

## Assessing the Influence of Green Accounting, Material Flow Cost Accounting, and Firm Size on Company Sustainability Performance



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**ABSTRACT:** The purpose of this research is to investigate the impact that Green Accounting, Material Flow Cost Accounting, and Firm Size on the Corporate Sustainability Performance of Companies in the Primary Consumer Goods Sector that Are Listed on the Indonesian Stock Exchange in the Years 2020-2022. Quantitative methods and secondary data are utilized in this kind of research. In the years 2020-2022, the Indonesian Stock Exchange is home to 66 populations derived from the major consumer products industrial sector. A purposive sample strategy was employed for the sampling process, and there were as many as 43 companies with an observation period of three years. With the assistance of the SPSS version 22 program, the method of analyzing the data that is being utilized is known as Multiple Linear Regression Analysis. According to the findings of this research, Green Accounting has an effect on Corporate Sustainability Performance with a significance value of 0.000 < 0.05, Material Flow Cost Accounting does not have an effect on Corporate Sustainability Performance given that it has a significance value of 0.719 > 0.05, and Firm Size does have an effect on Corporate Sustainability Performance.

**KEYWORDS:** Green accounting, material flow cost accounting, firm size, corporate sustainability performance

### 1. INTRODUCTION

Recent developments relating to social and environmental problems are a source of worry for the community at this time, and the community is working to raise awareness among corporations about the need of environmental management in their operations. (Werastuti, 2021). The notion of corporate sustainability performance refers to the adoption of a long-term business orientation by a company in order to satisfy the demands of stakeholders both now and in the future, while at the same time maintaining a focus on factors of economic growth, environmental protection, and social justice. (Hassan, 2021). Corporate sustainability performance can be achieved if the company is not only oriented and focused on profit. However, every company must also pay attention to environmental and social issues which can later be used as the basis for strategic planning for companies in running their business (Rakesa & Werastuti, 2022).

The existence of companies today is very influential on the economic value of the country, the more companies, the more jobs will be opened. Foreign investors will also be interested in investing. However, despite the fact that this has a beneficial influence, it is also one of the elements that has led to the formation of environmental damage issues. This is due to the fact that in reality, there are still a great number of businesses that are solely concerned with their earnings and do not pay attention to the impact that their actions have on society and the environment. Environmental damage often occurs due to the large amount of company waste that is directly discharged into the river without prior processing so that the waste can decompose in nature (Lako, 2018).

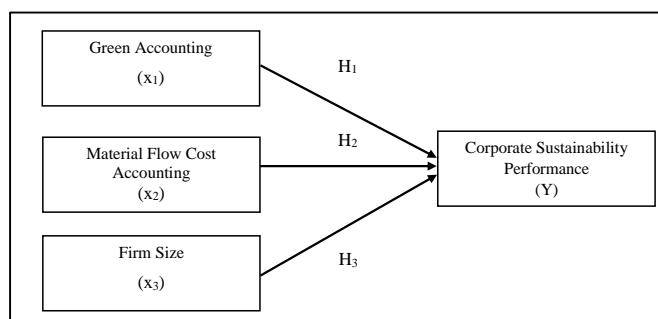
Purnomo (2022) said one of the cases occurred at PT Rayon Utama Makmur (PT RUM) which has spread environmental pollution to the Gupit River, Nguter, Sukoharjo. In 2022, PT RUM's sewage pipeline was damaged, this had an impact on polluted river water. Not only that, the problem of odor from the rayon fiber factory waste has also been a recurring problem since the last few years. The residents' rejection action was carried out, the residents demanded that PT RUM be closed. Based on this case, it can be concluded that every company is not only required to be concerned with the owner and management, but also must pay attention to related parties such as the community and the surrounding environment (Abdullah & Amiruddin, 2020).

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In light of this, businesses require tools that may support the company's commitment to the environment and social causes in order to achieve corporate sustainability performance. One of these tools is green accounting, which businesses can apply in order to fulfill this requirement (Rakesa & Werastuti, 2022). Companies also need tools in processing waste so that it has a good impact on the sustainability of the company and the environment, namely by implementing material flow cost accounting (Rakesa & Werastuti, 2022). In addition, the size of the company is a significant factor in determining the success of the corporation in terms of sustainability. In addition, the size of the company is a significant factor in determining the success of the corporation in terms of sustainability. The size of the company is frequently believed to be a factor in its ability to meet corporate social and environmental goals (Crisostomo et al., 2019).

Several academics have investigated the effects of green accounting variables, material flow cost accounting, and company size on the performance of corporations in terms of sustainability, but their findings have been conflicting. Among them are research conducted by Rakesa & Werastuti (2022), Azlaila *et al* (2022), Marota (2017), Loen (2019), Crisostomo *et al* (2019), Katoppo & Nustini (2022). Given the existence of phenomena and the variations in the findings of research, it is required to carry out additional testing in order to determine whether or not the findings are consistent when applied to a variety of different things.

With the phenomenon and previous research, researchers are interested in examining more deeply and it is hoped that the results of this research can help companies increase the value of corporate sustainability performance so that the title taken is **“The Effect of Green Accounting, material flow cost accounting, and firm size on corporate sustainability performance”**.



**Figure 1. Conceptual Framework**

In light of this occurrence and the findings of other studies, the following hypothesis statement serves as the foundation for this investigation :

H1 : Green accounting has a positive impact on corporate sustainability performance

H2 : Material flow cost accounting has a positive impact on corporate corporate sustainability performance

H3 : Firm size has a positive impact on corporate corporate sustainability performance

## 2. RESEARCH METHOD

The method of descriptive quantitative research was utilized in this study. The information comes from secondary sources such as annual reports and sustainability reports that are posted on the websites of the respective companies. Companies in the Primary Consumer Goods Sector Manufacturing Industry that were Listed on the IDX in 2020-2022 make up the population that is used. Purposive sampling was the method that was utilized for the data collection. firms that have been listed on the IDX in the years 2020-2022, firms that have issued annual reports in the years 2020-2022, and companies that have financial reports with comprehensive data that are in agreement with the variables required in the study are the criteria for selecting the sample. In total, 129 pieces of data were collected from 43 different businesses.

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**Table 1. Variabel Operational**

Variable	Measurement Indicator
Corporate Sustainability Performance (Y)	$CSP I_i = \frac{\sum X_{li}}{n_i}$ <p>CSP I<sub>i</sub> : Corporate Sustainability Performance Index Company i  <math>\sum X_{li}</math> : Number of indicators that have been disclosed by company i  n<sub>i</sub> : Expected disclosure of CSP indicators, in this formula there are 91 indicators, n = 91</p>
Green Accounting (X1)	The dummy is calculated by giving a score of 1 if there is an environmental cost component, a score of 0 if there is none.
Material Flow Cost Accounting (X2)	$MFCA = \frac{\text{Total Raw Material Cost} \times 100\%}{\text{Total Output Produced}}$
Firm Size (X3)	SIZE = Ln (Total Assets)

Source : Processed data (2023)

## 3. RESULT AND DISCUSSION

### 3.1. Result

#### Descriptive Statistic

**Table 2. Descriptive Statistics**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
X1_Green Accounting	129	,000	1,000	,54264	,500121
X2_MFCA	129	,072	,987	,60157	,220281
X3_Firm Size	129	27,295	32,826	29,57359	1,402684
Y_Corporate Sustainability Performance	129	,099	,648	,33661	,108306
Valid N (listwise)	129				

Source : Output SPSS 22, 2023

The analysis of the data is carried out in the form of descriptive statistics. The data on the dependent variable, which is corporate sustainability performance, and the data on the independent variables, which are green accounting, material flow cost accounting, and company size, are used to compile the data. Table 2 displays the total number of observations, which is 129, together with the minimum and maximum values, as well as the mean and standard deviation, for each variable.

#### Classical Assumption Test

**Table 3. Normality Test Results**

One-Sample Kolmogorov-Smirnov Test	
	Unstandardized Residual
N	129

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Normal Parameters <sup>a,b</sup>	Mean	,0000000
	Std. Deviation	,10123874
Most Extreme Differences	Absolute	,051
	Positive	,038
	Negative	-,051
Test Statistic		,051
Asymp. Sig. (2-tailed)		,200 <sup>c,d</sup>

Source : Output SPSS 22, 2023

Because the value is more than 0.05, as demonstrated in the acquisition of the Asymp sig (2-tailed) value of 0.200, it can be deduced that the data that was utilized in this investigation followed a normal distribution. This conclusion can be drawn from the table that was just presented.

Table 4. Multicollinearity The Results

Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	X1_Green Accounting	,943	1,060
	X2_MFCA	,989	1,011
	X3_Firm Size	,935	1,070

Source : Output SPSS 22, 2023

According to the data presented in the table that is located above, it is known that the final regression results in this study are free from multicollinearity because they show the acquisition rate that is in accordance with the standard test value. Specifically, the tolerance value is greater than 0.10 and the VIF value is less than 10, both of which indicate that this study does not exhibit multicollinearity.

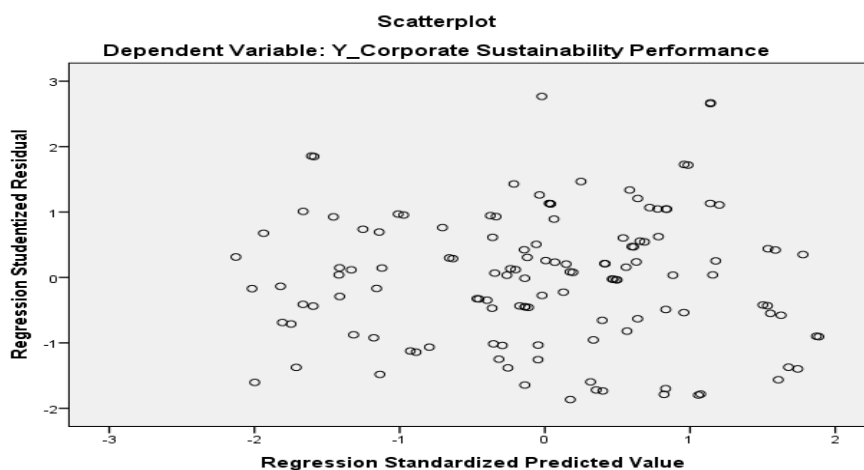


Figure 2. Heteroscedasticity The Results

According to the data presented in the picture that can be seen above, the dots are scattered both above and below the number 0 (zero), and they do not form a distinct pattern. Therefore, it is possible to assert that there is no instance of heteroscedasticity in the research.

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**Table 5. Autocorrelation The Results**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,355 <sup>a</sup>	,126	,105	,102446	2,415

Source : Output SPSS 22, 2023

It is possible to deduce from the table that is located above that the Durbin-Watson value for this investigation is 2.131. Because of this, one can reach the conclusion that  $du > d > 4-du$ , which is equivalent to saying that  $1.7603 < 2.131 < 2.2397$ , which indicates that the data in this study do not exhibit autocorrelation.

## Hypothesis Testing

**Table 6. Result of Multiple Linear Regression Analysis and t-test**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.	
		B	Std. Error	Beta		T
1	(Constant)	-,522	,229		-2,276	,025
	X1_Green Accounting	,063	,017	,303	3,598	,000
	X2_MFCA	-,015	,043	-,029	-,351	,726
	X3_Firm Size	,025	,006	,335	3,982	,000

Source : Output SPSS 22, 2023

Table 6. demonstrates that both the green accounting variable and the firm size variable are less than 0.05, and that the estimated t value is bigger than the value displayed in the table. This indicates that both variables have a positive effect on the performance of corporations in terms of sustainability. Because the significance value of the material flow cost accounting variable is more than  $> 0.05$  and the computed t value is lower than the value from the t table, we can conclude that the material flow cost accounting variable does not influence the performance of the corporation in terms of sustainability.

**Table 7. F Test Results**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,239	3	,080	7,944	,000 <sup>b</sup>
	Residual	1,246	124	,010		
	Total	1,486	127			

Source : Output SPSS 22, 2023

According to the data presented in the table that is located above, the F count value is 7.944, and the significance value is expressed as  $0.000 < 0.05$ . In order to demonstrate that green accounting, MFCA, and firm size each have an impact on the corporate sustainability performance variable, it is necessary to verify these three factors.

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Table 8. Value of Determination Coefficient

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	,402 <sup>a</sup>	,161	,141	,10025

Source : Output SPSS 22, 2023

According to the data presented in the table that can be seen above, the coefficient of determination in the column labeled "Adjusted R-Square" is 0.141, which translates to 14.1%. This indicates that the green accounting variable, MFCA, company size has an effect of 14.1% on the corporate sustainability performance variable. The remaining 85.9% is influenced by other independent variables such as environmental performance, corporate commitment, or profitability, none of which were examined in this study.

### 3.2 Discussion

#### Effect of Green Accounting on Corporate Sustainability Performance

According to the findings of this research, one can conclude that green accounting has a constructive impact on the variable representing the performance of corporations in terms of sustainability. Businesses that use environmentally friendly accounting practices to manage their operations will see an improvement in the value of their performance in terms of corporate sustainability. This is due to the fact that businesses that practice green accounting are viewed as having a high level of social responsibility in addressing the environmental damage that is produced by the operations carried out by the firm (Sulistiawati & Dirgantari, 2016). The revelation of information regarding the environmental expenses that are disclosed by enterprises has a positive impact on the performance of corporations in terms of sustainability. It is possible to view the company's environmental expenditures as a type of long-term investment due to the fact that the state of the environment and the state of its natural resources will, in the long run, have an effect on the sustainable performance of the firm (Putri et al., 2019), so that the performance of corporations in terms of sustainability might greatly improve. The findings of this study are consistent with the findings of previous research carried out by Loen (2019) Research demonstrates that using environmentally friendly accounting practices has a beneficial impact on the long-term viability of businesses. The findings of a study carried out by Rakesa & Werastuti (2022) demonstrate that green accounting has a constructive impact on the sustainability of corporations. After that, research that was carried out by Marota (2017) demonstrates that the concept of going green has a major effect on the sustainability of corporations.

#### Effect of Material Flow Cost Accounting on Corporate Sustainability Performance

According to the findings of this research, the variable representing material flow cost accounting has no effect whatsoever on the performance of corporations in terms of sustainability (Loen, 2019). This is because the high and low operating costs incurred by companies in managing waste cannot always be predicted, besides that waste management into new products cannot be applied in every industrial sector of the company (Monica, 2022). In light of this, the implementation of the idea of material flow cost accounting, the purpose of which is to maximize the flow of raw materials and the re-management of factory waste, will be derailed by this. MFCA is literally considered to be able to assist companies in producing waste that is truly useful (Abdullah & Amiruddin, 2020). However, in the main consumer goods subsector business in the years 2020 to 2022, not all companies will exhibit the cost of managing trash into new items that are produced. This is due to the fact that not all industries in the primary consumer goods subsector will have garbage that is safe for production once again (Monica, 2022). Because of this, the findings of the computation in the t test do not have any partial effect on the performance of the corporation in terms of sustainability. The conclusion drawn from the findings of the research on the MFCA variable is consistent with the findings of the earlier research carried out by Abdullah & Amiruddin (2020) this demonstrates that using the computation of plant area in material flow cost accounting has no impact whatsoever on the sustainability of the organization. According to the findings of research carried out by Ulupui (2020), material flow cost accounting has a detrimental impact on the environmental performance of an organization. The argument is further strengthened by the findings of a study carried out by Loen (2019), which demonstrate that MFCA does not contribute in any way to the enhancement of firm sustainability.

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## Effect of Firm Size on Corporate Sustainability Performance

It has been determined from the findings of the research that the variable known as corporate sustainability performance is affected by the variable known as firm size. This is due to the fact that businesses with larger sizes will deliver better performance and create greater accountability for the issues that arise as a result of actions carried out by the organization (Puspita & Daljono, 2014). Large companies also tend to disclose information in more detail and widely as an effort made in maintaining good relations with stakeholders through sustainability reports every year (Natalia & Wahidahwati, 2016), so that the value of corporate sustainability performance can increase significantly. The conclusion reached by the researchers about the research results of the company size variable is consistent with the findings of earlier research carried out by Crisostomo et al (2019) which demonstrates that the size of a company has a positive and significant effect on the performance of a corporation in terms of sustainability. In a similar vein, the findings of a study that was carried out by Puspita & Daljono (2014) indicate that the size of a firm has a positive and significant impact on the performance of corporate sustainability initiatives.

## 4. CONCLUSION AND SUGGESTIONS

### 4.1. Conclusion

The following are some of the conclusions that may be derived from the research after considering both the results and the discussion of them:

1. Green Accounting positive impact on Corporate Sustainability Performance in primary consumer goods sector companies listed on the IDX in 2020-2022.
2. Material Flow Cost Accounting no impact on Coporate Sustainability Performance in primary consumer goods sector companies listed on the IDX in 2020-2022.
3. Firm size positive impact on Corporate Sustainability Performance in primary consumer goods sector companies listed on the IDX in 2020-2022.

### 4.2. Suggestions

From the conclusions described above, the suggestions that the authors can give are:

1. Companies are expected to incur environmental costs on a consistent basis as a form of corporate responsibility for environmental damage caused by the company's activities, in order to increase the value of the company's sustainability performance, which will also provide good benefits to the company and stakeholders.
2. The company is required to be able to recycle any waste generated by its manufacturing activities and to be able to use the MFCA concept in a sustainable manner, so that it would eventually provide good benefits for the company's sustainability performance.
3. The corporation is expected to maintain performance and social responsibility in addressing problems that arise as a result of its operations. The larger the company, the more the performance and responsibility required to support every promise to the organization's sustainability performance.

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