Towards Sustainable Development: The Interconnection of Green Corporate Governance and Green Finance in Cemara Asri's SMEs

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ABSTRACT

This study examines the effect of Green Corporate Governance and Green Finance on the Sustainability Performance of MSMEs in Cemara Asri, Medan. This study uses quantitative data methods and the data source is primary data. The sampling technique uses saturated samples, so that the entire population is used as a sample of 60 MSMEs. Data analysis and testing consisted of validity tests, reliability tests, descriptive statistics, classical assumption tests, multiple regression analysis, partial (T test) and simultaneous hypothesis testing (F test), and determination coefficient tests (R^2). The results of the study show that Green Corporate Governance has an effect and is significant on Sustainable Performance with $t_{calculated}$ 3.905 > t_{table} 2, 00172 and a significant value of 0.000 > 0.05. Green Finance has a significant effect on Sustainable Performance with $t_{calculated}$ of 2.664 > t_{table} 2, 00172 with a significant level of 0.010 > 0.05. Simultaneously, Green Corporate Governance and Green Finance have a significant effect on Sustainable Performance with an $F_{calculated}$ 111.121 > F_{table} 3.16 with a significance of 0.000 > 0.05 with a regression coefficient value of 79.6%.

Keywords : *Green Corporate Governance, Green Finance, Sustainable Performance, MSMEs*

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) contribute significantly to economic development. MSMEs contribute around 60.5% to the Gross Domestic Product (GDP) and employ more than 120 million workers (Ministry of Cooperatives and SMEs of the Republic of Indonesia, 2022). This role makes MSMEs the backbone of economic growth, not only at the national level, but also on a local scale, including in the Cemara Asri area which is located in the Cemara Asri, Medan Estate. The existence of MSMEs in the region

able to encourage local economic growth. However despite the economic benefits, MSMEs also face major challenges in terms of sustainability. Zhang & Zhou (2021) also said emphasized that the implementation of Green Corporate Governance increases the competitiveness of MSMEs in a sustainable manner, implementation still faces strategic limitations and environmental awareness. In the era of sustainability, MSMEs face various serious challenges in implementing Green

Corporate Governance, accessing Green Finance, and realizing Sustainable Performance. According to Indriastuti & Mutamimah (2023), even though MSMEs play an important role in economic growth, their attention to environmental and sustainability aspects is still very limited.

After observing of MSMEs in Cemara Asri, it was found that waste such as cooking oil, food scraps and dishwater was disposed of directly into the gutters around the business area. This causes an unpleasant odor and has the potential to pollute the surrounding environment. Waste disposal such as cooking oil can also endanger road users due to slippery asphalt. In addition, in food packaging, entrepreneurs do not have a policy on the use of environmentally friendly packaging. Food and beverages are packaged with single-use plastic materials. Nurjanah & Michelle (2025) found that culinary MSMEs affected by the pandemic increasingly prioritize cost efficiency by still using single-use plastics, so that sustainability practices are increasingly neglected.

In terms of Green Finance, MSMEs have difficulty accessing green financing instruments. Ogunyemi & Ishola (2024) emphasized that many MSMEs are unable to utilize these instruments due to the limitations of green financial literacy and the absence of a financing model that matches capacity. When entrepreneurs in Cemara Asri want to replace old equipment with machines that are more energy-efficient and environmentally friendly. However, the high investment cost makes them continue to use old equipment that wastes electricity. According to Budisaptorini & Wibowo (2024), limited access to finance is one of the main factors that hinder MSMEs from adopting green practices, even though green financing has been proven to be able to improve sustainability business performance.

Another problem arises in Sustainable Performance. Many MSMEs have not been able to manage the environmental impact of their production activities. Entrepreneurs dump waste in sewers because they don't know how to process leftover foodstuffs into compost to be resold to local farmers. In fact, if this method can be done to reduce waste and can also create economic added value. This issue is also the same as what Fajri (2023) said, which shows that the portion of food waste from culinary businesses is quite significant and has the potential to be processed into useful compost, thereby reducing waste and greenhouse gas emissions.

Figure 1. Waste disposal on the road.

LITERATURE REVIEW

Green Corporate Governance

According to Shaik et al. (2024) Green Corporate Governance is the integration of sustainability principles into corporate governance, including strategic decisions that consider social and environmental aspects. H. Xu & Li (2023) also stated that Green Corporate Governance in MSMEs is able to increase competitiveness through the integration of environmentally friendly practices in strategic decisions. According to Mallin (2019), the indicators of Green Corporate Govarnance are:

1. Transparency
2. Accountability
3. Independence
4. Responsibilities

Green Finance

According to Budisaptorini & Wibowo (2024) Green Finance is a financing instrument that is specifically directed to support environmentally friendly projects, such as green loans, green bonds, and sustainable investments. Kim & Lee (2022), the development of green financing mechanisms that match the capacity of MSMEs in Asia is still a major challenge, especially related to affordability and access to regulations. Tang et al. (2022) emphasized that the successful implementation of Green Finance for MSMEs in developing countries is greatly influenced by regulatory support and green finance infrastructure. According to UNEP (2016), the indicators of Green Finance are:

1. Capital allocation
2. Energy efficiency
3. Renewable energy
4. Ecosystem protection

Sustainable Performance

According to Wang et al. (2023), Sustainable Performance is a company's ability to balance economic, social, and environmental dominance. Alhawari et al. (2021) added that sustainable business models play an important role in building long-term competitive advantage. According to Shaik et al. (2024), the indicators of Sustainable Performance are:

1. Economic performance
2. Social performance
3. Environmental performance

Based on the description above and the results of previous research, the variables in this study can be seen in the image of the research framework, namely:
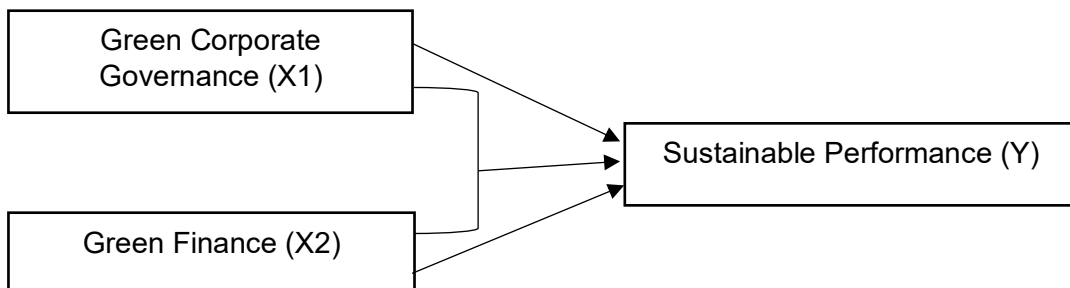

Figure 2. Frame of Mind

The hypothesis in this study is:

H_1 : Green Corporate Governance has a significant effect on the Sustainable Performance of MSMEs in Cemara Asri, Medan

H_2 : Green Finance has a significant effect on the Sustainable Performance of MSMEs in Cemara Asri, Medan

H_3 : Green Corporate Governance and Green Finance have a significant effect on the Sustainable Performance of MSMEs in Cemara Asri, Medan

RESEARCH METHOD

This research was conducted in the Cemara Asri, Medan Estate, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra and was conducted from August 2025 to September 2025. The population of this study is MSMEs located in the Cemara Asri area with a total of 60 MSMEs. The sample used in this study is a saturated sample or saturation sampling. According to Sugiyono (2019), saturated samples are a sample determination technique if all members of the population are used as research samples.

The research data was obtained using a questionnaire that was compiled based on the indicators of each research variable, then distributed directly to all MSMEs who were respondents. Sugiyono (2019), questionnaire is a data collection technique carried out

by giving a set of questions or written statements to the respondents to be answered. This study used a 1-5 Likert scale (1 = strongly disagree to 5 = strongly agree), with 10 items for Green Corporate Governance and Green Finance, and 8 items for Sustainable Performance.

RESULTS

Validity Test
According to Ghozali (2018), the validity test is used to measure the validity or validity of a questionnaire.

Table 1. Validity Test

No	R count	R table	Result
X1. P1	0,2542	0,929	Valid
X1. P2	0,2542	0,888	Valid
X1. P3	0,2542	0,431	Valid
X1. P4	0,2542	0,661	Valid
X1. P5	0,2542	0,814	Valid
X1. P6	0,2542	0,458	Valid
X1. P7	0,2542	0,730	Valid
X1. P8	0,2542	0,860	Valid
X1. P9	0,2542	0,776	Valid
X1. P10	0,2542	0,353	Valid
X2. P1	0,2542	0,914	Valid
X2. P2	0,2542	0,813	Valid

X2. P3	0,2542	0,560	Valid
X2. P4	0,2542	0,845	Valid
X2. P5	0,2542	0,757	Valid
X2. P6	0,2542	0,639	Valid
X2. P7	0,2542	0,573	Valid
X2. P8	0,2542	0,774	Valid
X2. P9	0,2542	0,553	Valid
X2. P10	0,2542	0,704	Valid
Y.P1	0,2542	0,955	Valid
Y.P2	0,2542	0,915	Valid
Y.P3	0,2542	0,477	Valid
Y.P4	0,2542	0,881	Valid
Y.P5	0,2542	0,781	Valid
Y.P6	0,2542	0,660	Valid
Y.P7	0,2542	0,867	Valid
Y.P8	0,2542	0,765	Valid

Source: Processed data, 2025

The analysis results show that the validity coefficient values range from 0.353 to 0.929, while the table r value with a significance level of 0.05 for a sample size of 60 respondents is 0.2542. It can be seen that the validity coefficient of all question items are greater than the r_{table}. Based on these results, it can be concluded that the questions used in the research variables are valid.

Reliability Test
Based on the opinion Ghozali (2018), reliability is actually a tool to measure a questionnaire which is an indicator of variables or constructs.

Table 2. Reliability Test

Variabel	Cronbach's Alpha	Result
Green Corporate Governance	0,6	0,822
Green Finance	0,6	0,892
Sustainable Performance	0,6	0,914

Source:Processed products, 2025

The results of the analysis showed that the independent dependent variables had *a Cronbach's Alpha* value above 0.6. Based on these results, it can be concluded that all instruments are reliable so that they can be used to conduct research.

Normality Test
Based on the opinion Ghozali (2021), the normality test aims to test whether in the regression model, the disruptive or residual variables have a normal distribution.
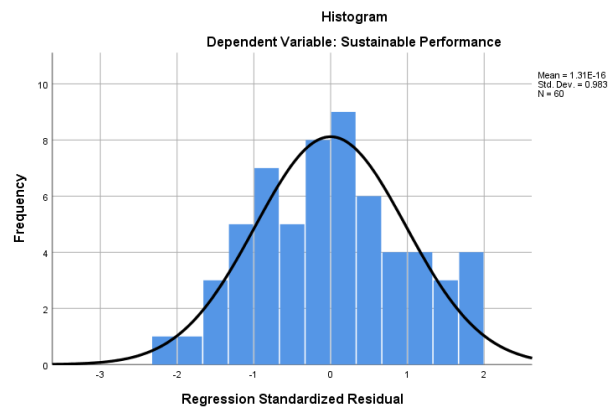
Figure 3. Histogram
Source:Processed products, 2025

From figure 3 above, it shows that the results of the histogram graph have real data forming curve lines that tend to be symmetrical and do not deviate to the left or to the right, so it can be said that the data is normally distributed.
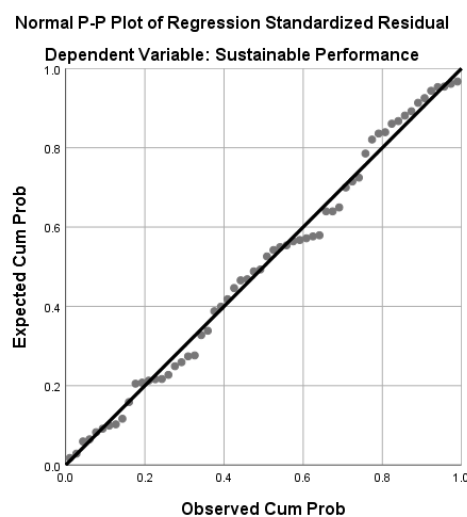

Figure 4. P-Plots
Source:Processed products, 2025

From Figure 4 above, it shows that the data points are spread around the diagonal line and follow the direction of the diagonal line, so the regression model meets the assumption of normality.

According to Sarwono (2018), the Kolmogorov-Smirnov test (K-S) is one of the non-parametric statistical methods used to find out whether the data has a certain distribution, especially the normal distribution.

Tabel 3. Uji One Sample Kolmogrov – Smirnov

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		60
Normal Parameters[a,b]	Mean	.0000000
	Hours of deviation	253.851.045
Most Extreme Differences	Absolute	.069
	Positive	.069
	Negative	-.058
Test Statistic		.069
Asymp. Sig. (2-tailed)		.200[c,d]

Source: Processed data, 2025

Based on the results of the normality test with the Kolmogorov-Smirnov test, it is known that the significance value of 0.200 is greater than 0.05 (Sig F > 5%), so it can be concluded that the tested data is distributed normally.

Heteroscedasticity Test
According to Sahir (2021), the Heteroscedasticity Test is to see if there is an unevenness of variance from one residual observation to another. The data is declared non-hetero if the significance value is > 0.05, and vice versa if the significance value is < 0.05, then the data is declared hetero.
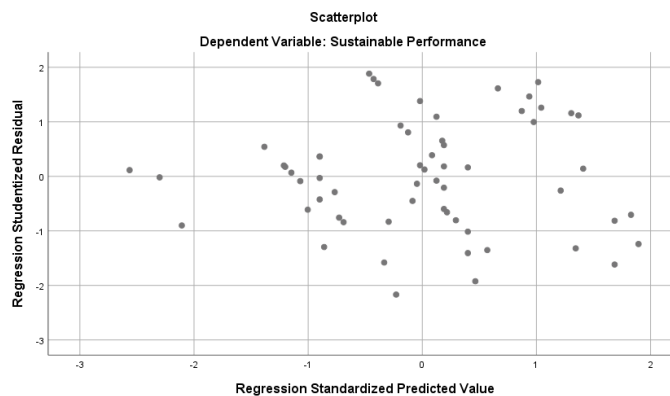

Figure 5. Heterokedasticity
Source: Processed data, 2025

Based on Figure 5 above, it can be seen that the scatterplots chart points are scattered randomly and scattered above and below the number 0 on the Y axis without forming a specific pattern. It can be concluded that heteroscedasticity does not occur.

Multicollinearity Test
According to Sahir (2021) the Multicollinearity Test is to see whether or not there is a high relationship between independent variables. To detect Multicoloniality, the *Variance Inflation Factor* (VIF) and *Tolerance* (TOL) methods were used. According to Ghozali (2021), the way to find out if the data has multicollinearity is to look at

the values of Tolerance and VIF, if the Tolerance value is ≥ 0.1 or the VIF value is ≤ 10, then the data does not experience multicollinearity, and vice versa.

Table 4. Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Green Corporate Govarnance	0,185	5,404
	Green Finance	0,185	5,404

Source: Processed data, 2025

Based on Table 4 above, it can be seen that the correlation values for the variables Green Corporate Govarnance and Green Finance have a tolerance value (0.185) > 0.1 and a VIF value (5.404) < 10 it can be concluded that the variables Green Corporate Govarnance and Green Finance do not have symptoms of multicollinearity.

Multiple Linear Regression Analysis
According to Ghozali (2021), multiple linear regression analysis is an analysis to determine the influence of independent variables that number more than one to one dependent variable.
The regression equation for the two predictors is:

$$Y = a + b_1X_1 + b_2X_2 + e$$

Table 5. Multiple Linear Regression Analysis Results

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-2,597	2,185
	Green Corporate Govarnance	0,525	0,134
	Green Finance	0,330	0,124

Source: Processed data, 2025

Sustainable Performance = -2.597 + 0.525 Green Corporate Governance + 0.330 Green Finance + e

Based on these equations, it can be concluded as follows:

1. The constant value obtained is -2.597, which means that if the variables of Green Corporate Governance and Green Finance are valued at 0, then the Sustainable Performance remains -2.597.
2. The value of the regression coefficient of the Green Corporate Governance variable has a positive value (+) of 0.525, meaning that every increase in the Green Corporate Governance variable by 1 unit, the Sustainable Performance will decrease by 0.525.

3. The value of the regression coefficient of the Green Finance variable has a positive value (+) of 0.330, meaning that for every increase in the Green Finance variable by 1 unit, the Sustainable Performance of MSMEs will increase by 0.330.

Partial Significance Test (t-test)
According to Ghozali (2021), the t-statistical test shows how far an individual explanatory variable is influential in explaining the dependent variable.

Table 6. Results of the t test

	Model	t	Itself.
1	(Constant)	-1,188	0,240
	Green Corporate Governance	3,905	0,000
	Green Finance	2,664	0,010

Source: Processed data, 2025

The results of the analysis showed that *Green Corporate Govarnance* had (X_1) $t_{calculated}$ of 3.905 < 2.00172 with a significance level of 0.000 < 0.05. This shows that Green Corporate Governance has a significant effect on Sustainable Performance. Furthermore, the Green Finance variable (X_2) has a calculated $t_{calculated}$ of 2.664 < 2.00172 with a significance level of 0.010 < 0.05, which means that Green Finance also has a significant effect on Sustainable Performance. Thus, from the two independent variables tested, it can be proven that Green Corporate Governance and Green Finance have a significant effect on Sustainable Performance.

Simultaneous Significance Test (F test)
Based on Nugroho & Haritanto (2022), the F test is used to test the influence of independent variables together on dependent variables.

Table 7. Test F
ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1482,385	2	741,193	111,121	.000b
Residual	380,198	57	6,670		
Total	1862,583	59			

Source: Processed data, 2025

Based on the results of the analysis, it can be seen that the F value$_{is}$ calculated as 111.121 > F_{table} 3.16 with a significance level of 0.000 < 0.05. This shows that the variables of Green Corporate Governance, and Sustainable Performance have a significant effect on Sustainable Performance.

Coefficient of Determination Test (R^2)
Based on the opinion Ghozali (2021), the determination coefficient essentially measures how far the model's ability to explain the variation of dependent variables.

Table 8. Coefficient of Determination Test (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892a	0,796	0,789	2,583

Source: Processed data, 2025

The Sustainable Performance of MSMEs can be explained by the variables of Green Corporate Governance and Green Finance of 79.6%, while the remaining 20.4% is influenced by other factors that come from outside the research model.

DISCUSSION

Green Corporate Governance on Sustainable Performance
Based on the results of the partial test on the influence of Green Corporate Governance, the calculation results show $t_{calculated}$ 3.905 < t_{table} 2, 00172 with a significance level of 0.000 < 0.05 which means that Green Corporate Governance has an effect and is significant on the Sustainable Performance of MSMEs. This, it can be concluded that H_1 is accepted. The results of this study are in line with previous research that found that good corporate governance strengthens board oversight of environmental issues and has a positive impact on sustainable performance Naciti (2020) and Oliveira & Santos (2023).

Green Finance for Sustainable Performance
Based on the results of the partial test on the influence of Sustainable Performance, the calculation results show $t_{calculated}$ 2.664 < t_{table} 2, 00172 with a significance level of 0.010 < 0.05 which means that Green Finance has a significant effect on Sustainable Performance. The results of this study are in line with previous research that shows that green finance initiatives in China have a positive impact on the environmental performance of companies, ultimately resulting in better financial outcomes (X. Xu & Xu, 2021).

Green Corporate Governance and Green Finance towards Sustainable Performance
Based on the results of the simultaneous test on the influence of Green Corporate Governance and Green Finance, the calculation results showed that the value of $F_{calculated}$ at 111.121 > F_{table} 3.16 with a significance level of 0.000 < 0.05 which means that Green Corporate Governance and Green Finance together

significant effect on Sustainable Performance Based on this, it can be concluded that H_3 is accepted. The results of this study are in line with previous research that shows that green finance initiatives in China have a positive impact on the company's environmental performance, ultimately resulting in better financial outcomes X. Xu & Xu (2021) and Al-Ghazali & Afsar (2021).

CONCLUSION
The results of the study show that partially, the Green Corporate Governance variable has a significant effect on Sustainable Performance, the Green Finance variable has a significant effect on Sustainable Performance. Simultaneously,

Green Corporate Governance and Green Finance have a significant effect on Sustainable Performance. From the results of the determination coefficient test, an Adjusted R Square value of 0.796 was obtained, which means that the Sustainable Performance of MSMEs can be explained by the variables of Green Corporate Government and Green Finance of 79.6%, while the remaining 20.4% is influenced by other factors that come from outside this research model.

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