IMPLEMENTATION OF GREEN ACCOUNTING, INTERNAL CORPORATE GOVERNANCE STRENGTH, MATERIAL FLOW COST ACCOUNTING ON SUSTAINABLE DEVELOPMENT: CORPORATE SOCIAL RESPONSIBILITY AS A MODERATING VARIABLE

ABSTRACT

Sustainable development is an activity that integrates environmental, social and economic considerations into a development strategy to ensure environmental integrity and safety, efficiency, welfare and quality of life for present and future generations. Sustainable development can be achieved by implementing green accounting, internal corporate governance strength, and material flow cost accounting. This research examines the impact of green accounting, internal corporate governance strength, and material flow cost accounting on sustainable development, with corporate social responsibility (CSR) as a moderating variable. Sustainable development integrates environmental, social, and economic considerations, aiming to ensure quality of life and environmental integrity for current and future generations. The study focuses on textile and garment companies listed on the Indonesia Stock Exchange from 2019 to 2021, with a purposive sample of 60 firms analyzed using Partial Least Squares (PLS). Findings indicate that green accounting, internal corporate governance strength, and material flow cost accounting positively influence sustainable development. Furthermore, CSR strengthens the positive effects of green accounting and material flow cost accounting on sustainable development, while CSR does not moderate the effect of internal corporate governance strength.

Keywords: Sustainable Development, Implementation of Green Accounting, Internal Corporate Governance Strength, Material Flow Cost Accounting, Corporate Social Responsibility

INTRODUCTION

The company really needs good management and must be able to manage the company in order to achieve business goals in accordance with the vision and mission that have been set. This encourages companies not only to be required to generate maximum profit but also demands from the community to pay attention to waste management in order to preserve the environment. stay awake.

Rapidly growing industrial activities are one of the causes of environmental damage issues. Because in reality many companies are still focused on achieving profits alone, without considering the negative impacts of their production activities on the environment and the surrounding community where the company is located. So that corporate awareness is needed in managing the environment and social life in addition to corporate activities to achieve the company's targeted profit.

On the other hand, in the era of society 5.0 which is indicated by increasing openness, corporate concern for the environment is expected to increase. Until now, there are still many environmental damage problems caused by companies that do not care about the environment so that the goal of sustainable development has not been able to run as expected.

Sustainable development is an activity that combines current economic, social and environmental interests without sacrificing the interests of future generations to live decently (Kong, 2021). This is in line with the many phenomena of social degradation and environmental damage due to corporate waste. As happened in that a textile factory in Bandung was sealed because it polluted the Citarum River. The sealing of the company by officers of the Ministry of Environment and Forestry (KLHK) on the textile company CV SS was due to the failure to optimally manage the Wastewater Treatment Plant (IPAL). Editorial (radarsuka bumi) (Betahita, 2019), that there was burning of PT CS fabric waste polluting the environment. Air pollution is caused by smoke from the textile industry in Bojongkembar Village.

Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management, Article 1 Number 3 provides an understanding of sustainable development itself, namely that sustainable development is a conscious and planned effort that combines environmental, social, and economic aspects into a development strategy to ensure the integrity of the environment and the safety, ability, welfare, and quality of life of the present and future generations. In theory, there are several factors that influence sustainable development. In this study, the factors that influence sustainable development are the implementation of green accounting, internal corporate governance strength, material flow cost accounting, and strengthened by corporate social responsibility.

Green accounting is one of the accounting sciences that reveals costs related to environmental conservation (Andi, K. Petta Lolo et al., 2020). Empirical evidence from previous studies shows that there is a relationship between the implementation of green accounting and Sustainable Development, namely (Andi, K. Petta Lolo et al., 2020; Chamorro Gonzalez & Herrera Mendoza, 2021; Dhar et al., 2022; ENDIANA et al., 2020; Nabila, 2021; Nga et al., 2019; Tu & Huang, 2015). However, this is not in line with the results of the study conducted (Nabila, 2021) that the implementation of green accounting has a negative impact on Sustainable Development.

The second factor that influences sustainable development is internal corporate governance strength can influence Sustainable Development in the company. It can be analyzed that the level of corporate concern in maintaining environmental sustainability is still low, so that the company's goal is needed to implement good corporate governance in order to build the company's image and achieve responsibility to all stakeholders. Ignoring stakeholder interests can tarnish the company's image in the eyes of the public, this will have a negative impact on the company's financial capabilities (Abdullah & Amiruddin, 2020).

Empirical evidence according to (Martínez-Ferrero & García-Meca, 2020) shows that internal corporate governance strength has a positive effect on sustainable development. Differences in research conducted by (Rosati & Faria, 2019) show that the internal characteristics of companies that contribute to achieving the SDGs are still unknown.

The third factor that influences sustainable development is material flow cost accounting. Specifically, material flow cost accounting aims to manage manufacturing processes related to the flow of materials, energy, and data so that the manufacturing process can be more efficient and in accordance with the set targets (Rachmawati & Karim, 2021).

In an effort to contribute to the waste reduction problem from a different perspective, contemporary management accounting develops collection tools for the quantification of specific wastes by utilizing material flow cost accounting to provide financial and non-financial information in order to support waste reduction decisions by managers.

Research conducted by (Marota, 2017) shows that flow cost accounting has a positive effect on sustainable development. Meanwhile, research by (Nga et al., 2019) shows that material flow cost accounting has no effect on sustainable development.

The image of a company can be overcome and improved if a company has social responsibility. Social responsibility or what can be called corporate social responsibility. Corporate social responsibility is a concept that organizations, especially companies, have a responsibility to consumers, employees, shareholders, communities and the environment in all aspects of the company's operations.

An empirical study conducted by (Dewi & Budiasih, 2022) Corporate social responsibility can moderate green accounting which states that the more companies carry out environmental performance, the more companies carry out corporate social responsibility. Research (Ezzine, 2018) which states that there is a relationship between corporate governance and the company's Corporate social responsibility.

This study is a development of research conducted by (Martínez-Ferrero & García-Meca, 2020) and (Rachmawati & Karim, 2021), (Dhar et al., 2022) What distinguishes this study from previous studies is the addition of the Green Accounting variable. Furthermore, in this study, the researcher also uses corporate social responsibility as a moderating variable because from several references there is a relationship between corporate social responsibility and sustainable development. Then the researcher also changed the year of research from the previous study by taking a sample of textile and garment companies listed on the IDX in the period 2019-2021.

METHOD, DATA, AND ANALYSIS

Research Object

The population in this study is palm oil plantation companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2021 period.

Table 1 Sample

No	Sample Selection Criteria	Number of Companies
Indonesia stock exchange		
1	Textile and garment companies registered during 2019-2021	2 2
2	Companies that do not publish consecutive annual reports as of December 31	(2)
3	Companies that did not report *corporate social responsibility* during 2019-2021	(0)
Number of samples		**20**

Operational Definition and Variable Measurement

The data used in this study are secondary data . The variables used in this study are the dependent variable, namely *Sustainable development* , the independent variable, namely implementation. *green accounting, internal corporate governance strength, material flow cost accounting ,* and the moderating variable, namely *corporate social responsibility.*

Definition *sustainable development* , in this study refers to research (Begum et al., 2019) Sustainable development whose composition is measured from *Environmental sustainability practices* (ENVSP), *Economic sustainability practices* (ECSP), and *Social sustainability practices* (SSP). ENVSP has 5 indicators, namely *technological advancement, waste management treatment, greenhouse gas emission and pollution control activity, national, state, and local policies,* and *international regulatory policies and compliances.* ECSP has 5 indicators, namely *utilization of resources and materials, brand reputations and advantages, market demand growth and pricing policies, costs of milling activity,* and *production efficiency* . SSP has 5 indicators, namely *community wellbeing, incentives structure, employee welfare, employee equity and human resource development, and quality of life* using the content analysis method with the formula:

$$SDj = \frac{\Sigma Xij}{Nij}$$

Information :
SDj = *Sustainable development* of the company
ΣXij = Number of company *Sustainable development* disclosures
Nij = Number of items for the company is 13 indicators

green accounting implementation variable according to (Kong, 2021) is measured using a nominal scale, namely when the company *implements green accounting* , then given a score of 1; If not implemented, given a score of 0. This means that if a company has one of the environmental cost components, product recycling costs, environmental development and research costs in *the annual report* will be given a score of 1, but if there is no environmental cost component in the *annual report,* the score will be 0 .

According to (Martínez-Ferrero & García-Meca, 2020) *Corporate Governance measurement* uses composition aggregation, number of independent commissioners (*board independence)* , president director *(CEO independence),* and the frequency of board meetings . Where the nominal scale will be used for its classification. As for the measurement of *Corporate Governance* : the number of independent commissioners is measured by the proportion of the independent board of commissioners. The main director, is given a value of 1 if the main director is an official who does not hold a dual position, while 0 for those who hold a dual position. The frequency of board meetings is measured by the number of board of directors meetings per year.

Measurement of material flow cost accounting refers to research conducted by (Ulupui et al., 2020) measuring *material flow cost accounting* by looking at production costs.

Corporate Social Responsibility disclosure is measured using the GRI (*Global Reporting Initiative*) indicator index which uses 91 economic, environmental and social indicators. Information regarding *corporate social responsibility* based on GRI consists of 3 disclosure focuses, with the formula:

$$CSRj = \frac{\Sigma Xij}{Nij}$$

Information :
CSRj = *Corporate social responsibility disclosure index* of the company
ΣXij = Number of company CSR disclosures
Nij = Number of items for the company is 91 indicators

Data Analysis Method

This study uses the PLS 7.0 (Persial Loast Square 7.0) data analysis method. WarpPLS software is a variant-based structural equation analysis (SEM) that can simultaneously test structural models (Ghozali & Latan, 2015)

RESULT AND DISCUSSION

Descriptive Statistics

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SD	60	0.13	1.00	0.712	0.223
DK	60	0.00	0.67	0.373	0.166
FRD	60	3.00	24.00	10,283	5,699
BP	60	0.0013	9.5715	1.6146	2.8637
MOBILE PHONE	60	0.0014	10.2015	1.6657	2.8673
CSR	60	0.5055	0.7692	0.6361	0.0727

Source: WarpPLS Processed Data, 2023

The table above provides a descriptive statistical overview for the six research variables measured in 60 observations. Here is a further description of each variable:

1. Sustainable Development (SD) has a minimum value of 0.13 and a maximum value of 1.00, with an average (mean) of 0.712 and a standard deviation of 0.223. The average approaching 1 indicates that most companies in the sample have relatively high scores in terms of sustainable development, although there is quite significant variation.
2. The Board of Commissioners (DK) has a minimum value of 0.00 and a maximum value of 0.67, with a mean of 0.373 and a standard deviation of 0.166. The average value of DK shows the

diversity in the size or composition of the board of commissioners among the companies studied, although the variation is still relatively moderate.

3. Firm Risk Disclosure (FRD) has a minimum value of 3.00 and a maximum value of 24.00, with a mean of 10.283 and a standard deviation of 5.699. This variable shows a fairly wide difference in corporate risk disclosure, with a high standard deviation indicating a large variation in risk disclosure among companies in the sample.
4. Production Cost (BP) has a range of values between 0.0013 to 9.5715, with an average of 1.6146 and a standard deviation of 2.8637. The high value of this standard deviation indicates a significant variation among companies in terms of the production costs they incur.
5. Human Capital (HP) , with a minimum value of 0.0014 and a maximum of 10.2015, has an average of 1.6657 and a standard deviation of 2.8673. A large standard deviation value indicates substantial variation between companies in terms of human capital, indicating differences in the level of investment or attention of companies to this aspect.
6. Corporate Social Responsibility (CSR) has a range of values from 0.5055 to 0.7692, with an average of 0.6361 and a relatively low standard deviation of 0.0727. A small standard deviation indicates that most companies have similar levels of CSR, so that the variability between companies in terms of CSR is not too high.

Table 3. Frequency Distribution of Green Accounting Variables

	N	F	%
GA	60	40	66.67
Non-GA	60	20	33.33
Amount		60	10 0

Source: WarpPLS Processed Data, 2023

The table above shows the distribution between companies that implement Green Accounting (GA) and those that do not (Non-GA) in the research sample. Out of 60 companies, 40 of them (66.67%) implement Green Accounting practices. This large percentage indicates that most companies in the sample have adopted this practice, which may indicate awareness of the importance of environmental sustainability in company operations.

Table 4. Frequency Distribution of the President Director Variable

	N	F	%
DU	60	51	85.00
Non-DU	60	9	15.00
Amount		60	100

Source: WarpPLS Processed Data, 2023

This table shows the distribution of companies in the sample based on the implementation of Disclosure of Uncertainty (DU) or uncertainty disclosure, as well as companies that do not implement it (Non-DU). As many as 51 out of 60 companies, or 85%, implement uncertainty disclosure in their reports. This high percentage indicates that the majority of companies in the sample have realized the importance of uncertainty disclosure, which may reflect a commitment to transparency and readiness in facing business risks.

Inferential Analysis

Table 5 . VIF (Variance Inflation Factor) Results

No	Variables	Loading Factor	Provision	Conclusion
1.	SD	1,949	<10	Valid
2.	GA	5,898	<10	Valid
3.	ICGS	2,590	<10	Valid
4.	MFCA	3.912	<10	Valid
5 .	CSR >>GA	3.625	<10	Valid
6.	CSR>>ICGS	2,462	<10	Valid
7.	CSR>>MFCA	3,709	<10	Valid

Source: WarpPLS Processed Data, 202 3

the VIF values from this study can be seen in Table 5, which shows that all variables have VIF values smaller than 10, so that all indicators in the estimated model meet the valid requirements.

Table 6. R - Square Value Results

Indicator	R-Square
Sustainable Development	0.823

Source: WarpPLS Processed Data, 202 3

Based on table above 6 mark R-Square For variable *sustainable development* is 0.823. This result shows that 82.3% of the *sustainable development value variable* is influenced by the *green accounting variable. internal corporate governance strength, material flow cost accounting,* and *corporate social responsibility* , while below 82.3% the remainder is influenced by by variable other unexamined in this study.

Table 7. Hypothesis Test Results

No	Variables	Path Coefficient	P Value	Information
1.	GA	0.217	0.001	Accepted
2.	ICGS	0.525	<0.001	Accepted
3.	MFCA	0.153	0.049	Accepted
4.	CSR*GA	0.247	0.004	Accepted
5.	CSR*ICGS	0.116	0.103	Rejected
6.	CSR*MFCA	0.327	<0.001	Accepted

Source: WarpPLS Processed Data, 2022

Based on the analysis results, it was obtained that H1, H2, H3, H4, H6 P value is smaller than the profitability level of 0.05 proving that this hypothesis is accepted. While H5 reflects a profitability level of 0.05 greater so that this hypothesis is rejected.

CONCLUSION

Based on the results of the data analysis that have been presented previously, it can be concluded that the implementation of green accounting, internal corporate governance strength, and material flow cost accounting have an influence on the achievement of sustainable development. Furthermore, the implementation of green accounting shows a significant influence on sustainable development which is moderated by corporate social responsibility (CSR). On the other hand, internal corporate governance strength does not show a significant influence on sustainable development when moderated by CSR, while

material flow cost accounting still has an influence on sustainable development even though there is moderation by CSR. Based on the conclusions and limitations in this study, there are several suggestions for further research. First, future research can increase the range of years of research to obtain more comprehensive data. Second, it is recommended to add other relevant variables to enrich the analysis. Third, further researchers can consider changing or expanding the sample to obtain more generalizable results.

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