JURNAL UPI

Jurnal Riset Akuntansi

dan Keuangan

Journal homepage: https://ejournal.upi.edu/index.php/JRAK/

GREEN ACCOUNTING, MATERIAL FLOW COST ACCOUNTING, GENDER DIVERSITY ON CORPORATE SUSTAINABILITY

Dita Andini[1]*, Bambang Wicaksono[2], Adytira Rachman[3]

Faculty of Economics, Universitas 17 Agustus 1945 Banyuwangi, Indonesia
*Correspondence: E-mail: ditaandini36@gmail.com

ABSTRACT

This study aims to examine and analyze the influence of green accounting, material flow cost accounting, and gender diversity on corporate sustainability. This research is quantitative and utilizes secondary data from annual reports and sustainability reports of manufacturing companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period. The sample consists of 81 data points selected using the purposive sampling method. The data analysis technique employed in this study is multiple linear regression analysis. The results of this study conclude that green accounting and material flow cost accounting have a positive effect on corporate sustainability, whereas gender diversity has a negative effect on corporate sustainability.

INFO ARTIKEL

Article History:
Submitted/Received 01 January 2025
First Revised 05 January 2025
Accepted 13 January 2025
First Available online 26 April 2025
Publication Date 26 April 2025

Keywords:
Corporate Sustainability.
Gender Diversity,
Green Accounting,
Material Flow Cost Accounting,

DOI: http://dx.doi.org/10.xxxxx/ijost.v2i2
p- ISSN 2528-1410 e- ISSN 2527-8045

1. INTRODUCTION

Indonesia, one of Southeast Asia's largest nations, boasts a diverse array of natural resources (Romario & Armada Riyanto, 2024). The optimal utilization of natural resources hinges on fostering a harmonious collaboration between humans and nature. However, this relationship can sometimes lead to challenges that disrupt ecosystems across land, water, seas, forests, weather, and rice fields, ultimately destabilizing the environment. These issues often arise from the mindset of exploiting nature for personal gain. Such actions trigger an ecological crisis, where the damaged relationship between humans and nature negatively impacts both the environment and human society (Romario & Armada Riyanto, 2024). All these actions are in fact carried out on the basis of blind utilization of the environment, without thinking about the impact.

The environment is better utilized by meeting the needs of living things through a sense of responsibility so that its sustainability is maintained. The dilemma of environmental aspects including extreme weather phenomena, climate change, and environmental damage can actually come from other things, one of which is an unsustainable development model caused by rapid economic growth (Dahlia Pinem & Sindi Aulia, 2023). Rapid and unsustainable economic growth is also not good because it only focuses on economic activities without thinking about the future of the surrounding environment.

GDP or Gross Domestic Product is even one of the references used to determine the prosperity and economic growth rate of a country. Although high per-capita income is very easy to find in some countries, the problem of social inequality is still an important point that must be resolved (Supriatna, 2023). One of the factors is manufacturing companies, which is a sector that attracts investors. The reason is because manufacturing companies are able to survive in the midst of economy in Indonesia (Wulandari et al., 2023). This is evidenced in the data BPS 2024 which states the contribution of the manufacturing industry in Indonesia which consistently achieved the highest percentage of GDP from 2019-2023 quarter II.

The many successes made by manufacturing companies are certainly very helpful for Indonesia in improving the economy every year. However, environmental threats are also inversely proportional to the positive impacts provided. Quoting from netralnews.com, there are a total of 26 companies indicated to be related to environmental pollution of the Ciujung River in Serang City which were tracked through drone mapping and satellite imagery and were inspected directly by the Minister of Environment, Hanif Faisol Nurofiq. There are a total of 4 sub-districts affected by Ciujung River waste, namely Tanara, Tirtayasa, Carenang, and Lebakwangi. As of November 8, 2024, 2 factories of manufacturing companies engaged in pulp and paper have been sealed. Incidents such as the case above are evidence that the company's low attention to the environment from industrial activities. Therefore, companies must have concern for the adverse effects of natural damage as a form of responsibility that may occur due to their industrial activities (Evita & Syafruddin, 2019).

Some companies assume that the company's expenses will increase when allocating environmental costs. Whereas allocating funds for environmental management activities reflects the company's commitment to environmental care, which can strengthen the company's positive image and increase the trust of stakeholders. This will certainly have an impact on achieving good corporate sustainability in the future. (Pratiwi & Kusumawardani, 2023). Sustainability has become a dominant buzzword in both the corporate environment and society as a whole. The ability to integrate sustainability into corporate strategy and

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

involve stakeholders will be the determining factor whether a business will grow or fail. (Napitupulu et al., 2020).

Ignoring the decisions of stakeholders that have an impact on the company's image, of course, will also have a negative impact on the performance of the company's financial statements (Abdullah & Amiruddin, 2020). The importance of well-presented financial performance in the annual report will provide benefits as a benchmark for investors. Besides that, poor financial performance can have an impact on the lack of investor interest in investing in the company. In connection with this, the company needs a benchmark in achieving the level of corporate sustainability. Three requirements must be met for the implementation of a sustainability system, namely sustainable environmental, economic and social systems (Tran & Herzig, 2020).

Referring to the environmental system, green accounting can be an alternative for companies in implementing environmental accounting to achieve corporate sustainability. According to Mega Pertiwi et al. (2023), green accounting is a concept that emphasizes the efficiency and effectiveness of resource use in the company's production process. This concept aims to create a balance between company growth and environmental preservation. The application of environmental accounting includes a comprehensive approach to savings, especially in terms of saving land, materials, and energy. This view is in line with the results of research found by Lestari & Alim (2021), Wilang Ica Swari & Ratna Sari (2023), and Mega Pertiwi et al. (2023), which states that green accounting has a positive effect on corporate sustainability

Referring to the economic system, companies can use Material Flow Cost Accounting (MFCA) as a tool to implement the concept of Corporate Sustainability. The existence of this concept can make it easier for companies to describe the use of raw materials, energy, and process flow in more detail, enabling more effective cost planning to support the principle of sustainable development. Initially in conventional accounting, the calculation of all costs will be fully allocated to production costs, but if there are losses on wasted raw materials and energy, it will directly cut the cost of goods sold (Ulupui et al., 2020). Unlike the MFCA concept, where the company will divide costs into production costs and waste materials. The use of raw materials, energy and its flow will actually be more fully described in this concept. This transparency allows the company to plan costs more optimally, which is in line with the concept of sustainable development. This view is supported by previous research conducted by Lestari & Alim (2021) and May et al. (2023) which shows that the application of MFCA has a positive and significant impact on company sustainability. However, a different opinion was expressed by Hindriani et al. (2024) that MFCA has a negative effect on corporate sustainability.

Social aspects such as the ranks of company decision makers are also very important to consider in the sustainability of the company because of their role as policy makers. New ideas, thoughts, perspectives and insights related to environmental and social issues are sometimes much more sensitive for some female directors (Fakir & Jusoh, 2020). This is due to the tendency of women to be more sensitive to social, educational, and regulatory issues (Mega Pertiwi et al., 2023). Other research also reveals a relationship between gender diversity on the board of directors and environmental sustainability, which shows that companies with boards that have more gender diversity tend to be more environmentally responsible (Fayaz et al., 2021). Some of them are put forward by Wilang Ica Swari & Ratna Sari (2023) and Widarti et al. (2022) who argue that gender diversity has a positive effect on

company sustainability. However, in contrast to the results of research by Fakir & Jusoh (2020) which states that gender diversity has no effect on corporate sustainability performance.

This research uses two theories, namely stakeholder theory and agency theory. Referring to stakeholder theory, a company is not just an entity that only focuses on its internal interests, but must also provide benefits to its stakeholders. The expectations of each stakeholder also have an impact on the company's financial performance so that management will try to manage and meet their expectations. Success in communicating environmental and social activities is very important for every company to create sustainability in the future. Another thing with agency theory, to achieve corporate sustainability performance, one of them is related to board characteristics which include the presence of women on the board of directors and the number of boards of directors and commissioners in a company. Because the more diversity on the board, the better the monitoring and management of company activities, especially in environmental aspects.

Research related to Corporate Sustainability is still rarely carried out in Indonesia, especially by linking these three variables to determine the resulting influence in implementing the concept of corporate sustainability. Researchers use manufacturing companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period which are expected to reflect the factors that influence company sustainability. The purpose of this study is to analyze and test the effect of Green Accounting, Material Flow Cost Accounting, Gender Diversity on Corporate Sustainability and this research is expected to provide additional information as a reference for manufacturing industry players to pay more attention to environmental consequences in an effort to support company sustainability.

The Influence of Green Accounting on Corporate Sustainability

Green accounting or environmental accounting can assist companies in identifying, recording, and reporting costs associated with environmental control as a form of responsibility for their operational activities (Mega Pertiwi et al., 2023). The application of green accounting through the disclosure of environmental costs illustrates the company's efforts to fulfill its social responsibility so that it has a positive impact on the company's sustainability performance (Wilang Ica Swari & Ratna Sari, 2023). There is also the purpose of developing green accounting, namely to encourage corporate responsibility, increase environmental transparency, and assist companies in formulating strategies to address environmental issues (Mega Pertiwi et al., 2023).

Referring to stakeholder theory, disclosure of green accounting will increase the trust of interested parties to collaborate with the company and show that there is a good and sustainable relationship in a positive way. The big picture of the green accounting concept will help companies increase investor confidence (Wilang Ica Swari & Ratna Sari, 2023). This is because nowadays people have a special interest in companies that take care of the environment. With the implementation of green accounting, the company has also indirectly carried out its responsibilities to stakeholders in increasing the sustainability of the company. This opinion is certainly supported by Lestari & Alim (2021), Wilang Ica Swari & Ratna Sari (2023), and Mega Pertiwi et al. (2023), which states that green accounting has a positive effect on corporate sustainability. Then the hypothesis is formulated as follows:

H_1: Green Accounting has a positive effect on Corporate Sustainability.

The Influence of Material Flow Cost Accounting on Corporate Sustainability

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

Material flow cost accounting (MFCA) is used as a tool to increase the transparency of material flows, energy and costs associated with environmental impacts, and as an effort to support company decisions. The use of MFCA in the production process can also provide a deep understanding of the problems that may arise in the company (Fakhroni, 2020). The application of MFCA can facilitate the process of identifying monetary waste, material losses, and the results of converting product values into positive and negative product values (emissions). This certainly provides an advantage for the company in getting a clear picture of the factory's problems.

Based on stakeholder theory proposed by Freeman & David, (1983), the company's focus is not only on the welfare of the owner, but also on the welfare of the government, private sector, society and elements that contribute indirectly. Therefore, the company must observe all production activities by paying attention to applicable principles. One of them is by applying MFCA, then the company can reduce environmental costs by minimizing the negative impact of its production activities.

By reducing or making environmental cost efficiency, the company's profit will increase because the company will remain sustainable and stable in contributing to sustainable development (Hindriani et al., 2024). This is in accordance with research conducted by Fakhroni (2020) and Hindriani et al. (2024), which states that material flow cost accounting is proven to have a positive effect on company sustainability. From the previous description, the hypothesis is formulated as follows:

H_2: Material Flow Cost Accounting has a positive effect on Corporate Sustainability.

The Influence of Gender Diversity on Corporate Sustainability

According to agency theory, the difference in interests between the principal and the agent may cause the agent to prioritize his own interests over the company's goals and vision. Therefore, good corporate governance can help reduce agency problems, which in turn improves corporate performance. Studies examining the relationship between gender diversity and corporate sustainability performance show mixed results (Widarti et al., 2022). This happens because the presence of women in the board of directors is able to bring new ideas, insights, and perspectives on environmental, social, and stakeholder relations issues

Women are proven to be able to influence sustainability performance in industries with high environmental and social exposure, as their insights and views create effective new approaches in decision-making regarding environmental and social reporting (Widarti et al. 2022). While country specifics, regulations and background affect the significance of gender diversity to corporate sustainability, this does not diminish the importance of women's contributions to boards. Gender diversity in the board structure creates a broader perspective, thus strengthening the belief that the decisions made by the company are able to support sustainability. Thus, companies need to plan advanced strategies to maximize the benefits of gender diversity because it can increase the confidence that the decisions made by the company can maximize the sustainability of the company. This statement is reinforced by findings conducted by Wilang Ica Swari & Ratna Sari (2023) and Wiryani et al. (2019), that gender diversity has a positive effect on corporate sustainability performance. So that the hypothesis that is compiled is :

H_3: Gender Diversity has a positive effect on Corporate Sustainability.

2. METHODOLOGY

Research Design

This study uses a population consisting of all manufacturing companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) for the period 2021-2023, with a total population of 103 companies. The sample in this study was selected using purposive sampling method and obtained a total sample size of 81 with the criteria in the table below.

Table 1. Results of Research Sample Determination

No.	Criteria	Total
1.	Manufacturing companies in the basic materials sector **listed** on the Indonesia Stock Exchange during the period 2021-2023.	103
2.	Manufacturing companies in the basic materials sector that **do not** publish annual reports in the 2021-2023 period.	(17)
3.	Manufacturing companies in the basic materials sector that **do not** publish sustainability reports in the 2021-2023 period.	(12)
4.	Manufacturing companies in the basic materials sector that **do not** publish the data needed in the study.	(47)
	Number of Research Samples	27
	Total Number of Samples (27 x 3 Years)	81

Source: Data processed, 2024.

Research Variables and Operational Definitions

Green Accounting

Green accounting is an accounting science that deals with accounting preservation by disclosing costs (Fakhroni, 2020). Indicators in measuring this variable are using content analysis such as the number of content analysis scores per dimension and the number of dimensions (May et al., 2023).

Material Flow Cost Accounting

Material Flow Cost Accounting (MFCA) is a management tool that aims to calculate the cost of losses incurred from the production process of materials, so that decisions can be made that support waste management by the company. (May et al., 2023). MFCA measurement indicators refer to Manual On Material Flow Cost Accounting ISO 14051 (2015) by using the percentage of positive and negative costs through material costs, system costs, and energy costs (Rahmania Santi et al., 2022).

Gender Diversity

Gender diversity (GD) is the gender diversity of board members in a company (Wilang Ica Swari & Ratna Sari, 2023). The indicators used to measure the GD variable are the number of female members of the board of commissioners and directors and the number of members of the board of commissioners and directors (Wilang Ica Swari & Ratna Sari, 2023).

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

Corporate Sustainability

Corporate Sustainability is an alternative to the Company's growth and profit maximization model (Widarti et al., 2022). Indicators in the measurement of Corporate Sustainability = Economic + Social + Environmental + Technology (Ln Formula). With Economy = Investment + Net Income + Sales, Social = Corporate Social Responsibility (CSR) + Employee Salaries, Environment = Waste Management and Environmental Costs + Utility Costs, and Technology = Development and Training Costs (Anggreini et al., 2023).

Data Analysis Technique

Data analysis in this study uses descriptive statistics, classical assumption tests consisting of normality tests, multicollinearity tests, heteroscedasticity tests, and autocorrelation tests. Then the test was continued by applying the Cochrane-Orcutt method, then testing using multiple linear regression analysis, model feasibility test (F test), hypothesis testing (t test), and finally testing the coefficient of determination (R^2).

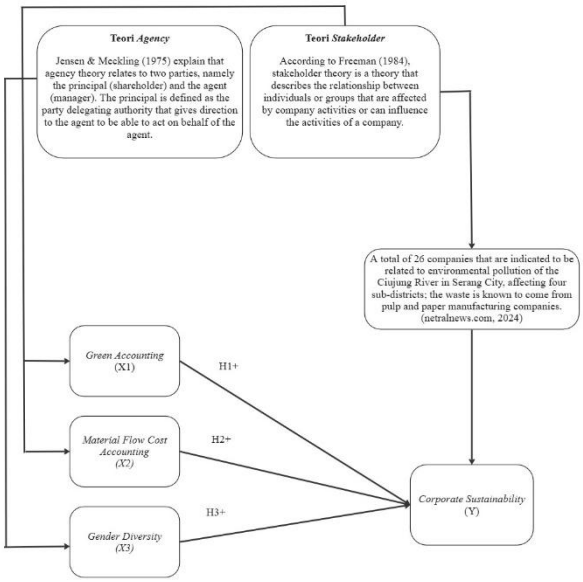

Figure 1. Research Model

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistical tests were carried out to describe the distribution of the analyzed data as a whole, and the results are presented in the following table:

Table 2. Descriptive Statistical Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Green_Accounting	74	1.5714	3.0000	2.125477	.3418094
Material_Flow_Cost_Accounting	74	.0118	.9022	.391914	.3047516
Gender_Diversity	74	.0000	.4286	.108855	.1234251
Corporate_Sustainability	74	24.9431	31.9759	28.792859	1.6269478
Valid N (listwise)	74				

Source: Data processed 2024, SPSS 25 Output.

Interpretation of descriptive statistical tests based on table 2, namely:

Green Accounting

The minimum value of green accounting in the company PT Samator Indo Gas Tbk is 1.5714, while the maximum value is 3.000. The mean value of the company PT Samator Indo Gas Tbk is 2.125477 and the standard deviation value is 0.3418094.

Material Flow Cost Accounting

The minimum value of material flow cost accounting in the company PT Semen Indonesia (Persero) Tbk is 0.0118, while the maximum value is 0.9022. The mean value of the company PT Semen Indonesia (Persero) Tbk is 0.391914 and the standard deviation value is 0.3047516.

Gender Diversity

The minimum value of gender diversity in the company PT Avia Avian Tbk is 0.0000, while the maximum value is 0.4286. The mean value of the company PT Avia Avian Tbk is 0.108855 and the standard deviation value is 0.1234251.

Corporate Sustainability

The minimum value of the company value in the company PT Kapuas Prima Coal Tbk is 24.9431, while the maximum value is 31.9759. The mean value of the company PT Kapuas Prima Coal Tbk is 28.792859 and the standard deviation value is 1.6269478.

Classical Assumption Test

Normality Test

In this study, the Kolmogorov-Smirnov test was used to test normality, which aims to ensure that the independent and dependent variables in the regression model are normally distributed. Data is categorized as normal if the significant value is more than 0.05 and vice versa if it is less than 0.05 the data is not normally distributed. In this observation, the research sample data totaling $n = 74$ was reduced to $n - 1 = 73$ due to the use of the Cochrane-Orcutt method in the autocorrelation test which uses lag transformation so that it has an impact on other classic assumption tests and there is a reduction in observation data. The test results are presented in the following table:

Table 3. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		73
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.97174557
Most Extreme Differences	Absolute	.063
	Positive	.063
	Negative	-.061
Test Statistic		.063
Asymp. Sig. (2-tailed)		.200[c,d]

Source: Data processed 2024, SPSS 25 Output

Referring to Table 3, the significance value of 0.200 for the independent variables shows that the data meets the **normal distribution** criteria because it is greater than 0.05.

Multicollinearity Test

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

Multicollinearity test is conducted to ensure that there is no correlation between independent variables in a good regression model. Multicollinearity is considered not to occur if the Tolerance value> 0.10 or VIF < 10. The following table presents the results of the multicollinearity analysis:

Table 4. Multicollinearity Test Results

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	LAG_Green_Accounting	.803	1.245
	LAG_Material_Flow_Cost_Accounting	.807	1.239
	LAG_Gender_Diversity	.991	1.009

a. Dependent Variable: LAG_Corporate_Sustainability

Source: Data processed 2024, SPSS 25 Output

The tolerance values of Green Accounting (0.803), Material Flow Cost Accounting (0.807) and Gender Diversity (0.991) are all above 0.10 while the VIF values are (1.245), (1.239), and (1.009) respectively where all three have values (<10). Thus it can be concluded that **there is no multicollinearity** and **the regression model is feasible to use.**

Heteroscedasticity Test

In this study, the Glejser test was used to test heteroscedasticity with the aim of identifying the inequality of variance in the regression model using the sig value requirement> 0.05 so that it does not contain heteroscedasticity. The test results are presented in the following table

Table 5. Heteroscedasticity Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.642	.255		2.513	.014
	LAG_Green_Accounting	.014	.276	.007	.049	.961
	LAG_Material_Flow_Cost_Accounting	.311	.375	.110	.829	.410
	LAG_Gender_Diversity	.169	.764	.027	.221	.825

a. Dependent Variable: ABS_RES1

Source: Data processed 2024, SPSS 25 Output.

Referring to table 5. it is known that Green Accounting with sig. of 0.961>0.05, Material Flow Cost Accounting with sig. 0.410>0.05, and Gender Diversity with sig. of 0.825>0.05. It can be concluded that the significant value for the three independent variables is greater than 0.05. This shows that the regression model **does not have heteroscedasticity.**

Autocorrelation Test

In this study, the Durbin-Watson Test (DW Test) was used to test for autocorrelation with the aim of assessing the correlation between the residuals of period t and the residuals of period t-1 (previous) in a linear regression model. The regression model can be considered good if it is free from autocorrelation problems. The results of the autocorrelation test can be seen in the following table:

Table 1 . Autocorrelation Test Results Durbin Watson before resolving with Cochrane-Orcutt Method

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.706[a]	.499	.477	1.1763987	.908

a. Predictors: (Constant), Gender_Diversity, Material_Flow_Cost_Accounting, Green_Accounting
b. Dependent Variable: Corporate_Sustainability
Source: Data processed 2024, SPSS 25 Output

In table 6. the initial data shows a Durbin-Watson value of 0.908. If this value is compared with the number of samples of 74 and 3 independent variables and a significance of 0.05, the dL value is 1.54 and the dU value is 1.71. In accordance with the provisions that the test results show the position 0 < 0.908 < 1.54 means that **autocorrelation has occurred.**

Further researchers ensure that there is no autocorrelation in the results of this study. One way is that researchers use the Cochrane-Orcutt Method which is considered an effective solution for alternative autocorrelation problem solving. The results of the Durbin-Watson autocorrelation test after being overcome by the Cochrane-Orcutt Method are as follows:

Table 2. Durbin Watson Autocorrelation Test Results after resolved with Cochrane-Orcutt Method

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.664[a]	.440	.416	.9926457	1.961

a. Predictors: (Constant), LAG_Gender_Diversity, LAG_Material_Flow_Cost_Accounting, LAG_Green_Accounting
b. Dependent Variable: LAG_Corporate_Sustainability
Source: Data processed 2024, SPSS 25 Output

The new Durbin-Watson number, listed in table 7, is 1.961. By comparing this figure with the reference Durbin-Watson table at a significance of 0.05 and a total sample of 74, we get dL= 1.54 and dU= 1.71, so 4-dU= 2.29. Based on these results, it can be concluded that dU<d<4-dU, namely 1.71<1.961<2.29, which indicates that **there is no autocorrelation**.

Multiple Linear Regression Analysis

The results of the study using multiple linear regression analysis using SPSS 25 are as follows:

Table 8. Multiple Linear Regression Analysis Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	10.971	.384		28.554	.000
	LAG_Green_Accounting	1.976	.415	.478	4.760	.000
	LAG_Material_Flow_Cost_Accounting	1.415	.564	.251	2.508	.014
	LAG_Gender_Diversity	-3.496	1.149	-.275	-3.041	.003

a. Dependent Variable: LAG_Corporate_Sustainability
Source: Data processed 2024, SPSS 25 Output

Referring to the analysis results in table 8, there is a regression equation as follows:

$CS = \alpha + \beta_1 GA + \beta_2 MF + \beta_3 GD + \varepsilon$

$CS = 10{,}971 + 1{,}976GA + 1{,}415MF - 3{,}496GD + \varepsilon$

From the multiple linear regression equation above, it can be explained as follows:

a. The constant coefficient value of 10.971 means that if Green Accounting, Material Flow Cost Accounting, and Gender Diversity are 0 then Corporate Sustainability is worth 10.971.

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

b. The coefficient value of the Green Accounting variable is 1.976, which means that if Green Accounting increases by 1 point, the value of Green Accounting will increase by 1.976 and other variables are considered constant.
c. The coefficient value of the Material Flow Cost Accounting variable is 1.415, which means that if Material Flow Cost Accounting increases by 1 point, the value of Material Flow Cost Accounting will increase by 1.415 and other variables are considered constant.
d. The coefficient value of the Gender Diversity variable is -3.496, which means that if Gender Diversity decreases by 1 point, the value of Gender Diversity will decrease by -3.496 and other variables are considered constant.

F Test (Model Feasibility Test)

In this study, the test that aims to see whether the independent variables affect the dependent variable together is the F test. This is done by comparing the F_{count} value with F_{table} and the sig value. 0,05. The formula for calculating F_{table} is as follows:

$F_{(table}$ = (α ; df = k ; n - k - 1)
= (0.05; df = 3; 74 - 3 - 1)
= (0.05; df = 3; 70)
= 2, 735541

Here are the criteria for the F-test:

a. If $F_{count} > F_{(table)}$ and Sig.<0.05 means that the research model is feasible to use. This is because the regression model can simultaneously explain the independent variables have a significant effect on the dependent variable.
b. If $F_{count} < F_{(table)}$ and Sig.>0.05 means that the research model is not suitable for use. This is because the regression model cannot explain simultaneously the independent variables have a significant effect on the dependent variable.

Table 9. F Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.491	3	17.830	18.095	.000[b]
	Residuals	67.989	69	.985		
	Total	121.480	72			

a. Dependent Variable: LAG_Corporate_Sustainability
b. Predictors: (Constant), LAG_Gender_Diversity, LAG_Material_Flow_Cost_Accounting, LAG_Green_Accounting
Source: Data processed 2024, SPSS 25 Output

Referring to Table 9. it can be proven that the value of $F_{count} > F_{(table)}$ is 18.095> 2.735541 and the significance is 0.000 <0.05. So it is concluded that the regression model is effective in explaining simultaneously the Green Accounting, Material Flow Cost Accounting, and Gender Diversity variables affect the Corporate Sustainability variable. Therefore, **this research model is feasible to use.**

T-test (Hypothesis Test)

The t test or hypothesis test in this study was used to identify the effect of each independent variable on the dependent variable. The formula used to calculate t_{table} is as follows:

t-table = 0.05
= (0.05 ; n - k - 1)
= (0,05 ; 74 - 3 - 1)
= (0,05 ; 70)

= 1,99444

Here are the criteria for the t-test

a. If $t_{count} > t_{(table)}$ and Sig.<0.05 then the independent variable individually has an influence on the dependent variable. So that H_0 is rejected and H_a is accepted
b. If $t_{count} < t_{(table)}$ and Sig.>0.05 then the independent variable individually has no influence on the dependent variable. So H_0 is accepted and H_a is rejected.

Table 10. t-test results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	10.971	.384		28.554	.000
	LAG_Green_Accounting	1.976	.415	.478	4.760	.000
	LAG_Material_Flow_Cost_Accounting	1.415	.564	.251	2.508	.014
	LAG_Gender_Diversity	-3.496	1.149	-.275	-3.041	.003

a. Dependents Variable: LAG_Corporate_Sustainability

Source: Data processed 2024, SPSS 25 Output

Based on Table 10, the analysis results are described below

a. Green Accounting

The t_{count} value of Green Accounting is 4.760 with a t_{table} value of 1.99444. So $t_{count} > t_{(table)}$ with a significance value of 0.000 <0.05. So it can be concluded that Green Accounting has a positive effect on Corporate Sustainability.

b. Material Flow Cost Accounting

The t_{count} value of Material Flow Cost Accounting is 2.508 with a t_{table} value of 1.99444. Then $t_{count} > t_{(table)}$ with a significance value of 0.014 <0.05. So it can be concluded that Material Flow Cost Accounting has a positive effect on Corporate Sustainability.

c. Gender Diversity

The $t_{calculated}$ value of Gender Diversity is -3.041 with a value of $-t_{table}$ -1.99444. Then $t_{count} > t_{(table)}$ with a significance value of 0.003 <0.05. So it can be concluded that Gender Diversity has a negative effect on Corporate Sustainability.

Coefficient of Determination (R^2)

The coefficient of determination is a test used to measure the extent to which the model can explain the dependent variable through the use of Adjusted R Square.

Table 11. Results of the Coefficient of Determination

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.664[a]	.440	.416	.9926457

a. Predictors: (Constant), LAG_Gender_Diversity, LAG_Material_Flow_Cost_Accounting, LAG_Green_Accounting

Source: Data processed 2024, SPSS 25 Output

Referring to Table 11. it can be seen that the Adjusted R Square coefficient of determination is 0.416 or 41.6%. So it can be concluded that 41.6% of the Corporate Sustainability variable can be explained by the three independent variables, namely Green Accounting, Material Flow Cost

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

Accounting, and Gender Diversity. The remaining 58.4% is explained by other variables not discussed in this study.

Discussion

The Influence of Green Accounting on Corporate Sustainability

Based on the test results of the first hypothesis, it can be seen that the t_{count} value of green accounting is 4.760 with a t_{table} value of 1.99444. Then $t_{count} > t_{(table)}$ with a significance value of 0.000 <0.05. This concludes that H_1 is accepted, namely green accounting has a positive effect on corporate sustainability.

The concept of green accounting plays an important role in helping companies disclose costs associated with environmental activities transparently. Companies that are able to manage environmental costs well can improve the sustainability of their business. Through transparent disclosure in annual reports or sustainability reports, companies can demonstrate their efforts to protect the environment as well as the integration of sustainability in business strategy. Thus, the more transparent companies are in disclosing green accounting aspects, the greater the impact on the sustainability of the company in the future. This step not only provides a positive signal to investors and stakeholders, but can also maximize long-term profits, preserve the environment, and ensure the sustainable use of resources. The results of this study are also in line with the findings of Lestari & Alim (2021), Wilang Ica Swari & Ratna Sari (2023), and Mega Pertiwi et al. (2023), which states that green accounting has a positive effect on corporate sustainability.

The Influence of Material Flow Cost Accounting on Corporate Sustainability

Based on the test results of the second hypothesis, it can be seen that the t_{count} value of material flow cost accounting is 2.508 with a t_{table} value of 1.99444. Then $t_{count} > t_{(table)}$ with a significance value of 0.014 <0.05. This concludes that H_2 is accepted, namely material flow cost accounting has a positive effect on corporate sustainability.

The application of material flow cost accounting (MFCA) in the production process provides a clearer understanding of the problems that companies may face. By using MFCA, companies can more easily identify cost waste, material losses, and the difference between products that provide positive and negative value (such as emissions). This allows the company to have a more transparent picture of the issues in the factory. Through the application of MFCA, companies can reduce environmental costs by minimizing the negative impacts of their production processes. By optimizing environmental cost efficiency, the company can increase profits as it will remain viable and contribute to sustainable development. Therefore, it can be concluded that the better the implementation of material flow cost accounting (MFCA) by the company, the better the overall management of production costs. thus supporting the sustainability of the company through resource optimization and minimization of impacts on the environment. The results of this study are in line with research conducted by Fakhroni (2020) and Hindriani et al. (2024), which states that material flow cost accounting is proven to have a positive effect on company sustainability.

The Influence of Gender Diversity on Corporate Sustainability

Based on the test results of the third hypothesis, it can be seen that the t_{count} value of gender diversity is -3.041 with a value of $-t_{table}$ -1.99444. Then $t_{count} > t_{(table)}$ with a significance value of

0.003 <0.05. So it can be concluded that H_3 is rejected, namely gender diversity has a negative effect on corporate sustainability.

The negative relationship between the two suggests that gender diversity at the managerial level is often considered important to enhance perspectives. However, if not managed properly, gender diversity can lead to imbalances in strategic decision-making. This causes a negative impact on the stability and sustainability of the company. Especially significant differences in views between the two genders can be caused by the culture of women who tend to avoid conflict and risk averse, which can slow down the decision-making process and reduce the company's operational efficiency.

The average percentage of gender diversity in the research data also supports the research results of 10.79%, which is not in accordance with the gender diversity target set by the Manpower Law Number 12 of 2003, which is at least 30% of women in leadership roles. The standard is also in accordance with the global ratio set by the International Finance Corporation (IFC) which also sets a standard ratio of 30:70 gender diversity in the leadership team. Therefore, the results of this study are in line with Wiryani et al. (2020) which also states that gender diversity has a negative effect on corporate sustainability.

4. CONCLUSION

Green Accounting has a positive effect on Corporate Sustainability. This is because the more transparent the company in disclosing green accounting aspects through annual reports or sustainability, the greater the impact on the company's sustainability in the future.

Material Flow Cost Accounting (MFCA) has a positive effect on Corporate Sustainability. This is because companies that implement MFCA are able to manage production costs thoroughly so as to support the sustainability of the company through resource optimization and minimization of environmental impacts.

Gender Diversity has a negative effect on Corporate Sustainability. This is because gender diversity that is not managed properly can cause an imbalance in decision making so that it has a negative impact on company sustainability

5. REFERENCES

Abdullah, M. W., & Amiruddin, H. (2020). Efek Green Accounting Terhadap Material Flow Cost Accounting Dalam Meningkatkan Keberlangsungan Perusahaan. *EKUITAS (Jurnal Ekonomi Dan Keuangan)*, *4*(2), 166–186. https://doi.org/10.24034/j25485024.y2020.v4.i2.4145

Anggreini, R., Sari, P., & Rakhmawati, I. (2023). Green accounting , material flow cost accounting , leverage , sustainability , resource efficiency perusahaan BEI di Indonesia. *Jebisku*, *1*(4), 514–531.

Dahlia Pinem, & Sindi Aulia. (2023). The Effect of Corporate Sustainability Performance on the Values of Companies Listed in the Sri Kehati Index. *Formosa Journal of Sustainable Research*, *2*(3), 713–734. https://doi.org/10.55927/fjsr.v2i3.3073

Evita, M., & Syafruddin, S. (2019). Pengaruh Biaya Lingkungan, Kinerja Lingkungan, Dan Iso 14001 Terhadap Kinerja Keuangan Perusahaan Pertambangan Studi Kasus Pada Bursa Efek Indonesia Tahun 2014-2017. *Measurement : Jurnal Akuntansi*, *13*(1), 27. https://doi.org/10.33373/mja.v13i1.1829

DOI: http://dx.doi.org/10.17509/xxxx.xxx
p- ISSN 2338-1507 e- ISSN 2541-061X

Fakhroni, Z. (2020). Pengaruh Implementasi Green Accounting dan Material Flow Cost Accounting Terhadap Sustainable Development. *Jurnal ASET (Akuntansi Riset)*, *12*(1), 109–116.

Fakir, A. N. M. A., & Jusoh, R. (2020). Board gender diversity and corporate sustainability performance: Mediating role of enterprise risk management. *Journal of Asian Finance, Economics and Business*, *7*(6), 351–363. https://doi.org/10.13106/JAFEB.2020.VOL7.NO6.351

Fayaz, M., Abbas, M., & Zahid, M. (2021). Gender Diversity and Environmental Sustainability: Investigating Some Methodological Perspectives. *Journal of Managerial Sciences*, *15*(3), 114–129.

Freeman, R. E., & David, L. R. (1983). Stockholders and Stakeholders: A New Perspective on Corporate Governance. *California Management Review*, *25*(3), 88–106. https://doi.org/10.2307/41165018

Hindriani, R., Siregar, D. K., Idayu, R., & Husni, M. (2024). Penerapan Green Accounting dan Material Flow Cost Accounting terhadap Sustainable Development. *Jurnal Revenue*, *4*, 845–854.

Lestari, W., & Alim, M. (2021). Pengaruh Green Accounting, Material Flow Cost Accounting (MFCA) terhadap Sustainable Development. *Jurnal Digital Akuntansi (JUDIKA)*, *2*(2), 59–67. http://ojs.itb-ad.ac.id/index.php/JUDIKA/article/view/1952%0Ahttp://ojs.itb-ad.ac.id/index.php/JUDIKA/article/download/1952/428

Manual On Material Flow Cost Accounting ISO 14051. (2015). Asian Productivity Organization.

May, S. P., Zamzam, I., Syahdan, R., & Zainuddin, Z. (2023). Pengaruh Implementasi Green Accounting, Material Flow Cost Accounting Dan Environmental Performance Terhadap Sustainable Development. *Owner*, *7*(3), 2506–2517. https://doi.org/10.33395/owner.v7i3.1586

Mega Pertiwi, D., Handajani, L., & Astuti, W. (2023). The Influence of Green Accounting on Company Sustainability Through Environmental Performance in The Consumer Goods Sector. *Jurnal Akuntansi Dan Perpajakan*, *9*(2), 324–340. http://jurnal.unmer.ac.id/index.php/ap

Napitupulu, S., Primiana, I., Nidar, S. R., Effendy, N., & Puspitasari, D. M. (2020). The effect of management capabilities in implementing good corporate governance: A study from indonesia banking sector. *Journal of Asian Finance, Economics and Business*, *7*(1), 159–165. https://doi.org/10.13106/jafeb.2020.vol7.no1.159

Pratiwi, L. R., & Kusumawardani, N. (2023). Green Intellectual Capital, Environmental Cost, dan Material Flow Cost Accounting Terhadap Sustainable Development. *Economics and Digital Business Review*, *5*(1), 13–21. https://doi.org/10.37531/ecotal.v5i1.798

Rahmania Santi, A., Andi, K., Lindrianasari, L., & Oktavia, R. (2022). Pengaruh penerapan material

flow cost accounting terhadap green accounting dan financial performance. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, *5*(2), 723–732. https://doi.org/10.32670/fairvalue.v5i2.2327

Romario, E., & Armada Riyanto. (2024). Relasionalitas Hubungan Manusia dan Alam Semesta dalam Fenomena Anomali Iklim di Indonesia. *JOURNAL SCIENTIFIC OF MANDALIKA (JSM) e-ISSN 2745-5955 | p-ISSN 2809-0543*, *5*(6), 265–274. https://doi.org/10.36312/10.36312/vol5iss6pp265-274

Supriatna, S. (2023). Pengaruh Tingkat Kemiskinan, Tingkat Pendidikan, dan Upah Minimum Provinsi Terhadap Peningkatan Pendapatan Perkapita di Indonesia 2011-2020. *Bandung Conference Series: Economics Studies*, *3*(1), 199–206. https://doi.org/10.29313/bcses.v3i1.6995

Tran, T. T., & Herzig, C. (2020). Material flow cost accounting in developing countries: A systematic review. *Sustainability (Switzerland)*, *12*(13). https://doi.org/10.3390/su12135413

Ulupui, I. G. K. A., Murdayanti, Y., Marini, A. C., Purwohedi, U., Mardi, & Yanto, H. (2020). Green accounting, material flow cost accounting and environmental performance. *Accounting*, *6*(5), 743–752. https://doi.org/10.5267/j.ac.2020.6.009

Widarti, R. A., Merawati, E. E., Djaddang, S., & Ahmar, N. (2022). How Gender Diversity Influence Corporate Sustainability Performance: a Literature Review. *Accounting Research Journal of Sutaatmadja (ACCRUALS*, *6*(2), 84–95. https://doi.org/10.35310/accruals.v6i02.921%0Ahttps://ojs.stiesa.ac.id/index.php/accruals/index

Wilang Ica Swari, S. A. P., & Ratna Sari, M. M. (2023). Green Accounting, Intellectual Capital, Gender Diversity dan Kinerja Keberlanjutan Perusahaan. *E-Jurnal Akuntansi*, *33*(12), 3160–3174. https://doi.org/10.24843/eja.2023.v33.i12.p04

Wiryani, D. A. S. S. P., Sukoharsono, E. G., & Mardiati, E. (2020). Profitability, feminism of board of directors and corporate sustainability performance. *International Journal of Research in Business and Social Science (2147- 4478)*, *8*(6), 351–356. https://doi.org/10.20525/ijrbs.v8i6.570

Wulandari, R., Mulyani, S., Nuridah, S., & Fauzobihi. (2023). Pengaruh Penerapan Biaya Lingkungan dan Kinerja Lingkungan terhadap Profitabilitas pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia (BEI) Periode 2019-2022. *Journal Of Social Science Research*, *3*, 10016–10023.