14	Percentage of LB3 transported for international shipments	194	4,424	0.929
		4386	100,023	21,004
		208,857	4,763	

Source: Data Processed 2021

Table 4 is the weighted index results LB3 disclosure, the largest weighted index item obtained by the first important disclosure item, namely the disclosure item on LB3 utilization mentioning LB3

utilization, as a substitute for raw materials, utilization of LB3 as a substitute for energy sources, as raw material, utilization of LB3 in accordance with developments in science and technology.

The next important disclosure item is the LB3 recycling disclosure item, the company disclosed how the company carries out a process to turn used materials into new materials by for example making solid waste into bricks, the company also explains that this recycling is not dangerous and is licensed and has added value. Recycling makes something new or a different product.

The 3rd important item is the processing of LB3 translated into LB3 processors in a manner that takes into account the availability of technology, environmental standards or environmental quality standards. The company has obtained approval for the trial implementation of LB3 processing. The company has obtained a written permit for LB3 processing activities. The 4th important item is the next most important disclosure item is the prevention of environmental pollution and environmental damage due to LB3 where the company provides information about warnings of environmental pollution and environmental damage to the public. The company isolates environmental pollution and environmental damage. The company terminates sources of environmental pollution and environmental damage and other means in accordance with scientific and technological developments.

The 5th important disclosure item is an effort to reduce LB3, the elaboration of this item is an effort to substitute materials, namely through the selection of raw and auxiliary materials that originally contain B3 and are replaced with raw and auxiliary materials that do not contain B3. Modification process is through selecting

and implementing more efficient production processes. Another effort is to use environmentally friendly technology. Companies are required to report waste reduction activities to KLH. The 6th important disclosure item is the emergency response system in managing LB3, what is meant by this disclosure item is that everyone who produces LB3, collects LB3, utilizes LB3, transports LB3, processes LB3, and hoards LB3 must have an emergency response system including the preparation of an emergency management program. LB3, training and rehearsal for emergency management of LB3, handling emergency management of LB3.

Index The 7th important item is disclosing the causes of LB3. The elaboration is that the company discloses the causes of liquid, solid, gaseous LB3, explosive, flammable, reactive, infectious, corrosive, toxic types of LB3 produced by the company. The 8th important disclosure item is LB3 supervision, the company explains by whom the company's LB3 supervision is carried out. Evidence of company supervision reveals verification of LB3 management reports and LB3 dumping, explaining inspections carried out by the government to oversee the management of LB3 produced by companies.

The 9th order disclosure item is the volume of the LB3 spill. Spills are leaks in large quantities and are difficult to control. The volume of spilled material is also large. How many company LB3 spills. Furthermore, the 10th important LB3 disclosure item is LB3 maintenance including maintenance of the equipment used for LB3 processing. Furthermore, the

11th important disclosure item is the financing that the company provides financial information that has been issued for the management of LB3 which was carried out for one period. The 12th important disclosure item is LB3 storage, what companies need to disclose is storage permits, storage facilities and locations. The storage in question is that the storage of LB3 produced before the final disposal is carried out must be stored in advance with various established procedures.

The 13th important disclosure item is that LB3 collection must obtain a permit for collection activities must have an environmental permit, the LB3 producing company specifies the type of LB3 that must be collected. Usually this collection activity, the LB3 producing company will hand over the processing to a third party. The 14th important disclosure item is the LB3 type/code, it is very important for the company to disclose the LB3 type/code produced by the company: solid type, liquid type, gas type, then explosive, flammable, reactive, infectious, corrosive, toxic LB3 type. The 15th important LB3 disclosure item is the total weight of LB3 by type, for each type of waste whether it is solid type, liquid type, gas type, then explosive, flammable, reactive, infectious, corrosive, toxic type of LB3 it is very important to disclose the weight each type or types produced by the company. The 16th important LB3 disclosure item is LB3 coaching where the company describes the existing coaching in the company through education and training on LB3 management, technical guidance on LB3 management to the company's LB3 staff.

Index The 17th important disclosure is the LB3 disposal method, the elaboration is that the company explains the disposal methods, there are 3 disposal methods, which method the company uses, there are deep wells, storage ponds, and special LB3 landfills (before LB3 is stockpiled, it is put in drums/barrels first). The company disposes of LB3 meaning as a final disposal site, in contrast to hoarding, if stockpiling is temporary before being transported to be processed, disposed of or handed over to a third party. Index 18th, the most important item is the disclosure of LB3 stockpiling, the company describes the landfill facility in the form of a place that meets the requirements and the technology used, must apply for a permit for LB3 stockpiling to parties in accordance with the regulations set by the government.

Index The 19th important item is the item for disclosing the total weight of LB3 based on the disposal method, the company discloses the amount or weight of each type of LB3 transported based on the disposal method, either using the deep well disposal method, storage ponds, or putting it into new drums for stockpiling. The 20th important order disclosure index is information on LB3 transportation which is an activity of transferring LB3 produced by the company to the LB3 manager. These activities are related to the transportation, transfer and delivery of LB3 from the LB3 producing company for landfilling, disposal, it could also be the transfer of LB3 from the waste producing company to other LB3 management actors. LB3 transportation itself can be carried out if the producer has entered into a cooperation contract with the LB3

manager specifying the ultimate goal of managing the waste. It is also necessary to disclose the status of the permit for transportation with the existing means of transportation. Index the most recent disclosure is the percentage of LB3 transported for international shipping consisting of the time of transportation, explanation of the destination country, complete export documents, possessing permits from the government of origin and the government of destination. The data is contained in the attachment.

Simulation of Calculation of Using LB3 Disclosure Index for Measurement of LB3 Disclosure

There are two measurements of LB3 disclosure, namely unweighted and weighted, for unweighted measurement is done by adding up the disclosures of each company per year, then dividing the total item disclosures, giving a value if the company discloses is given a number of 1 if not 0. For disclosure of LB3 uses the weighted index by multiplying the index/weight and the realization of disclosures made by the company. Example of calculating LB3 disclosure using a weighted index at PT Duta Pertiwi Nusantara Tbk. (DPNS) in 2019 as follows:

Table 5. LB3 Disclosure Measurement Simulation Results with Index Weighted and without Using (Unweighted)

Disclosure Code	Disclosure Items	Researcher index	Corporate Disclosures	Unweighted	weighted
P1	LB3 type	0991	1	1	0991
P2	Total LB3 weight by type	0987	1	1	0987
P3\	LB3 Hoarding	1,049	1	1	1,049
P4	LB3 disposal method	0.996	0	0	0.000
P5	Percentage of LB3 transported for international shipments	0.996	0	0	0.000
P6	LB3 Supervision	0939	0	0	0.000
Q7	Transport information LB3	1,054	0	0	0.000
Q8	Total spill volume LB3	1,054	0	0	0.000
Q9	Waste treatment B 3	1,054	0	0	0.000
P10	Total weight LB3 by disposal method	0.943	0	0	0.000
P11	Efforts to reduce LB3	0.958	0	0	0.000
Q12	Emergency response system in managing LB3	0.943	0	0	0.000

P13	LB3 Storage	1,001	0	0	0.000
P14	LB3 financing	0.929	0	0	0.000
P15	Prevention of environmental pollution due to LB3	1,054	1	1	1,054
Q16	LB3 collection	1030	1	1	1030
Q17	LB3 coaching	0.977	1	1	0.977
P18	Utilization of LB3	1010	1	1	1010
P19	LB3 recycling	1010	1	1	1010
P20	Causes of LB3	1025	1	1	1025
P21	LB3 treatment	1006	1	1	1006
Total				10	10.138
Average (Result of measurement of LB3 disclosure)				0.476	0.483

Source: Simulation Secondary Data Processed in 2021

Table 5 is the result of measuring LB3 disclosures using unweighted where the measurement is only based on the realization of LB3 disclosures, if any is given 1 and if not given a score of 0, then the total is divided by the number of all LB3 disclosure items (21) resulting in PT Duta Pertiwi Nusantara Tbk's LB3 disclosures (DPNS) in 2019 on an unweighted basis of 0.4716 or 47.16%. For the measurement of weighted LB3 disclosure obtained from the disclosure realization score if the item is not disclosed it is given a value of 0 if it is disclosed it is given 1. Then each item is multiplied by the weight that has been obtained in this study, the total number of all disclosure items is then divided by the total number of disclosure items (21) results in a 2019 weighted LB3 disclosure

measurement of PT Duta Pertiwi Nusantara Tbk (DPNS) of 0.483 or 48.3%.

Both of these methods have almost similar results presented in the appendix, for the weighted method of disclosing LB3 already using measurements that are weighted according to the wishes of normative stakeholders, the government is represented by the ministry of environment, academics and researchers in the field of environmental accounting. In the following, the results of the independent sample t-test measurement of LB3 disclosure both unweighted and weighted in manufacturing and mineral and coal companies are presented in the following listed on the Indonesia Stock Exchange (IDX) in 2019.

Table 6. Independent Difference Test Results Sample t-test

Information	Score
sig F	0.193
tt Equal Variance assumed	0.468
t Equal Variance not assumed	0.468
sig t Equal Variance assumed	0.840

Mean Unweighted 0.2803

Mean Weighted 0.2945

Source: Processed data for 2021

Sig F arithmetic has the result that both population variances are identical (Equal Variance assumed), then the t test should use the Equal variance assumed basis, so the sig t count value is 0.468, the sig t count value is > 0.05 which means H_0 is accepted, meaning there is no difference in LB3 disclosure unweighted and weighted. The mean unweighted results are not much different from the mean weighted results, although the weighted values are higher (0.2945) than the unweighted (0.2803) but in statistical calculations there is no significant difference between the two. The difference between the unweighted and weighted indexes is 0.0142. The results of the index weighted for LB3 disclosure are a reflection of the level of importance stakeholders expect of LB3 disclosures in Indonesia.

Disclosure of LB3 Unweighted has the same weight value between all items if it discloses 1, does not disclose 0. Weighted is the result of the stakeholder's desire to disclose LB3. Based on table 4, respondents rated the most important items, there were 4 each with a weight of 1,054, namely utilization of LB3, recycling of LB3, processing of LB3, handling of environmental pollution due to LB3. The importance of disclosing the use and recycling of LB3 according to the results of interviews with stakeholders, these 2 items are related to the added value of the company's income. Meanwhile, processing and handling are related to company

expenses. The weighted index produces important to unimportant values for LB3 disclosure according to the wishes of stakeholders.

CONCLUSION AND SUGGESTIONS

Conclusion

The results of this study are the LB3 disclosure index of 21 items with weights on each item. The most important weighting is the utilization of LB3, recycling of LB3, processing of LB3, handling of environmental pollution due to LB3. The smallest index is the disclosure item of the percentage of LB3 transported for international shipments.

The results of this weighted index illustrate the desire of stakeholders for LB3 disclosures in the company's annual report. Disclosure of LB3 is still voluntary, although gradually the government will require disclosure of LB3 in annual reports for companies listed on the IDX. The researcher hopes that the LB3 disclosure index can provide input for policy makers in formulating LB3 disclosure items or can be used as a standard guideline for companies' LB3 disclosures, so that companies are not confused about using reference guide-lines for LB3 disclosures.

The results of the independent sample t-test showed no difference in the disclosure of unweighted and weighted LB3. The weighted value is higher than the unweighted value, the difference between the two 0.0142, so that in statistical calculations there is no significant

difference between the two. The results of the index weighted for LB3 disclosure are a reflection of the level of importance stakeholders expect of LB3 disclosures in Indonesia. The results of the weighting obtained LB3 disclosure items with different values from the highest to the lowest among the 21 items.

Suggestions

Suggestions for making the next index so that it does not only involve normative stakeholders, the ministry of environment, academics and researchers in the field of environmental accounting, it is necessary to involve other stakeholders which has never been done in this research. The preparation of the LB3 disclosure index is always adjusted to new regulations made by policy makers. For researchers in the field of LB3 disclosure, it is better not to use a weighted index in measuring LB3 disclosure, but use unweighted with the depth, quality, and detail of each item that provides information about LB3 disclosure.

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 2. [https://www.ayobandung.com/bandung/pr-79677324/dump-limbah-ke-sungai-saluran-industrial-farmasi-combiphar-di Tutup-paksa?page=all](https://www.ayobandung.com/bandung/pr-79677324/dump-limbah-ke-sungai-saluran-industrial-farmasi-combiphar-di-Tutup-paksa?page=all)
 3. <https://www.mongabay.co.id/byline/a-asnawi-mojokerto/>
 4. <https://mediapurnapolri.net/2020/05/20/penyidikan-pidana-environment-pt-dpl-dinyatakan-lengkap-p21/>

GOVERNMENT REGULATION:

1. Law (UU) Number 4 of 1982 concerning basic provisions for environmental management
2. Law (UU) Number 40 of 2007 concerning Limited Liability Companies
3. Law (UU) Number 32 of 2009 concerning Environmental Protection and Management
4. Government Regulation (PP) Number 47 of 2012 concerning social and environmental responsibility
5. Government Regulation (PP) Number 101 of 2014 concerning the management of LB3
6. Ministerial Regulation (Permen) Number 55 of 2015 LB3 characteristic test
7. Ministry of Environment and Forestry Regulation (Candy) Number 63 of 2016 LB3 Hoarding Test

REFERENCES FROM INTERNET:

Attachment
Results of distributing questionnaires

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
P1	3	6	5	5	7	6	6	5	5	6	5	5	7	6	3	7	6	6
P2	3	6	5	5	7	6	6	4	5	6	5	5	7	6	3	7	6	6
P3	7	7	6	6	6	7	7	6	7	6	6	6	6	7	7	6	7	7
P4	6	6	6	6	7	5	5	6	6	6	6	6	7	5	5	6	5	5
P5	6	6	6	6	7	5	5	6	6	6	6	6	7	5	5	6	5	5
P6	6	6	6	5	6	5	5	6	6	6	6	5	6	5	3	6	5	5
Q7	7	7	6	7	6	7	7	6	7	6	7	7	6	7	6	7	7	6
Q8	7	7	7	7	6	7	7	5	7	7	7	6	7	7	6	7	7	7
Q9	7	7	6	7	6	7	6	7	7	7	6	7	6	7	6	7	7	6
P10	6	5	5	6	6	6	5	6	6	5	5	5	6	6	4	5	6	5
P11	6	5	5	6	6	6	5	6	6	5	5	6	6	6	3	6	6	5
p12	6	5	5	6	7	6	5	5	6	5	5	6	6	6	4	5	6	5
p13	7	5	6	6	6	7	7	6	5	5	6	6	6	6	4	6	7	7
p14	5	7	5	5	6	5	5	5	5	7	5	5	6	5	4	5	5	5
p15	7	5	7	7	6	7	7	6	7	5	7	7	6	7	3	6	7	7
p16	7	7	6	7	6	6	7	6	7	7	6	7	6	6	4	6	6	6
p17	5	7	6	6	6	6	6	6	5	7	6	6	6	6	3	6	6	5
p18	7	5	6	6	6	6	6	6	7	7	6	6	6	6	4	6	6	5
p19	5	7	7	6	6	6	5	6	5	7	7	6	6	6	4	6	6	5
p20	7	5	6	7	6	7	7	6	7	5	6	7	6	6	3	6	7	6
p21	6	5	7	6	6	6	7	7	6	5	7	6	6	6	3	7	6	6

Code	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
P1	7	6	6	5	5	7	6	7	6	7	6	7	7	7	6	7	6
P2	7	6	6	5	5	7	6	7	6	7	6	7	7	7	6	7	6
P3	6	7	6	6	6	6	6	6	6	6	6	6	7	6	5	5	6
P4	6	6	6	6	6	7	4	7	7	6	7	6	7	5	6	6	6
P5	6	5	6	6	6	7	4	7	7	6	7	6	7	5	6	7	6
P6	6	5	6	6	5	5	4	7	6	6	7	6	7	6	6	5	5
Q7	7	7	7	7	7	7	7	5	6	4	5	5	4	5	6	6	6
Q8	7	6	7	7	6	7	7	5	6	4	5	5	4	5	7	6	5
Q9	7	6	7	6	7	6	7	6	6	4	5	6	4	5	6	6	7
P10	6	6	5	5	5	6	4	7	7	6	6	6	7	6	6	5	6
P11	6	6	5	5	6	6	4	7	7	6	6	7	7	6	6	5	6
p12	5	6	5	5	6	6	4	7	6	6	6	6	6	7	5	6	6
p13	6	7	5	6	6	6	7	5	6	3	4	7	6	6	7	7	7
p14	5	5	7	5	5	6	4	6	6	6	6	6	6	6	7	6	7
p15	6	7	5	7	7	6	4	7	6	6	6	7	6	7	6	6	7
p16	6	7	7	6	7	6	4	6	6	7	5	7	5	6	6	5	6
p17	6	5	7	6	6	6	6	6	6	6	5	6	6	6	6	5	6
p18	6	7	5	6	7	6	6	5	5	6	5	6	7	6	7	7	7

p19	6	5	7	7	6	6	6	7	6	7	5	7	6	5	7	6	6
p20	6	7	5	6	7	6	6	7	6	7	6	5	5	6	7	6	6

p21	7	6	5	7	6	6	6	6	7	6	6	5	6	7	6	5	5
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Calculation of Unweighted index and weighted LB3 disclosure for manufacturing and mineral and coal companies on the IDX in 2019

No	Company Code	Year	Unweighted	Weighted
1	INTP	2019	0.190	0.201
2	SMBR	2019	0.238	0.248
3	SMCB	2019	0.286	0.294
4	SMGR	2019	0.190	0.201
5	WSBP	2019	0.190	0.201
6	WTON	2019	0.190	0.199
7	AMFG	2019	0.333	0.343
8	ARNA	2019	0.000	0.000
9	KIAS	2019	0.000	0.000
10	Mlia	2019	0.429	0.439
11	TOTO	2019	0.429	0.439
12	IKAI	2019	0.381	0.391
13	ALKA	2019	0.429	0.439
14	ALMI	2019	0.429	0.439
15	STEEL	2019	0.333	0.343
16	BTONs	2019	0.190	0.196
17	GDST	2019	0.000	0.000
18	HENNA	2019	0.190	0.194
19	ISSP	2019	0.333	0.338
20	JKSW	2019	0.000	0.000
21	KRAS	2019	0.143	0.151
22	LION	2019	0.143	0.151
23	LMSH	2019	0.190	0.196
24	PICO	2019	0.000	0.000
25	TBMS	2019	0.190	0.196
26	BUDI	2019	0.143	0.146
27	DPNS	2019	0.476	0.488
28	EKAD	2019	0.619	0.675
29	ETWA	2019	0.381	0.391
30	INCH	2019	0.000	0.000
31	SRSN	2019	0.714	0.762
32	TPIA	2019	0.000	0.000
33	UNIC	2019	0.762	0.766
34	AKKU	2019	0.000	0.000
35	AKPI	2019	0.190	0.201
36	APLI	2019	0.571	0.578
37	BRNA	2019	0.714	0.718
38	IGAR	2019	0.238	0.245
39	SIMA	2019	0.000	0.000
40	CPIN	2019	0.238	0.245
41	JPFA	2019	0.095	0.100
42	PLAY	2019	0.095	0.100
43	SIPD	2019	0.429	0.437
44	TIRT	2019	0.381	0.392

45	FASW	2019	0.238	0.248
46	Indonesian Embassy	2019	0.095	0.100
47	KDSI	2019	0.238	0.248
48	SPMA	2019	0.333	0.343
49	KRAH	2019	0.286	0.295
50	ASII	2019	0.238	0.248
51	AUTO	2019	0.143	0.150
52	GJTL	2019	0.143	0.148
53	IMAS	2019	0.190	0.201
54	INDS	2019	0.048	0.050
55	LPIN	2019	0.000	0.000
56	PRAS	2019	0.286	0.295
57	SMSM	2019	0.095	0.100
58	ARGO	2019	0.286	0.340
59	MYTX	2019	0.286	0.343
60	UNITS	2019	0.048	0.050
61	HDTX	2019	0.286	0.343
62	RICY	2019	0.429	0.437
63	STAR	2019	0.000	0.000
64	SSTM	2019	0.238	0.293
65	TRIS	2019	0.190	0.196
66	BRICK	2019	0.143	0.146
67	BIMA	2019	0.714	0.772
68	PTSN	2019	0.238	0.248
69	JECC	2019	0.286	0.340
70	KBLM	2019	0.381	0.391
71	KBLI	2019	0.381	0.390
72	SCCO	2019	0.190	0.201
73	VOKS	2019	0.143	0.150
74	AISA	2019	0.238	0.248
75	ALTO	2019	0.286	0.343
76	CHECK	2019	0.810	0.859
77	DLTA	2019	0.000	0.000
78	ICBP	2019	0.000	0.000
79	INDF	2019	0.190	0.198
80	MLBI	2019	0.286	0.343
81	MYOR	2019	0.905	0.908
82	PSDN	2019	0.048	0.050
83	BREAD	2019	0.905	0.908
84	SKBM	2019	0.190	0.201
85	SKLT	2019	0.238	0.247
86	STTP	2019	0.143	0.149
87	ULTJ	2019	0.000	0.000
88	RMB	2019	0.238	0.245
89	GGRM	2019	0.286	0.341
90	HMSP	2019	0.333	0.341
91	WIIM	2019	0.429	0.439
92	DVLA	2019	0.095	0.100
93	INAF	2019	0.429	0.439
94	SIDO	2019	0.286	0.296

95	KLBF	2019	0.238	0.248
96	KAEF	2019	0.762	0.809
97	BRAND	2019	0.810	0.809
98	PYFA	2019	0.381	0.393
99	TSPC	2019	0.571	0.582
100	ADES	2019	0.571	0.581
101	TCID	2019	0.667	0.676
102	MBTO	2019	0.619	0.674
103	MRAT	2019	0.238	0.245
104	UNVR	2019	0.000	0.000
105	KETCH	2019	0.000	0.000
106	LMPI	2019	0.143	0.150
107	ANTM	2019	0.095	0.100
108	MEANING	2019	0.619	0.672
109	CITA	2019	0.048	0.100
110	ELSA	2019	0.429	0.486
111	MITI	2019	0.000	0.000
112	PTBA	2019	0.762	0.765
113	RUIS	2019	0.286	0.338
114	SMMT	2019	0.524	0.575
115	TINS	2019	0.095	0.100