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Determinant Factors of Sustainability Reporting: A Study in Indonesian Green Index of Sri-Kehati

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Abstract

This research aims to examine the determinant factors of sustainability report disclosure. Determinant factors include regulation of partnership and environmental development programs by state-owned firms, regulation of sustainability finance by listed firms on the Indonesian Stock Exchange, industry sensitivity, analyst coverage, and information asymmetry. Regulation of partnership and environmental development programs by state-owned firms is measured by state-owned status. Regulation of sustainability finance by listed firms on the Indonesian Stock is measured by period of before and after regulation issuance. Industry sensitivity is measured by level of environmental risk. Analyst coverage is measured by number of analysts who analyze the firms' share in the stock market. Information asymmetry is measured by bid-ask spread. Sample consists of listed firms in Indonesian Green Index of Sri-Kehati 2015-2019. State-owned firms, sustainability finance regulation, industry sensitivity, analyst coverage, and information asymmetry have effect on sustainability report disclosure. State-owned status lead firms to disclose sustainability reporting as a picture of effective monitoring by government shareholders and to meet regulation needs. Sustainability finance regulation leads firms to disclose sustainability reporting as regulation needs. Higher industry sensitivity leads firms to disclose sustainability since sensitive industry brings higher risk to the environment. Higher analyst coverage and lower information asymmetry leads firms to implement higher transparency by disclosing sustainability report.

Keywords: *state-owned firms, sustainability finance regulation, industry sensitivity, analyst coverage, information asymmetry, sustainability report*

1. Introduction

Business has too much focus on economic and profit which bring big cumulative damage to natural resource [1] and negative impact to the society and environment [2]. Contrast to the sustainability concept, business that has too much focus on economic performance will bring more problem in the future. Some cases in Indonesia shows that business only cares about economic performance and ignore the responsibility to the environment. Up to 2018, Environtment and Forestry Ministry of Indonesia proceed 462 firms that involve the environmental damage cases [3]. Social and environmental issues become important component to build business sustainability. In Indonesia, it is regulated especially for business firms in *UU*

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no. 40 2007 and specifically in *PP no. 47 2012*. Although social and environmental disclosure is a mandatory, the format of disclosure is still a voluntary*. Some firms make social and environmental disclosure in the annual reports, others make it in the separated report such as sustainability report. Compare to disclosure of annual report, sustainability report gives information of social, environmental, and economic in standardized format to support the scope, contents, quality and quantity, and completeness of information [4]. Sustainable firms are more likely do the social and environmental responsibilities than the non-sustainable ones [5]. Indicators of sustainability are where the firms have good corporate governance to ensure the fulfilment of public and social interests [5], higher environmental performance as an indicator of good environmental responsibilities [6], and higher profitability to ensure that firms are able to cover the costs of social and environmental activities [7]. However, not all sustainable firms that do the social and environmental responsibilities disclose their activities into sustainability report [8]. Stubbs *et al.* [8] report that in last 30 years most of larger and sustainable firms do not issue the sustainability report.

Stubbs *et al.* [8] explain that do the social and environmental responsibilities is as important as do the disclosure of it. Disclosure of sustainability report is a form of transparency and accountability regarding to the social and environmental responsibilities that have been done by firms [9]. Some factors to make sustainable firms want to disclose sustainability report are regulation, industry, informational environment, and firm visibility. While previous studies examine sustainable firms with good corporate governance, higher profitability, and higher environmental performance are more likely to disclose sustainability report (e.g.[5]–[7]); this research aims to examine why not all sustainable firms disclose sustainability report. Stubbs *et al.* [8] find that most of sustainable firms do to the social and environmental responsibilities but do not disclose the sustainability report because of lower external pressure, unsupported firms environment, and less firms visibility. Regulation of state-owned firms is factor of external pressure to disclose sustainability report. Industry sensitivity is also a factor external pressure both by industry and regulator. Analyst coverage is one of firms' visibility factors especially to analyst. Information asymmetry captures both firms' environment and visibility factors.

This research examines the effect of regulation of state-owned firms, industry sensitivity, analyst coverage, and information asymmetry on sustainability report disclosure by sustainable firms. Sustainable firms consist of the firms that listed in Indonesian Green Index of Sri-Kehati. Index of Sri-Kehati captures the top 25 firms with large market capitalization and assets, positive earnings, higher social and environmental responsibility, higher support of human rights and working force, and good corporate governance [10]. This research contributes to examine deeply why sustainable firms do not disclose sustainability report, while Yayasan KEHATI [11] explain that sustainable firms already achieve good environmental, social, and governance performance. This research also contributes to answer the previous findings gap. Fajar [12] finds that social and environmental responsibility in Indonesia is mostly bound by regulation while Nurfadilah and Sagara [13] and Basuki and Patrioty [14] do not find any significant effect of regulation on social and environmental responsibility. The gap comes from previous studies [12]–[14] that do not mention specific regulation and specific firms' characteristics that relate to the regulation. Karassin and Bar-Haim [15] find that different type of regulation has different social and environmental responsibility implementation. This research uses specific regulation implementation for state-owned firms (*Keputusan Menteri no. PER-09/MBU/07/2015*) and for listed firms in Indonesian Stock Exchange (*POJK No. 51/POJK.03/2017*).

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*Based on *POJK No. 51/POJK.03/2017*, sustainability report becomes a mandatory disclosure for Indonesian Stock Exchange listed non-banking firms in 2020 and banking firms in 2019.

2. Hypotheses Development

2.1 Regulation and Sustainability Report

UU no. 40 2007 and *PP no. 47 2012* obligate firms to do the social and environmental activities, especially to the business that close to natural resource and environment, and disclose it in annual report or separated report such as sustainability report. In the context of *UU no. 40 2007* and *PP no. 47 2012*, there is a possibility that firms which already do the social and environmental responsibilities do not issue the sustainability report. Fajar [12] finds that social and environmental responsibility in Indonesia is mostly bound by regulation. On the other hand, Nurfadilah and Sagara [13] and Basuki and Patrioty [14] do not find any significant effect of regulation on social and environmental disclosure. Karassin and Bar-Haim [15] suggest that social and environmental disclosure is implemented differently in different type of regulation.

A specific regulation about environmental responsibilities for state-owned firms is *Keputusan Menteri no. PER-09/MBU/07/2015* (some chapter has been updated by no. *PER-03/MBU/12/2016*, no. *PER-02/MBU/7/2017*, and no. *PER-02/MBU/04/2020*) where the state-owned firms have obligation to do environmental responsibilities and disclose it in the specific chapter. In this case, there is a big potential that state-owned firm issues sustainability report compared to non-state-owned firms. In the context of legitimacy theory, disclosure of sustainability report is a legitimacy of state-owned firms where their businesses have to be linear with government and regulator interests, specifically with Indonesian State-Owned Enterprises Ministry, since government and regulator are also firms' stakeholders. State-owned firms need to make specific report about their environmental responsibilities program to ensure that their compliances to State-Owned Enterprises Ministry can improve their business and value. In the political cost perspective, sustainability report is a reporting strategy to avoid any penalty costs that relate to regulation violation of *Keputusan Menteri no. PER-09/MBU/07/2015*.

State-owned firms are the firms where the government is the control shareholders. Government is party who gives the big concern to social and environmental responsibilities. First, government has a main objective to use all resources to fulfill public interests including fulfill the social and environmental responsibilities [16]. Second, government is the trusted party that a big power in a specific country so they have the ability to meet all stakeholders' interests including interests of society and environment [17]. Government shareholders can realize social and environmental responsibilities by implementing an effective monitoring to ensure state-owned firms to disclose sustainability reporting. As shareholders, government shareholders can implement their monitoring implementation by making a decision in shareholder general meeting that relate to reporting policy including sustainability reporting implementation [18]. Based on legitimacy theory, government role as shareholders ensure that state-owned firms do operational business that also linear to government objective to meet public interests by disclosing sustainability report. As a government, government shareholders can use their political position to formulate regulation that relate to social and environmental policy [19]. In this case, government implement an effective monitoring by formulating *Keputusan Menteri no. PER-09/MBU/07/2015* to ensure state-owned firms will disclose sustainability report. Based on legitimacy theory, regulation formulation can reduce political costs since there is political consequences for government if state-owned firms do not disclose sustainability reporting. Muttakin and Subramanian [17] and Dincer [19] find that governmental ownership has a positive effect on sustainability report.

H1: Status of stated-owned firms has a positive effect on sustainability report

Another specific regulation is *POJK No. 51/POJK.03/2017* where program of sustainability finance is a must for financial institution and listed firms in Indonesian Stock

Exchange. Listed banking-firms are obligated to issue sustainability report start from period of 2019 while listed non-banking firms are obligated to issue sustainability report start from period of 2020. Firms that violate the regulation will have an administration penalty from regulator. Since early implementation is suggested by the regulation, there will be a growth of sustainability report since 2017 when the regulation is issued by Financial Service Authority compare to before 2017. In the context of legitimacy theory, disclosure of sustainability report is a legitimacy of business practice that has to be linear with interests of Financial Service Authority as a stock exchange regulator. Firms need to disclose sustainability report to improve their value, for example, Indonesian Financial Service Authority will give incentive for firms that can maintain the effective sustainability finance plan. In the context of political cost, sustainability report is a reporting policy chosen by the firms to avoid any administration penalties from Financial Service Authority.

H2: Sustainability finance regulation has a positive effect on sustainability report

2.2 Industry Sensitivity and Sustainability Report

Legitimacy In industry-level, specific business characteristics in some industries motivate firms to issue sustainability report. Industrial activity is an indicator of firms' visibility. Firms in the environmentally sensitive industry are noticed more by the public, social and environmental activists and community, and regulators. Environmentally sensitive industry refers to the firms in industry where the operational activities have bigger risk and impact on environment [20] and give more attention to the public [21]. Disclosure of sustainability report by firms in environmentally sensitive industry gives better evaluation for stakeholders to evaluate the environmental risk of the business. Firms in environmentally sensitive industry have bigger motivation to issue sustainability report as a legitimation of their business to the public. Previous studies [20], [22], [23] proof that firms in the sensitive industry are more likely to engage in social and environmental activities and reporting.

H3: Environmentally sensitive industry has a positive effect on sustainability report

2.3 Analyst Coverage and Sustainability Report

Legitimacy Analyst role is as informational communicator between firms and investor to ensure the information enrichment in the stock market [24]. Analyst ensures the data availability includes financial data and other information that relates to the firms' business. Since investor cannot analyze all firms' stock in the market, analyst is expected to be an informational intermediary for investor to evaluate any data in the market and publish it in the mainstream media [25]. In this case, analyst becomes firms' visibility indicator in the context of market participants attention, includes investors' attention [25]. Analyst coverage indicates the public awareness [26]. Since firms' visibility is a motivation to disclose the sustainability report [8], firms with higher analyst coverage give more attention to the public, especially to the stock market participants, and are more likely to disclose sustainability report. Analyst becomes an informational guide for market participants if they need social and environmental responsibility information to make investment decision. In the context of political cost, firms choose sustainability report as a reporting strategy to avoid bigger cost of stock market value reduction [26] and expensive equity financing [27]. Previous studies [25], [28] find that analyst coverage encourage firms to disclose social and environmental information.

H4: Analyst coverage has a positive effect on sustainability report

2.4 Information Asymmetry and Sustainability Report

Legitimacy In the context of agency theory, information asymmetry between managers and investors has a negative relationship to information disclosure [29]. Previous studies [30]–[32] also find the negative relationship between information asymmetry and social and environmental disclosure. Information asymmetry refers to the condition where firms have private information, such as non-financial information, that is not disclosed to the market participant such as investors [33]. As Li and You [26], informational environment also shows the firms' visibility in the context of investor attention and recognition. Lower information asymmetry captures the condition where firms are noticeable and recognized by the market. Sustainability reporting also determined by firms' culture [8]. Firms may have culture value to engage in social and environmental activities, but sustainability report disclosure have also to be supported by reporting and accounting culture value. Informational environment is determined by disclosure and transparency culture value [34]. Lower information asymmetry indicates that firms have disclosure and transparency culture value and improve information disclosure [29], include disclosure of sustainability report.

H5: Information asymmetry has a negative effect on sustainability report

3. Research Method

3.1 Sample

Population are firms in Indonesian Stock Exchange. Research sample consists of firms that listed in Index of Sri-Kehati continuously in two periods a year from 2015-2019. Listed firms in Index of Sri-Kehati are considered as sustainable firms since the evaluation includes the industry evaluation of non-social and environmental supporting (pesticide, nuclear, weapon, tobacco, alcoholic drink, pornography, gambling, genetically modified organism, and coal mining), financial condition, and fundamental aspects (environmental responsibility, society and community involvement, good governance, business ethics, workforce management, and human rights) [11].

Table 1. Research Sample

Year	Listed Firms in Sri-Kehati Index		
	Sustainability Report Issuer	Non- Sustainability Report Issuer	Total
2015	17	8	25
2016	16	7	23
2017	20	5	25
2018	19	4	23
2019	21	3	24
Total	93	27	120

As in table 1, sample includes 120 firm-years. From total sample of 120 firm-years, there are 93 firm-years that disclose the sustainability report and 27 firm-years that do not disclose the sustainability report.

3.2 Data and Variables

In this research, variables include dependent, independent, and control variables. Dependent variable is disclosure of sustainability report. Disclosure of sustainability report is measured by dummy variable where score 1 if firm issues sustainability report and score 0 if otherwise. Data of disclosure of sustainability report can be accessed in www.idx.co.id or firms' website. Independent variables are state-owned firm status, sustainability finance regulation, industry sensitivity, analyst coverage, and information asymmetry. State-owned firm status and sustainability finance regulation variables are based on regulation aspects. State-owned firm status is measured by dummy variable where score 1 if firm is state-owned and score 0 if otherwise. The list of state-owned firms can be accessed in www.bumn.go.id. Sustainability finance regulation refers to *POJK No. 51/POJK.03/2017* that can be accessed in www.ojk.go.id. The regulation is issued in 2017. Sustainability finance regulation is measured by dummy variable where score 1 for period after sustainability finance regulation is issued (2017-2019) and score 0 for period before sustainability finance regulation is issued (2015-2016).

Industry sensitivity refers to industry that has higher business risk for environmental aspects. In this research, environmental risk of business is based on *PerMen no. 5 2012*. *PerMen no. 5 2012* obligate firms in the environmentally sensitive industry to make an environment impact analysis that relates to the business and submit the report to the Indonesian Ministry of Environment. Based on research sample industry category, environmentally sensitive industry includes industries of cement; coal mining; construction and building; energy; metal and mineral mining; plantation; property and real estate; toll roads, airports, and harbors; and tourism, restaurant, and hotel. *PerMen no. 5 2012* also categorizes the environmentally sensitive industry into three levels of environmental risk which are sensitive level 1 (low environmental risk), sensitive level 2 (moderate environmental risk), and sensitive level 3 (high environmental risk). Industry sensitivity is measured by scoring level where score 0 for firms in non-environmentally sensitive industry, score 1 for firms in environmentally sensitive industry level 1, score 2 for firms in environmentally sensitive industry level 2, and score 3 for firms in environmentally sensitive industry level 3. Analyst coverage and information asymmetry variables capture the informational environment condition and firms' visibility in the stock market. Analyst coverage is measured by number of analysts that follow the firms' stock analysis [25], [28]. Analyst coverage for firms' stock can be accessed in www.reuters.com. Information asymmetry is measured by bid-ask spread at the end of period. Bid-ask spread measurement is as in equation 1 [32].

$$Bid\ Ask\ Spread = \frac{Ask - Bid}{(Ask + Bid)/2} \tag{1}$$

Where *Ask* is ask stock price and *Bid* is bid stock price. Higher bid-ask spread indicates higher information asymmetry. Bid price and ask price can be accessed in www.idx.co.id. Control variable is firms' size. Firms' size covers all aspects of external pressure, firms' visibility, and informational environment. In the context of social and environmental disclosure, bigger firms are more likely to get more attention from the public and regulators than smaller firms. Bigger firms also have higher resources to cover the costs of social and environmental activities [7]. In this case, bigger firms are more likely to disclose sustainability report. Firms' size is measured by natural logarithm of total assets.

3.3 Analysis Model

This research uses logistics regression to examine research hypotheses since the dependent variable is a dummy one with two categories of disclose and do not disclose the sustainability report. Regression model is as in equation 2.

$$\ln\left(\frac{SR}{1-SR}\right) = a + b1STATE + b2SF + b3ESI + b4AC + b5IA + b6SIZE + e \tag{2}$$

Where *SR* is sustainability report, *STATE* is status of state-owned firms, *SF* is sustainability finance regulation, *ESI* is environmentally sensitive industry, *AC* is analyst coverage, *IA* is information asymmetry, and *SIZE* is firms' size. Hypotheses if H1-H4 are accepted if *b1-b4* are positive and significant. Hypothesis of H5 is accepted if *b5* is negative and significant.

4. Results

4.1 Descriptive Statistics

Table 2. Descriptive Statistics

SR	Mean				State-Owned Firms		Sustainability Finance Regulation	
	ESI	AC	IA	SIZE	No	Yes	Before	After
Issuer	1.3700	13.9000	0.0040	31.4943	40	53	33	60
Non-Issuer	0.4800	9.8500	0.0107	30.8577	24	3	16	11
t-statistics	3.0590*	2.9600*	4.5110*	1.272				
Chi-square					17.6960*		4.8960**	

*Significant in 0.01, **Significant in 0.05

Table 2 shows that average value of environmentally sensitive industry score is 1.3700 for sustainability report issuer firms and 0.4800 for non-sustainability report issuer firms (statistically different in level of 0.01). Average value of analysts that follow the stock analysis is 13.9000 for sustainability report issuer firms and 9.8500 for non-sustainability report issuer firms (statistically different in level of 0.01). Average value of information asymmetry is 0.0040 for sustainability report issuer firms and 0.0107 for non-sustainability report issuer firms (statistically different in level of 0.01). Average firms' size is 31.4934 for sustainability report issuer firms and 30.8577 for non-sustainability report issuer firms. Sustainability report issuer firms consist of 40 non-state-owned firms and 53 stated-owned firms while non-sustainability report issuer firms consist of 24 non-state-owned firms and 3 stated-owned firms (statistically different in level of 0.01). Sustainability report issuer firms consist of 33 firms before sustainability finance regulation issuance and 60 firms after sustainability finance regulation issuance while non-sustainability report issuer firms consist of 16 firms before sustainability finance regulation issuance and 11 firms after sustainability finance regulation issuance (statistically different in level of 0.05).

4.2 Logistic Regression Test

Table 3. Logistic Regression Test

Variable	Coefficient	z-Statistic
STATE	1.7429	2.0339**
SF	1.1973	2.0758**
ESI	0.8771	2.2873**
AC	0.1184	2.0018**
IA	-153.0352	-1.9119***
SIZE	0.0595	0.2811
Constant	-3.1088	
McFadden R-squared	0.3690	
LR-statistic	47.2172*	
Sig. of Hosmer-Lemeshow	0.8391	
Correct Prediction	88.33%	

*Significant in 0.01, **Significant in 0.05, ***Significant in 0.10

For preliminary test, table 3 shows that LR-statistic value is 47.2172 (significant in 0.01). It indicates that regression model is fit to the data. Significance value of Hosmer-Lemeshow is 0.8391 (insignificant). It indicates that regression model can predict its observed value. R-squared value of 0.3690 shows that status of state-owned firms, sustainability finance regulation, environmentally sensitive industry, analyst coverage, information asymmetry, and firms' size have explanatory power of 36.90% to explain sustainability report disclosure with correct prediction level of 88.33%. In table 3, status of state-owned firms (STATE) has a coefficient value of 1.7429 (significant in 0.05). It indicates that state-owned firms are more likely to disclose sustainability report than non-state-owned ones. Sustainability finance regulation (SF) has a coefficient value of 1.1973 (significant in 0.05). It indicates that after sustainability finance regulation issuance, firms are more likely to disclose sustainability report than before the regulation issuance. The results are consistent with Fajar [12] who finds that social and environmental responsibility in Indonesia is mostly bound by regulation. It is also consistent with Karassin and Bar-Haim [15] who find different types of regulation bring different implementation of social and environmental disclosure. In this case, general regulation such as *UU no. 40 2007* and *PP no. 47 2012* do not fully drive firms to disclose the sustainability report. Specific regulation brings different situation for firms to disclose the sustainability report. Regulation of *Keputusan Menteri no. PER-09/MBU/07/2015* makes stated-owned firms are more likely to disclose the sustainability report than non-stated-owned ones. Regulation of *POJK No. 51/POJK.03/2017* also increases the probability for firms to disclose the sustainability report after the regulation publication in 2017. It confirms the legitimacy theory and political cost concept that firms issue the sustainability report to legitimate their business to regulators and avoid penalty costs of regulation violation.

Environmentally sensitive industry (ESI) has a coefficient value of 0.8871 (significant in 0.05). It indicates that higher environmentally sensitive industry tends to disclose sustainability report than the lower one. The result is consistent with previous studies [20], [22], [23] that find firms in the sensitive industry are more likely to engage in social and environmental activities and reporting. Since firms in the sensitive industry bring more social and environmental risks, they try to not get any bad attention from public, social and environmental activists and community, and regulators. It also confirms the legitimacy theory. Analyst coverage (AC) has a coefficient value of 0.1184 (significant in 0.05). It indicates that firms that followed by more analysts tends to disclose sustainability report. Information asymmetry (AI) has a coefficient value of -153.0352 (significant in 0.10). It indicates that firms with lower information asymmetry tends to disclose sustainability report than the higher ones. On the other hand, there is no significant effect of size on sustainability report. The results are consistent with previous studies where analyst coverage encourage firms to disclose social and environmental information [25], [28] as an transparency action to reduce information asymmetry [34]. It confirms the agency theory where information asymmetry between managers and shareholders can be reduced by higher information disclosure which is encouraged by the stock analysts in the market.

5. Conclusion

This research aims to examine the determinant factors of sustainability report disclosure by sustainable firms. Based on logistics regression; status of state-owned firms, sustainability finance regulation, industry sensitivity, analyst coverage, and information asymmetry have effect on sustainability report disclosure. The result confirms the sustainability reporting in the contexts of legitimacy theory, political costs and agency theory. In the context of legitimacy theory; state-owned enterprise regulation, sustainability finance regulation, and industry sensitivity motivate firms to disclose sustainability report as a legitimacy of firms' businesses that have to be linear with government, regulator, and public interests. As a political cost perspective; state-owned enterprise regulation, sustainability finance regulation, and industry sensitivity motivate firms to disclose sustainability report to avoid any penalty costs from government and regulator. In the agency theory perspective, the effect of analyst coverage and information asymmetry on sustainability report shows the analyst role to reduce information asymmetry and support more information disclosure to the market. This research has limitation in the sustainability finance regulation measurement. Although *POJK No. 51/POJK.03/2017* is published in 2017 and early implementation is suggested, the full implementation of the regulation for all listed firms is in reporting period of 2020. The accurate growth of sustainability reporting occurs if the comparison is done in period before 2017 and after 2020. For the future, next research can examine the effect of sustainability finance regulation on sustainability reporting by using data after 2020. Another limitation, this research determines the sustainable firms are based on listed firms in Index Sri-Kehati by *Yayasan KEHATI*. Future research is expected to use another evaluation such as Index of ESG (Environmental, Social, and Good Governance) Leaders that has just launched in December 2020 by Indonesian Stock Exchange.

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