

The Impact of Environmental Costs and Corporate Governance Mechanisms on Financial Performance

Atik Tri Andari^{1*)}, Candra Pramula Pinandita²⁾, Veri Hardinansyah Dja'far³⁾

^{1,3}Politeknik Negeri Malang, Indonesia

²Politeknik Negeri Jember, Indonesia

DOI: <https://doi.org/10.32939/fbv2c845>

E-Journal Al-Dzahab

Vol. 7 Issue 2

September 2026

Pp. 245-261

Article Information:

Received: July 30, 2026

Revised: Aug 28, 2026

Accepted: Sep 2, 2026

Keywords:

Environmental Accounting;

Environmental Costs;

Corporate Governance

Mechanisms;

Return on Assets;

Food and Beverage

Manufacturing

Correspondent:

atik.tri@polinema.ac.id

ABSTRACT

Purpose: This investigation assesses the extent to which financial performance is influenced by environmental costs and corporate governance mechanisms, specifically audit committee meeting frequency and the proportion of independent commissioners, within an industry marked by substantial environmental impact.

Design/Methodology/Approach: Companies in the food and beverage manufacturing sub-sector were examined for the 2022-2024 period. Purposive sampling with pre-set criteria determined the sample, resulting in 15 companies and 45 firm-year observations. Multiple linear regression, conducted via SPSS 22, served to assess the partial and simultaneous associations of the independent variables with financial performance.

Findings: Financial performance is significantly negatively associated with environmental costs ($B = -4.040$; $p = 0.017$) and the proportion of independent commissioners ($B = -389.723$; $p = 0.001$), while audit committee meeting frequency shows no significant association with financial performance ($B = 100.376$; $p = 0.081$). Simultaneously, the three variables are significantly associated with financial performance ($F = 5.558$; $p = 0.003$). The model captures 23.7% of the variation manifest in financial performance, as indicated by the adjusted R^2 of 0.237.

Research Implications: These outcomes offer further insight into environmental accounting and corporate governance by offering empirical evidence from the food and beverage manufacturing sub-sector. Practically, companies are advised to prioritize environmental cost management and strengthen board independence, as increasing audit committee meeting frequency alone appears insufficient to improve financial performance. Future research is encouraged to incorporate additional governance variables, expand the observation window, or consider other industry sectors to enhance the generalizability of these results.

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



INTRODUCTION

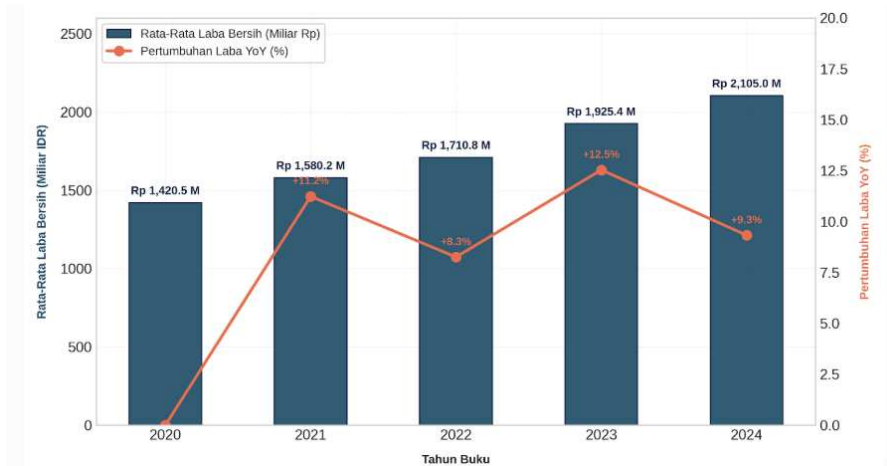
The maximization of profits is aspired to by every company. Once this objective is attained, the company's performance is deemed salutary. In the case of publicly listed companies, unsatisfactory performance may be construed unfavourably by stock market perceptions, thereby swaying shareholders' decisions to divest or acquire the company's shares. Consequently, it must be ensured by financial managers that the company's performance is rendered sound and stable, and the company's financial health, including its susceptibility to bankruptcy risk, must be vigilantly monitored (Hutabarat, 2021). A common approach to assessing how well a company is doing is to look at its financial metrics. These metrics reveal the effects of the company's operational choices and also give a clear picture of how its business activities performed.

Companies in the food and beverage sub-sector play a vital role in meeting consumer needs. Consumer needs such as food and drink will always be in demand as they are essential daily necessities that must be met. The developments in these sectors illustrate that fierce business competition demands that business operators manage their companies effectively and

efficiently. One way for a company to succeed in this competitive environment is to ensure the sustainability of its business by improving and maintaining its performance.

Financial performance captures a company's operational results through precise financial measures, offering an objective view of its true condition (Fauziah et al., 2023; Umboh & Yanti, 2025). The outcomes of these business undertakings are customarily epitomised by the profits engendered (Meiyana & Aisyah, 2019). Companies that yield high profits are regarded as those whose performance is commendable. Net profits earned by food and beverage manufacturers between 2020 and 2024 are depicted in Figure 1.

Figure 1. Net Profit of Manufacturing Companies in the Food and Beverage Sub-sector, 2020-2024



Source: Processed research data, 2026

Looking at Figure 1, the net profit of manufacturing companies in the food and beverage sub-sector shows fluctuations during the 2022-2024 period. Although changes occurred from one year to the next, the overall average net profit increased from IDR 1,420.5 million in 2020 to IDR 2,105.0 million in 2024. This increase indicates an improvement in how successfully the company converts operations into profit during the observation period. However, the fluctuation in net profit suggests that the company's profitability level has not been fully consistent from year to year. Therefore, the development of net profit can serve as one indicator of changes in financial performance, while the company's ability to utilize assets and capital effectively needs to be assessed through other financial performance indicators.

One way to assess how a company is performing financially is by looking at financial ratios (Arrahima, 2024). Ratio analysis can provide insight into a company's current situation as well as its potential trajectory. It also provides a basis for judging whether the company's financial position is sound. The ratios most frequently applied in this type of evaluation fall into three categories: liquidity, solvency, and profitability.

Several factors by which financial performance is influenced can be identified, one of which is environmental costs. Environmental costs can be interpreted as an investment with long-term returns, given that funds disbursed presently harbour the potential to cultivate a favourable corporate reputation, thereby bolstering stakeholder confidence. Waste is generated by most companies during the production process, particularly by those situated within the manufacturing sector. Companies found to be inflicting pollution will be perceived as exhibiting deficient environmental performance. As a result, these measures reveal the degree to which the company is living up to its responsibility for mitigating the effects it produces (Ladyve et al., 2020). In order to fulfil its responsibilities and undertake environmental protection and management efforts, a company carries out various environment-related activities, such as waste treatment. These operations generate expenses referred to as environmental costs. Such costs stem from environmental conditions that do not comply with established standards (Hansen & Mowen, 2009).

Delineated hereunder are several antecedent studies about environmental costs, namely the research undertaken by Meiyana and Aisyah (2019). Environmental costs exert a substantial negative influence on financial performance, such that higher costs are associated with sharper declines in corporate financial outcomes. Nonetheless, Budi and Zuhrohtun (2023) discover that environmental costs had a negative effect on financial performance. Research concerning the correlation between environmental costs and financial performance has likewise been undertaken. The findings from Zulaika and Mariani (2024) point to a beneficial influence on how well the company performs financially.

Furthermore, financial performance is also swayed by corporate governance factors. An impact upon how a company performs financially can be wrought by sound corporate governance, given that the incidence of fraud can thereby be diminished and actions incongruent with legal provisions concerning the responsibilities and authorities of stakeholders can thereby be forestalled. With effective corporate governance in place, a company can achieve its objectives of enhancing the welfare of shareholders or stakeholders and increasing corporate profits. This corporate governance is reflected in corporate governance mechanisms.

Superior corporate governance mechanisms emphasise the importance of shareholders having access to timely, accurate, and transparent information (Alabdullah & Naseer, 2023; Mirza et al., 2024). This is due to several factors, including the board structure (independent commissioners and the board of directors), ownership structure (managerial ownership), and the audit committee (Khasanah et al., 2023). Investors must consider a company's financial performance when deciding where to invest their money. Investors will seek out and fund more profitable businesses with their money. Companies with good performance will have high business value or profits (Syahputri & Saragih, 2024).

Relevant prior studies on corporate governance mechanisms include the following. Suryanto and Refianto (2019) found no significant effect of the board of directors on financial performance. By contrast, others pointed to a significant joint influence of the audit committee, independent commissioners, institutional ownership, and managerial ownership. Saifi (2019) reported significant effects from the board of directors, independent commissioners, managerial ownership, along with institutional ownership. Yet Renyaan et al. (2023) showed that the proportion of independent supervisory board members had no significant connection to ROA.

Building on earlier studies, inconsistency still exists in the findings regarding the effect of environmental costs and corporate governance mechanisms on financial performance. Some studies show a negative effect, while other studies find a positive or insignificant effect. In addition, research that simultaneously examines environmental costs and several corporate governance mechanisms in the food and beverage sub-sector remains limited. This sub-sector was selected because its production activities relate to resource use and waste management, making it relevant to assess the association between environmental costs and financial performance. The 2022-2024 period was selected to provide more up-to-date empirical evidence, while the board of directors, independent commissioners, managerial ownership, and audit committee were selected because they represent aspects of management, supervision, ownership, and control of the company.

Therefore, this paper sets out to assess the effect of environmental costs and corporate governance mechanisms on the financial performance of manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange during the 2022-2024 period. This study is anticipated to contribute empirically by extending the evidence regarding the connection among environmental management, corporate governance, and financial performance in Indonesia's food and beverage sub-sector.

LITERATURE REVIEW

Stakeholder Theory

The stakeholder theory outlined by Freeman (1994) contends that stakeholders are those with a vested interest in the company and evaluate its performance. This implies that companies must be more rigorous in making assessments and providing information, and must disclose it in terms more lucid and consequential to stakeholders' interests. All parties, both internal and external, who have a relationship, whether direct or indirect, that influences or is influenced by the company itself are considered stakeholders within the context of stakeholder theory (Hadi, 2011). Stakeholder theory holds that a company must serve not only its own interests but also those of external parties with a vested interest. It further asserts that corporate responsibility toward stakeholders necessitates the dissemination of social disclosures.

In this study, Stakeholder Theory explains that environmental costs and corporate governance mechanisms can influence financial performance through the company's response to stakeholder interests. Environmental costs reflect the company's commitment to environmental responsibility, which may minimize environmental risk, regulatory costs, and conflict with stakeholders and improve operational efficiency, thereby increasing Return on Assets (ROA). Meanwhile, effective corporate governance mechanisms can strengthen supervision, accountability, and management transparency, reduce opportunistic behavior, and encourage more efficient use of company resources. These mechanisms can improve the quality of decision-making and the efficiency of asset use, which ultimately affects the company's financial performance as gauged by ROA.

Environmental Costs and Financial Performance

Environmental costs are monetary outlays that emerge from an enterprise's efforts to manage and mitigate the ecological repercussions of its operations. These expenditures encompass costs associated with prevention, detection, internal and external failure, and the maintenance of environmental quality (Rounaghi, 2019). From a company perspective, environmental costs not only reflect an expense that must be incurred, but also demonstrate the company's commitment to controlling environmental risk and maintaining the sustainability of operational activities. Effective management of environmental costs can help companies reduce the risk of pollution, regulatory sanctions, recovery costs, and potential reputational loss. However, if environmental costs increase without generating adequate efficiency or economic benefit, these expenditures can increase the company's burden and suppress profitability in the short term. Thus, the effect of environmental costs on financial performance is not solely determined by the magnitude of the expenditure, but also by how effectively the company channels that spending toward operational gains and risk mitigation.

Alternatively, environmental management can be viewed as a core part of a company's broader strategy to manage risk and sustain long-term operations, shaping the link within environmental costs and financial performance. Companies that consistently allocate resources to environmental management can obtain benefits in the form of improved resource use efficiency, diminished environmental risk, increased legitimacy, and stakeholder trust. Conversely, environmental costs that are not managed productively can become a burden that reduces the resources available for other productive activities. Therefore, environmental costs are directly associated with a company's ability to produce financial performance. Findings from Meiyana and Aisyah (2019) along with Budi and Zuhrohtun (2023) show that environmental costs are related to financial performance, thereby providing empirical grounds that a company's decisions in allocating environmental costs can be reflected in its financial performance.

H1: Environmental costs affect financial performance

The Frequency Of Audit Committee Meetings and Financial Performance

Audit committee meeting frequency can serve as an indicator of the intensity of oversight over financial reporting, internal control, audit, and the company's risk management. More frequent meetings provide committee members with the opportunity to obtain up-to-date information, identify problems, and follow up on audit findings and internal control weaknesses. More intensive meeting activity can strengthen the oversight function and reduce the opportunity for opportunistic behavior by management. More intensive oversight can also enhance the financial information standard used by management and stakeholders in decision-making.

The effectiveness of such oversight can affect financial performance through risk control, improved decision-making quality, and reduced potential losses arising from errors or irregularities in company management. An audit committee that is active through more frequent meetings has a greater opportunity to evaluate financial information and ensure that company issues are adequately followed up. Utami et al. (2020) point to the significance of audit committee characteristics in supporting the company's oversight function. Empirically, Khasanah et al. (2023) as well as Farhanah and Susilawati (2022) found that the existence and activity of the audit committee are related to financial performance. In contrast, Zulaika and Mariani (2024) did not find an effect of the audit committee on financial performance. This difference in findings shows that the effectiveness of the audit committee does not depend solely on its formal existence, but also on the intensity of its activity and the quality of oversight conducted. Therefore, the link between audit committee meeting frequency and financial performance needs to be tested empirically.

H2: The frequency of audit committee meetings affects financial performance

The Proportion of Independent Commissioners and Financial Performance

The proportion of independent commissioners represents one important measure in assessing the strength of the company's oversight function. The presence of board members who have no direct affiliation with management or controlling shareholders is expected to increase objectivity in the decision-making process. With a more independent composition of commissioners, oversight of resource use, risk control, and the company's strategic decisions has the potential to become more effective.

The correlation between independent commissioners and financial performance can occur through improved quality of oversight over strategic decisions, risk control, and the use of company resources. When the monitoring function runs effectively, management will face stronger oversight so that the potential for decisions detrimental to the company can be minimized. Ultimately, this condition has the potential to improve operational efficiency and financial performance. Titania and Taqwa (2023) explains that the existence of independent commissioners can protect stakeholders and minority shareholders by strengthening the oversight function. Empirically, Novitasari et al. (2020) and Malik (2022) found that an independent board of commissioners affects financial performance. That said, Novaliana et al. (2023) found that an independent board of commissioners fails to affect financial performance. This difference in results indicates that formal independence does not necessarily result in effective oversight if it is not accompanied by adequate competence, objectivity, and involvement in the monitoring process.

H3: The proportion of independent commissioners affects financial performance

Environmental costs, the frequency of audit committee meetings, and the proportion of independent commissioners affect financial performance

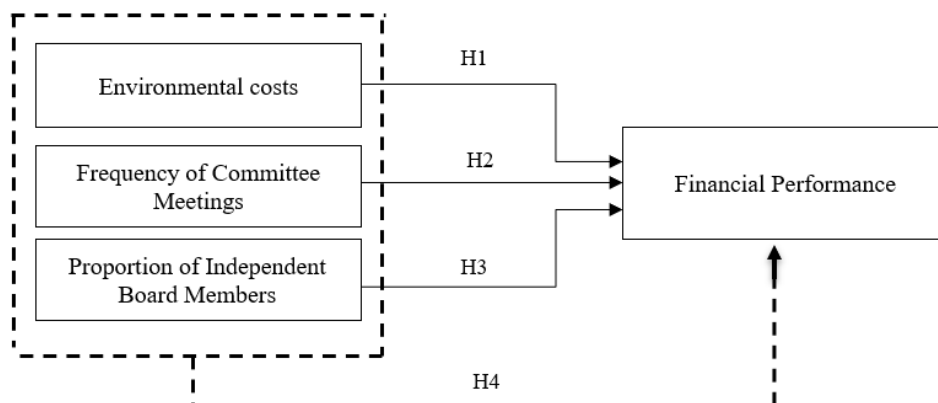
The combined effect of environmental costs, audit committee meeting frequency, and the proportion of independent commissioners is expected to contribute to financial performance

through effective environmental management and corporate oversight. When considered simultaneously, these three variables reflect the company's efforts in managing the environment as well as the effectiveness of internal oversight mechanisms. The integration of these aspects can strengthen risk control, accountability, and efficiency in resource use, which can ultimately support the achievement of better financial performance. Therefore, testing these variables simultaneously provides a more comprehensive assessment of whether environmental management and corporate governance mechanisms jointly affect financial performance. Based on this argumentation, environmental costs, audit committee meeting frequency, and the proportion of independent commissioners are hypothesized to have a simultaneous effect on financial performance.

H4: Environmental costs, the frequency of audit committee meetings, and the proportion of independent commissioners affect financial performance

Based on the theoretical foundation and results of previous research, this study develops a conceptual framework that describes the link among environmental costs, audit committee meeting frequency, and independent commissioners as independent variables, with financial performance as the dependent variable. Environmental costs represent the company's efforts in managing environmental impact and risk arising from operational activities, while audit committee meeting frequency and independent commissioners represent oversight mechanisms in corporate governance. These three variables are theoretically expected to affect financial performance as assessed via ROA. The conceptual framework of the study is presented in Figure 2.

Figure 2. Conceptual Framework



METHODS

This study's population is constituted by food and beverage firms listed on the Indonesia Stock Exchange (IDX) throughout the 2022-2024 interval. The population list was obtained from the list of companies available on the official IDX website. Sample selection followed a purposive sampling method, applying inclusion and exclusion criteria established in advance. From an initial population of 84 companies, 12 companies were excluded because they conducted an initial public offering after January 1, 2022, or were delisted during the 2022-2024 period. Subsequently, 8 companies were excluded because they did not publish a complete and consistent Annual Report or Sustainability Report during the observation period, whilst 49 companies were excluded as they did not disclose a Sustainability Report. Based on this selection process, 15 companies met all the study criteria. This study's analytic unit is constituted by the firm-year observation. Each company was observed over three years, namely 2022, 2023, and 2024, resulting in 45 observations (15 companies × 3 years).

Based on the sampling criteria, 15 companies were obtained with a total of 45 firm-year observations during the 2022-2024 period. The data collection procedure in this study used the documentation technique. The data used are secondary data obtained from the Annual Reports and Sustainability Reports of companies in the food and beverage sector listed on the Indonesia Stock Exchange (IDX) during the 2022-2024 period.

Table 1. Sample Selection Using the Purposive Sampling Method

No.	Sampling Criteria	Number of Companies
1.	Food and Beverage Sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2022–2024	84
2.	Companies that went public after 1 January 2022 or were delisted during 2022–2024	(12)
3.	Companies that did not publish complete and consistent Annual Reports or Sustainability Reports for the period 2022–2024	(8)
4.	Companies that did not disclose a Sustainability Report	(49)
Number of Companies Meeting the Criteria		15
Observation period		3
Number of firm-year observations (15 × 3 years)		45

Source: Processed research data, 2026

Both reports were reviewed to obtain data on environmental costs, audit committee meeting frequency, independent commissioners, and financial performance. Data collection was conducted for the 2022-2024 period. According to Creswell and Creswell (2022) Variables represent the characteristics or attributes of individuals or organisations that are measured and observed by the researcher to answer the research question. Variables are attributes of a group of people or objects that vary from one to another within the group. This study is predicated upon the following variables:

Table 2. Operational Definition and Measurement of Variables

Variable	Definition	Measurement Formula/Scale	Source
Environmental Costs (X1)	Environmental costs refer to costs incurred by a company as a consequence of production activities that affect environmental quality, including costs related to preventing, reducing, and remediating environmental impacts.	$Environmental\ Costs = \frac{Cost}{Profit}$	Hansen & Mowen (2009); Hapsari et al. (2021)
Frequency of Committee Meetings (X2)	Audit committee meeting frequency measures the level of activity in fulfilling its oversight and monitoring roles.	The number of times the audit committee convenes per year	OJK Regulation No. 55/POJK. 04/2015; Anaima & Trisnaningsih (2021)
Proportion of Independent Board Members (X3)	Independent commissioners serve on the board without financial, managerial, ownership, or other ties that could impair their objectivity in fulfilling their supervisory role.	$\frac{\Sigma Independent\ member\ of\ the\ board\ of\ commissioners}{\Sigma the\ company's\ board\ of\ commissioners} \times 100\%$	OJK Regulation No. 57/POJK. 04/2017; Anaima & Trisnaningsih (2021)
Financial Performance (Y)	Financial performance captures how effectively a company utilizes its assets and generates profits from controlled resources.	$ROA = \frac{Net\ profit\ after\ tax}{Total\ Assets} \times 100\%$	Anaima & Trisnaningsih (2021)

This study is constituted as a quantitative study. According to Creswell and Creswell (2022), a focus on the testing of objective theories, through the measurement of variables in numerical form by which statistical analysis may be undertaken, is maintained by a quantitative approach. So that it may be tested whether an influence upon financial performance is exerted by environmental costs, the frequency of audit committee meetings, and the proportion of independent commissioners, multiple linear regression analysis is employed. However, a valid regression equation (BLUE) must be constituted by a proposed regression equation, and freedom from violations of classical assumptions must therefore be exhibited. Consequently, tests of the classical assumptions must be carried out prior to the regression of the research variables being undertaken. Checks for normality, multicollinearity, autocorrelation, and heteroscedasticity are included among these tests.

RESULT

This research examines manufacturing companies in the food and beverage sub-sector that appeared on the IDX from 2022-2024. Using purposive sampling, the study narrowed down to 15 companies, producing 45 data points over the three-year timeframe. Prior to performing data analysis, the variables must satisfy the BLUE (Best Linear Unbiased Estimator) assumptions. To verify this, classical assumption testing is required, which covers normality, multicollinearity, heteroscedasticity, and autocorrelation.

Table 3. Descriptive Statistics Outcomes

Variable	N	Min	Max	Mean	Std. Dev.	Condition
Environmental Costs	45	75	260	144.51	49.35	Fairly high variation
Frequency of Committee Meetings	45	4	9	5.53	1.42	Relatively stable
Proportion of Independent Board Members	45	3.33	5	3.58	0.47	Relatively homogeneous
Financial Performance	45	1.05	925	381.1	384.4	Very high variation

Source: Processed research data, 2026

Looking at Table 3, the 15 food and beverage sector companies during the 2022-2024 period show different characteristics for each research variable. Environmental costs have a minimum value of 75 and a max value of 260, with a mean of 144.51 along with a standard deviation of 49.35. The frequency of audit committee meetings has a minimum value of 4 and a maximum value of 9 times per year, with a mean of 5.53 times along with a standard deviation of 1.42. The proportion of independent commissioners has a minimum value of 3.33 and a max value of 5, with a mean of 3.58 along with a standard deviation of 0.47. Financial performance suggests the highest variation, with values ranging from 1.05% to 925% and a standard deviation of 384.40%. The maximum value of 925% has been re-checked against the company's financial statements and retained as an extreme observation because it is consistent with the source data. Thus, environmental costs and financial performance show greater variation across companies, while corporate governance characteristics tend to have a more limited observation range.

Normality Test

The determination of whether, within a regression model, a normal distribution is followed by the disturbance variables or residuals, is aimed at by the normality test (Ghozali & Ratmono, 2017). The non-parametric Kolmogorov-Smirnov (KS) test is employed as the analysis by which the normality of the residuals in this study is tested. Below, the normality test results for the dataset are reported.

Table 4. Normality Test Outcomes

Test	Asymp. Sig. (2-tailed)	Criterion	Decision
One-Sample Kolmogorov-Smirnov	0.200	> 0.05	Normal

Source: Processed research data, 2026

It is evinced by the table above that 0.05 is exceeded by the Sig. value gleaned from the normality test administered by way of the Kolmogorov–Smirnov test for all variables employed in this study is $0.200 > 0.05$; it can therefore be inferred that acceptance is warranted for the alternative hypothesis (H_a), whereby a normal distribution of the research data is also thereby implied.

Multicollinearity Test

Multicollinearity testing detects whether predictor variables are highly or perfectly correlated in a regression equation. An acceptable model must be free from such intercorrelations. The following table displays the outcomes from the multicollinearity analysis conducted with SPSS 22.

Table 5. Multicollinearity Test Outcomes

Variable	Tolerance	VIF	Decision
Environmental Costs (X1)	0.403	2.483	No multicollinearity
Frequency of Committee Meetings (X2)	0.402	2.488	No multicollinearity
Proportion of Independent Board Members (X3)	0.990	1.011	No multicollinearity

Source: Processed research data, 2026

Predicated upon the table 5 above, the Variance Inflation Factor (VIF) values for each variable were obtained. A tolerance of less than 0.10 or a VIF of 10 or more is considered the values customarily employed to indicate the presence of multicollinearity (Ghozali & Ratmono, 2017). Gleaned from the multicollinearity test results presented above is the finding that 10 is not exceeded by any of the VIF values: 0.403 is registered for X1, 0.402 for X2, and 0.990 for X3. Furthermore, 2.483 is registered for the VIF value of X1, 2.488 for X2, and 1.011 for X3. It can therefore be inferred that no multicollinearity between the variables exists. In other words, the absence of any issue of multicollinearity is indicated by the multicollinearity test outcomes above.

Autocorrelation Test

Autocorrelation testing can be carried out by assessing the SPSS output values using the Run Test. The following table shows the Run Test values for the autocorrelation test.

Table 6. Outcomes of the Autocorrelation Test

Test	Z	Asymp. Sig. (2-tailed)	Decision
Runs Test	-1.505	0.132	No autocorrelation

Source: Processed research data, 2026

Predicated upon the table above, it can be discerned that 0.05 is exceeded by the value of Asymp. Sig (2-tailed), namely $0.132 > 0.05$; it can therefore be inferred that freedom from autocorrelation is exhibited by the regression model.

Heteroscedasticity Test

The assumption of homoscedasticity, whereby the same distribution is exhibited by the research variables, is tested by means of the heteroscedasticity test. Should the variance of the residuals be maintained as constant from one observation to the next, homoscedasticity is what this is termed; should variation instead be exhibited, heteroscedasticity is what this is termed. Homoscedasticity is exhibited by a good regression model, meaning that heteroscedasticity is not present. The Glejser test, carried out by means of SPSS 22, was employed as the test for heteroscedasticity in this study. Presented in the table below are the results of the Glejser test.

Table 7. Outcomes of the Heteroscedasticity Test

Variable	Sig.	Decision
Environmental Costs	0.156	No heteroscedasticity
Frequency of Committee Meetings	0.615	No heteroscedasticity
Proportion of Independent Board Members	0.460	No Heteroscedasticity

Source: Processed research data, 2026

In light of the Glejser test results, the significance value for environmental costs is 0.156 and for audit committee meeting frequency is 0.615. Both values are greater than the significance level of 0.05, so H_0 is accepted, denoting that there is no symptom of heteroscedasticity in either of these variables. Meanwhile, the proportion of independent board members has a significance value of 0.460, which is also greater than 0.05. Thus, this variable also shows no symptom of heteroscedasticity. In summary, the Glejser test results show no evidence of heteroscedasticity in the regression model.

Coefficient of Determination Test

The extent to which variation in the independent variables can be captured by a model is gauged by means of the coefficient of determination, rendered useful for such purpose. Ranging from 0 to 1, the coefficient of determination approaches unity when predictors account for virtually all variation in the dependent variable. Table 7 reports these findings from the regression analysis.

Table 8. Coefficient of Determination Test Outcomes

R	R Square	Adjusted R Square
0.538	0.289	0.237

Source: Processed research data, 2026

Referring to Table 8, the R Square value of 0.289 indicates that variables X1, X2, and X3 jointly explain 28.9% of the variation in financial performance. Once corrected for the number of predictors incorporated into the model, the Adjusted R Square of 0.237 indicates that these three variables account for approximately 23.7% of the variance in financial performance. Thus, the model's ability to explain the variation in financial performance is relatively limited, while the remaining 76.3% of variation may be related to factors not included in the model, such as company-specific factors, industry characteristics, and macroeconomic conditions. This condition represents one of the limitations of the study and indicates the need to consider additional variables in future research.

t-test

The t-test was undertaken to ascertain the degree to which a single independent variable accounts for fluctuations in the dependent variable, with its outcomes tabulated in Table 9 below.

Table 9. Results of the t-test

Variable	Coefficient (B)	t-value	Sig.	Decision
Environmental Costs	-4.040	-2.500	0.017	Significant
Frequency of Committee Meetings	100.376	1.790	0.081	Not significant
Proportion of Independent Board Members	-389.723	-3.587	0.001	Significant

Source: Processed research data, 2026

Basically, the t-test is applied to gauge the unique explanatory contribution of each independent variable to the variation in the dependent variable and to test the hypotheses within the study. Referring to Table 9, environmental costs have a significant partial association with financial performance, as shown by a significance value of 0.017, which is smaller than the 5% significance level (0.05). In contrast, audit committee meeting frequency does not have a significant partial effect on financial performance, as its significance value is 0.081, which is greater than 0.05. Meanwhile, the proportion of independent commissioners has a significant partial association with financial performance because its significance value is 0.001, which is smaller than 0.05. Thus, environmental costs and the proportion of independent commissioners have a partial association with financial performance, while audit committee meeting frequency has no significant association with financial performance.

F-test

To evaluate the combined influence of all independent variables on the dependent variable, an F-test was performed. Table 10 presents these simultaneous test results.

Table 10. Results of the F-test

F-value	Sig.	Decision
5.558	0.003	Significant

Source: Processed research data, 2026

Findings from the F-test (ANOVA) reveal an F value of 5.558, accompanied by a significance value of 0.003. As the significance value falls below 0.05, the regression model as a whole is deemed statistically significant. In other words, environmental costs, audit committee meeting frequency, and the proportion of independent commissioners collectively account for variation in financial performance; however, the F test does not show how or how significantly each variable individually contributes.

DISCUSSION

The regression results show that environmental costs have a negative relationship with financial performance among food and beverage companies listed on the IDX. This indicates that higher environmental costs are associated with lower financial performance in the observed sample. However, this result should not be interpreted as evidence that environmental expenditure directly reduces financial performance. Rather, the relationship needs to be understood in terms of the economic and managerial context of environmental spending. The negative relationship may be explained by several factors. Environmental costs can create a short-term financial burden through spending on pollution control, waste treatment, environmental provisions, and resource management, while the economic benefits may only be realized in the longer term. In addition, companies with weaker financial performance may incur higher environmental costs because of environmental problems, regulatory pressure, remediation, or compliance requirements. Such spending may therefore be reactive rather than a proactive strategic investment. The financial implications of environmental costs consequently depend on the purpose, timing, allocation, and effectiveness of the expenditure. The possibility of reverse causality should also be considered. Companies with stronger financial performance may have greater capacity to invest in environmental management, whereas weaker companies may face higher environmental costs due to pollution, regulatory penalties, remediation, or compliance. Therefore, the results indicate an empirical association rather than evidence of a causal relationship in which environmental costs reduce financial performance.

Environmental expenditure nevertheless reflects the company's efforts to control the environmental impact of its production activities. Companies that disclose environmental costs demonstrate greater attention to environmental management and stakeholder accountability. This is consistent with Ramadhana and Setiawan (2024), who emphasize the importance of environmental cost disclosure as information about corporate responsibility toward the environment. Such disclosure enables stakeholders to assess how companies manage the environmental consequences of their activities. From the perspective of Stakeholder Theory, environmental costs can also support relationships with communities, consumers, regulators, and investors. Danso et al. (2020) show that stakeholder integration and environmental sustainability orientation can support financial performance, while Baah et al. (2021) find that stakeholder pressure can encourage green production practices that influence corporate reputation, environmental performance, and financial results.

This issue is particularly relevant to food and beverage companies because their production activities involve substantial use of water, energy, raw materials, packaging, and waste management. Environmental spending on waste reduction, resource efficiency, pollution control, and compliance with environmental standards may reduce operational and reputational risks. Kim et al. (2021) show that environmental performance can be associated with firm market value and that this relationship may be strengthened by corporate reputation. The findings are also consistent with Dewi and Ardianingsih (2024), who report that environmental costs affect financial performance. Thus, environmental costs should not be viewed only as an operational burden but also as part of environmental management and stakeholder accountability. However, environmental expenditure does not automatically generate financial benefits. Its benefits are more likely to emerge when spending is directed toward productive activities such as energy and water efficiency, waste reduction, pollution prevention, and improved environmental management.

The results further show that audit committee meeting frequency has no significant effect on financial performance. This finding suggests that the effectiveness of corporate governance cannot be assessed merely from the frequency of formal meetings. Although the audit committee is responsible for overseeing financial reporting, internal controls, risk management, and compliance, frequent meetings do not necessarily indicate effective oversight. The quality of discussions, member competence and independence, attendance, and follow-up actions may be more important, although these aspects were not directly measured in this study and therefore cannot be used as empirical explanations for the insignificant relationship. This finding is consistent with Malik (2022) and Zulaika and Mariani (2024), who show that governance mechanisms do not always have a direct effect on financial performance. Similarly, Bansal (2016) finds that audit committee meeting frequency does not necessarily improve financial performance. In contrast, Hoque et al. (2013) identify a relationship between audit committee meeting activity and financial performance among Australian companies. These differences suggest that the contribution of audit committee meetings may depend on institutional context, company characteristics, member quality, and the broader governance environment. Meetings are more likely to contribute to financial performance when they address substantive issues and lead to concrete corrective actions. Therefore, companies should focus not only on the number of meetings but also on their quality and substance, particularly regarding financial risks, reporting quality, internal controls, compliance, and environmental risks. This approach can strengthen stakeholder protection and support sustainable financial performance.

The results also show that the independent board of commissioners has a significant effect on financial performance. This indicates that independent oversight can strengthen monitoring of management and encourage decisions that consider broader stakeholder interests. A higher proportion of independent commissioners can strengthen oversight of resource use, strategic decisions, risk management, financial reporting, and compliance. However, the negative coefficient indicates that greater board independence does not necessarily correspond to better financial performance. Thus, independent commissioners may strengthen accountability, but their financial contribution depends on the quality and effectiveness of their oversight. This result is consistent with Novitasari et al. (2020) and Malik (2022), which emphasize the importance of board independence in strengthening corporate oversight. From the perspective of Stakeholder Theory, independent commissioners can encourage management to consider not only shareholders but also consumers, employees, creditors, communities, regulators, and environmental interests. Wang et al. (2021) show that independent commissioners can influence CSR and financial performance in developing economies, while Tran (2021) finds that director independence can be related to profitability, particularly when combined with CSR practices. However, Yen and Thanh (2021) report

different findings, indicating that the effectiveness of independent commissioners may vary according to ownership structure, institutional environment, company characteristics, and the quality of monitoring. Therefore, formal independence needs to be supported by competence, objectivity, involvement, and effective oversight.

The significant effect of independent commissioners should nevertheless be interpreted cautiously. The relatively low R^2 indicates that most variation in financial performance is explained by factors outside the model. In addition, the irregular distribution of ROA values and unresolved heteroscedasticity in the independent commissioners variable (X3) may affect the reliability of the estimated coefficient and significance level. Therefore, the finding should be understood as an empirical relationship within the sample and model rather than as evidence of a strong or universally applicable causal relationship. The negative coefficient also suggests that the presence of independent commissioners alone cannot be assumed to improve financial performance.

When considered simultaneously, environmental costs, audit committee meeting frequency, and independent board of commissioners significantly affect financial performance. This finding indicates that environmental management and corporate governance should be viewed as complementary rather than isolated mechanisms. Environmental costs represent the company's responsibility toward external stakeholders and the environment, while the audit committee and independent commissioners support transparency, accountability, and internal oversight. Together, these mechanisms can help companies respond to stakeholder expectations while ensuring that corporate resources are managed responsibly.

From the perspective of Stakeholder Theory, effective stakeholder management can provide trust, reputation, support, and legitimacy that contribute to value creation. Danso et al. (2020) demonstrate the relevance of stakeholder integration and environmental sustainability to financial performance, while Baah et al. (2021) show that stakeholder pressure can encourage green production practices associated with corporate reputation and environmental outcomes. Other theoretical perspectives also provide useful interpretations. Agency Theory emphasizes monitoring and control costs, Legitimacy Theory views environmental expenditure as a response to social and regulatory expectations, Resource Dependence Theory highlights the potential role of independent commissioners in providing external resources and networks, and the Natural-Resource-Based View suggests that environmental capabilities can create competitive advantage when effectively integrated with organizational resources. These perspectives indicate that the relationship between environmental management, governance, and financial performance is context-dependent rather than uniformly positive.

Environmental responsibility may also generate economic benefits through corporate reputation. Kim et al. (2021) show that reputation can strengthen the relationship between environmental performance and firm market value. Meanwhile, independent commissioners strengthen management oversight, and the audit committee supports reporting integrity and internal controls. However, the insignificant effect of audit committee meeting frequency indicates that formal governance characteristics alone are insufficient to explain financial performance. Radu and Smaili (2021) emphasize the need to balance financial performance with social and environmental accountability. Accordingly, environmental expenditure is more likely to contribute to long-term benefits when supported by effective governance and directed toward productive environmental activities. Overall, the findings reinforce the relevance of Stakeholder Theory in understanding financial performance among food and beverage companies. Environmental costs reflect the company's response to external stakeholder interests, while corporate governance supports accountable decision-making and resource management. Nevertheless, their effects should be interpreted according to the empirical relationships identified in the study rather than assumed to automatically produce positive financial outcomes.

CONCLUSION

Based on the findings, environmental costs have a significant association with financial performance, while audit committee meeting frequency has no significant association. The proportion of independent commissioners has a negative and significant association with financial performance, while environmental costs, audit committee meeting frequency, and the proportion of independent commissioners jointly have a significant association with financial performance. These findings suggest that companies should improve environmental cost management and reporting, focus on the quality and effectiveness of audit committee oversight rather than meeting frequency, and strengthen the competence of independent commissioners in environmental, accounting, and risk management issues. This study is limited by its small sample, short observation period, heteroscedasticity, absence of control variables, and limited measurement of environmental and governance factors. Future research should use larger samples, longer observation periods, panel data, robust statistical methods, relevant control variables, and alternative measures of financial performance to provide more generalizable and comprehensive results.

REFERENCES

- Alabdullah, T. T. Y., & Naseer, H. Q. (2023). Corporate governance strategic performance as a significant strategic management to promoting profitability: A study in UAE. *Journal of Humanities, Social Sciences and Business*, 2(4), 620–635. <https://doi.org/10.55047/jhssb.v2i4.706>
- Anaima, N., & Trisnarningsih, S. (2021). Pengaruh mekanisme corporate governance terhadap kinerja keuangan dengan ukuran perusahaan sebagai variabel kontrol. *Jurnal Ilmiah Ekonomi Global Masa Kini*, 12(2), 83–90. <https://doi.org/10.36982/jiegm.v12i2.1348>
- Arens, A. A., Elder, R. J., Beasley, M. S., & Hogan, C. (2017). *Auditing and assurance services*. Pearson.
- Arrahima, I. (2024). Literature review: The influence of financial ratios in tax avoidance decision-making opportunities. *International Journal of Accounting, Business, and Economic Policy*, 1(1), 40–49. <https://ojs.projournal.com/index.php/ijabep/article/view/7>
- Baah, C., Opoku-Agyeman, D., Acquah, I. S. K., Agyabeng-Mensah, Y., Afum, E., Faibil, D., & Abdoulaye, F. A. M. (2021). Examining the correlations between stakeholder pressures, green production practices, firm reputation, environmental and financial performance: Evidence from manufacturing SMEs. *Sustainable Production and Consumption*, 27, 100–114. <https://doi.org/10.1016/j.spc.2020.10.015>
- Bansal, N. (2016). Audit committee, corporate governance and firm performance: Empirical evidence from India. *International Journal of Economics and Finance*, 8(3), 103–116. <https://doi.org/10.5539/ijef.v8n3p103>
- Budi, E. C., & Zuhrohtun, Z. (2023). Pengaruh green accounting, kinerja lingkungan dan biaya lingkungan terhadap kinerja keuangan. *E-Jurnal Ekonomi dan Bisnis Universitas Udayana*, 12(10), 1942–1953. <https://doi.org/10.24843/EEB.2023.v12.i10.p05>
- Budiman, R. (2018). *Rahasia analisis fundamental saham*. Elex Media Komputindo.
- Creswell, J. W., & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Danso, A., Adomako, S., Lartey, T., Amankwah-Amoah, J., & Owusu-Yirenkyi, D. (2020). Stakeholder integration, environmental sustainability orientation, and financial performance. *Journal of Business Research*, 119, 652–662. <https://doi.org/10.1016/j.jbusres.2019.02.038>
- Dewi, A. F., & Ardianingsih, A. (2024). Pengaruh corporate social responsibility (CSR), biaya lingkungan dan kinerja lingkungan terhadap kinerja keuangan: Perusahaan pertambangan yang terdaftar di Bursa Efek Indonesia (BEI) periode 2016–2022. *Journal of Accounting*

- and Management's Student*, 1(1), 1–11.
- Farhanah, S., & Susilawati, S. (2022). Pengaruh mekanisme corporate governance dan human capital terhadap kinerja keuangan. *Jurnal Akuntansi*, 11(2), 176–191. <https://doi.org/10.37932/ja.v11i2.655>
- Fauziah, N., Kurniawan, A. W., Nurman, Anwar, & Amin, A. M. (2023). Financial performance analysis using Economic Value Added (EVA) and Financial Value Added (FVA) at PT Astra International Tbk, 2017–2021 period. *Journal of Management, Accounting, General Finance and International Economic Issues*, 2(2), 494–502. <https://doi.org/10.55047/marginal.v2i2.612>
- Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly*, 4(4), 409–421. <https://doi.org/10.2307/3857340>
- Ghozali, I., & Ratmono, D. (2017). *Analisis multivariat dan ekonometrika: Teori, konsep, dan aplikasi dengan EViews 10*. Universitas Diponegoro.
- Hadi, N. (2011). *Corporate social responsibility*. Graha Ilmu.
- Hansen, D. R., & Mowen, M. M. (2009). *Akuntansi manajerial*. Salemba Empat.
- Hapsari, H. R., Irianto, B. S., & Rokhayati, H. (2021). Pentingnya alokasi biaya lingkungan terhadap kinerja lingkungan dan profitabilitas perusahaan. *Jurnal Riset Akuntansi dan Keuangan*, 9(2), 407–420. <https://doi.org/10.17509/jrak.v9i2.29598>
- Hoque, M. Z., Islam, M. R., & Azam, M. N. (2013). Board committee meetings and firm financial performance: An investigation of Australian companies. *International Review of Finance*, 13(4), 503–528. <https://doi.org/10.1111/irfi.12009>
- Hutabarat, F. (2021). *Analisis kinerja keuangan perusahaan*. Desanta Publisher.
- James, P. C. (2024). Improving corporate governance: Internal mechanisms or external controls—Which is better? A review of the literature. *International Journal of Business Management and Economic Research (IJBMER)*, 15(2), 2372–2383.
- Khasanah, U., Nuryati, T., & Arfananda, G. (2023). Pengaruh good corporate governance, kepemilikan institusional, dan ukuran perusahaan terhadap kinerja keuangan perusahaan. *International & National Conference on Accounting and Fraud Auditing*, 4(1), 1–13. <https://doi.org/10.31326/v4i1.1587>
- Kim, S., Terlaak, A., & Potoski, M. (2021). Corporate sustainability and financial performance: Collective reputation as moderator of the relationship between environmental performance and firm market value. *Business Strategy and the Environment*, 30(4), 1689–1701. <https://doi.org/10.1002/bse.2702>
- Ladyve, G. M., Askandar, N. S., & Mawardi, M. C. (2020). Pengaruh kinerja lingkungan, biaya lingkungan, dan ukuran perusahaan terhadap kinerja keuangan perusahaan yang terdaftar di Bursa Efek Indonesia tahun 2015–2018. *E-Jurnal Ilmiah Riset Akuntansi*, 9(6).
- Malik, M. H. A. (2022). Pengaruh good corporate governance terhadap kinerja keuangan sektor aneka industri di Bursa Efek Indonesia. *Owner: Riset & Jurnal Akuntansi*, 6(3), 1629–1647. <https://doi.org/10.33395/owner.v6i3.919>
- Meiyana, A., & Aisyah, M. N. (2019). Pengaruh kinerja lingkungan, biaya lingkungan, dan ukuran perusahaan terhadap kinerja keuangan dengan corporate social responsibility sebagai variabel intervening. *Nominal: Barometer Riset Akuntansi dan Manajemen*, 8(1), 1–18.
- Mirza, H. H., Hussain, H., Hussain, R. Y., Ahmed, M. W., & Adil, M. (2024). Corporate disclosure and transparency as a tool of socially responsible risk management. In *Advances in human resources management and organizational development* (pp. 91–104). IGI Global. <https://doi.org/10.4018/979-8-3693-5733-0.ch004>
- Nisrina, S., Ningtyas, I. W., & Wiwaha, A. (2022). Pengaruh penerapan good corporate governance dan struktur kepemilikan terhadap kinerja keuangan perusahaan manufaktur subsektor food and beverage. *International Journal of Digital Entrepreneurship and*

- Business*, 3(2), 92–101. <https://doi.org/10.52238/ideb.v3i2.95>
- Novaliana, S., Akila, A., & Mafra, N. U. (2023). Pengaruh good corporate governance (GCG) dan struktur kepemilikan terhadap kinerja keuangan perusahaan perbankan yang terdaftar di Bursa Efek Indonesia periode 2016–2020. *Jurnal Media Wahana Ekonomika*, 20(3), 549–562. <https://doi.org/10.31851/jmwe.v20i3.13460>
- Novitasari, I., Endiana, I. D. M., & Arizona, I. P. E. (2020). Pengaruh mekanisme good corporate governance terhadap kinerja keuangan perusahaan perbankan yang terdaftar di BEI. *Kumpulan Hasil Riset Mahasiswa Akuntansi (KHARISMA)*, 2(1), 47–57.
- Radu, C., & Smaili, N. (2021). Corporate performance patterns of Canadian listed firms: Balancing financial and corporate social responsibility outcomes. *Business Strategy and the Environment*, 30(7), 3344–3359. <https://doi.org/10.1002/bse.2806>
- Ramadhana, N. M., & Setiawan, M. A. (2024). Pengaruh pengungkapan biaya lingkungan terhadap kinerja keuangan dengan kinerja lingkungan sebagai variabel moderasi. *Jurnal Eksplorasi Akuntansi*, 6(2), 640–654. <https://doi.org/10.24036/jea.v6i2.1550>
- Renyaan, R. M., & Sofian, S. (2023). Pengaruh mekanisme corporate governance terhadap kinerja keuangan. *Jurnal Ilmiah Mahasiswa Akuntansi*, 12(2), 134–145. <https://doi.org/10.33508/jima.v12i2.5354>
- Rounaghi, M. M. (2019). Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability indicators. *International Journal of Ethics and Systems*, 35(4), 504–512. <https://doi.org/10.1108/IJOES-03-2019-0056>
- Saifi, M. (2019). Pengaruh corporate governance dan struktur kepemilikan terhadap kinerja keuangan perusahaan. *Profit: Jurnal Administrasi Bisnis*, 13(2), 1–11.
- Suryanto, A., & Refianto, R. (2019). Analisis pengaruh penerapan good corporate governance terhadap kinerja keuangan. *Jurnal Bina Manajemen*, 8(1), 1–33. <https://doi.org/10.52859/jbm.v8i1.53>
- Syahputri, L., & Saragih, F. (2024). Pengaruh good corporate governance terhadap profitabilitas pada perusahaan perbankan yang terdaftar di Bursa Efek Indonesia. *Owner*, 8(1), 673–685. <https://doi.org/10.33395/owner.v8i1.1763>
- Syofyan, E. (2021). *Good corporate governance (GCG)*. Unisma Press.
- Titania, H., & Taqwa, S. (2023). Pengaruh good corporate governance terhadap kinerja keuangan perusahaan. *Jurnal Eksplorasi Akuntansi*, 5(3), 1224–1238. <https://doi.org/10.24036/jea.v5i3.795>
- Tran, H. T. (2021). The link between independent directors and firm's performance: The moderating role of corporate social responsibility. *Corporate Governance*, 21(5), 831–844. <https://doi.org/10.1108/CG-05-2020-0176>
- Umboh, O. M., & Yanti, H. B. (2025). The effect of financial performance and corporate social responsibility on firm value with firm size as a control variable. *TRANSEKONOMIKA: Akuntansi, Bisnis dan Keuangan*, 5(2), 354–362. <https://doi.org/10.55047/transekonomika.v5i2.860>
- Utami, D., Azari, C., & Kusuma, Y. B. (2020). Pengaruh good corporate governance dan leverage terhadap kinerja keuangan perusahaan subsektor makanan dan minuman. *Aplikasi Administrasi: Media Analisis Masalah Administrasi*, 23(2), 1–17. <https://doi.org/10.30649/aamama.v23i2.116>
- Wang, C., Deng, X., Alvarez-Otero, S., Sial, M. S., Comite, U., Cherian, J., & Oláh, J. (2021). Impact of women and independent directors on corporate social responsibility and financial performance: Empirical evidence from an emerging economy. *Sustainability*, 13(11), 6053. <https://doi.org/10.3390/su13116053>
- Yen, N. H., & Thanh, N. P. (2021). Independent directors and performance of companies listed on the Ho Chi Minh Stock Exchange. *VNUHCM Journal of Economics, Business and*

Law, 5(4), 1881–1891. <https://doi.org/10.32508/stdjelm.v5i4.784>

Zulaika, A. M., & Mariani, D. (2024). Pengaruh komite audit, biaya lingkungan, modal intelektual, likuiditas, dan pertumbuhan perusahaan terhadap kinerja keuangan perusahaan. *Jurnal Mutiara Ilmu Akuntansi*, 2(3), 292–313. <https://doi.org/10.55606/jumia.v2i3.3256>