# THE INFLUENCE OF GREEN INNOVATION AND CSR ON SUSTAINABLE DEVELOPMENT MEDIATED BY GREEN PERFORMANCE

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***ABSTRACT***

*This study examines the effect of applying green innovation and corporate social responsibility disclosure on sustainable development mediated by green performance. This study's population were all mining and manufacturing companies listed on Indonesia Stock Exchange in 2015-2019. The sample in this study is mining and manufacturing companies that have to publish the sustainability report. This study's analytical tool is SPSS version 25 and used a process program that is integrated into SPSS. The results showed that green performance could not be a mediating variable for green innovation and CSR on sustainable development. This research provides information about the positive impacts that the company will generate to achieve sustainable development goals. With the application of green innovation and green performance, the company will be able to increase sustainable development achievement.*

***Keywords**: Green innovation, CSR, Green performance, Sustainable Development*

## INTRODUCTION

In this developing economic era, companies are required to focus on profits and focus on the social and environmental conditions in which the company operates because the company's existence is inseparable from the interests of various parties. The company's operating activities often impact the surrounding environment, which in turn also affects the social conditions in that environment. This impact causes disruption. Environmental disturbances occur due to economic activities that use natural resources and energy as the principal capital in the economy's pro principle. Natural resources and energy have become victims of development progress due to siding with this economic progress.

Elkington (1998) believes that a good company is a company that focuses not only on the economy but also focuses on society (community) and the environment. Paying attention to the social and environmental impacts that may arise can affect the company in the long term. The company is considered to have carried out its operations following the community's existing regulations so that the company becomes more legitimate and the community increasingly accepts its performance.

The concept of sustainable development or sustainable development was first introduced in the world at the first UN conference in Stockholm in 1972 by the environmental sector, which was motivated by concerns about the future due to poverty and environmental problems. Sustainable development in Indonesia is regulated in Law no. 32 of 2009 concerning Environmental Protection and Management (UUPPLH), which contains sustainable development, which means conscious and strategic efforts that combine environmental, social and economic issues in a development plan to guarantee the needs of present and future generations. To achieve the goals of sustainable development.

Companies must find ways to reduce the company's negative impact on the environment to support sustainable development. One way to reduce the company's negative effect on the environment is by doing green innovation. Green innovation is an environmental strategy that involves a transformation in production procedures, reducing resource consumption and preventing pollution (Asadi et al., 2020).

CSR is a part of sustainable development, which represents the three main dimensions of sustainable development. CSR is a corporate social responsibility which is the company's commitment to maximizing long-term economic, social and environmental welfare through business practices, policies, and resources (Du et al., 2011).

Research on CSR and sustainable development has been done a lot. Research Hahn (2011), Riaeni (2016), Shahzad et al. (2020), Yuliasih (2020) stated that CSR has a positive impact on sustainable development. Mapisangka (2009) says that CSR is still included in its management, which causes its presence to not produce anything positive for the company's sustainability. Hariyani (2010) said creating CSR appears to be the result of the fact that each company's natural characteristic is to seek maximum profit and does not care about the welfare of workers, society, and the natural environment. While the research conducted by Abdelhalim & Eldin (2019) found that CSR does not have a long-term impact in developing countries, they suggest studying the relationship between CSR and sustainable development.

The company discloses CSR in the context of the company's responsibility to external parties (community and government) to maintain support and fulfil their information needs. Companies that apply green innovation and disclose CSR describe the company's performance.

Shahzad et al. (2020) concluded that all the CSR dimensions were significantly favourable for environmentally sustainable development. Shahzad also found that ecologically sustainable development positively boosted green innovation. The research findings indicate that CSR activities should be included in the organization's environmental strategy for green innovation because all CSR dimensions have a positive relationship with environmentally sustainable development. Unlike Shahzad's research, this research makes sustainable development the dependent variable.

Chen et al. (2018) concluded that companies seeking financial benefits in pursuing green innovation must have a long-term orientation when implementing green innovation. Therefore, in this study, researchers determined green innovation and CSR as independent variables. Researchers also added a new variable, namely green performance, as a mediating variable to mediate the effect of green innovation and CSR on sustainable development.

*Green performance is* used as a mediating variable based on the existing literature, which shows that environmentally friendly and committed to sustainability can reduce environmental degradation and drive green performance (Chang, 2011; Lopes et al., 2017).

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### Legitimacy Theory

The legitimacy theory contains the matter that companies are obliged to operate by the community's regulations so that the company intends that the company's behaviour is following existing norms (Brown & Deegan, 1998).

The concept of legitimacy is essential for companies in analyzing their relationship with the environment. Legitimacy theory based on company opinion seeks to conform to the social values that exist in its activities with the principles of behaviour that live in society. Because legitimacy is essential to the company, the problems arising from social norms and values and reactions to these constraints produce a focus on analyzing the selected company's behaviour concerning the environment (Dowling & Pfeffer, 1975).

Gray et al. (1996) stated companies that report on their companies' performance impact the social values in which these companies run. Ariesanti (2017) states that companies with good environmental performance and high disclosure will position them to be companies that have activities with benefits. The quality of this disclosure will help validate the community.

Companies use the company's sustainability report to convince the public that the company is operating by existing norms so that the community accepts the company's performance. A company issues a sustainability report in an accountable manner to disclose environmental, social and good management performance. The sustainability report is published to get legitimacy from the community. So that if a company does not disclose its CSR or does not publish a sustainability report, the company is considered not credible and is not regarded as legitimate by the community.

**Sustainable Development**

Based on Law No.32 of 2009, sustainable development means conscious and strategic efforts that combine environmental, social, and economic issues in a development plan to guarantee ecological integrity and safety, potential, welfare, and quality of life of the current generation and time. Will come. Sustainable development uses natural resources to fulfil the people's needs now and in the future and industries that recall them (Kushwaha & Sharma, 2016).

The objective of sustainable development is to facilitate the long-term use of resources and at the same time offer suitable living conditions for all (Hahn, 2011). It implies that there are no laws of nature that justify sustainable development, but it is an ethical decision to follow a sustainability policy.

Sustainable development has three main dimensions, including environmental, economic and social dimensions. Or better known as 3P, namely economy (profit), environment (planet) and social (people). The sustainable development principle ensures that development must be balanced between the economy, social life, and sustainable development must prioritize these three dimensions (triple bottom line development).

To achieve sustainable development, world leaders adopted the Sustainable Development Goals (SDGs) Agenda on 25 September 2015 at the UN headquarters. The SDGs are considered a global development agreement. The SDGs have 17 goals (goals), 169 targets, and 241 more comprehensive indicators(Sutopo et al., 2014).

**Green Innovation**

*Green innovation* is how a company can reduce the adverse effects of its operations on the natural environment (Chen et al., 2018). Green innovation is an environmental strategy that involves a transformation in production procedures, which consists of reducing resource consumption, preventing pollution, and implementing an environmental management system in business operations (Asadi et al., 2020).

The definition of green innovation refers to products, processes or management practices that aim to reduce environmental impact. Green innovation also takes its philosophical roots from sustainable development theory, which signifies the relationship between an organization's operations and its effects on the natural environment (Cancino et al., 2018). The main focus of green innovation is on reducing waste, preventing pollution, and implementing a system that focuses on environmental management (Eiadat et al., 2008).

Companies are said to have carried out green innovation if they had introduced or developed new products that increased energy savings, better pollution prevention, more waste recycling, or reduced raw material use during the previous three years (Roper & Tapinos, 2016).

**Corporate Social Responsibility**

*Corporate Social Responsibility* (CSR) is an effective strategy widely understood as a company or brand commitment to maximize long-term economic, social and environmental well-being through business practices, policies, and resources (Du et al., 2011).

CSR is mandatory for every company. It is stated in CHAPTER V Article 74 of Law Number 40 of 2007 concerning Limited Liability Companies ("UUPT"), which contains Social and Environmental Responsibility, in which companies whose operations are in the sector and related to SDA must carry out Social Responsibility and Environment.

When referring to sustainable development, CSR's essence is based on three dimensions: economic, social, and environmental (Zhang, 2019), which is only in line with the Triple Bottom Line of sustainable development (Elkington, 1998). So in reporting CSR, the guidelines that companies must adhere to is the Global Report Initiative (GRI).

GRI is an independent international organization that helps organizations and businesses take responsibility for their business activities by providing a common language to communicate those impacts. The newest generation of GRI is GRI G4 (fourth generation). GRI G4 consists of 91 indicators divided into three aspects: economic, environmental, and social. Where in the financial element, there are nine indicators, environmental factors, there are 34 indicators. Meanwhile, there are two sub-aspects in social aspects, namely employment (16 hands), human rights (12 indicators), society (11 indicators), and product responsibility (9 needles).

## Green Performance

*Green performance* describes the environmental impact, compliance with regulations, and organizational systems representing the company's ecological actions (Neely et al., 1995). The Green version refers to measuring the interaction between business and the environment(Olsthoorn et al., 2001).

*A variety of indicators can measure green performance,* including energy consumption, solid waste disposal and pollution, unnecessary waste (e.g. fuel, debris, operational machine tools), wastewater (e.g. oily wastewater, liquid waste from operations or cleaning), gas emissions, greenhouse gases (e.g. NOx, CO2, and SO2), the impact of infrastructure on the density of marine biology, employee recognition of environmental protection, enforcement and enforcement, overall green costs, and a company's green image (Jim et al., 2013).

## Hypothesis Development

The performance of green business management is impacted by two factors, namely: activities to improve social welfare and maintain the sustainability of natural resources (Molina-Azorín et al., 2009). Previous literature highlighted that organizations need to consider green innovation and use environmentally friendly technologies that demonstrate the practical use of resources while developing environmental efficiency and practices (Galdeano-Gómez et al., 2013). According to Albort-Morant et al. (2016), environmentally friendly technology offers two advantages for businesses; commercial advantages to produce environmentally friendly products and economic benefits that can increase competitiveness. In the current era, green innovation is driving environmental awareness and environmental sustainability.

*Green innovation* also takes its philosophical roots from sustainable development theory, which signifies the relationship between an organization's operations and its influence on the natural environment (Cancino et al., 2018). Companies seeking financial gain in pursuing green innovation must have a long-term orientation when implementing invention (Chen et al., 2018). Asadi et al. (2020) demonstrate the importance of green innovation in promoting sustainable performance. By doing green innovation, the company has paid attention to the environment in which the company operates. Paying attention to the environmental impacts that may arise and affect the company in the long term. The company is considered to have carried out its operations following existing community regulations so that the company becomes more legitimate and the community increasingly accepts its performance.

H1: Green innovation has a positive effect on sustainable development

CSR is a part of sustainable development, representing the three main dimensions of sustainable development (economic, social and environmental). CSR is the company's performance when creating a suitable environment (Suratno et al., 2006). If a large company's environmental performance, then the company will be seen as having a significant commitment to environmental preservation. Gray et al. (1996) said the company that reports its performance impacts the social value in which the company runs. Companies that carry out CSR disclose CSR activities that have been carried out in their annual reports. This disclosure will encourage the community's legitimacy, which in turn has an impact on the sustainability of the company.

Several studies have shown that CSR has a positive influence on sustainable development. According to Hahn (2011), responsible corporate behaviour can (although limited) promote sustainable development. Riaeni (2016) found that the vision of sustainable development is embodied in the CSR program. Shahzad et al. (2020) found that all CSR dimensions have a positive relationship with environmentally sustainable development. According to Yuliasih (2020), CSR disclosure has a positive effect on sustainable development goals. Hariyani (2010) say CSR exists as a result of the fact that every company looking for maximum profit and does not care about the welfare of workers, society, and the natural environment. According to Abdelhalim & Eldin (2019), CSR policies do not have a long-term impact in developing countries, so they suggest studying the relationship between CSR and sustainable development. By incorporating sustainable development systematically into company CSR practices, CSR can have long-term socio-economic impacts, such as poverty alleviation and job creation.

H2: CSR has a positive effect on sustainable development

Existing literature shows that organize organizations environmentally and committed organizations can reduce environmental degradation and drive green performance (Chang, 2011; Lopes et al., 2017). Cai and Li (2018) found the determinants of green innovation are environmental regulations, market pressure and competition, and customer green demand, which affect company performance. He also found that green innovation affects company performance. Guoyou et al. (2013) emphasizing green innovation impact the competitive performance of environment-based organizations. Companies that pay attention to the environmental effects are considered to be more legitimate for the community.

H3: Green innovation has a positive effect on green performance

Patten (1991) stated that there is a negative relationship between financial performance and company performance. Al-Tuwaijri et al. (2004) said a significant positive association of economic performance on CSR with environmental performance (green performance).

CSR is the company's performance to create a good environment (Suratno et al., 2006). If the company's environmental performance is significant, it will be seen as having a big commitment to ecological sustainability. Green performance describes the environmental impact, compliance with regulations, and organizational systems representing the company's environmental actions (Neely et al., 1995). Green performance refers to measuring the interaction between business and the environment (Olsthoorn et al., 2001).

H4: CSR has a positive effect on green performance

Environmental sustainability can be achieved by implementing green performance. Companies looking for financial gain in pursuing green innovation must have a long-term orientation when implementing invention (Chen et al., 2018) for corporate behaviour to balance the three dimensions of development (economic, social, environmental). It requires a deliberate effort to monitor and assess the interactions between these dimensions. (Abdelhalim & Eldin, 2019) Therefore, it is crucial to know whether green performance can be a mediating variable for sustainable development.

H5: Green performance has a positive effect on sustainable development

Environmental sustainability is one of the main strategies to encourage green innovation to achieve corporate sustainability (Albino et al., 2009). Shahzad et al. (2020) suggest that CSR activities should be included in the organization's environmental strategy for green innovation because all CSR dimensions have a positive relationship with environmentally sustainable development. With increasing environmental awareness in society, consumers tend to choose environmentally friendly products, which means choosing companies that behave in an environmentally friendly manner (Chen & Chen, 2008). In this regard, the CSR strategy meets consumer expectations. As a result of implementing this CSR strategy, companies are encouraged to consider the concept of green performance and then affect the company's sustainability.

H6: Green performance mediates the influence of green innovation and CSR on sustainable development

H6a: Green innovation mediated by green performance affects sustainable development

H6b: CSR that is mediated by green performance affects sustainable development

## RESEARCH METHODOLOGY

The type of research used is a quantitative approach. This study uses a process program that is integrated with SPSS to test the mediating variables.

The form of the equation to test the hypothesis in this study is based on Baron & Kenny (1986) is:

a. For the independent variable, Green innovation

$\mathbf{PB = CPB + \gamma GI + \varepsilon PB}$ (Equation I)

$\mathbf{GP = CGP + \alpha GI + \varepsilon GP}$ (Equation II)

$\mathbf{PB = CPB + \gamma' GI + \beta GP + \varepsilon PB}$ (Equation III)

b. For the independent variable of CSR

$\mathbf{PB = CPB + \gamma CSR + \varepsilon PB}$ (Equation I)

$\mathbf{GP = CGP + \alpha CSR + \varepsilon GP}$ (Equation II)

$\mathbf{PB = CPB + \gamma' CSR + \beta GP + \varepsilon PB}$ (Equation III)

Information:
PB = Sustainable Development
GI = Green innovation
CSR = Corporate Social Responsibility
C = regression constant
*α1, α2* = GI and CSR regression coefficients on green performance
β = green performance regression coefficient on sustainable development controlling green innovation
γ = GI and CSR regression coefficients on sustainable development
γ '= GI and CSR regression coefficients on sustainable development by controlling green performance
ε = error

### Dependent Variable

Sustainable development means conscious and strategic efforts that incorporate the environment, social and economy into development plans to ensure environmental integrity and safety, potential, welfare, and quality of life for present and future generations.

The formula used in measuring the disclosure index for sustainable development goals is:

$$\textbf{PBIj} = \frac{\sum Xyi}{ni}$$

Information:
PBIj = company sustainable development index j
∑Xyi = number of items disclosed
ni = number of disclosure items for a company (17 items based on sustainable development goals)

**Independent Variable**

1. *Green innovation;* is a way a company can reduce the adverse effects of its operations on the natural environment (Chen et al., 2018). It involves a transformation in production procedures, which consists of reducing resource consumption, preventing pollution, and implementing an environmental management system in business operations (Asadi et al., 2020).
   The score of 1 = if the company has introduced or developed a new product that increases energy savings, better pollution prevention, more waste recycling or a reduction in the use of raw materials during the previous three years. Value 0 = if the company does not do green innovation (Roper & Tapinos, 2016).
2. CSR; is an effective strategy as a company committed to maximizing long-term economic, social and environmental well-being (Du et al., 2011).
   The formula used in measuring the CSR disclosure index is:

$$\textbf{CSRIj} = \frac{\sum Xyi}{ni}$$

Information:
CSRIj = CSR index of company j
∑Xyi = number of items disclosed
ni = number of disclosure items for a company (91 items based on GRI G4)

**Mediation Variables**

*Green performance;* describes the effectiveness and efficiency of the company's environmental actions (Neely et al., 1995). Green performance refers to measuring the interaction between business and the environment (Olsthoorn et al., 2001).

The formula used in measuring green performance is:

1. ***Energy productivity***
$$= \frac{Sales}{Total\ of\ Direct\ and\ Indirect\ energy\ Consumed}$$
2. ***Carbon productivity***
$$= \frac{Sales}{Total\ of\ CO2\ and\ equivalent\ CO2\ Emission}$$

## RESEARCH FINDINGS

### Descriptive Analysis

Table 1
*Frequency Statistics for Green innovation*

**GI**

| | Frequency | Per cent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid .00 | 21 | 30.0 | 30.0 | 30.0 |
| 1.00 | 49 | 70.0 | 70.0 | 100.0 |
| Total | 70 | 100.0 | 100.0 | |

Source: secondary data processed (2021)

Based on table 1, the value of 0 on the green innovation variable means the company does not do green innovation, while the value 1 means green innovation. Forty-nine companies run green innovation, and 21 companies don't run green innovation. The percentage of companies that did green innovation was 70%, and those that didn't do green innovation were 30%. It shows that most of the sample companies undertake green innovation.

Table 2
*Descriptive Statistics Results*

| Variable | N | Minimum | Maximum | Mean | Standard deviation |
|---|---|---|---|---|---|
| CSR | 70 | 0.13 | 1.00 | 0.4955 | 0.17294 |
| GP | 70 | 0.0032 | 599,871.8429 | 41,122,3660 | 123,467,1544 |
| PB | 70 | 0.00 | 1.00 | 0.7014 | 0.23250 |

Source: secondary data processed (2021)

Based on table 2 displays descriptive statistical results for the Corporate Social Responsibility (CSR) variable. ThCSR's value ranges from 0.13 to 1, which means that the percentage of CSR values is between 13% and 100%. The mean (average) value of CSR is 0.4955, which means that the average sample company discloses CSR as much as 49.55% or as items of the existing 91 disclosure items. CSR's standard deviation value is 0.17294, which indicates that the average deviation of CSR to the average value is 17.29%.

The descriptive statistics for the Green performance (GP) variable show the most minor and most significant values , respectively 0.0032 and 599871.8429. The GP minimum value is 0.0032. Its shows that its energy productivity is low, where sales are low, and the energy consumption is high. Meanwhile, the maximum value of GP is 599,871.8429. It shows that the company's carbon productivity is high, where sales are high, and small companies' total emissions are high. The mean (average) value of GP is 41,122.43327, which means that every 1 tonne of emission or 1 GJ of energy used by the company will be valued at IDR 41,122.43327.

The Sustainable Development (PB) variable's descriptive statistical results show the most minor and most significant values , respectively 0 and 1, which means the percentage of PB values is between 0% to 100%. The mean (average) PB value is 0.7014, which means that the sample companies average carry out PB goals as much as 70% or as many as 12 of the 17 existing sustainable development goals. The standard deviation value that PB has is 0.23250, which indicates that the average deviation of PB to its average value is 23.25%.

**Test of Significance of Individual Parameters (t-test)**

Table 3
*T-Test Results*

| Model | Coefficient | Don't count | Sig. |
|---|---|---|---|
| GI | | | |
| The equation I (GI → PB) | γ | 4,5546 | 0,000 |
| Equation II (GI → GP) | α | -0.8031 | 0.4247 |
| Equation III | | | |
| GI → PB | γ' | 5,2184 | 0,000 |
| GP → PB | β | 3,4531 | 0.0010 |
| CSR | | | |
| Equation I (CSR → PB) | γ | 0.1201 | 0.9047 |
| Equation II (CSR → GP) | α | -0.1349 | 0.8931 |
| Equation III | | | |
| CSR → PB | γ' | 0.1655 | 0.8690 |
| GP → PB | β | 2,4998 | 0.0149 |

Source: secondary data processed (2021)

**Discussion**

**The influence of green innovation on sustainable development**

Based on the t-test results in table 3 for the independent variable GI in the equation I, it can be seen that the t value for equation I is 4.5546 and a significance value of 0.000. Thus green innovation has a significant positive impact on sustainable development.

This study supports the legitimacy theory wherein the legitimacy theory focuses on corporate communication with the community so that the company seeks to conform to the social values that exist in its activities with the norms of behaviour in the social system of society.

The company carries out green innovation by developing new products that increase energy savings and better pollution prevention. By conducting green innovation, the company reduces the adverse effects of its operations on the natural environment.

*Green innovations are* one way for companies to achieve sustainable development. A company is considered legitimate (legitimate) if its environmental performance is good and disclosure is high. Therefore, the company's disclosure is doing innovation in its sustainability report is a strategy to create good value for the company in fulfilling information.

The accounting treatment of green innovation in this study is the disclosure of the sustainability report. The sustainability report displays information on whether the company has innovated by paying attention to the environment in which the company operates. This disclosure is in line with SDGs point 10. Therefore, companies that carry out green innovation affect sustainable development.

This study follows the research of Shahzad et al. (2020), whose results have the influence of green innovation on sustainable development. This study also follows the analysis of Asadi et al. (2020), which displays the importance and potential of green innovation in achieving sustainable development.

**The influence of CSR on sustainable development**

Based on the results of the t-test in table 3 for the independent variable CSR in equation I, the t value is 0.1201, and the significance value is 0.9047. Thus, CSR on development does not have a significant effect. The results of this study are not in line with the legitimacy theory. According to the theory of legitimacy, the company must run according to the community's regulations to try to operate with due regard to social norms in society.

Ariesanti (2017) state companies with prominent disclosures would position them to be companies that have activities with benefits, and the quality of this disclosure will help validate the community. CSR disclosure in this study is still deficient. The descriptive statistical analysis results show that the minimum value for CSR is 0.13, or only 12 items are disclosed from the existing 91 items. It means that information about CSR that the company presents cannot be seen about sustainable development.

This result agrees with Abdelhalim & Eldin (2019), which states that CSR does not have a long-term impact in developing countries, so they suggest studying the relationship between CSR and sustainable development. This research is also in line with Mapisangka (2009), which states that it is still and Hariyani (2010).

**The influence of green innovation on green performance**

Based on the t-test results in table 3 for the independent variable GI in equation II, the t value is -0.8031 and a significance value of 0.4247. Thus there is no significant impact from green innovation and green performance. This result is not following the legitimacy theory,

the legitimacy theory of companies that pay attention to environmental effects. It is considered more legitimate for the community. By conducting green innovation, companies should reduce the adverse impacts of their operations on the natural environment.

*Green performance* refers to measuring the interactions between business and the environment (Olsthoorn et al., 2001). Green innovation does not affect green performance in this study because many companies have not implemented an excellent green version, such as waste management and energy efficiency. When viewed from the quantitative indicators of green performance, namely a measure based on empirical data and numerical results that characterize performance in physical and financial form. The physical character in this study is productivity.

This research is not in line with the study conducted by Chang, 2011; Lopes et al. (2017), which states that environmentally friendly and environmentally friendly organizations can reduce environmental degradation and drive green performance.

### The effect of CSR on green performance

Based on the t-test results in table 3 for the independent variable CSR in equation II, the t value is -0.1349 and a significance value of 0.8931. This result is not following the legitimacy theory. Ariesanti (2017) says that a company with good environmental performance and significant disclosure will position it as a company with activities with benefits. The quality of this disclosure will help validate the community. So that if a company does not disclose its CSR, the company is considered not credible and not regarded as legitimate by the community.

CSR is the company's performance to create a good environment (Suratno et al., 2006). If a large company's environmental performance, then the company will be seen as having a significant commitment to environmental sustainability. CSR disclosure in the sustainability report shows that management has contributed to the company's performance by providing broader information to information users to display an overview of the company's condition, which will impact the company's green performance.

CSR does not affect green performance in this study due to the low disclosure of corporate CSR in the sustainability report and the number of companies that have not implemented good green performance.

These results do not match the research Al-Tuwaijri et al. (2004) the result is a significant positive relationship of economic performance on CSR with environmental performance (green performance).

### Effect of green performance on sustainable development

Based on the t-test results in table 3 for the independent variables GI and CSR in equation III, the t value is 3.4531 and the significance value and 0.0010, respectively. 2.4998 and a significance value of 0.0149. Thus it can be concluded that green performance affects sustainable development. This study supports the legitimacy theory in which the legitimacy theory of a company is considered to be more legitimate (legitimate) if the environmental performance is good and the disclosure is high. Therefore, disclosing green performance in a sustainability report is a strategy to create good value for the company in fulfilling information.

Disclosure of energy consumption and carbon consumption in implementing green performance, which affects sustainable development, shows that management has been able to increase legitimacy by providing broader information in the sustainability report.

This study follows Abdelhalim & Eldin's (2019), which results in companies seeking financial benefits and pursuing sustainable development must apply green performance to monitor and assess the interactions between development dimensions (economic, social, environmental).

### The influence of green innovation on sustainable development mediated by green performance

Based on the criteria for the mediation variable test from Baron & Kenny (1986), a variable is considered a mediating variable. If the coefficients $\alpha$, $\gamma$, and $\beta$ are significant. That is, where the independent variable affects the mediator, the independent variable impacts the dependent. The mediator variable has dependent implications even though the independent variable does not significantly affect the dependent. On the independent variable of green innovation in table 3, the coefficient $\alpha$ is not significant, and the coefficient $\gamma$ and $\beta$ are substantial. So it can be concluded that green performance cannot be a mediating variable for green innovation and sustainable development.

*Green performance* does not mediate the relationship between green innovation and sustainable development because green performance only refers to measuring the interaction between business and the environment, which means it does not represent the three main sustainable development dimensions.

This result is inconsistent with Albino et al. (2009), who stated that environmental sustainability is one of the main strategies to encourage green innovation to achieve corporate sustainability where environmental sustainability is described by green performance.

**The effect of CSR on sustainable development mediated by green performance**

Based on the criteria for the mediation variable test Baron & Kenny (1986), for the independent variable CSR, the coefficient $\alpha$ and $\gamma$ is not significant, and the coefficient $\beta$ is substantial. It does not qualify for green performance to be a mediating variable in the relationship between CSR and sustainable development.

*Green performance does* not mediate the relationship between CSR and sustainable development. It means that CSR judged by green performance does not affect sustainable development mediated by green performance.

This result is not theoretical Shahzad et al. (2020) states that CSR incorporated into the organization's environmental strategy has a positive relationship with environmentally sustainable development.

## CONCLUSION

The results showed that green performance could not mediate the relationship between green innovation and CSR on sustainable development. This study provides information about the positive impacts that the company will have to achieve its sustainable development goals. By implementing green innovation and green performance, companies will be able to increase sustainable development achievement.

Based on the results of this study, it is hoped that companies will have more awareness to participate in preserving the environment to become a form of corporate CSR on the climate because companies that pay attention to the impact on the environment have contributed to the achievement of sustainable development goals.

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