THE American Journal of Humanities and Social Sciences Research (THE AJHSSR) 2024
E-ISSN: 2581-8868
Volume-07, Issue-03, pp-173-184
www.theajhssr.com **Crossref DOI: https://doi.org/10.56805/ajhssr**
Research Paper **Open Access**

THE EFFECT OF ENVIRONMENTAL TAXES, FOSSIL FUEL USE AND SUSTAINABILITY REPORTING AS INTERVENING VARIABLES ON CARBON EMISSIONS

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ABSTRACT

The purpose of this study focuses on the sustainability of carbon emissions and the role of environmental taxes, fossil fuel use, sustainability reporting and their mediation on carbon emissions. Descriptive quantitative method was used in this study. Data collected through purposive sampling technique from sustainability reports of mining and coal companies that have been listed on the Indonesia Stock Exchange. The Partial Least Square (PLS) method, supported by the Smart PLS version 4 application, was used to process the data in this study. The results show that environmental taxes and fossil fuel use do not significantly affect carbon emissions that still cause global warming, then the results of environmental taxes on sustainability reporting and sustainability reporting on carbon emissions have a significant effect. Meanwhile, the mediation of sustainability reporting on environmental taxes on carbon emissions has a positive effect on corporate sustainability.

KEYWORDS: Environmental Tax, Fossil Fuel Use, Sustainability Reporting and Carbon Emissions.

1. INTRODUCTION

Carbon emissions have become a serious threat to the world including Indonesia, because abundant emissions into the air have caused significant climate change and adverse environmental impacts (Abdul Majid et al., 2023). The use of fossil fuels can produce chemical compounds and pollution that have a negative impact on environmental conditions, such as the use of vehicles that are mostly fueled by fossil fuels, namely petroleum (Ichsan et al., 2023). Environmental tax is a form of real step from the government in maintaining a balance between economic development and preservation of environmental functions (Kristanti et al., 2022). The effect of sustainability reports on environmental taxes is mainly related to the disclosure and transparency of companies in managing environmental effects and controlling the negative effects caused to the environment (Kristanti et al., 2022). Thus, sustainability reports can be an effective tool in monitoring and reporting the company's environmental performance, including in terms of reducing carbon emissions and applying environmental taxes (Sudjono & Setiawan, 2022). Thus, sustainability reports can be an effective tool in monitoring and reporting the company's environmental performance, including in terms of reducing carbon emissions and applying environmental taxes (Sudjono & Setiawan, 2022a).

The mining and coal industry in Indonesia is the largest contributor to CO2 emissions in developing countries, so it is important to analyze the disclosure of CO2 emissions in the mining company sub-sector in Indonesia in supporting government programs to realize the development goals of sustainability programs and reduce the volume of greenhouse gas emissions (Ayu Cahya Wati, 2022). The International Energy Agency (IEA) reported that in 2021, energy sector emissions in Indonesia reached around 600 million tons of carbon dioxide, making Indonesia the ninth largest CO2 emitter in the world. However, per capita energy emissions are only 2 tons, half the global average (International Energy Agency (IEA), 2023).

Mining and coal companies listed on the Indonesia Stock Exchange are only 33 with a total of 84 companies that publish sustainability reports. The rest of the company does not continue its disclosure or has not issued a Sustainability report. Companies are reluctant to make their sustainability reports because there are several aspects that influence them. First, the company is not clear in managing its business or activities and is not committed to good corporate governance. The second factor is that from the company's point of view, sustainability reports are like additional costs that must be incurred by the company (Rotua Aprilya Tobing et al., 2019) .

Previously, research has been conducted on sustainability reporting, environmental taxes and fossil fuel use on carbon emissions. Research conducted by (Ramanathan & Isaksson, 2023) mentioned that sustainability reporting can provide a basis for companies to measure the company's performance to choose a report that its sustainability impact can be accurately identified. Meanwhile, according to (Khatri & Kjærland, 2023) states that the practices and initiatives in the company's existing sustainability reports must be considered to have a complementary impact on environmental performance.

According to (Farooq et al., 2023) in his research shows that environmental taxes have a significant effect on corporate carbon emission income, this can prevent the development of activities that produce pollution and force companies to preserve the environment. From the principle of prudence in corporate accounting in addressing uncertainties and risks in dealing with the environment that has been sufficiently considered (Yanti et al., 2022). Meanwhile, the results of research from (Wolde-Rufael & Mulat-Weldemeskel, 2020) states that strict environmental policies and environmental taxes can lead to a reduction in CO2 emissions indicating that a country's environmental performance can reduce CO2 emissions associated with its strict environmental policies and environmental taxes highlighting their important role in environmental mental externalities.

According to (Farooq et al., 2023) in his research shows that environmental taxes have a significant effect on corporate carbon emission income, this can prevent the development of activities that produce pollution and force companies to preserve the environment. From the principle of prudence in corporate accounting in addressing uncertainties and risks in dealing with the environment that has been sufficiently considered (Yanti et al., 2022). Meanwhile, the results of research from (Wolde-Rufael & Mulat-Weldemeskel, 2020) states that strict natural approaches and natural charges can lead to a diminishment in CO2 outflows demonstrating that a country's natural execution can diminish CO2 outflows related with its strict natural approaches and natural charges highlighting their vital part in natural mental externalities.

Research conducted by (Soku et al., 2023) on Fossil Fuel Use in Europe, states that the use of natural gas and petroleum also has a significant impact on carbon emissions, the use of these fuels can increase the volume of carbon emissions. The results of the study are also similar to the results of the study of (Han Wang & Dongming Zhang, 2023) that the adoption of green energy goes hand in hand with a significant decrease in fossil fuel mining. This relationship is multifaceted, affected by components such as the expanding utilize of renewable vitality sources, expanded natural mindfulness, and fast innovative propels.

Research on the effect of sustainability reporting on environmental taxes, and the use of fossil fuels on carbon emissions has been widely conducted, **but** those that connect sustainability reports on environmental taxes, the use of fossil raw materials to carbon emissions of companies in Indonesia and the role of sustainability reports in mediating environmental taxes and carbon emissions are still very limited, so it needs further research.

The urgency of this research is to identify the level of disclosure of the results of carbon emissions in mining and coal companies in Indonesia in a form to support and realize sustainable development goals and carry out government programs for net zero emissions in Indonesia.

2. LITERATURE REVIEW

Legitimacy Theory

According to legitimacy theory, the company should strive to carry out all its activities or operations in proportion to the appropriate regulatory standards that apply in the society in which the company operates (Dowling & Pfeffer, 1975). Community recognition is a form of legality for companies in disclosing sustainability reports that will provide a positive picture for stakeholders, by understanding the level of support or rejection of efforts to reduce carbon emissions, governments or organizations can adjust their strategies according to the wishes of the community, so as to support the survival of the company and can motivate the company to be accepted by the community that if the companys activties and performance are in accordance with standards, because legitimacy has to support the survival of a company (Nishitani et al., 2021).

Legitimacy theory states that the existence of organizations and their activities are legitimized in the eyes of society. Companies should be able to report on their activities if management considers it important to meet society's expectations, including in terms of the environment. Thus, legitimacy theory influences corporate behavior related to environmental taxes through efforts to maintain a legitimized relationship with society (Dradra, 2024). Legitimacy theory focuses on the interaction between the company and its social environment, which means that there is a social relationship between the companyand the environment, that the actions taken are appropriate or consistent, and the belief that something is wrong and the company is able to adjust to customary laws, cultural values, beliefs and socially established meanings. Environmental disclosure is one way for companies to gain validity, in the context of fossil fuel use, legitimacy theory can be used to explain the reasons for disclosing carbon emissions by carbon-intensive companies (Kurniawan & Rusli, 2020).

Environmental Tax

Environmental tax is a tax imposed on companies that cause environmental damage such as air, water, and land pollution, and has the aim of reducing adverse effects and increasing corporate awareness of the importance of protecting the environment. According to (Aisyah et al., 2020) in their research explained, carbontax is an environmental tax obtained from the use of fossil fuels such as gas, coal, and oil because it can increase the price of these fuels, the price increase has an impact on reducing the demand for fossil fuels in accordance with the law of demand (Galih et al., 2023).

Fossil Fuel Usage

The utilize of powers such as coal, oil, and common gas could be a major asset in Indonesia. The utilize of these powers can cause nursery gas emanations and contribute to climate alter and natural impacts, companies that want to reduce the negative impact of the use of fossil fuels on the environment can develop more effective strategies to reduce carbon emissions and reduce other negative effects (Sudjono & Setiawan, 2022a). The use of fossil fuels still dominates the energy sector, but efforts to reduce dependence on fossil use and increase the use of renewable energy to make a major focus in national energy policy, with awareness of the negative impacts of fossil fuels, steps to reduce CO2 emissions or pollution and encourage the transition to clean energy sources and sustainability are increasingly important (Timothy Q. Donaghy et al., 2023).

Sustainability Reporting

A Sustainability report could be a report that does not as it were contain monetary execution data, but moreover non-financial data such as natural and social activities (Pujiningsih, 2020). The data can result within the improvement of maintainability announcing, which is defined as formal communication with inner and outside partners that points to supply data almost the company's execution performance (Maria Roszkowska-Menkes et al., 2024). This is also relevant in the context of sustainable development where sustainability reports are considered as a medium of information regarding the contribution of issuers and listed companies to the company's achievement of its sustainable development goals (SDGs) (Fandira et al., 2022). Sustainability reporting provides benefits for mining and coal companies, namely by implementing sustainable practices, companies can minimize the adverse environmental, social, and governance impacts caused by their operations. (Lutfiati Rohmah & Ari Sudhana, 2022)Disclosure of sustainability reports in Indonesia is still voluntary, which means that companies disclose it voluntarily, and there are no regulations that require it, so many companies have not been able to disclose their sustainability reports (Madani & Gayatri, 2021).

Carbon Emissions

Carbon emissions are carbon dioxide emissions that lead to air space, which contribute to global warming and drastic temperature changes produced by the energy and transportation sectors, which make greenhouse gas emissions increase every year (Galih et al., 2023). Carbon emissions also occur due to the very high and large use of coal and fuel oil, so that these conditions cause air pollution that can interfere with human activities (Kristanti et al., 2022). Because of this, the reduction of carbon emissions can be a standard for policy evaluation and believes that the imposition of a carbon tax is expected to achieve the government's target of realizing sustainable development goals (Jin Hu et al., 2023).

Framework of Thought

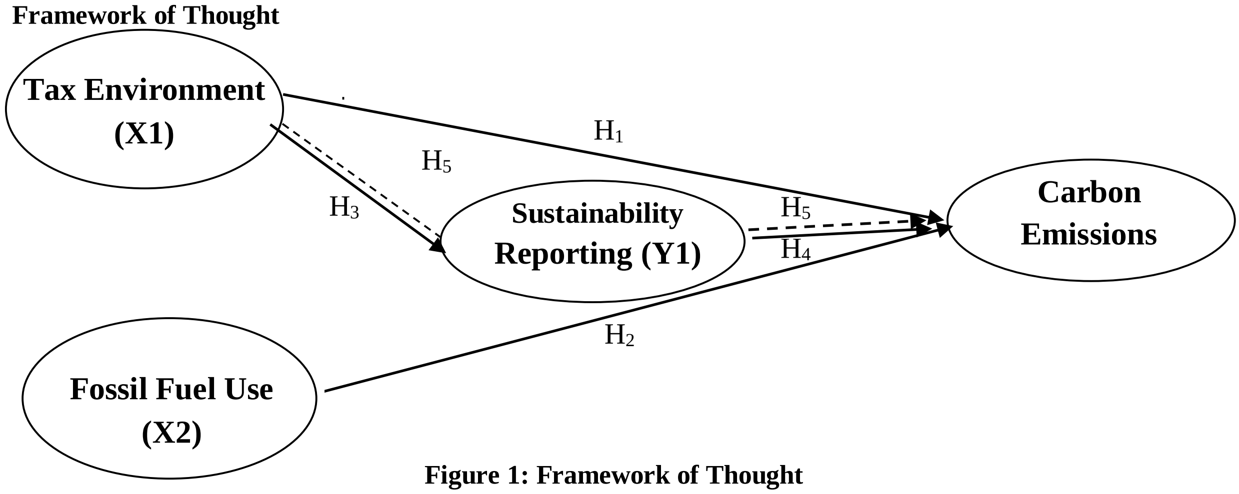

Figure 1: Framework of Thought
Processed by researchers in 2024

Hypothesis

The Effect of Environmental Taxes on Carbon Emissions

Environmental tax is a form of accountability for company operations to society through government regulations (Adi Pratama et al., 2022). According to (Bashir et al., 2022) to address the challenges of environmental degradation, one of the most debated issues is the application of environmental taxes and environmentally related technologies and their impact on the demand for renewable energy, which is increasingly popular because it is a less active and sustainable energy source, with the application of environmental taxation can encourage further development in the renewable energy sector. Previous research from (Soku et al., 2023) mentioned that environmental tax policies positively have the potential to reduce carbon emissions and promote sustainable development. This result is consistent with research from (Luca Lambertini et al., 2020) that the application of environmental taxes can significantly encourage green investment and investment in renewable energy. Based on these studies, the hypothesis can be formulated as follows:

H1: It is suspected that there is a statistically positive relationship between environmental taxes and carbon emissions.

Fossil Fuel Use on Carbon Emissions

The imposition of tariffs on fossil fuel use can be considered a relatively cost-effective climate policy instrument, as it has succeeded in reducing emissions within its environment (Thomas Sterner et al., 2018). Fossil fuels, such as oil, coal, and natural gas, are sources of energy that are widely used in the production and transportation process, but their use will also increase carbon emissions (CO2), which is a greenhouse gas that has a negative impact on the environment (Asyari & Hernawati, 2023). The study conducted by (Galih et al., 2023) mentioned that variables that affect the occurrence of global warming and the onset of global warming due to the use of natural gas and oil. (Martins et al., 2021) moreover contends that the intertemporal relationship caused by the utilization of coal, oil, and characteristic gas in carbon outflows within the comes about of his inquire about states that positive causality is recognized, within the sense that fossil fuel utilization causes an increment in carbon dioxide emanations. Based on these thinks about, the theory can be defined as takes after:

H2: Positive effect of fossil fuel use on carbon emissions is suspected.

The Effect of Environmental Taxes on Sustainability Reporting

Many companies use social responsibility as a form of loss impact of their activities including tax avoidance, therefore the government decided for each company to issue its sustainability report to improve the economy and corporate image. In disclosing its social responsibility, the company is able to moderate the negative effect in the total sustainability disclosure of the company's activities in its annual report (Dr. Amrie Firmansyah at al., 2021). By strengthening regulations on companies, it is hoped that it can involve all stakeholders with the aim of protecting social nature and to prevent global warming by positively supporting the application of environmental tax rates in Indonesia. In his research (Sudjono & Setiawan, 2022b) revealed that in the development of an effective environmental tax implementation chart is to involve stakeholders who have mutual integrity with each other in the policy of implementing sustainable reports that have been implemented by Indonesia.

H3: It is suspected that there is a positive influence between environmental taxes on Sustainability Reporting.

The Effect of Sustainability Reporting on Carbon Emissions

The disclosure of sustainability reports in companies is very useful for stakeholders to know the company's activities in its sustainability goals, while carbon emissions are the result of the company's activities that cause harm to the environment and surrounding communities. The use of sustainability reports must go through an audit process. It is not only an audit of the financial statements that can present fairly or not in accounting principles (Trisyanto, 2020). If there are additional provisions that make it possible to calculate the level of carbon emissions generated by each company, it should be noted that the party responsible for re-examining the carbon emissions reported by the company is responsible for avoiding tax avoidance. In his research (Sudjono & Setiawan, 2022) explained that to effectively disclose sustainability reports on company activities. It takes a consultant and the role of auditors and independent examiners in supporting the disclosure of its:

H4: It is suspected that there is a positive influence between Sustanability Reporting and Carbon Emissions.

The Effect of Environmental Taxes on Carbon Emissions mediated by Sustainability Reporting Disclosure

Some of the principles in implementing environmental taxes include implementing a carbon tax to ensure effective implementation, and the need for transparency and public information such as corporate sustainability reports (Kurular, 2020). Sustainability reporting is an organizational measurement practice that presents the economic, environmental, and social impacts made by the company to increase the company's transparency and accountability to stakeholders, including the influence on the environment (Kusumawati & Murwaningsari, 2023). Sustainability reporting that discloses carbon emissions serves as an action that positively affects the company's carbon emissions, such as in the report on the application of environmental taxes to carbon emissions that can be mediated by sustainability reporting that has been implemented through carbon taxes intended to reduce carbon emissions generated by the company (Nur Fathia & Virna Sulfitri, 2023). Research from (Al Shammre et al., 2023) has shown that there is a nonlinear relationship between environmental taxes and carbon emissions (CO2), with results showing that environmental taxes can reduce carbon emissions (CO2) and a positive relationship between the two variables. Disclosure of sustainability reporting that discloses carbon emissions and actions to reduce them will increase transparency and corporate accountability to the environment (Nur Fathia & Virna Sulfitri, 2023). Based on these studies, the hypothesis can be formulated as follows:

H5: It is suspected that there is a positive relationship between sustainability reporting mediated by environmental taxes and carbon emissions.

3. METHODS

The method in this study uses a quantitative descriptive approach. The population of this study is a mining and coal energy sector company consisting of 33 companies listed on the Indonesia Stock Exchange from 2020 to 2022 and a total of 84 samples collected through purposive sampling method. This study uses the Partial Least Square (PLS) method with the SmartPLS version 4 application. The data analysis was carried out in three stages, namely with external and internal analysis and hypothesis testing.

4. RESULTS AND DISCUSSION

Research Results

1. Outer Model Evaluation (Measurement Model)

a) Convergent Validity Test

Ensuring that each indicator value for each variable should have a high value type, or the right type of relationship is the goal of convergent validity. If the mutating factor value is greater than 0.70. Indicators in the study are considered valid. However, according to (Ghozali., 2014) the loading factor value of 0.50 to 0.60 is considered very appropriate for early stage research.

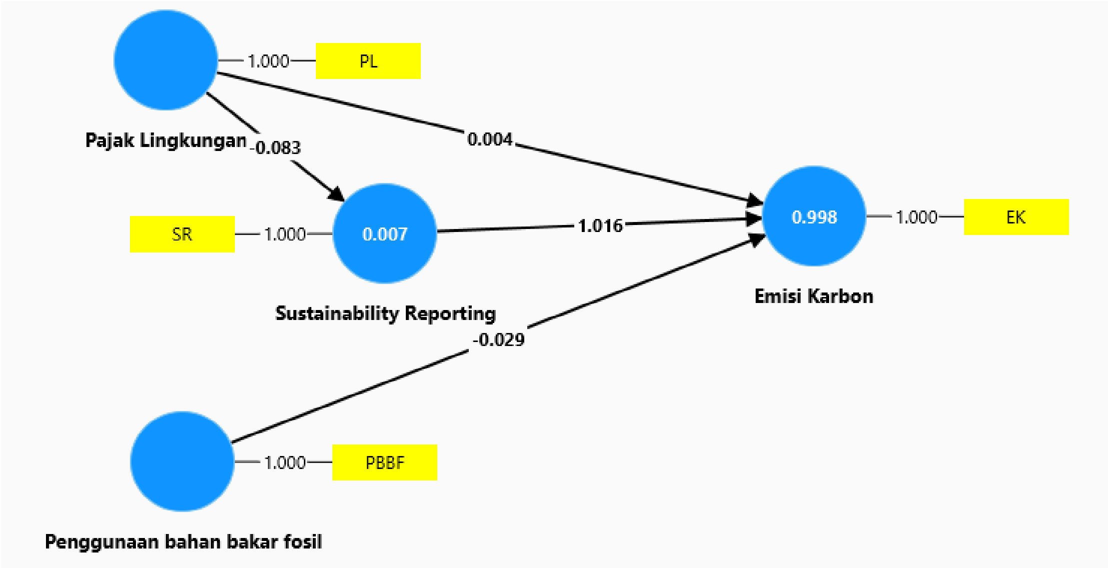

Figure 2. Outer Model Test Results

When viewed in Figure 2, it can be seen that all variables in the research indicators have a correlation value greater than 0.70 so they are considered reliable.

b) Discriminant Validity (Average Variance Extracted (AVE))

The average variance extracted (AVE) value is tested to evaluate the validity of each component value. The resulting AVE value must be greater than 0.50, so that the configuration results have the right effectiveness. The test results show that the value of the AVE of each variable is greater than 0.50 (Bogozzi and Yi; 1988).

Table 1. ***Average Variance Extracted***

Variabel	***Average Variance Extracted (AVE)***
Environmental Tax (X1)	1.000
Fossil Fuel Usage (X2)	1.000
Sustainability Reporting (Y1)	1.000
Carbon Emissions (Y2)	1.000

Source: Processed by researchers (2024)

The results in table 1 explain that the environmental tax variable has an AVE value of 1,000, the Ave value is> 0.50 so that the results are said to be valid, the variable use of fossil fuels is 1,000 Ave value> 0.50 so that the results are said to be valid, the sustainability reporting variable is 1,000 Ave value> 0.50 so that the results are said to be valid, and the results of carbon emissions are 1,000 Ave value> 0.50 so that the results are said to be valid. So from the results of the value of all variables in the AVE test from the cross loading correlation results it is declared valid.

c) Reliability test using Composite Reliability and Cronbach's Alpha

The composite reliability test and Cronbach's alpha test are tests on assessing the reliability of constructs that can be determined based on groups of indicators. A construct is considered reliable if the composite reliability value and Cronbach's alpha are greater than 0.70 (Vinzi, Trinchera, & Amato; 2010).

Tabel 2. *Reliability*

Indikator	***Cronbach's Alpha***	***Composite Reliability***
Environmental Tax (X1)	1.000	1.000
Fossil Fuel Usage (X2)	1.000	1.000
Sustainability Reporting (Y1)	1.000	1.000
Carbon Emissions (Y2)	1.000	1.000

Source: Processed by researchers (2024)

The test results in table 2 show the results for the environmental tax variable of 1,000 this value> 0.70 so that the results are said to be valid, the variable use of fossil fuels of 1,000 this value> 0.70 so that the results are said to be valid, the sustainability reporting variable of 1,000 this value> 0.70 so that the results are said to be valid, and the carbon emission variable of 1,000 this value> 0.70 so that the results are said to be valid.

Furthermore, the composite reliability obtained on the environmental tax variable is 1,000, this value is> 0.70 so that the results are said to be valid, the variable use of fossil fuels is 1,000, this value is> 0.70 so that the results are said to be valid, the sustainability reporting variable is 1,000, this value is> 0.70 so that the results are said to be valid, and the carbon emission variable is 1,000, this value is> 0.70 so that the results are said to be valid.

2. Structural Model Test (Inner Model)

a. Square Test

To determine how much influence, the independent latent variables have on the dependent latent variable, the R-Square test is used. Doing this test shows how much the dependent variable is influenced by the independent variable. The model is considered good with a result of 0.67, while a result of 0.33 is moderate and a result of 0.19 is weak (Ghazali, 2014).

Table 3. *R-Square*

Indikator	***R Square***	***R Square Ajusted***
Carbon Emissions	0,998	0,998
Sustainability Reporting	0,007	-0,005

Source: Processed by researchers (2024)

The research results in table 3 explain that the value of R-Square on the carbon emission variable is 0.998> 0.67, which means that the ability of environmental taxes, fossil fuel use and sustainability reporting is 98% to influence carbon emissions very well, while the value of 2% is generated from the influence of other variables that are not in the good category in explaining the carbon emission variable. Then the result of the R-Square value of sustainability reporting is 0.007

3. Hypothesis Test

a. Path Coefficient

The Path Coefficient test is carried out to determine whether each independent latent variable on the dependent latent variable has an effect or not. In the hypothesis test in this study, the hypothesis is tested with a probability value, namely Ha is accepted if the P value <0.05 (Ghazali., 2014).

Gambar 2: Uji *Path Coefficients*

Indicator	***Origonal Sampel (O)***	***Standard Deviation (STDEV)***	***T Statistics (|O/STDEV|)***	***P Values***
Environmental Tax -> Carbon Emissions	0.004	0.004	1.150	0.125
Fossil Fuel Use -> Carbon Emissions	0.029	0.019	1.564	0.059
Environmental Tax -> *Sustainability Reporting*	-0,083	0.047	1.739	0.041

Sustainability Reporting -> Carbon Emissions	1.016	0.013	78.164	0.000

Source: Processed by researchers (2024)

From the results of the path coefficients test, it explains the relationship between each variable directly and the results are:

1. The relationship between environmental taxes and carbon emissions is 0.125> 0.05 from the results of P Values, so it can be said that environmental taxes do not have a positive and significant effect on carbon emissions.
2. The relationship of fossil fuel use variables to carbon emissions is 0.059> 0.05 from the results of P Values, so it can be stated that the use of fossil fuels does not have a positive and significant effect on carbon emissions.
3. The relationship between environmental tax variables and sustainability reports is 0.041 <0.05 from the results of P Values, so the results can be called a positive and significant effect on sustainability reporting.
4. The relationship of sustainability reporting variables to carbon emissions is 0.000< 0.05 from the results of P Values, then the results of sustainability reporting have a positive and significant effect on carbon emissions.

b. Indirect Effect

Analysis of the indirect effect test is used to determine the indirect effect on research. Testing a hypothesis on a variable that is influenced by an intermediate variable is also known as a mediating variable and has an indirect effect. Results that exceed the value of 0.05 will be considered influential, which means that the temporary variable "plays a role" in mediating between the variables it affects.

Tabel 3. ***Specific Inderect Effects***

Indicator	***Origonal Sampel (O)***	***StandardDeviation (STDEV)***	***T Statistics (|O/STDEV|)***	***P Values***
Environmental Tax -> Sustainability Reporting -> Carbon Emissions	-0,084	0.048	1.734	0.041

Source: Processed by Researchers

From the results of the indirect effect test, it states that the result of the P Value is 0.041 with a result < 0.05 of the P-Value value, which states that the intervening variable of sustainability reporting is said to play a good or significant influence in mediating the relationship of an environmental tax variable to carbon emissions.

5. DISCUSSION

The Effect of Environmental Taxes on Carbon Emissions

The conclusion from the results of this study for hypothesis testing is that the results of environmental taxes have no significant effect on carbon emissions. The role of environmental taxes depends on the natural energy consumption, resource rent and renewable quality of the environment in the company, the application of environmental taxes should follow the recommendations for policy makers and not necessarily the government that uses environmental taxes as a tool to control carbon emissions, they must take into account the results of their emissions against other major determinants of carbon emissions such as energy consumption actors, types of energy use and the development and application of clean technology. This is in line with research by (Buhari Doğan et al., 2022) states that environmental taxes act as an additional cost that can prevent the production of hazardous waste and companies tend to use environmentally friendly machinery and technology in an effort to minimize this cost and also to limit environmental externalities. (Ladyve at al., 2020) also has the same results which state that environmental costs are considered as a burden for companies that must be paid to repair damage due to their production activities. However, different results were carried out by (Farooq et al., 2023) shows that environmental taxes have a positive effect on the company's carbon emission income, this can prevent the development of activities that produce pollution and force companies to preserve the environment. Results that are not in line are also done by (Wolde-Rufael & Mulat-Weldemeskel, 2020) which states that strict environmental policies and environmental taxes can lead to reduced CO2 emissions indicating that a country's environmental performance can reduce CO2 emissions associated with its strict environmental policies and environmental taxes highlighting their important role in environmental mental externalities.

The Effect of Fossil Fuel Use on Carbon Emissions

The result of hypothesis two is that the use of fossil fuels does not significantly affect carbon emissions. Companies engaged in energy or manufacturing that produce CO2 emissions, are currently using environmentally friendly newspapers such as the use of Biodiesel, natural gas and other environmentally friendly fuels, companies must also agree in company relations and government regulations to achieve zero emission targets in 2030. This result is similar to research (Martins et al., 2021) explained that the use of fossil fuel energy consumption did not find that the results would have a significant effect on CO2 emissions in producing renewable energy. This is also similar to the research (Sairi & Omari., 2020) which states that his research conducted in the Czech Republic that there is no significant influence between the use of emissions and CO2 emissions because some countries already use environmentally friendly fuels that do not produce high emissions and damage the environment. However, from research conducted by (Soku et al., 2023) showed different results regarding the use of fossil fuels in Europe, which states that the use of natural gas and petroleum also has a significant effect on carbon emissions, increasing the use of natural gas and petroleum will increase carbon emissions. The results of the study are also similar to the results of the study of (Han Wang & Dongming Zhang, 2023) that the implementation of green energy is in line with the significant decline in fossil fuel mining.

The Effect of Environmental Taxes on Sustainability Reporting

The result of hypothesis three is that environmental taxes have a significant effect on sustainability reporting. The imposition of environmental taxes on corporate activities is to encourage companies to further reduce or limit activities that produce pollution and reduce carbon emissions, and also to deal with environmental pollution problems. Environmental costs in sustainability reporting play a positive role as a form of sustainability in dealing with damage caused by company activities. This research agrees with (Sudjono & Setiawan, 2022a) which reveals that in its application, the influential tax is to involve stakeholders who have mutual integrity with each other in the policy of implementing sustainable reports that have been implemented by Indonesia. However, research conducted by (Martania Dwi Hapsari, 2023) shows different results, in the results of his research explaining that some companies may have difficulty in measuring and disclosing their environmental impacts, especially if they do not have an effective accounting system for measuring environmental costs.

The Effect of Sustainability Reporting on Carbon Emissions

The results of hypothesis four regarding sustainable reports on carbon emissions have a significant effect. Sustainability reports help inform sustainability performance, social responsibility, and environmentally friendly business practices. Sustainability reporting can help companies improve the sustainability system with a good image, can invite environmentally conscious investors, and establish better relationships with the community, because of the increasing public awareness of environmental and social issues. This result is similar to the study conducted (Sudjono & Setiawan, 2022) which explains that sustainability consultants, the role of auditors and independent examinations are needed to effectively disclose the company's emission scheme.

The Effect of Environmental Taxes on Carbon Emissions Intevening by Sustainability Reporting

It can be concluded that hypothesis five of sustainability reporting has an effect on its role in mediating environmental taxes on carbon emissions. The mediating effect of sustainability reporting on the application of environmental taxes has a positive impact on the economy in addition to improving climate welfare for corporate sustainability, because environmental taxes since natural charges that increase increment the price cost of traditional energy conventional vitality sources can encourage people empower individuals and companies to consider the environmental natural externalities of their energy use. Vitality utilize. Therefore, general protection in policy will be more effective if applied in the sustainability report as an evaluation and consideration of the environmental taxation paid by the company for its activities. This is similar to research conducted by (Al Shammre et al., 2023) shows that environmental taxes tax can reduce carbon emissionsemisions (CO2) due to the sustainability of the role of environmental taxes tax in their reports to address environmental pollution. This is also similar to the results of research from (Wolde-Rufael & Mulat-Weldemeskel, 2020) that there is a shift in focus on rules and regulations on environmental taxes that can improve understanding between the relationship betweenbettween environmental policies and CO2 emissions. In addition, the importance of environmental taxes tax on regulations in combating the need for emissions in the implementation of a new and efficient sustainability system (Burcu Ozcan et al., 2020).

6. CONCLUSION

Based on the resultscomes about of the data processing information handling tests that have been carried out, it can be concluded that environmental taxes natural charges have no significant effect critical impact on carbon emissions, because environmental taxes outflows, since natural charges act as additional extra costs that can prevent avoid the production generation of hazardous waste perilous squander and companies tend to use environmentally friendly utilize ecologically neighborly machines and technologies innovations in an effort exertion to minimize play down these costs and also additionally to limit environmental constrain natural externalities . The use of fossil fuels has no significant effect on carbon emissions, because some companies already use environmentally friendly fuels that do not produce high emissions and damage the environment. Then the results of environmental taxes have a significant effect on sustainability reporting, because environmental taxes in sustainable reports act as a form of sustainability information in dealing with damage caused by company activities and to attract stakeholders. Then the results of sustainability reporting have a positive effect on carbon emissions because sustainability reporting information effectively provides information on company activities in supporting the disclosure of the resulting emission scheme. Meanwhile, the mediation of sustainability reporting on environmental taxes on carbon emissions has a positive effect, because general protection in policy will be more effective if applied in sustainable reports as an evaluation and consideration of the imposition of environmental taxes paid by companies for their activities.

Research Limitations and Suggestions

Although there are many policies, the current analysis still has shortcomings in the time frame used and only utilizes three independent variables, which may not be able to obtain comprehensive results in terms of their influence with related factors. Therefore, the results in this study may not all be significant. Suggestions for further research or for future research are expected to consider other variables such as the implementation of carbon tax or carbon trading.

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