Firm Activities and Environmental Performance: The Moderating Role of Institutional Ownership

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Abstract. The low environmental performance is a challenge for companies in Indonesia, especially companies in the food and beverage subsector that produce more plastic waste than other sectors. The purpose of this study is to prove the moderating effect of institutional ownership on the influence of firm activities on environmental disclosure. Firm activities are measured by asset turnover, sales growth, and gross profit margin. Based on 107 data points from 35 firms in the food and beverage subsector, we report that institutional ownership strengthens the influence of asset turnover and gross profit margin on environmental performance. Institutional ownership does not enhance the impact of sales growth on environmental performance. The results were robust, as seen by other research model test designs and by comparing test results without looking at the moderating role of institutional ownership. We also recommend increasing government investment to increase ownership of the company. Managers should improve environmental performance to support the company's long-term operations.

1. Introduction

Environmental awareness is one of the things that must be considered in the implementation of company operational activities. This increase in environmental awareness is driven by environmental damage that threatens long-term corporate operations [1]. The growth of business and economic organizations marked by increasing industrial operations often has a negative impact on the environment, causing social and environmental problems [2]. Thus, companies that utilize natural resources in their operational activities must fulfill their environmental responsibilities to support the existence of the firm's performance in the long term [1].

Rapid economic growth in the current era of globalization encourages companies to improve financial performance and strive for sustainable business growth. Sustainable economic development is designed to meet the needs and improve the quality of life without

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having to sacrifice the opportunities of future generations by considering environmental sustainability as part of efforts to improve economic performance. Economic development that does not pay attention to the sustainability of natural resources and the environment can result in development problems in the future. This is because economic growth that depends on natural resources without taking environmental sustainability into account will ultimately harm the environment itself. The company's operational activities can have negative impacts on the surrounding environment, such as deforestation, threatened ecosystems, waste disposal, air and water pollution, and climate change. This environmental damage can have a negative impact on the company's operations and society in general.

To support sustainable performance, governments in various countries have issued policies or regulations that encourage companies to pay attention to environmental sustainability as part of their company performance. Regulators in Indonesia in 2007 issued Law No. 40 of 2007, Article 1, paragraph 3 concerning Limited Liability Companies. This article states that social and environmental responsibility is a firm's commitment to participate in sustainable economic development in order to improve the quality of life and the environment, which is beneficial, both for the company itself, the local community, and society in general.

The Indonesian government issued Law No. 40 of 2007, which serves as the legal basis for the establishment, operations, and dissolution of public firms in Indonesia. This law also regulates various aspects related to companies, including capital, shares, general meetings of shareholders, directors, boards of commissioners, social and environmental responsibility, and dissolution and liquidation. The Financial Services Authority has issued regulations related to sustainability reports as stated in POJK No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies. The regulation explains that financial services institutions, issuers, and public firms in Indonesia are required to publish sustainability reports within a preparation period of two years since this regulation was issued. The existence of this regulation is expected to encourage these companies to prepare and publish sustainability reports gradually.

One type of industry that has low environmental performance is the food and beverage industry. A study by Garzón- Jiménez & Zorio-Grima [3] reported that the food and beverage industry has an average environmental performance score of 28.299%. Even the latest research published in the journal Science Advances revealed the fact that during the period 2018 to 2022, large food and beverage manufacturers were the main perpetrators of global plastic pollution. This research report is based on the results of an audit of 1,576 brands in 84 countries, including Indonesia, which stated that 28,570 types of plastic waste pollute the open environment, such as beaches, rivers, and parks. Three food and beverage companies from Indonesia, namely Wings, Mayora Indah, and Indofood, are included in the list of the top 15 companies contributing to global plastic pollution.

Our study evaluates environmental performance in the food and beverage sector. Three essential reasons underlie companies in the food and beverage sector as the focus of the study. First, the food and beverage sector is highly dependent on natural resources, so it has a broad impact on the environment. Second, food and beverage sector companies have low environmental awareness [3]. The company's concern for environmental damage is not comparable to the company's operations that have an impact on environmental pollution. Third, food and beverage sector companies provide essential services for the survival of society by providing food that is needed by the community.

2. Hypothesis and Aims

The central tenet of legitimacy theory is the 'social contract' between corporations and society, which expects corporations to engage in a variety of actions desired by society in return for society's acceptance of the corporation's operations in society [4]. Corporations seek to establish symmetry between the social values associated with or implied by their operations and the social norms of acceptable behavior in the larger social system or the corporation's operating environment [4]. Companies that violate the social contract indicate that they do not obtain legitimacy and have a negative impact on the corporation in the long run. Lack of legitimacy causes society to take a stance to "punish" the corporation by reducing consumption of the corporation's products or shifting consumption to products from other companies [1].

Some of the corporate activities that are symmetrical with social values and increase legitimacy are ethical standards, legal requirements, and environmental responsibility [5]. Companies also gain legitimacy by engaging in social and environmental initiatives that benefit society and the environment [5]. Thus, legitimacy theory is related to society's evaluation of a company's environmental performance [6].

One of the factors observed by previous researchers in explaining environmental reports is asset turnover. Asset turnover indicates the effectiveness of a company in using its assets to support the achievement of company goals. High asset turnover indicates that the company is effective in using its assets. In the context of legitimacy theory, companies that have more activities, marked by high asset turnover, encourage companies to comply with their social contracts. Following Darus et al. [4], the principle of legitimacy theory is the 'social contract' between business and society, which expects companies to comply with the "social contract" through various socially desirable actions. Legitimacy theory views that companies are bound by a social contract with society in supporting their operations. In addition, this social contract arises because of the negative impact of the company's operations, which causes the community to push the company to make a social contract. This contract is to ensure that both parties do not have a negative impact on the environment.

High asset turnover indicates that the company has complex economic activities and creates enormous environmental responsibilities. The negative impact of the company's complex economic activities, causing ecological damage, requires the company to comply with the social contract. The demands of society for companies to fulfill the social contract. Thus, companies that have high asset turnover have a positive impact on environmental performance.

Several indicators to measure company activity have been presented by researchers and prove that high company activity has a positive effect on environmental disclosure. For example, Baroroh et al. [7] report that inventory turnover positively influences the disclosure of the sustainability report. Ahmad et al. [8] used manufacturing and mining corporations listed in Indonesia and Thailand as research samples and reported that corporate activities positively affected sustainability reporting. Also, Heriansyah & Faradiza [9] strengthen this finding that corporate activities positively affected sustainability reporting.

In the context of companies in Indonesia, where regulators do not require companies to publish sustainability reports, the relationship between firm activity and sustainability reports is inconsistent. Moreover, Indonesian people do not prioritize sustainability reports as an evaluation of their decision to choose the products they consume [5]. Ho et al. [10] found that firm activities do not affect sustainability reports. In this context, encouragement from owners is very important for companies to disclose environmental disclosure [11], [12], [13]. To support the role of institutional ownership, we use ownership as a factor that can strengthen the influence of asset turnover, which has a positive effect on environmental performance. Based on this argument, the first hypothesis is:

H1: Institutional ownership increases the positive influence of asset turnover on environmental performance.

The second factor observed by prior literature that influences environmental reporting is sales growth. Sales growth is an indicator of increasing company activity that encourages companies to improve environmental disclosure [14]. In the context of legitimacy theory, large companies have greater environmental responsibilities. Large companies are characterized by increased production activities, which are marked by increased sales.

However, researchers in developing countries have not found a relationship between sales growth and sustainability reports. For example, NasiruKaoje & Auwal [14] used 24 oil and gas companies in Nigeria. They reported that high sales growth encourages companies to improve their sustainability reports. They reported that sales growth is not an important factor in improving sustainability reports. In the context of companies in Indonesia, encouragement from owners is very important to improve the quality of the company's sustainability report. This is because activities that support social and environmental performance reduce the net profit, which is the owner's right [15]. Moreover, institutional owners tend to have better awareness of contributing to solving environmental and social problems. In the context of companies in Indonesia, there is no guarantee that corporate concern for social and environmental issues can improve bank financial performance [5]. Based on this argument, the second hypothesis of our research is:

H2: Institutional ownership increases the positive influence of sales growth on environmental performance.

The third factor used by researchers in explaining sustainability reports and as an indicator of company activity is profitability. High profitability indicates an increase in the company's financial performance driven by the effectiveness of the production process. The relationship between net profit margin and environmental reports is examined through two channels. First, in the context of our research, because profitability is a factor in environmental reports, we use net profit margin as an indicator of profitability. The reason is that the company's involvement in reducing environmental damage problems requires costs [15], so a high net profit margin indicates the strength of the company to spend part of its income to run programs that can reduce environmental problems. For example, companies can take policies for environmentally friendly investments by replacing environmentally friendly production machines that have an impact on increasing product costs [15], which can then affect net income. However, Zhang & Xie [15] reported that the firms' environmentally friendly investments have an impact on increasing economic benefits from environmentally conscious customers and further support the company's long-term financial performance. Second, the amount of environmental investment costs to reduce the negative impact of environmental damage is not an individual decision of the director. The owner must approve the director's decision because this investment has an impact on the company's production structure and subsequently has an impact on financial performance and economic benefits from environmentally conscious customers [15].

Prior works of literature reported the importance of the role of institutional ownership. Institutional shareholders have a greater incentive to monitor managers and have the ability and resources to discipline managers. Also, institutional shareholders keep away from the opportunistic behaviors of managers by prioritizing short-term profits. Institutional shareholders encourage managers to take policies that encourage the company's existence in the long term. They encourage companies to be active in environmental and social activities as a form of fulfilling social contracts. Alomran & Alsahali [11] report that institutional shareholders play a significant role in managers' decisions to enhance their sustainability performance. Based on this argument, the third hypothesis of our research is:

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H3: Institutional ownership increases the positive influence of sales growth on environmental performance.

Based on these hypotheses, the aims of studies are:
Aim 1: Empirically demonstrating the role of institutional ownership in strengthening the positive influence of asset turnover on environmental performance.
Aim 2: Empirically demonstrating the role of institutional ownership in strengthening the positive influence of sales growth on environmental performance.
Aim 3: Empirically demonstrating the role of institutional ownership in strengthening the positive influence of net profit margin on environmental performance.

3. Methods

This study focuses on food and beverage sub-sector companies in Indonesia. The focus on food and beverage sub-sector companies is because the companies' business operations contribute to increasing plastic waste. The research sample was selected based on purposive sampling and resulted in 35 firms. Data was taken from the firm's financial statements and observed for five years (2018-2022). With unbalanced data, 107 analysis units were obtained and analyzed using panel data regression.

The research model has three independent variables, one moderating variable, and one dependent variable. The three independent variables are assets turnover (ASSETTURN), sales growth (SALEGROW), and net profit margin (NPM). Each is measured by the following formula [7]:

$$\text{ASSETTURN} = \frac{Net\ Sales_t}{Assets_t}$$

$$\text{SALEGROW} = \frac{Sales_t - Sales_{t-1}}{Sales_{t-1}}$$

$$\text{NPM} = \frac{Net\ income_t}{Net\ Sales_t}$$

The institutional ownership variable (INSOWN) is measured by the Percentage of shares held in blocks by institutional investors. Environmental performance (ENVPERF) is measured using the environmental disclosure index from the Global Reporting Initiative (GRI). The GRI guidelines are adopted in this study because GRI is very well-known and widely used. The environmental disclosure index consists of a total of 34 items. The control variable is company size (SIZE), which is measured by the total logarithm of total assets.

The research data were analyzed using panel data regression. In this data analysis process, the Breusch and Pagan Lagrangian multiplier test was used to determine the selected model between common effect and random effect. The Hausman test was used to determine the selected model between the random effect and fixed effect. The Breusch and Pagan Lagrangian multiplier test produced a P-value of <0.05, indicating that the null hypothesis was rejected and caused the researcher to use the random effect analysis method. Hausman test produces a P-value of <0.05, indicating that the null hypothesis is rejected and causes researchers to use the fixed effect analysis method.

Classical assumption tests include multicollinearity, heteroscedasticity, and autocorrelation tests. Multicollinearity testing uses variance inflation factors. Heteroscedasticity testing uses the Wald test. Autocorrelation testing uses the Wooldridge test. The equation of this study is:

$$ENVPERF_{i,t}=\beta_0 + \beta_1 ASSETTURN_{i,t} + \beta_2 SALEGROW_{i,t} + \beta_3 NPM_{i,t} + \beta_4 INSOWN_{i,t} + \beta_5 ASSETTURN{*}INSOWN_{i,t} + \beta_6 SALEGROW{*}INSOWN_{i,t} + \beta_7 NPM{*}INSOWN_{i,t} + \beta_8 SIZE_{i,t} + \varepsilon \quad (1)$$

4. Result

4.1. Descriptive Statistics

Table 1 presents descriptive statistics of the variables used in this study. Environmental performance is reported to have an average of 0.5477, and reports that the sample has an environmental performance of 54.77%. This performance is higher than that reported by Mukhibad & Hapsoro [5], which reported 29.8%. This difference in results is due to differences in research objects. Mukhibad & Hapsoro [5] used manufacturing companies, and this study used food and beverage sub-sector companies. This finding also indicates that the environmental performance of food and beverage sub-sector companies is higher than that of manufacturing firms.

Table 1. Descriptive Statistics

Variables	Mean	Std. Dev.	Min.	Max.
ENVPERF	0.5477	0.0592	0.37838	0.69231
ASSETTURN	0.9086	0.7375	0.14598	4.0178
SALEGROW	0.1644	0.2231	-0.4652	1.0178
NPM	0.0885	0.1643	-0.5042	0.9389
INSOWN	0.6609	0.1903	0.0587	0.9358
SIZE	28.888	2.9479	19.4087	32.8264

Table 1 also reports that the average asset turnover score is 0.9086. This result shows that the sample has an average annual net sales of 90.86% of total assets. High asset turnover indicates that the sample has high production activities and increases net sales. High production activities encourage companies to fulfill social contracts and support the existence of company operations. Table 1 also reports an average sales growth of 0.1644. This result indicates that the company has an annual sales increase of 16.44%. The high level of sales also indicates high company activities that encourage increasing their legitimacy towards society. The average net profit margin is 0.0885, which suggests that the average net income is 8.85% of net sales. This result reports that the sample has positive financial performance. In addition, this result also shows that the sample has the resources to carry out activities that support legitimacy, such as complying with social ethics, laws, and environmental responsibilities [5]. However, some samples have sales growth and net profit margins of -46.52% and -50.42%, respectively. These results indicate that the samples have varied sales and financial performance.

Table 1 reports an average of institutional ownership of 0.6609 and a standard deviation of 0.1903. The research sample prioritizes companies owned by institutions. These results indicate that institutional owners intervene highly in managers' policies. Owners can intervene in managers' policies through the use of their votes at general shareholder meetings by electing managers and boards of commissioners who have policies in accordance with the owners.

4.2. Regression Analysis

The results of the Breusch and Pagan Lagrangian multiplier and the Hausman test recommend a random effect model. Table 2 presents the results of the research equation regression with a random effect approach. The results show that hypothesis 1 produces a coefficient of 0.0788 and a p-value of 0.002. The p-value score is 0.002, less than 0.01, and indicates that the hypothesis is accepted at the 1% level. These results suggest that institutional ownership strengthens the positive effect of sales growth on environmental disclosure.

Asset turnover indicates company activity, whereas a high asset turnover indicates high sales compared to total assets. In addition, high asset turnover indicates the effectiveness of a company's activities. Previous studies have reported that asset turnover is an important factor in improving environmental performance [7] [8]. High firm activity encourages companies to fulfill social contracts by enhancing environmental performance [9].

In addition, researchers reported that institutional ownership strengthens the supervision of managers to reduce manager opportunism and focuses on corporate legitimacy to ensure long-term corporate performance [11]. Especially in firms that have high business activities, it increases the importance of corporations fulfilling social contracts. In the context of our research, institutional ownership's concern for environmental issues to increase corporate legitimacy increases the positive influence of asset turnover on environmental performance.

Table 2 also reports that the second hypothesis produces a coefficient of -0.1507 and a p-value of 0.116. The p-value score of 0.116 is greater than 0.1 and indicates that the hypothesis test is rejected. These results suggest that institutional ownership does not strengthen the influence of sales growth on environmental performance. The second indicator of corporate activity used in this study is sales growth. Researchers have reported that sales growth encourages companies to improve environmental performance [14]. However, other researchers reported that sales growth does not affect environmental performance [12]. The company's involvement in activities that can reduce environmental problems requires company resources and reduces net income, which is the owner's right. High sales growth indicates an increase in sales, but an increase in sales does not indicate an increase in net income because a higher increase in production costs can accompany the increase in sales. Although previous researchers reported that institutional shareholders care more about environmental performance because environmental activities require resources, institutional ownership does not encourage increased environmental disclosure when resources are limited.

The results of the third hypothesis test produced a coefficient of 0.4120 and a p-value of 0.048 (lower than 0.05). These results indicate that the third hypothesis is accepted at the 5% level. The results of this study report that institutional ownership strengthens the positive effect of net interest margin on environmental performance. A high net interest margin reflects the availability of greater company resources than sales growth. Environmental activities reduce net income in the short term. However, in the long term, high legitimacy causes increased financial performance through increased eco-conscious customers. Eco-conscious customers cause them to take policies to consume products produced by companies that care about environmental issues [5]. Effective supervision of institutional ownership causes managers to take policies to increase environmental disclosure.

Table 2. The Result of Testing

Hypothesis	Coefficient	P-Value	Finding
H1: Institutional ownership increases the positive influence of asset turnover on environmental performance	0.0788***	0.002	Accepted
H2: Institutional ownership increases the positive influence of sales growth on environmental performance	–0.1507	0.116	Rejected
H3: Institutional ownership increases the positive influence of net interest margin on environmental performance	0.4120**	0.048	Accepted

***p<0,01; **p<0,05; *p<0.1

4.3. Robustness Test

Table 3 presents the results of the regression test without using the moderating effect of institutional ownership on the influence of assets turnover, sales growth, and net interest margin on environmental performance. The results of this test are to strengthen the results of our hypothesis test on whether institutional ownership strengthens the influence of assets turnover, sales growth, and net interest margin on environmental performance. The results of the test on the influence of asset turnover on environmental performance produce a coefficient of 0.0211 and a p-value of 0.001 (<0.01). These results indicate that asset turnover has a significant positive effect on environmental performance. The coefficient scores of the direct influence of assets turnover on environmental performance and the moderating effect of institutional ownership are 0.0211 and 0.0788, respectively. When compared to both scores, the coefficient score of the moderating effect of institutional ownership is greater than without moderation (0.00788 is greater than 0.0211). The high coefficient score increases the slope of the regression and indicates a greater influence. These results strengthen hypothesis 1.

Table 3. The Result of Hypothesis Testing (Robustness)

No.	Hypothesis	Coefficient	P-Value
1	The effect of assets turnover on environmental performance	0.0211***	0.001
2	The effect of sales growth on environmental performance	0.0476**	0.027
3	The effect of net profit margin on environmental performance	0.1386***	0.000

***p<0,01; **p<0,05; *p<0.1

Table 3 reports the test results of the influence of sales growth on environmental performance, resulting in a coefficient score of 0.0476 and a p-value of 0.027 (<0.05). These results report that sales growth has a significant positive effect at the 5% level on environmental performance. When compared with the results of the second hypothesis test, which produced a coefficient of -0.1507 and a p-value of 0.116 (> 0.10). The comparison of these two test results strengthens the results of the second hypothesis test that institutional ownership does not increase the positive effect of sales growth on environmental performance.

Table 3 reports that the test results of the effect of net interest margin on environmental performance produce a coefficient of 0.1386 and a p-value of 0.000 (<0.01). These results report that net profit margin has a significant positive effect on environmental performance. The coefficient scores of the direct impact of net profit on environmental performance and the moderating effect of institutional ownership are 0.1386 and 0.4120, respectively. When comparing the scores of both, the coefficient score of the moderating effect of institutional ownership is greater than the test result of the model without moderation (0.4120 is greater than 0.1386). The high coefficient score increases the regression slope and indicates a greater influence. This comparison of coefficient scores strengthens hypothesis 3.

5. Conclusion

This The purpose of this study is to prove the moderating effect of institutional ownership on the influence of asset turnover, sales growth, and net interest margin on environmental performance. Based on 107 data from food and beverage subsector companies in Indonesia, we report that institutional ownership strengthens the influence of asset turnover on environmental performance. We also report that institutional ownership enhances the impact of net interest margin on environmental performance. However, we report that institutional ownership does not strengthen the influence of sales growth on environmental performance. In general, we report that institutional ownership improves environmental performance when asset turnover and net interest margin are high.

Our study only uses a sample of food and beverage subsector manufacturing companies that have a major contribution to producing plastic waste. Previous researchers can use research objects with different characteristics to expand the existing literature.

Our study recommends that regulators encourage institutions to invest in stocks, increasing their proportion as company owners. This high ownership strengthens their commitment to improving environmental performance. We also recommend that managers improve environmental performance to support the company's legitimacy and support the firm's operations in the long term.

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