Is Greenwashing Efficient or Opportunistic?

Indah Umiyati[1*] and Icih Icih[1]
[1] STIE Sutaatmadja, Subang, Indonesia
*Corresponding author: indahumiyati@stiesa.ac.id

ABSTRACT

The demand for disclosure of sustainability performance that includes social and environmental aspects triggers the emergence of greenwashing behavior where disclosure is not in line with actual performance. This study analyzes whether this greenwashing behavior is efficient, that is, it occurs because the company's ability is inadequate to achieve the performance it should be or is it opportunistic. The analysis was carried out by looking at the relationship between greenwashing and profitability and earnings management. This study analyzes 224 companies in the non-financial sector registered in 11 emerging market countries during 2016-2022 with a total sample of 1,344 company-years. The results show that greenwashing is not related to profitability as measured by return on assets but is negatively related to earnings management. This means that greenwashing will increase when earnings management companies toward income decreasing. This shows that greenwashing behavior is more influenced by opportunistic behavior of companies.

Keywords: Sustainability performance, greenwashing, profitability, earnings management

1. INTRODUCTION

Attention to corporate and environmental sustainability has long been a concern (Gokten et al., 2020). Especially since the establishment of the Global Reporting Initiative (GRI) which provides a framework for companies to convey sustainability information to stakeholders. In October 2016, GRI published its first global standard for sustainability reporting. This standard specifies how reports are made which must present an organization's positive and negative impacts on sustainability objectives to stakeholders in a transparent and accountable manner. Through this reporting, organizations could describe significant impacts on the economy, environment and society based on generally accepted standards (Gokten et al., 2020).

With the establishment of sustainability reporting standards in general, many studies then analyze whether organizations disclose sustainability performance in reports solely because they want to improve their reputation in the eyes of stakeholders or indeed show organizational commitment to economic, environmental, and social sustainability. There is research showing that reported sustainability performance shows a company's commitment to economic, environmental, and social sustainability which is related to the company's ethical behavior. So that the better the company's sustainability performance, the more it shows the company behaves ethically and the tendency to do things that are opportunistic will decrease (Gaio et al., 2022). Other research shows that when there are certain standards that must be met to maintain a reputation in the eyes of stakeholders, the sustainability performance disclosed by the company will lead to the consequences of greenwashing and excess information over symbolic disclosure of management strategy. In this condition the company can perform opportunistic behavior (Velte, 2021). One of the behaviors of opportunistic companies is earnings management (Chouaibi et al., 2022).

Previous studies have found a link between earnings management and greenwashing behavior. Greenwashing refers to the practice of companies that present themselves as environmentally friendly or committed to sustainable practices, but whose actions and

policies do not actually match those claims. These studies show that earnings management and greenwashing are closely related. Companies that engage in earnings management practices are likely to also engage in greenwashing behavior to maintain a positive image regarding the environment, while their practices may be inconsistent with these claims.

Research on greenwashing behavior has been carried out in both developed and developing countries. However, there is a tendency that most of these studies to be conducted in developed countries. Developed countries often have stricter regulations regarding environmental reporting and sustainable business practices. These countries also have more resources to conduct research and have better access to company data and information. Therefore, much of the initial research on greenwashing was mostly conducted in developed countries. However, nowadays, there is increasing global awareness regarding environmental and sustainability issues in developing countries. Many developing countries have also adopted regulations and guidelines regarding environmental reporting and sustainable practices. Along with that, research on greenwashing is also increasingly being carried out in developing countries to understand the specific context and dynamics that exist in these countries. Therefore, this research will be conducted in the context of emerging market countries.

Trumpp et al., (2015) convey sustainability performance consisting of managerial dimensions and operational dimensions. The managerial dimension refers to strategic-level sustainability performance, i.e., policies, structures, and processes, while the operational dimension focuses on the company's measurable environmental and social impacts. Bisig & Hummel (2017) states that Managerial Sustainability Performance (MSP) aimed at building reputation and risk management objectives, and agency theory can be applied specifically to view management's sustainability performance.

Meanwhile, the operational dimension of sustainability performance is easier to observe because it can be quantified in terms of its environmental and social impacts. Bisig & Hummel (2017) shoes that Operational Sustainability Performance (OSP) negative effect on the company's reputation. This means that OSP which can be observed numerically does not have an impact on improving the company's reputation and is not a way to improve the company's reputation. So, using the point of view of stakeholder theory and corporate culture, through OSP the company will try to fulfill its responsibilities to all stakeholders in this case will minimize negative environmental and social impacts and will pay taxes fairly.

Under ideal conditions, MSP and OSP should go hand in hand. When a company has a good MSP, it will lead to a better OSP, but if a good MSP does not make a good OSP then this shows greenwashing behavior. Greenwashing is behavior to mislead users of corporate information that makes the company appear to have a strong commitment to environmental and social conditions (Hu et al., 2023; Ruiz-Blanco et al., 2022; Yu et al., 2020). Because this greenwashing behavior aims solely to build the company's reputation and disclose the company's environmental and social commitments, based on agency theory, the company's earnings management activities will increase greenwashing behavior. Another thing that needs to be considered influencing the emergence of greenwashing by companies is profitability. When a company already has a good sustainability policy and strategy (MSP) but is not aligned with its operational performance, this can be due to inadequate resource support which can be reflected in the level of company profitability.

Based on the results of previous research, this study aims to analyze whether greenwashing behavior indicates the actual economic condition of the company or reflects unethical (opportunistic) behavior. This study analyzes the relationship between profitability as measured by return on assets and earnings management as measured by discretionary accruals and greenwashing in non-financial companies in countries whose capital markets fall into the category of emerging markets.

This research contributes to several things. First, this study measures greenwashing by looking at the misalignment between the company's MSP and OSP. This discrepancy can be seen from the residual regression between MSP as the independent variable and OSP as the dependent variable. This is different from previous studies that measure greenwashing by looking at the difference between environmental and social scores from two different databases (Ruiz-Blanco et al., 2022), the difference between the average ESG score in an industry and the company's ESG score (Yu et al., 2020), and the proportion of symbolic social and environmental disclosures (Huang et al., 2022). Second, this research is the first study to analyze the relationship between greenwashing and earnings management in a country whose capital market is included in the emerging-market group. Third, this research is the first study to look at greenwashing behavior from two sides, namely efficient and opportunistic.

2. LITERATURE REVIEW

Bisig & Hummel (2017) defines sustainability performance as a multi-dimensional form that includes social, economic, and environmental responsibility. Regarding sustainable performance measurement, the literature agrees that sustainability performance can be divided into two dimensions, namely the operational dimension and the management dimension. The operational dimension of performance focuses on measurable results, including on the environmental aspect, namely total greenhouse gas emissions, employee turnover, total waste generated, and on the social aspect, namely the level of injury. Meanwhile, the performance management dimension focuses on sustainability policies, structures, and processes.

Under ideal conditions, the managerial and operational dimensions should go hand in hand. When a company has a good managerial dimension, it will lead to a better operational dimension, but if a good managerial dimension does not make the operational dimension good, this shows greenwashing behavior. Greenwashing is behavior to mislead users of corporate information that makes the company appear to have a strong commitment to environmental and social conditions (Hu et al., 2023; Ruiz-Blanco et al., 2022; Yu et al., 2020). Because this greenwashing behavior aims solely to build the company's reputation and disclose the company's environmental and social commitments, then based on traditional economic theory this greenwashing behavior will have a positive relationship with earnings management activities.

Earnings management refers to practices carried out by companies or individuals to manipulate financial statements with the aim of creating a false or misleading impression about the company's financial performance. The general objective of earnings management is to increase the valuation of a company by investors, avoid violating credit agreements, or influence tax policy.

Earnings management can be done in two main ways, namely "income increasing" and "income decreasing". Income increase in earnings management aims to increase the profits reported by the company. Income decreasing in earnings management aims to reduce profits reported by the company.

Stewardship theory explains that managers manage companies honestly and do not take actions that violate ethics. When there is a misalignment between OSP and MSP which creates the potential for greenwashing, it occurs because in actual economic conditions the company does not have the resources to implement policies related to environmental and social concerns. Several studies have shown that profitability has a positive effect on sustainability performance (Artiach et al., 2010; Taha et al., 2023). So, if this happens, the emerging greenwashing behavior occurs due to the actual (efficient) economic condition of the company. Under these conditions it is expected:

H1: *profitability is negatively related to corporate greenwashing behavior*.

Traditional economic theory explains that companies involved in earnings management will improve their sustainability performance so that they can maximize the company's shareholder value. In carrying out earnings management, the company will be limited by reputation risk and the possibility of detecting such actions and getting punished. Bisig & Hummel (2017) said that sustainability performance is an important mechanism that can increase corporate value in terms of reputation and risk management. According to the risk management argument, companies focus on sustainability performance to develop a positive sustainability reputation. In other words, a high level of sustainability performance can mitigate negative impacts when the company experiences negative events, for example demands from investors and stakeholders.

This traditional economic theory perspective can be applied to the greenwashing behavior of sustainability performance. Greenwashing is more appropriate for external stakeholders and more suitable for building a positive reputation. So that greenwashing will build a positive company reputation. In this case it is used to cover earnings management behavior by management.

Previous studies have found a link between earnings management and greenwashing behavior. Greenwashing refers to the practice of companies that present themselves as environmentally friendly or committed to sustainable practices, but whose actions and policies do not actually match those claims. These studies show that earnings management and greenwashing are closely related. Companies that engage in earnings management practices are likely to also engage in greenwashing behavior to maintain a positive image regarding the environment, while their practices may be inconsistent with these claims.

Several studies have found that companies involved in earnings management also tend to engage in greenwashing practices. They use claims and actions that highlight their commitment to the environment to divert attention from questionable accounting practices and create a positive impression on stakeholders. Earnings management can be done in two main ways, namely "income increasing" and "income decreasing."

In conditions of increasing income companies will use greenwashing to support the reported positive financial performance. Whereas in the condition of decreasing income,

greenwashing is used to justify the decline in profits because the company requires a lot of costs to make commitments to the environment and society. So, the hypothesis is stated:

H2: income increasing (income decreasing) earnings management associated with increased corporate greenwashing behavior.

3. METHODOLOGY

3.1 Population and Samples

The population used in this study are non-financial companies listed on the Stock Exchange in emerging market countries for the 2016-2022 period. According to the research institute MSCI (Morgan Stanley Capital International) there are 24 countries that are included in the Emerging Market, namely Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Kuwait, Malaysia, Mexico, Peru., Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates.

The sample in this study is a country that (1) has at least 10 companies that have complete data on environmental and social performance in the Refinitive Eikon database, (2) is included in the industry group that has a fit model when estimating greenwashing and management profit. Based on these criteria, it was obtained that 224 companies in the non-financial sector (consumer discretionary, consumer staples, industrial, information technology and utilities) were registered in 11 countries during 2016-2022, so that a total sample of 1,344 companies was obtained. The sample distribution by country and industry group is presented in Table 1.

Table 1: Sample distribution by country and industry

	consumer discretionary	consumer staples	industrial	information technology	utilities	Total
Brazil	7	21	14	0	21	63
Chile	7	21	0	7	28	63
China	35	7	98	7	14	161
Indonesia	0	21	0	0	7	28
South Korea	63	42	90	42	14	252
Malaysia	0	42	35	0	0	77
Philipines	7	0	21	0	14	42
South Africa	28	21	56	7	0	112
Taiwan	35	21	77	308	0	441
Thailand	14	21	28	0	7	70
Turkey	21	0	14	0	0	35
Total	217	217	434	371	105	**1.344**

3.2 Greenwashing Measurement

This research focuses on corporate greenwashing behavior. As previously explained, the company's sustainability performance consists of operational dimensions (operational sustainability performance - OSP) and managerial dimensions (management sustainability performance -MSP). OSP_{it} measured by the average social operational performance (SOP) and environmental operational performance (EOP). SOP is the value of the Social Pillar Score while EOP is the value of the Environmental Pillar Score in the Refinitive Eikon database.

MSP_{it} is management's sustainability performance as measured by the average score of process and policy disclosures on the company's social and environmental commitments. Disclosure elements of environmental processes and policies consist of 44 elements while social disclosure consists of 18 elements. The greenwashing behavior can be seen from the residual value of equation (1), where the smaller the residual value indicates the higher the greenwashing behavior. The smaller the residual value indicates the actual OSP performance is smaller than it should be (OSP based on the predicted equation).

Equation (1) is estimated by industry group by considering the effect of different years and countries. To facilitate interpretation, the residual value is multiplied by negative one (-1) when it is entered into the estimation model to test the hypothesis.

$$OSP_{it} = \beta_0 + \beta_1 MSP_{it} + e_{it} \quad (1)$$

3.3 Earnings Management Measurement

This study uses discretionary accruals based on the modified Jones model (Dechow et al., 1995) as a proxy for earnings management, using the following equation:

$$TA_t = \alpha_1 + \alpha_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \alpha_2 \frac{PPE_t}{A_{t-1}} + \varepsilon_t \quad (2)$$

TA is total accrual which is calculated as follows:

$$TA_t = \frac{(\Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - Dep_t)}{A_{t-1}} \quad (3)$$

The values of the financial statements that form the basis of the modified Jones model analysis are CA (current assets), CL (current liabilities), Cash (Cash and cash equivalents), STD (debt included in current liabilities (long-term debts that are due soon) , Dep (depreciation and amortization expense), A (Total Assets), REV (Revenues) and REC (net receivables) Equation (2) is estimated based on industry group by considering the effect of differences in years and countries.

Earnings management is the residual value of equation (2). The greater the residual value indicates the direction of earnings management which is increasingly in the direction of increasing income. Conversely, the smaller the residual value indicates the direction of earnings management which is increasingly towards decreasing income.

3.4 Hypothesis Testing

To test the research hypothesis, the following model is used:

$$GW_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 DAC_{it} + \delta Controls_{it} + e_{it} \quad (4)$$

Referring to the previous avoidance literature, this study uses several control variables ($Controls_{it}$). This study uses control variables that influence greenwashing, namely firm size (SIZE) and leverage (LEV).

Because the research year includes the pandemic period, the research model uses the PANDEMIC control variable, namely 1 if the company is in a pandemic year, namely 2020 and 2021, another 0. Then to control country differences, this study uses the growth variable GDP (Gross Domestic Product).

The regression model above is then estimated using panel regression. The first hypothesis is proven if β_1 significant negative value while the second hypothesis is proven if β_2 significant both positive and negative. If the value is positive, this shows that income increasing earnings management is related to the greater greenwashing carried out by the company. Conversely, if the value is negative, this shows that the management of earnings is decreasing, which is related to the increasing amount of greenwashing carried out by the company.

To strengthen the research results, sensitivity testing will be carried out as follows:

1. Change the greenwashing measurement to variables 1 and 0 where 1 if the residual value of equation 2 is above the sample median, another 0. Then it is estimated using the logit model.
2. Estimating by excluding Taiwan from the sample because it is the country with the largest number of companies included in the sample and excluding the information technology sector from the sample because it is an industry sample with the largest number of companies included in the sample.

4. EMPIRICAL RESULTS

Greenwashing behavior and earnings management are obtained by estimating equations (1) and (2) using the ordinary least square and considering the year and country fixed effects. Table 2 shows the descriptive statistic of all variables.

Table 2: Descriptive Statistic

Variable	Obs.	Mean	Std. Dev.	Min	Max
GW	1.344	-0.0001116	16.10327	-46.43	58.42
ROA	1.344	0.0504731	0. 0730401	-0. 6745439	0.6032196
DAC	1.344	-0.0000893	0.0904032	-0.5	0.77
LNASSETS	1.344	22.45123	1.34465	19.11143	26.1781
LEVERAGE	1.344	1.031333	4.299835	0	151.2703
GDP	1.344	0.0279655	0.0277497	-0.083	0.12
PANDEMIC	1.344	0.4285714	0.4950559	0	1

GW = greenwashing behavior, ROA = return on assets, DAC = company earnings management, LNASSETS = company size as measured by natural logarithm of total assets, LEVERAGE = total debt divided by total company equity, GDP = growth of gdp in a country in year t, PANDEMIC = 1 if there is a pandemic period (2020 – 2022), 0 others.

All estimation models for greenwashing and earnings management are fit enough to be used in obtaining residuals which are used as measurements for greenwashing and earnings management.

Table 3: Correlation

	GW	ROA	DAC	LNASSETS	LEVERAGE	GDP	PANDEMIC
GW	1.0000						
ROA	0.0000	1.0000					
DAC	**-0.0859*** **	1.0000	1.0000				
LNASSETS	-0.2367***	0.0518	0.0518	1.0000			
LEVERAGE	-0.0023	0.0126	0.0328	0.0328	1.0000		
GDP	0.0100	0.0183	0.0174	0.0546	0.0546	1.0000	
PANDEMIC	-0.0792***	-0.0219	-0.1501***	-0.0552**	-0.1474***	-0.1474***	1.0000

GW = greenwashing behavior, ROA = return on assets, DAC = company earnings management, LNASSETS = company size as measured by natural logarithm of total assets, LEVERAGE = total debt divided by total company equity, GDP = growth of gdp in a country in year t, PANDEMIC = 1 if there is a pandemic period (2020 – 2022), 0 others.
*** (significant at α 1%), ** (significant at α 5%), *(significant at α 1%)

The correlation results show that there is no correlation between ROA and greenwashing. Meanwhile, there is a negative and significant correlation between greenwashing and earnings management (Table 3). This is an early indication that the more earnings management moves towards income decreasing correlates with an increase in the company's greenwashing behavior.

Tests in table 4 are carried out by estimating model (4) using panel regression. Column (1) uses firm fixed effect, column (2) industry fixed effect, column (3) country fixed effect and column (4) industry and country fixed effect. Tests in Table 4 columns (1) to (4) show that ROA is not related to greenwashing behavior. It can be concluded that greenwashing behavior (disalignment between OSP and MSP) does not reflect the limited resources of the company in implementing policies related to environmental and social concerns of the company.

Tests on table 4 columns (1) to (4) show that the DAC variable has a negative and significant association with the GW variable. This shows that the more earnings management moves towards decreasing income associated with an increase in the company's greenwashing behavior.

Several studies have found that companies involved in earnings management also tend to engage in greenwashing practices. They use claims and actions that highlight their commitment to the environment to divert attention from questionable accounting practices and create a positive impression on stakeholders. Earnings management can be done in two main ways, "income increasing" and "income decreasing".

Table 4: Testing the hypothesis of the relationship between profitability and earnings management with greenwashing behavior

	sign	**(1)**	**(2)**	**(3)**	**(4)**
intercept	?	106.32***	76.38***	97.47***	97.47***
ROA	**-**	**106.32**	**7.13**	**7.17**	**7.60**
DAC	**+/-**	**-7.47****	**-7.95*****	**-7.84*****	**-7.83*****
LNASSETS	?	-4.99***	-3.45***	-4.40***	-4.50***
LEVERAGE	+	-0.001	-0.001	-0.001	-0.001
GDP	?	35.91***	25.37*	25.87**	25.86**
PANDEMIC	?	9.69***	-.075	-.030	-0.19
firm fixed effect		Yes	no	no	no
industry fixed effect		No	yes	no	Yes
country fixed effect		No	no	yes	Yes
N		1.344	1.344	1.344	1.344
R^2		0.02	0.0643	0.0869	0.0893
Prob. F		0.0000	0.0000	0.0000	0.0001

GW = greenwashing behavior, ROA = return on assets, DAC = company earnings management, LNASSETS = company size as measured by natural logarithm of total assets, LEVERAGE = total debt divided by total company equity, GDP = growth of gdp in a country in year t, PANDEMIC = 1 if there is a pandemic period (2020 – 2022), 0 others.
*** (significant at α 1%), ** (significant at α 5%), *(significant at α 1%)

In conditions of increasing income companies will use greenwashing to support the reported positive financial performance. Whereas in the condition of decreasing income, greenwashing is used to justify the decline in profits because the company requires a lot of costs to make commitments to the environment and social.

The results of the study show that greenwashing is used to justify the decline in profits because companies need a lot of money to make environmental and social commitments. This means that greenwashing will increase when the company moves towards decreasing income.

4.1 Sensitivity Analysis

To test the sensitivity of measuring greenwashing behavior, an estimate is made using a logit model. Greenwashing is measured by a dummy variable with a value of 1 if the variable gw is worth more than the sample median, another 0. The results shown in table 5 show slightly different results from the main test. Table 5 shows that the higher the ROA, the lower the company's chances of greenwashing. For DAC, the test results in table 5 show results that support the main test. Even though in table 5 ROA reduces the chance of greenwashing, the effect is still smaller than the effect of DAC on greenwashing behavior. So overall Table 5 supports the results on the main test.

The next sensitivity test is to find out whether the results of the study are due to the dominant sample composition for certain countries and industrial groups. Then an estimate is made by removing Taiwan from the sample because it is the country with the largest number of companies included in the sample (Table 6 – column 1) and excluding the information technology sector from the sample because it is an industry sample with the largest number of companies included in the sample (Table 6 – column 2).

Table 6 shows that the higher the ROA, the greenwashing behavior will increase. For DAC, the test results in table 6 show results that support the main test. Even though in table 6 ROA increases greenwashing behavior, the effect is still smaller than the effect of DAC on greenwashing behavior. So overall Table 6 supports the results of the main test.

Table 5: Test the sensitivity by changing the greenwashing measurement using a dummy variable

	Sign	**(1)**
Intercept	?	7.29***
ROA	**-**	**-1.94****
DAC	**+/-**	**-2.32*****
LNASSETS	?	-0.31**
LEVERAGE	+	0.01
GDP	?	-.30***
PANDEMIC	?	7.29***
N		1.344
Pseudo R^2		0.0387
Prob.		0.0000

GW = greenwashing behavior, ROA = return on assets, DAC = company earnings management, LNASSETS = company size as measured by natural logarithm of total assets, LEVERAGE = total debt divided by total company equity, GDP = growth of gdp in a country in year t, PANDEMIC = 1 if there is a pandemic period (2020 – 2022), 0 others.
*** (significant at α 1%), ** (significant at α 5%), *(significant at α 1%)

5. CONCLUSION

Greenwashing is behavior to mislead users of corporate information that makes the company appear to have a strong commitment to environmental and social conditions (Hu et al., 2023; Ruiz-Blanco et al., 2022; Yu et al., 2020). In efficient conditions, greenwashing behavior occurs because companies have limited resources to implement policies regarding environmental and social care. Whereas in opportunistic conditions, this greenwashing behavior aims solely to build the company's reputation and disclose the company's environmental and social commitments, then based on traditional economic theory this greenwashing behavior will have a positive relationship with earnings management activities.

This study shows that in efficient conditions it does not show consistent results. Meanwhile, opportunistic conditions show consistent results. In conditions of increasing income companies will use greenwashing to support the reported positive financial performance. Whereas in the condition of decreasing income, greenwashing is used to justify the decline in profits because the company requires a lot of costs to make commitments to the environment and society.

Table 6: Sensitivity test by removing samples from Taiwan and the information technology industry

	Sign	**(1)**	**(2)**
Intercept	?	106.32***	106.32***
ROA	**-**	**10.84*** **	**10.84*** **
DAC	**+/-**	**-7.47*** **	**-7.47*** **
LNASSETS	?	-4.99***	-4.99***
LEVERAGE	+	-0.001	-0.001
GDP	?	35.91***	35.91***
PANDEMIC	?	9.69***	9.69***
N		1.344	1.344
R^2		0.0201	0.0201
Prob. F		0.0000	0.0000

GW = greenwashing behavior, ROA = return on assets, DAC = company earnings management, LNASSETS = company size as measured by natural logarithm of total assets, LEVERAGE = total debt divided by total company equity, GDP = growth of gdp in a country in year t, PANDEMIC = 1 if there is a pandemic period (2020 – 2022), 0 others.
*** (significant at α 1%), ** (significant at α 5%), *(significant at α 1%)

The results of the study show that greenwashing is used to justify the decline in profits because companies need a lot of money to make environmental and social commitments. This means that greenwashing will increase when the company moves towards decreasing income.

This study has several limitations, namely (1) there is an opportunity for omitted variables when estimating greenwashing, to overcome this problem further research must conduct a literature review of the factors that influence operational sustainability performance (OSP); (2) Greenwashing measurements must be tested for strength, for example by correlating greenwashing with the environmental controversies score and (3) if data is taken from a certain database there is the potential for self-selection bias because only companies whose data are available in that database can be used as a sample, if hand collected data allows for a wider range of samples, so data collection can be done by hand collecting.

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