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Environmental accounting disclosure in ASEAN countries

Haqi Fadillah[1], Syahril Djaddang[2]

[1, 2] *University of Pakuan, Pakuan Street, Tegallega, Bayar Tengah, Bogor, 16143, West Java, Indonesia*

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A B S T R A C T

This study aims to determine whether there is a difference between the scores of country-based environmental accounting disclosure (in the ASEAN region) and industry-based environmental accounting disclosure (in real estate, forest/agriculture, consumer goods, hospitals, energy, and chemicals/pharmaceuticals). The research method used is One-Way ANOVA difference test. The results show that there is a difference in the scores of country-based environmental accounting disclosure. The difference is between Indonesia and Singapore and between Indonesia and the Philippines. Furthermore, there is no significant difference in the scores of industry-based environmental accounting disclosure, as well as when viewed from each of ASEAN countries. Each country needs to have more stringent regulations and policies to require each company to present the environmental accounting disclosure in the annual report or sustainability report as a form of corporate legitimacy to the public. In addition, there should be a revision of the nature of the environmental accounting disclosure in the financial accounting standards, from voluntary to mandatory. It is intended that every company of various types of industries really pay attention to the environmental impact problems arising from its operational activities.

A B S T R A K

Penelitian ini bertujuan untuk mengetahui adanya perbedaan antara nilai pengungkapan akuntansi lingkungan berbasis negara (di kawasan ASEAN) dan pengungkapan akuntansi lingkungan berbasis industri (di bidang real estat, hutan/pertanian, barang konsumsi, rumah sakit, energi, dan bahan kimia/farmasi). Metode penelitian yang digunakan adalah uji beda One Way ANOVA. Hasilnya menunjukkan bahwa ada perbedaan dalam skor pengungkapan akuntansi lingkungan berbasis negara. Perbedaannya antara Indonesia dan Singapura dan antara Indonesia dan Filipina. Selanjutnya, tidak ada perbedaan signifikan dalam skor pengungkapan akuntansi lingkungan berbasis industri, serta bila dilihat dari masing-masing negara ASEAN. Setiap negara perlu memiliki peraturan dan kebijakan yang lebih ketat untuk mewajibkan setiap perusahaan mempresentasikan pengungkapan akuntansi lingkungan dalam laporan tahunan atau laporan keberlanjutan sebagai bentuk legitimasi perusahaan kepada publik. Selain itu, harus ada revisi terhadap sifat pengungkapan akuntansi lingkungan dalam standar akuntansi keuangan, dari sukarela sampai wajib. Hal ini dimaksudkan agar setiap perusahaan dari berbagai jenis industri benar-benar memperhatikan masalah dampak lingkungan yang timbul dari kegiatan operasionalnya.

1. INTRODUCTION

Southeast Asia has abundant and beautiful natural wealth. Its strategic position, between two continents and two oceans, makes this region become a destination for trade and industrial expansion. Unfortunately, the rapid economic and industrial growth in the last thirty years has caused enormous environmental damage in Southeast Asian countries. The environmental impacts in this region also extend beyond the borders of Southeast Asian countries. It is due to the multinational corporations and industrialized nations that direct the expansion of their operations and technologies to Southeast Asia. This, in turn, may cause environmental damage. The damage can lead to (Greenpeace Southeast Asia 2013): 1) sea threats, such as whaling and overfishing; 2) toxic

** Corresponding author, email address: [1] haqizoufadillah@gmail.com.*

waste that can contaminate springs; 3) global climate change due to the continuous production of carbon dioxide released into the atmosphere as a result of the use of fossil fuels, such as coal, natural gas and petroleum; 4) nuclear power energy; and 5) forest conservation.

Every company has a significant role for the issues of environmental damage. They need to make environmental problems as the main focuse. There are four reasons for the increasingly significant environmental issues (Pratiwi 2013): 1) the size of the company is getting larger. Higher accountability is required in making decisions regarding the operations, products, and services produced; 2) environmental activists and NGOs will demand responsibility for environmental damage or social impacts arising from the operations of the company; 3) corporate reputation and image; and 4) rapid technological developments.

The ways how a company reduces environmental impacts need to be explained in the financial statements, known as environmental accounting disclosure. Environmental accounting is not only dependent on the accuracy in classifying all costs made by the company, but also the ability and accuracy of the corporate accounting data in minimizing the environmental impacts arising from the company's activities.

It seems, there is a research gap between the previous researchers on environmental accounting disclosure. The research by Cho et al. (2007) indicate stated that the use of monetary and non-monetary components of non-litigation related to the environmental disclosures varies across groups. In general, the findings provide additional support for the argument that companies use disclosure as a means of legitimacy. Similarly, O'Donovan (2002) also found the relationship between legitimacy theory, as explanatory factor, and environmental accounting disclosure. The results of the research done by Cormier et al. (2004) show that there is a relationship between the attitude of the environmental manager to the various stakeholder groups, including how the managers respond to stakeholders through the decision to disclose, and the actual disclosure they make. In addition, the findings of the research conducted by Mukherjee et al. (2010) indicate that the variables affecting the environmental disclosure are the applicable tax rate, liquidity and leverage. Therefore, it can be said that legitimacy, stakeholders and theory institutions simultaneously explain the practice of corporate environmental disclosure in India.

Different results were obtained in the research by Fekrat et al. (1996). The main findings showed that although companies in some European countries provided environmental accounting disclosure, the disclosure did not correlate with the company's environmental performance. This is also supported by Wilmshurst et al. (2000) that legitimacy theory served as an influential factor in the process of management decision making and environmental disclosure. Smith et al. (2007) stated that environmental disclosure in Malaysian companies was negatively related to the company's financial performance.

From the practical issues and empirical studies above and after knowing how each country in ASEAN-5 implements environmental accounting disclosure, it is necessary to examine whether there is a difference or whether they have been aligned. The implementation is seen from the scores of environmental accounting disclosure based on the aspects of the country and industry.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS

Legitimacy Theory

According to Tilling (2010), legitimacy theory is defined as the perception or assumption that the desired organizational action is in accordance with the social system built on norms, values, beliefs and understandings held by the society. Cormier et al. (2004) concludes that legitimacy theory is a communication through an annual report of how organizations respond to the environment and society. However, in society there are many groups of individuals. Generally, the groups are referred to as "stakeholders."

Based the theory above, it can be concluded that every organization or company needs to adjust to the values adopted by the community. As a form of legitimacy between the company and the community, it is necessary to have a social contract that binds both. This social contract indicates that the company will pay attention to the public interest, one of which is not to disturb the environmental aspect. All activities, undertaken by the organization to prevent, minimize, and stop environmental impacts, should be presented in the environmental accounting disclosure. Thus, there will be no gaps between the organization and society that can disrupt the activity of both parties.

Stakeholder Theory

According to Freeman (1984), every organization has stakeholders, i.e. groups and individuals who are benefited or disadvantaged, and whose rights are violated or respected by corporate action. Stakeholder theory arises because the organization needs to

pay attention to its stakeholder interests, such as (Iryani 2009): 1) environmental issues involve the interests of various groups in society that can disrupt their quality of life; 2) the era of globalization has encouraged traded products to be environmentally friendly; 3) investors, in investing, tend to choose companies that own and develop environmental policies and programs; and 4) environmental activists and NGOs are increasingly vocal in criticizing companies that are less concerned about the environment.

The stakeholder theory above shows the importance of environmental accounting disclosure as a form of transparency and accountability provided by the company to its stakeholders to prevent, minimize and stop any environmental impacts occurring or may potentially occur in the future.

Environmental Accounting Disclosure

Disclosure can be interpreted as the expression of information presented in financial reporting (Nuswandari 2009). While the disclosure of environmental accounting is defined to identify the size, value, and accounting report of financial cost in the company's financial statements (Umami 2010). According Ikhsan (2008), environmental accounting disclosure is a type of voluntary disclosure of environmental accounting information from the point of view of the external function of environmental accounting. Therefore, it is necessary to disclose external environmental accounting data to clarify the prerequisites of the disclosed data so that stakeholders gain a consistent understanding of the environmental accounting data.

According to Pratiwi (2013), there are several ways to disclose information on environmental responsibility: 1) presentation of environmental information through "disclosure" can be done by making an overview of company activities related to efforts to preserve the environment, independent party's assessment results related to the compliance of the entity to environmental sustainability ; 2) environmental responsibility reporting can also be presented in the core financial statements, for example the equipment provided to reduce environmental pollution can be presented as a fixed asset; 3) costs incurred to prevent the environment from pollution can be recognized as an expense in the income statement.

Hypothesis Development

Despite the differences, each country has its own environmental regulations tailored to the existing conditions. The implementation, supervision, reward, and punishment in each country can also be different. If the country's good governance, consisting of transparency, accountability, and participation, runs well, the environmental aspect will possibly also work well. This will have an effect on how the company presents environmental accounting disclosure in its annual report or sustainability report.

Environmental accounting disclosure is very important as a form of corporate legitimacy to the society which is in accordance with the theory put forward by Freeman (1984). Based on the results of the research conducted by O. Gamble et al. (1996), Teoh et al. (1998), and Smith et al. (2007), there are significant differences in environmental accounting disclosure among the countries. Therefore, the hypothesis can be formulated as follows:

H1: There are significant differences in country-based environmental accounting disclosure scores.

Environmental accounting disclosure is necessary for a company as a form of corporate transparency and accountability to its stakeholders from every operational activity to prevent, minimize, and stop any environmental impacts that are occurring or that may potentially occur in the future. However, each industry has a different culture. This can be seen from the management style and accounting policies applied by the company. And the possibility of the environmental accounting disclosure scores of each industry will also be different. The results of the research conducted by Fekrat et al. (1996) and O. Gamble et al. (1996) indicate that there are significant differences in industry-based environmental accounting disclosure scores. From the above description, the hypothesis can be formulated as follows:

H2: There are significant differences in industry-based environmental accounting disclosure.

3. RESEARCH METHOD

Population and Sampling Technique

The sampling technique used in this research is purposive sampling method, a sampling technique done purposely, with the following criteria: 1) companies or issuers in the ASEAN-5 incorporated in the LQ45 Index (Indonesia), STI (Singapore) Syarikat 30 (Malaysia), SET50 (Thailand), and PSEi (Philippines). Other ASEAN countries are not included in the study because there are some of the ASEAN countries that do not have stock exchanges (such as Brunei Darussalam and Timor Leste) or because of the difficulty in finding data from every stock exchange from other countries, such as in Vietnam; 2) being the members of industry group that has links with environmental accounting, consisting of real estate,

Table 1
Operational of Variable

Variable/Sub-Variable	Indicator	Size	Scale	Reference
Environmental Accounting Disclosure	Annual Report and/or Sustainability Report	If the item is not contained in the disclosure. If the item is only publically disclosed If the item is disclosed with company's specific information in non-quantitative terms. If the item is discussed in monetary or quantitative terms.	Ratio	Fekrat et al. (1996)
Country-based	ASEAN-5	Indonesia Malaysia Singapore Thailand Philippines	Nominal	Fekrat et al. (1996), Barbu (2011), Makori et al. (2013), and O. Gamble et al. (1996)
Industry-based	Industry Sectors	Real Estate Forest / Agriculture Consumer Goods Hospital Energy Chemical/Pharmacy	Nominal	Barbu (2011) Suttipun et al. (2012), Fekrat et al. (1996) and O. Gamble et al. (1996)

Source: Previous research journal.

Table 2
Average Scores of Country-Based Environmental Accounting Disclosure

No.	Country	Average Score Total	Average Score Weighted
1.	Indonesia	12.50	23.13%
2.	Malaysia	8.77	16.31%
3.	Singapore	5.25	9.83%
4.	Thailand	10.26	19.05%
5.	Philippines	4.85	9.23%

Source: Processed Data (2016).

forest/agriculture, consumer goods, hospital, energy, and chemicals/pharmaceuticals; and 3) presenting Annual Report data on company website, stock exchange, or performance profile website, such as www.finance.yahoo.co.id and www.quotes.wsj.com

Operational of Variable

The dependent variable in this research is environmental accounting disclosure score, while the independent variables are country-based environmental accounting disclosure and industry-based environmental accounting disclosure. The details of dependent and independent variables in this study are described in Table 1.

Data Analysis Method

The main objectives of this study are to examine and analyze the differences between the country-based environmental accounting disclosure (H1) and industry-based environmental accounting disclosure (H2) using One Way ANOVAs statistical difference test.

4. DATA ANALYSIS AND DISCUSSION

Sample Description

The Average Scores of Country-Based Environmental Accounting Disclosure: Scoring in environmental accounting is conducted by reviewing annual reports and/or sustainability reports of the companies taken as the samples of this research with the criteria as presented in Appendix 1. Total score if a company presents all of its environmental accounting disclosure according to criteria is 54. The score generated by the company is then calculated to find its weighted score by dividing the actual total score of 54. The average score of environmental accounting is seen from both total and weighted score. From the result of the review is obtained the average country-based scores as shown in Table 2.

From Table 2, it can be seen that the country having the highest average score of environmental accounting disclosure is Indonesia, or 12.50, with a weighted average score of 23.13%. This indicates that in Indonesia there are many companies that provide

Table 3
Average Total Scores of Environmental Accounting Disclosure

No.	Industry	Country				
		Indonesia	Malaysia	Singapore	Thailand	Philippines
1.	Real Estate	10.80	11	4.33	9.11	4.25
2.	Forest/Agriculture	12	8.33	3	23	-
3.	Consumer Goods	11	12.50	4.50	11.33	3.25
4.	Hospital	0	-	-	7	-
5.	Energy	22.75	5.40	8.33	12	6.60
6.	Chemicals/Pharmaceuticals	9	15	-	6	-

Source: Processed Data (2016).

Table 4
Average Weighted Scores of Environmental Accounting Disclosure

No.	Industry	Country				
		Indonesia	Malaysia	Singapore	Thailand	Philippines
1.	Real Estate	15%	20%	8%	17%	8%
2.	Forest/Agriculture	63%	15%	6%	43%	-
3.	Consumer Goods	20%	23%	8%	21%	6%
4.	Hospital	0	-	-	13%	-
5.	Energy	42%	10%	15%	22%	12%
6.	Chemicals/Pharmaceuticals	17%	28%	-	11%	-

Source: Processed Data (2016).

information about their environmental accounting disclosure, followed by Thailand (19.05%) and Malaysia (16.31%). Singapore and the Philippines are the two countries that have a weighted average score below ten percent, or 9.83% and 9.23% respectively.

The Average Scores of Industry-Based Environmental Accounting Disclosure: Just like those of the country-based environmental accounting disclosure, the average scores of industry-based environmental accounting disclosure are seen from the total and weighted scores.

Average Total Scores of Environmental Accounting Disclosure (Table 3)

For Indonesia, Singapore, and the Philippines, the largest average score of industry-based environmental accounting disclosure is in the energy sector. This is quite reasonable because energy exploration activities can directly affect a country's environmental or natural resource damage if the company does not have high standards in preventing the environmental impacts.

In Thailand, Indonesia, and Malaysia, the environmental accounting disclosure score for the forest/agriculture industry is considerably high. Given the recent case of forest fires in Indonesia in which its smoke inflicts on other ASEAN countries, thus requiring companies to explain how they are working to prevent, minimize and stop environmental impacts due to the company's forest exploration.

Real estate, consumer goods, and pharmaceuticals sectors provide an average of sizeable disclosure score in each country. This indicates that in each country, the three industries have already presented the environmental accounting disclosure in their annual reports.

For hospitals industry, it is only Thailand that presents the environmental accounting disclosure, while Indonesia does not explain the environmental accounting disclosure at all. This is very surprising considering that waste from hospital can directly interfere with the environment, one of which is the disturbance in plants and animals as well as human health due to viruses, bacteria, and so forth.

Average Weighted Scores of Environmental Accounting Disclosure (Table 4)

In Indonesia, the forest/agriculture industry has the highest average score in environmental accounting disclosure, or 63%. This means that the forest/agriculture industry provides environmental accounting disclosure almost in every aspect as presented in Appendix 1. Then, each of other industries has average scores under 50% with the highest score in energy industry 42%, consumer goods 20%, pharmaceuticals/chemicals 17%, and real estate 15%. It is only hospital that does not provide any environmental accounting disclosure.

Malaysia and Thailand, on average, each industry provides environmental accounting disclosure in

Table 5
Kolmogorov-Smirnov Test Results of the Significant Difference Test of Environmental Accounting Disclosure Scores in Each ASEAN Country

	Total Score of Environmental Accounting Disclosure	Weighted Score of Environmental Accounting Disclosure
Significance	0.093	0.069

Source: Processed Data (2016).

Table 6
One way ANOVAs Test Results of Significant Difference Test of Country-based Environmental Accounting Disclosure Scores

	Total Score of Environmental Accounting Disclosure	Weighted Score of Environmental Accounting Disclosure
Significance	0.012	0.014

Source: Processed Data (2016).

Table 7
Summary of the Results of Multiple Comparisons in the Difference among Countries

Country	Differences among Countries	Significance
Indonesia	Malaysia	0.565
	Singapore	0.044
	Thailand	0.850
	Philippines	0.023
Malaysia	Singapore	0.741
	Thailand	0.978
	Philippines	0.639
Singapore	Thailand	0.335
	Philippines	1.000
Thailand	Philippines	0.237

Source: Processed Data (2016).

annual reports below 50%. In Malaysia, the sector that provides the largest environmental accounting disclosure is in the consumer goods industry sector, while in Thailand is in the forest/agriculture sector.

Meanwhile, industries in Singapore and the Philippines have the lowest average environmental accounting disclosure below 20%. This may indicate that the industries in both countries still provide low environmental accounting disclosure in their annual reports or sustainability reports.

Hypothesis Testing

Significant Difference Test of Country-Based Environmental Accounting Disclosure

This can be seen in Table 5. Prior to testing significant differences in the environmental accounting disclosure score of each ASEAN country, it should be seen first whether the research data are normally distributed or not by using the Kolmogorov-Smirnov One-Sample normality test. With a significant probability ≥ 0.05, the test results show that the environmental accounting disclosure score is $0.093 > 0.05$ indicating the data are normally distributed. The weighted score of environmental accounting disclosure is $0.069 > 0.05$ which also indicates that the data are normally distributed. Thus, hypothesis testing can use one way ANOVAs difference test (see Table 6).

With the significance level $\alpha = 5\%$., One Way ANOVAs test result of the country-based environmental accounting score has a total significance value of $0.012 < 0.05$. This indicates that H0 is rejected, which means that there is significant difference in environmental accounting disclosure score in each country. A similar result if using a weighted significant environmental accounting score is $0.014 < 0.05$.

If tested further by using Multiple Comparison Tukey HSD, it can be seen that the difference between Indonesia and Singapore has significance value of 0.044 (<0.05), and between Indonesia and the Philippines has a significance value of 0.023 (<0.05) (see Table 7).

Significant Difference Test of Industry-Based Environmental Accounting Disclosure

The data of industry-based environmental accounting disclosure scores are the same as the test in Table 8. So, the data are also normally distributed. From

Table 8
One Way Anova Test Results of Significant Difference Test of Industry-Based Environmental Accounting Disclosure Scores

	Total Score of Environmental Accounting Disclosure	Weighted Score of Environmental Accounting Disclosure
Significance	0.722	0.707

Source: Processed Data (2016)

Table 9
Summary of the Results of Multiple Comparisons in the Difference among Industries

Industry	Relationship Among Industries	Significance
Real Estate	Forest/Agriculture	0.933
	Consumer Goods	1.000
	Hospital	0.973
	Energy	0.892
	Chemicals/Pharmaceuticals	0.999
Forest/Agriculture	Consumer Goods	0.964
	Hospital	0.823
	Energy	1.000
	Chemicals/Pharmaceuticals	1.000
Consumer Goods	Hospital	0.975
	Energy	0.956
	Chemicals/Pharmaceuticals	0.999
Hospital	Energy	0.818
	Chemicals/Pharmaceuticals	0.958
Energy	Chemicals/Pharmaceuticals	1.000

Source: Processed Data (2016).

that point, the difference test can be done using One Way ANOVAs.

With the significance level α = 5%., One Way ANOVAs test result of the total score of industry-based environmental accounting disclosure has a significance value of 0.722 > 0.05. This indicates that H0 is accepted, so there is no significant difference in industry-based environmental accounting disclosure scores. The same result is obtained when using a weighted environmental accounting score, with significance value of 0.707 > 0.05.

By using Multiple Comparisons, it can be seen that each industry has no significant difference. From Table 9, it can be seen that the comparison among industries has significance value more than 1.5. Furthermore, it can be seen that there are differences in industry-based environmental accounting disclosure scores in each ASEAN country (see Table 10).

Indonesia

The number of samples of used in Indonesia is twenty-four. The results of normality test of Komogorov-Smirnov Test show that the data of the total environmental accounting disclosure scores are normally distributed, with a significance value of 0.704 (> 0.05). Similarly, the weighted environmental accounting disclosure score has a significance value of 0.764 (> 0.05). From the results of One Way ANOVAs difference test, the total environmental accounting score has a significance value of 0.221 (> 0.05), while the weighted environmental accounting score has a significance value of 0.226 (> 0.05). This indicates that there is no significant difference in industry-based environmental accounting scores in Indonesia.

Malaysia

The number of samples in Malaysia is thirteen, The results of the normality test of Komogorov-Smirnov Test show that the data of the total environmental accounting scores are normally distributed, with a significance value of 0.882 (> 0.05). Similarly, the weighted environmental accounting score has a significance value of 0.818 (> 0.05). From the results of One Way ANOVAs difference test, the total environmental accounting score has a significance value of 0.806 (> 0.05), while the weighted environmental accounting score has a significance value of 0.821 (> 0.05). This indicates that there is no significant difference in industry-based environmental accounting scores in Malaysia.

Singapore

The number of samples used in Singapore is twelve.

Table 10
Results of Kolmogorov-Smirnov and One Way ANOVAs Significant Difference Test of Industry-Based Environmental Accounting Disclosure Scores in Each ASEAN Country

Country	Significance of Total Score of Environmental Accounting Disclosure		Significance of Weighted Score of Environmental Accounting Disclosure	
	Normality Test	One Way ANOVAs	Normality Test	One Way ANOVAs
Indonesia	0.704	0.221	0.764	0.226
Malaysia	0.882	0.555	0.818	0.547
Singapore	0.103	0.789	0.080	0.775
Thailand	0.737	0.479	0.712	0.447
Philippines	0.078	0.547	0.088	0.550

Source: Processed Data (2016)

Table 11
Summary of the Test Results

No.	Description	Hypothesis	Result
1.	EADS → C-B	There is a significant difference in the country-based environmental accounting disclosure scores	There is a difference in the country -based environmental accounting disclosure scores
2.	EADS → I-B	There is a significant difference in the industry-based environmental accounting disclosure scores	There is no significant difference in the industry-based environmental accounting disclosure scores

Desc:
EADS = Environmental Accounting Disclosure Score
C-B = Country-Based
I-B = Industry-Based

The results of the normality test of Komogorov-Smirnov Test show that the data of the total environmental accounting scores are normally distributed with a significance value of 0.103 (> 0.05). Similarly, the weighted environmental accounting score has a significance value of 0.080 (> 0.05). From the results of One Way Anova difference test, the total environmental accounting score has a significance value of 0.789 (> 0.05), while the weighted environmental accounting score has a significance value of 0.775 (> 0.05). This indicates that there is no significant difference in industry-based environmental accounting scores in Singapore.

Thailand

The number of samples used in Thailand is nineteen The results of the normality test of Komogorov-Smirnov Test show that the data of the total environmental accounting score are normally distributed, with a significance value of 0.737 (> 0.05). Similarly, the weighted environmental accounting score has a significance value of 0.712 (> 0.05). From the results of One Way Anova difference test, the total environmental accounting score has a significance value of 0.479 (> 0.05), while the weighted environmental accounting score has significance value of 0.447 (> 0.05). This indicates that there is no significant difference in industry-based environmental accounting scores in Thailand.

The Philippines

The number of samples used in the Philippines is thirteen. The results of the normality test of Komogorov-Smirnov Test show that the data of the total environmental accounting score are normally distributed, with a significance value of 0.078 (> 0.05). Similarly, the weighted environmental accounting score has a significance value of 0.088 (> 0.05). From the results of One Way Anova difference test, the total environmental accounting score has a significance value of 0.547 (> 0.05), while the weighted environmental accounting score has a significance value of 0.550 (> 0.05). This indicates that there is no significant difference in industry-based environmental accounting scores in the Philippines.

The test in each country also strengthens the results of this research that there is no significant difference in industry-based environmental accounting disclosure scores.

Analysis and Discussion

The Difference in Country-Based Environmental Accounting Disclosure Scores

The environmental accounting disclosure presented by each company is a manifestation of the implementation of the law of each country related to environmental aspects. The result of the research shows that there is a significant difference in the country-based environmental accounting disclosure scores.

This result is consistent with the research conducted by O. Gamble et al. (1996), Teoh et al. (1998), and Smith et al. (2007). However, the result is not the same as the result of the research done by Fekrat et al. (1996), Barbu (2011), Makori et al. (2013), O'Donovan (2002), and Mukherjee et al. (2010).

In Indonesia, the average items are only disclosed in general, with an average total score of thirteen. For the accounting and financial aspects, only ten companies that disclose publicly: PT Adhi Karya (Persero) Ltd., PT Indocement Tunggal Prakarsa Ltd., PT Semen Indonesia (Persero) Ltd., PT Wijaya Karya (Persero) Ltd., PT Indofood Sukses Makmur Ltd., PT Indofood Sukses Makmur Ltd., PT Perusahaan Gas Negara (Persero) Ltd., and PT Tambang Batubara Bukit Asam (Persero) Ltd. For litigation aspect, it is only PT Astra Agro Lestari Ltd. that discloses the potential litigation. For the aspect of environmental pollution prevention and other aspects, the average companies disclose in general. In Indonesia, there are three companies that do not disclose environmental accounting, namely PT Pakuwon Jati Ltd., PT Charoen Pokphand Indonesia Ltd., and PT Siloam International Hospitals Ltd.

In Malaysia, all companies disclose environmental accounting. The average items are only disclosed in general with an average total score of nine. For the aspects of accounting, financial factor and litigation, none of the companies discloses in the annual report. For the aspects of environmental pollution prevention and other aspects, the average companies disclose in general.

In Singapore, the average items are only disclosed in general with an average total score of five. For the aspects of accounting, financial factors and litigation, none of the companies discloses in the annual report. There are only two companies that disclose how the environmental pollution prevention has been done, namely Ascendas Real Estate Investment Trust Ltd. and Sembcorp Marine Ltd. For other aspects, the average companies disclose in general.

In Thailand, the average items are only disclosed in general, with an average total score of ten. For the aspects of accounting and financial factors, it is only one company that discloses specifically either in monetary or quantitative terms, namely Bangchak Petroleum PCL. Meanwhile, other companies do not disclose the aspects of accounting and financial factor in the annual report. For the litigation aspect, no issuer discloses any potential litigation. For the aspect of environmental pollution prevention and other aspects, the average companies disclose in general.

In the Philippines, the average items are only disclosed in general, with an average total score of five. For the aspect of accounting, financial factors and litigation, none of the companies discloses in the annual report. There are only four companies that disclose how environmental pollution prevention has been done, namely Ayala Land Inc., SM Prime Holdings Inc., Universal Robina Corp., Energy Development Corp., and Semirara Mining and Power Corp. For other aspects, the average companies disclose in general.

Furthermore, the difference in country-based environmental accounting disclosure scores occurs between Indonesia-Singapore and Indonesia-Philippines. The difference is quite far away. The score for Indonesia is thirteen points, while scores for Singapore and the Philippines are only five points, the lowest compared to other ASEAN countries.

In Singapore, the most crucial issues are air pollution and noise. The country has legislations and a complete department to deal with the environmental issues especially regarding air pollution and noise issues. While in the Philippines, the country has the most advanced legislation on environmental aspects compared to other ASEAN countries. To implement the Environmental Law, several departments have been established, such as the Department of Human Settlements, the National Environmental Protection Council, and the Philipine Coast Guard. However, with Singapore, the average environmental accounting disclosure score in the Philippines is only five, the lowest among other ASEAN countries.

However, seeing from the lowest position in environmental accounting disclosure scores compared to other ASEAN countries, the Philippines and Singapore need to have more stringent regulations and policies to require each company to present the environmental accounting disclosure in the annual report or sustainability report as a form of corporate legitimacy to the community.

The Difference in Industry-based Environmental Accounting Disclosure Scores

From the results of this research indicate that there is no significant difference in industry-based environmental accounting disclosure scores. These results are in contrast to the results of the tests conducted by Fekrat et al. (1996) and O. Gamble et al. (1996). Nevertheless, the results of this study are consistent with the results of tests conducted by Barbu (2011), Suttipun et al. (2012), Cho and Patten (2007), Wilmshurst and Frost (2000), and Cormier et al. (2004).

Environmental accounting disclosure is a type of voluntary disclosure of environmental accounting information from the point of view of external environmental accounting functions. The average industries do not present the environmental accounting disclosure in detail, either from the aspects of accounting and financial factors, environmental litigation, environmental pollution prevention, or other aspects. This can be seen from the average percentage of disclosures that is still below fifty percent (see Table 4.4.). The disclosure is still in general and rarely displayed in monetary or quantitative form. This indicates that, in disclosing environmental accounting, the average companies simply present that they have conducted social activities related to the environment.

From the results of observation in Indonesia, the highest average total score is in energy industry (22.75 points), followed by Forest/Agriculture (12), Consumer Goods (11), Real Estate (10.80), Pharmaceuticals/Chemicals (9), and Hospital (0). In Malaysia, the highest average total score is in Pharmaceuticals/Chemicals (15), followed by Consumer Goods (12.50), Real Estate (11), Forest/Agriculture (8.33), and Energy (5.40). In Singapore, the highest average total score is in Energy (8.33), followed by Consumer Goods (4.50), Real Estate (4.33), and Forest/Agriculture (3). In Thailand, the highest average total score is in Forest/Agriculture (23), followed by Energy (12), Consumer Goods (11.33), Real Estate (9.11), Hospitals (7), and Pharmaceuticals/Chemicals (6). And in the Philippines, the highest average total score is in Energy (6.60), followed by Real Estate (4.25), and Consumer Goods (3.25).

The results of the research stated above show that the average of each company still presents the environmental accounting disclosure voluntarily (see Table 11). There are even some companies that do not present the environmental accounting disclosure at all, although the environmental accounting disclosure is necessary, as one form of legitimacy between the company and the community. In the financial accounting standard (in Indonesia refers to PSAK), there needs to be a revision of the nature of the environmental accounting disclosure, from voluntary to mandatory, so that all companies from various types of industries seriously pay attention to environmental impact problems arising from their operational activities. Then, the environmental activities, ranging from the prevention, mitigation and discontinuation of environmental impacts that have been conducted by the companies, should be presented in detail and clearly in the environmental accounting disclosure.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

The results of this study can be concluded as follows:

First, there is a difference in the country-based environmental accounting disclosure scores. The difference occurs between Indonesia and Singapore and between Indonesia and the Philippines. These results indicate that there is still no alignment related to the environmental impacts caused by the operational activities of the companies in ASEAN countries.

Second, there is no significant difference in the industry-based environmental accounting disclosure scores, as well as when viewed from each ASEAN country. Nevertheless, most industries do not present the environmental accounting disclosure in detail in terms of accounting and financial factors, environmental litigation, environmental pollution prevention, and other aspects. They merely show that the companies have engaged in social activities related to the environment.

The results of this study indicate that each country needs to have more stringent regulations and policies to obligate each company to present the environmental accounting disclosure in the annual report or sustainability report as a form of corporate legitimacy to the community. Such regulations and policies need to be accompanied by strict rewards and punishments so that each company provides clear and detailed environmental accounting disclosure.

Within the financial accounting standards there should be a revision of the nature of environmental accounting disclosure, from voluntary to mandatory. It is intended that every company of various types of industries really pay attention to environmental impact problems arising from its operational activities. Then, the environmental activities, ranging from the prevention, reduction to discontinuation of environmental impacts that have been conducted by the company, are presented in detail and clearly in the environmental accounting disclosure.

This research is expected to contribute to further research on the environmental accounting disclosure in ASEAN countries. The conclusion of this research is also expected to contribute to awaken the organizations and companies on the importance of environmental aspect because it is in direct contact with the interests of the stakeholders. The advantage of this research is that there is still research that takes the object of ASEAN countries based on the country and industry aspect. The weakness of this research is the uneven sample of industries in each country due to the limited research data.

It is suggested that further researchers and academics develop this research by involving not only the ASEAN countries but also other countries that often work together on environmental issues, such as Japan and the United States. Further researchers are also expected to measure the financial performance from various aspects such as Return on Assets (ROA), earnings per share, net profit margin, dividend per share, and firm size. In addition to examining the effect of financial performance on the total score of overall environmental accounting disclosure, further researchers can also test the influence existing in each ASEAN country.

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APPENDICES

Appendix 1

Aspects of Environmental Accounting Disclosure

1. Accounting and Financial Factors
   a. Past and current expenditures for environmental control facilities and equipment.
   b. Past and current operating costs for environmental control facilities and equipment.
   c. Estimated future expenditures for environmental control facilities and equipment.
   d. Future operating costs for environmental control facilities and equipment.
   e. Financing for environmental control facilities and equipment.
2. Environmental Litigation:
   a. Current Litigation
   b. Potential Litigation
3. Environmental Pollution Prevention:
   a. Air emission information
   b. Water discharge information
   c. Solid waste disposal information
   d. Controls, installations, facilities, or process described.
   e. Facility compliance status
4. Other Aspects:
   a. Discussion of rules and requirements
   b. Environmental policy or company issues for environment
   c. Conservation of natural resources
   d. Recognition for environmental protection
   e. Recycle
   f. Department or office for pollution control.

Source: Fekrat et al. (1996).