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## 主 論 文 の 要 旨

論文題目 Environmental Reporting Quality of Japanese Companies  
(日本企業における環境報告の質)

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## 論 文 内 容 の 要 旨

Environmental communication through sustainability or environmental reporting has become common practice in many countries. However, current reports are less useful for decision-making purposes (UNEP, 2015) and leading scholars consider that environmental reporting quality has not significantly improved (Deegan, 2017). Therefore, there is a need to enrich our understanding of its influential factors to improve this reporting quality.

As Fujitsu Research Institute (n.d.), Burritt, Christ, and Omori (2016), and Kawahara (2017) admit, Japan adopts the voluntary approach. Interestingly, under this approach, several surveys have reported that Japan is a country that has extensive sustainability reporting rates (KPMG, 2002, 2005, 2008, 2011, 2013, 2015, 2017; WBCSD, 2019) for a long time. Several studies also point out the extensiveness of Japanese companies' environmental disclosures compared to companies from other advanced countries (Freedman and Jaggi, 2011; Ho and Taylor, 2007; Kolk, 2005). Therefore, it is important to explore and examine Japanese companies' environmental reporting to understand their reporting quality and factors influencing the reporting quality.

This study aims to analyze Japanese companies' environmental reporting and what factors affect this practice, especially their reporting quality. The main research questions analyzed are how is Japanese companies' environmental reporting quality and what factors have influenced it? The influencing factors studied cover general contextual factors, internal context, and corporate characteristics. As part of this objective, this study also tries to provide a new environmental reporting quality measurement, which has several essential features differentiating it from existing measurements.

The measurement of environmental reporting quality proposed and used in this study is corresponded to Kolk (1999) and Solomon (2000), as scholars, and FEE (2000) and CICA (1994), as professional accounting bodies, who suggest developing qualitative characteristics for environmental reporting based on the financial reporting framework. The reasons to shadow the

financial reporting are the similarity of the objective, which is to provide useful information (CICA, 1994), and the achievement of its qualitative characteristics in establishing credible financial information (FEE, 2000). Therefore, the qualitative characteristics for useful environmental information included in the quality index are relevance, faithful representation, comparability, verifiability, timeliness, and understandability. They are operationalized based on CDSB (2018), GRI (2016), United Nations Environment Programme/UNEP (2015), WRI and WBCSD (2004) to cover essential concepts in environmental reporting. As a result, this measurement has several essential features differentiating it from existing measurements.

Generally, this study found that Japanese companies' environmental reporting quality has improved under the voluntary approach. Japan adopts the voluntary approach but provides several quasi-mandatory pressures for companies to improve the reporting quality. Japan does not require large companies to publish an environmental report but pushes companies to improve their environmental reporting through several pressures, such as requiring non-environmentally sensitive organizations to publish an environmental report through formal regulations and providing environmental reporting guidelines that companies voluntarily adopt. Company characteristics and internal company context also contribute to the changes in Japanese companies' environmental reporting quality.

To understand contextual factors affecting the reporting quality, this study firstly conducted an exploratory qualitative study on the institution of environmental reporting in Japan through several official documents using thematic analysis based on institutional theory. The findings show that regulative, normative, and cognitive pressures emanating from laws related to environmental reporting, environmental accounting and reporting guidelines, environmental awareness of Japanese society and companies, overseas operations, and leading companies are contextual factors promoting this practice through coercive, normative, and mimetic isomorphism. Further analysis shows that there is no regulation requiring whole Japanese companies to publish an environmental report, and those elements tend to promote environmental reporting as *tatemae*, which could destroy harmony in the society if it is not followed. Therefore, they provide quasi-mandatory pressures for Japanese companies to publish an environmental report.

Understanding that Japan adopts the voluntary approach with quasi-mandatory pressures, this study examined the change of Japanese companies' environmental reporting quality. This study uses the newly developed measurement of the reporting quality, which is based on the qualitative characteristics of useful financial information.

The result shows that reporting quality has improved significantly. It does not support the criticism for the voluntary environmental reporting approach as an approach

that provides a low information quality that leads to the need to apply the mandatory approach to improve reporting quality. In fact, the findings provide empirical evidence that the voluntary context does not prevent the improvement of environmental reporting quality.

Furthermore, since prior studies tend to agree that company characteristics, especially company size and industry sensitivity, affect environmental reporting quality, this study examines them to understand more factors related to Japanese companies' environmental reporting quality. Specifically, this study examines the effect of the two characteristics on environmental reporting quality and the changes in their effect on Japanese companies' environmental reporting quality. The results confirm that company size affects environmental reporting quality, and that company size has become more powerful in affecting environmental reporting quality recently. On the other hand, industry sensitivity is not a powerful factor affecting environmental reporting, which has continued until recently. The indications that pressures on large companies from all industries, including non-environmentally sensitive industries, have been more extensive locally and globally could justify the results.

After examining contextual factors and company characteristics, this study analyzes the influence of internal context on Japanese companies' environmental reporting quality. Previous empirical studies suggest that corporate governance affects company disclosure, especially the independent director composition. This study also tries to explore further what independent directors' backgrounds that affect this reporting practice. The result shows that the positive effect of the proportion of independent directors on environmental reporting quality depends on the size of companies. Specifically, the larger the companies, the more effective independent directors improve environmental reporting quality. It also shows that independent directors from business experts positively affect the quality of this reporting. However, this study fails to provide a convincing result on the effect of independent directors from community influential and support specialist on the quality of environmental reporting. This study also could not prove the negative effect of CEO duality on environmental reporting quality.

This study intends to enrich references to understand and improve corporate environmental reporting quality by proposing a new measurement on environmental reporting quality and studying factors influencing this reporting quality. This measurement, which is focused on measuring the qualitative characteristics of useful environmental information, has several essential features that could improve existing reporting quality measurements.

First, this quality measurement covers many specific environmental topics,

including greenhouse gas emission, energy, water use, material, waste, other air emissions, water discharge, hazardous waste, and biodiversity. The first five are the most common areas of environmental disclosures, according to UNEP (2015). The topics also cover all environmental impact topics in GRI (2016) except for environmental compliance and supplier environmental assessment topics, which do not directly show impacts an organization has on the environment. This measurement is more specific than Chauvey *et al.* (2015), who cover social and environmental categories but do not specifically consider those environmental topics above, and more extensive than Comyns and Figge (2015), who cover only the greenhouse gas emission topic.

The second essential feature is the comprehensiveness of qualitative characteristics incorporated. Chauvey *et al.* (2015), Baalouch *et al.* (2019), and Comyns and Figge (2015) limitedly cover the relevance, faithful representation, and other qualitative characteristics of financial reporting. Since this measurement incorporates all of the qualitative characteristics of FASB (2010) and IASB (2010), it is more comprehensive in measuring the reporting quality.

The third is related to the basis for scoring, which is specially designed for each indicator. Commonly, prior studies use a uniform scoring approach for all of their indicators, which could lower the capability to capture the quality. For example, Comyns and Figge (2015) depend on the clarity of the information to measure all of their indicators, including by measuring the timeliness characteristic based on whether “the reporting period which the data covers is outlined in the sustainability report” and whether “there is a consistent reporting schedule” are “not reported,” “partially reported,” or “fully reported.” Differently, this new measurement assesses it based on the time lag of publication of the report, which is considered better in capturing the timeliness characteristic.

The last is that it enables companies from different industries to obtain similar quality scores because the indicators are scored based on the proportion of environmental topics covered and the material topics selected by companies. Measurements based on a rigid pre-determined list and scored based on the number of item in the list reported such as Clarkson *et al.* (2008), van Staden and Hooks (2007), and Wiseman (1982), which many studies have followed, are susceptible of the industrial sector characteristics related to impacts on the environment.

Therefore, this measurement could improve existing reporting quality measurements in assessing companies’ practices on providing useful environmental information, including to evaluate the fulfillment of the fundamental qualitative characteristics or the enhancing qualitative characteristics of environmental information. Interested parties also could measure the score of each of the qualitative characteristics

that are relevance, faithful representation (completeness, neutrality, and free from error), comparability, verifiability, timeliness, and understandability. In addition, applying the financial reporting framework on environmental reporting could also contribute to the debate on whether the accountant could be more involved in environmental or sustainability reporting (see Deegan, 2017), which was started in the 1970s (Gray, 1990).

Besides contribution from the new quality measurement proposed, this study also intends to contribute more on theoretical, policy, and practical aspects through exploring and examining several factors influencing environmental reporting in Japan. The findings are expected to improve existing findings, feed future research, and be references for other countries or companies to improve this reporting quality.

More specifically on theoretical aspects, besides providing empirical evidence from a country adopting the voluntary approach, this study also intends to provide support for and shows a need to improve the theoretical approach used in this field. In Chapter 3, this study utilizes institutional theory to identify contextual factors promoting environmental reporting. This effort provides several interesting factors that future research could examine to provide more meaningful empirical evidence on their roles in improving environmental reporting. Chapter 5 uses the legitimacy theory that predicts company size and industry sensitivity affects reporting quality. However, this study found that industry sensitivity lack in explaining this reporting practice recently since non-sensitive industries also experience more pressures and pursue corporate legitimacy. In Chapter 6, this study utilizes salient stakeholder theory, which is less adopted in this field, to improve the capability to explain this practice. Many studies adopt general stakeholder theory leading them to rely on the stakeholder awareness argument, limiting their ability to explain the internal company context role in affecting environmental reporting quality. Therefore, the findings could show the need to reconsider using industry sensitivity as a proxy for legitimacy concern and adopt stakeholder salience theory to improve the stakeholder perspective to examine determinant factors of environmental reporting quality.

Related to policymaking, Chapter 4 could help understand that adopting the voluntary approach does not prevent improvement in environmental reporting quality. It could be a reference to enhance environmental reporting quality in other countries or improve other topics such as social and governance topics. Chapter 5 evaluates the change in environmental reporting quality among companies based on industry sensitivity and company size. It could inform other countries and Japan that they do not need to provide policies based on industry sensitivity but need to pay attention to the difference in companies' environmental reporting quality based on their size to improve this reporting practice.

For practical contribution, Chapter 6 examines the role of independent directors and their backgrounds in affecting environmental reporting quality. This study suggests companies have more independent directors to improve corporate reporting quality, and even they are from other companies could also help improve this reporting quality.

The following limitations should be considered when interpreting the findings and considering the contribution of this study. First, this study is about Japan but mainly depends on English literature and documents related to factors influencing environmental reporting in Japan. It restricts data collected and narrows views considered in developing arguments. Specific to part studying the contextual factors, it limits the ability to discover the contextual factors promoting this practice in Japan.

Second, the measurement for environmental reporting quality proposed covers a more comprehensive dimension of qualitative characteristics of useful environmental information, but it could experience double counting because the materiality and neutrality scores are based on the other quality dimension scores. It affects the total quality score of the companies, but it helps to ensure that all qualitative characteristics of useful environmental information are covered.

The third is related to the number of variables examined. Many variables mentioned in Adams (2002) inside the three categories of factors influencing environmental reporting are not covered in this study. Related to contextual factors, this study does not cover, for example, economic context and media pressure. For corporate characteristics, corporate age, share trading volume and risk, debt/equity ratio, or political contributions are not examined. Many variables related to internal context are also neglected in this study, such as the environmental committee and corporate culture. Including more variables in the analysis could affect the result in which other factors simultaneously considered will influence the confidence of the results and enrich understanding factors influencing environmental reporting quality in Japan.

The last is about generalizability. This study provides evidence from Japan that is less studied compared to Anglo-Saxon countries. However, this study admits that analyzing only Japanese companies limits the generalizability of the results to other countries.

Future studies addressing the limitations above could enrich empirical evidence for factors influencing environmental reporting quality and provide a better research tool. Specifically, improving the reporting quality measurement proposed by avoiding double-counting could provide a better assessment tool for reporting quality. Related to variables examined in this study, several research questions remained, such as related to the insignificant effect of industry sensitivity and the proxy for company size. Future research could go deep into understanding the reason behind the insignificant effect of

environmental industry sensitivity on environmental reporting quality, which this study could not prove. Examining the effect of other dimensions or proxies for company size (e.g., total assets and market capitalizations) on environmental reporting quality could also clarify the findings of this study. Future studies could also examine the effect of other variables not covered in this study, as mentioned above. In addition, international comparative studies on environmental reporting quality could help understand, evaluate, and improve reporting quality and confirm determinant factors of this reporting quality.

Furthermore, there are many potential avenues for future research regarding environmental reporting, especially reporting quality. Since existing studies commonly focus on the volume and extent of environmental information provided, future studies could concentrate on reporting quality. This current study provides a new measurement tool for assessing environmental reporting quality, especially based on the quality of financial reporting.

Providing more evidence on the antecedents of this reporting quality will help the world improve the quality of environmental information available. Besides exploring the antecedents, it is also fruitful to understand the consequences of providing high-quality environmental reports. Future studies could examine the effect of high-quality environmental information on several users, such as employees, governmental, and communities.