

THE EFFECT OF PROFITABILITY, LEVERAGE, LIQUIDITY, AND FIRM SIZE ON EARNINGS MANAGEMENT WITH GENDER DIVERSITY AS A MODERATING VARIABLE



Melinda Astuti¹

Universitas Esa Unggul, Jakarta, Indonesia
melindaastuti90@student.esaunggul.ac.id

Eka Bertuah²

Universitas Esa Unggul, Jakarta, Indonesia
eka.bertuah@esaunggul.ac.id

Abstract

This study aims to analyze the effect of firm characteristics – profitability, leverage, liquidity, and firm size – on earnings management, with gender diversity on the board of directors as a moderating variable. Using panel data from food and beverage industry companies listed on the Indonesia Stock Exchange (IDX) from 2019 – 2023, the study finds that profitability has a positive and significant effect on earnings management, while leverage, liquidity, and firm size have no significant effect. Gender diversity negatively moderate the relationship between profitability and earnings management, indicating that the presence of women on the board can reduce earnings manipulation during profitability. In contrast, gender diversity positively moderate the firm effect of firm size, suggesting that in larger firms, it may strengthen the tendency toward earnings management. Gender diversity does not moderate the effect of leverage and liquidity on earnings management. These findings contribute to agency theory by demonstrating that profitability creates an incentive misalignment between managers and shareholders, which can lead to earnings manipulation. However, gender diversity can strengthen monitoring and reduce agency conflicts, though its effectiveness varies by context. These results imply that the effectiveness of gender diversity as a governance mechanism depends on specific firm conditions.

Keywords: Earnings Management, Profitability, Leverage, Liquidity, Firm Size, Gender Diversity

INTRODUCTION

The food and beverage sector in Indonesia is one of the most represented industries on the Indonesia Stock Exchange (IDX). According to the *IDX Yearly Statistics 2023* published by the Indonesia Stock Exchange, there were 95 listed companies in this sector as of 2023. This indicates that companies in the food and beverage sector have experienced significant development. The industry has become one of the leading sectors that contributes substantially to national economic growth.

In 2019, before the outbreak of the COVID-19 pandemic, the sector experienced rapid growth driven by increased consumer purchasing power, the healthy lifestyle trend, and the growing consumption of processed foods and ready-to-drink beverages. However, when COVID-19 spread across the globe, including Indonesia, in 2020, it brought new challenges to nearly every aspect of life — including the food and beverage industry. Social restrictions, supply chain disruptions, and changes in consumer behavior led to a decline in demand in several subsectors. Nevertheless, the food and beverage sector successfully adapted by accelerating digitalization, expanding online sales channels, and introducing innovative products that aligned with market needs during the pandemic.

Between 2021 and 2023, the food and beverage sector gradually recovered and demonstrated strong growth. According to Bayu (2021), one of the main drivers of this recovery was the normalization of economic activities and the increase in consumer purchasing power. In 2021, the sector recorded an investment increase of IDR 36.6 trillion, and during 2022–2023, it continued to show significant growth.

The growth of Indonesia's food and beverage sector cannot be separated from companies' efforts to maintain stable performance, particularly in financial aspects. Many strategies can be undertaken by companies to sustain financial stability — one of which is earnings management. Earnings management plays an essential role in corporate development. In accounting, earnings management is a topic that has received considerable attention and serves as a major focus in academic research. This practice is used by management to adjust or manipulate financial reporting in order to achieve specific objectives, such as meeting profit targets, increasing stock value, or avoiding debt covenant violations.

According to Healy and Wahlen (1999), earnings management is often conducted using legitimate accounting techniques but can mislead stakeholders regarding the company's actual performance. However, such practices pose long-term risks if the reported financial information does not reflect the true condition of the company, it can lead to reputational damage, a decline in investor trust, and even regulatory sanctions.

Numerous factors may influence earnings management practices. From the perspective of financial ratios, profitability, leverage, and liquidity are among the most frequently examined variables in relation to earnings management. These ratios are commonly used to assess a company's performance and financial health.

Several studies investigating the effects of profitability, leverage, and liquidity on earnings management have produced mixed results. Hasty and Herawaty (2017) reported that profitability, represented by Return on Assets (ROA), and leverage, represented by Debt to Asset Ratio (DAR), both have a positive effect on earnings management. Similarly, Purnama and Nurdiniah (2019) found that profitability (ROA) has a positive influence on earnings management. In contrast, Marchellina and Firnanti (2021) found that both profitability and

leverage ratios do not affect earnings management. These findings are consistent with those of Adi et al. (2020), who concluded that profitability, leverage, and liquidity do not influence earnings management. Moghaddam and Abbaspour (2017) found that leverage and liquidity positively affect earnings management, while Hasanuddin et al. (2021) showed that leverage has no effect but liquidity positively influences earnings management.

Beyond financial ratios, firm size also affects earnings management. Kalbuana et al. (2021) explained that larger companies tend to be under stricter scrutiny by auditors and regulators, making earnings management more difficult compared to smaller firms. However, large firms often face pressure to meet market expectations, which may lead them to engage in more sophisticated forms of earnings management using their greater resources. Previous studies on the effect of firm size on earnings management have also produced varied results. Purnama and Nurdiniah (2019) found a negative relationship between firm size and earnings management, while Gozali et al. (2021) found a positive relationship. Meanwhile, studies conducted by Adi et al. (2020), Marchellina and Firnanti (2021), Hutauruk et al. (2022), and Hasanuddin et al. (2021) concluded that firm size has no significant effect on earnings management.

In recent years, the presence of women on corporate boards has had a notable impact within organizations. In the context of earnings management, gender diversity on the board of directors can enhance oversight of management, helping to reduce manipulation in profit reporting. Attia et al. (2024) stated that gender diversity on the board of directors has a negative effect on earnings management. This means that a higher proportion of women on the board tends to reduce earnings management practices while improving transparency and the quality of financial reporting. Similar findings were presented by Karina et al. (2023) and Ramadana et al. (2024). Ramadan (2021) also confirmed that the presence of women on the board is effective in reducing earnings management practices, as women tend to be more conservative and adhere more closely to ethical and moral standards than their male counterparts. Likewise, Kyaw et al. (2015) reported that gender diversity on the board of directors tends to reduce earnings management within companies.

The mixed results from prior studies have inspired the author to conduct research examining the effects of profitability, leverage, liquidity, and firm size on earnings management within Indonesia's food and beverage industry. This study aims to determine whether companies in this sector engage in earnings management and whether these four variables significantly influence such practices.

In addition to these independent variables, this study introduces gender diversity as a moderating variable to assess whether differences in gender composition on corporate boards affect earnings management. Female representation serves as the moderating variable. Through this study, the author aims to identify whether the presence of women on the board of directors moderates the influence of profitability, leverage, liquidity, and firm size on earnings management.

The purpose of this research is to analyze how profitability, leverage, liquidity, and firm size affect earnings management when gender diversity is included as a moderating variable. This study is expected to provide useful information and serve as a reference for future research.

REVIEW OF LITERATURE

Agency Theory

According to Jensen & Meckling (1976), agency is a concept that explains the relationship between the principal (owner or shareholder) and the agent (manager or executive). This relationship can exist between two or more individuals, groups, or organizations. The theory highlights the potential conflict of interest that arises when one party (the agent) makes decisions and acts on behalf of another (the principal). The differing priorities between the principal and the agent can lead to conflict — the principal focuses on maximizing company value and shareholder profits, while the agent tends to focus on personal interests such as salary, bonuses, and job security. The relationship between the principal and the agent can also result in information asymmetry, as agents often possess more information about the company than the principals do.

Positive Accounting Theory (PAT)

Positive Accounting Theory (PAT) was developed by Watts and Zimmerman (1986) to explain and predict how companies choose accounting methods. This theory views the firm as a nexus of contracts and suggests that managers often make accounting choices to serve their own incentives rather than to objectively portray the company's performance. One of PAT's hypotheses is the *Bonus Plan Hypothesis*, which posits that managers who receive bonuses based on company profits tend to select accounting methods that shift future income into the current period to increase reported earnings.

Profitability Ratio

Profitability ratios are used when a company wants to assess its ability to generate profit. These ratios also measure the effectiveness of a company's management (Kasmir, 2019). Profitability ratios show the efficiency of a company as reflected by the profit generated from sales and investment income. The ratio is measured by comparing various components in the financial statements, focusing primarily on the balance sheet and income statement. Profitability ratios can be measured over several periods to assess company performance trends over time (Kasmir, 2019).

Return on Assets (ROA) is a ratio that indicates a company's ability to generate profit from the assets it uses (Kasmir, 2019). A higher ROA value indicates a better company condition. ROA is also a measure of how effectively management utilizes its investments.

Leverage Ratio

The leverage ratio shows the extent to which a company's assets are financed by debt. It indicates the company's debt burden relative to its assets. Broadly, the leverage ratio measures the company's ability to pay all its obligations, both short-term and long-term, if the company were liquidated (Kasmir, 2019).

Debt-to-Asset Ratio (DAR) measures the proportion of total debt to total assets. It is calculated by comparing total liabilities, including current liabilities, with total assets. This ratio measures how much of a company's assets are financed by debt (Kasmir, 2019). A higher DAR indicates greater reliance on debt financing, suggesting higher financial risk. The higher the debt, the greater the interest burden and obligations that must be met (Kasmir, 2019).

Liquidity Ratio

Fred Weston, as cited in Kasmir (2019), defines the liquidity ratio as a ratio that describes a company's ability to meet its short-term obligations. Liquidity ratios function to

show or measure how quickly a company can meet its obligations due in the near future (Kasmir, 2019).

Current Ratio measures a company's ability to pay its short-term obligations when they come due. If the ratio is greater than one, it means the company has sufficient assets to cover its short-term liabilities. The higher the ratio, the better the company's liquidity position (Kasmir, 2019).

Firm Size

Firm size refers to how large or small a company is. It is typically measured by total assets, number of employees, sales, or market capitalization. Firm size is often used in research to examine how the scale of a company affects various aspects of performance, including financial strategy, risk, profitability, and managerial behavior such as earnings management (Dang et al., 2018). Firm size can be measured using the logarithm of total assets — the larger the total assets, the larger the firm size.

Earnings Management

Earnings management refers to managerial behavior in managing earnings through specific accounting methods (Hasty and Herawaty, 2017). Sulistyanto (2014) explains that earnings management involves intentionally altering financial information to increase or decrease reported earnings in order to make them appear stable. Management may engage in earnings management for various reasons, such as increasing stock prices, meeting financial targets, maximizing bonuses, or fulfilling investor expectations.

According to Sulistyanto (2014), several models have been developed and widely used to measure earnings management, including the *Healy Model (1985)*, *DeAngelo Model (1986)*, *Jones Model (1991)*, and *Modified Jones Model*.

The *Modified Jones Model* is an improvement of the Jones Model designed to eliminate estimation errors in determining discretionary accruals when discretion exceeds revenue (Sulistyanto, 2014). This model is widely used in accounting research because it more accurately separates discretionary accruals (which can be manipulated by management) from non-discretionary accruals (which cannot be manipulated). By considering changes in receivables, this model can more precisely identify manipulation practices. It also provides consistent and reliable results across various industries and conditions due to its robustness and stability.

Earnings management is measured through *Discretionary Accruals (DA)*. When $DA > 0$, the company engages in income-increasing earnings management. Conversely, when $DA < 0$, the company engages in income-decreasing earnings management (Dechow et al., 1995).

Gender Diversity

Gender diversity has become an increasingly relevant topic in recent years. It is believed that gender diversity can positively impact company performance. The presence of women on the board of directors brings a new perspective to corporate decision-making. Women tend to think differently from men, which is expected to influence the quality of decision-making processes (Nathania, 2022). Gull et al. and Hala, as cited in Ramadan (2021), state that compared to men, women are generally more socially oriented and focused on helping others, while men tend to be more concerned with personal gain and social status within the company.

RESEARCH METHOD

Measurement

This research is measured using hypothesis testing based on the variables included in the study. These variables are Profitability Ratio, Leverage Ratio, Liquidity Ratio, Firm Size, Gender Diversity, and Earnings Management. Each variable has its own measurement method. The independent variable profitability ratio is measured using Return on Assets (ROA), while the leverage ratio is measured using Debt to Asset Ratio (DAR). The liquidity ratio is measured using the Current Ratio (CR), while firm size (FS) is calculated using the logarithmic approach of total assets.

The moderating variable Gender Diversity (GD) is measured using a dummy variable, where 0 indicates that the company does not have female members on the board of directors, and 1 indicates that the company does have female members on the board. The dependent variable Earnings Management is calculated through Discretionary Accruals (DA), which are measured using the Modified Jones Model, consisting of four stages.

Population and Sample

The population used in this study consists of food and beverage sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period, totaling 94 companies. The sampling technique employed is purposive sampling. According to Sugiyono (2020), purposive sampling is a sampling method based on specific criteria aimed at ensuring that the selected samples accurately represent the research population. The sampling criteria are as follows:

1. Food and beverage sector companies listed on the IDX during the 2019–2023 period.
2. Food and beverage sector companies listed on the IDX since 2019 and still listed in 2023.
3. Food and beverage sector companies that consistently report their financial statements during the 2019–2023 period.
4. Food and beverage sector companies that did not change their industrial sector during the 2019–2023 period.

The sample was determined using a purposive sampling technique applied to companies in the food and beverage sector, resulting in a total of 32 companies used as samples in this study over a 5-year period (2019–2023), yielding a total of 270 sample data points. The results of the sample determination are summarized in Table 1 below.

Table 1.

Results of Sample Determination Using the Purposive Sampling Technique

No	Description	Total
1	Companies listed on the Indonesia Stock Exchange (IDX) in 2023	95
2	Companies not yet listed on the IDX during the 2019–2023 period	(37)
3	Companies that did not report their financial statements during the 2019–2023 period	(2)
4	Companies that changed their industrial sector during the 2019–2023 period	(2)
Total companies that can be used in the research		54
Total samples used in the research (54 companies × 5 periods)		270

Source: Processed Data by Researcher, 2025

Unit of Analysis

This study employs library research and documentation methods to obtain the required information. The library research method is used to gather data and information from various written sources such as books, journals, articles, research reports, official documents, and other written materials. The documentation method is carried out using computer software to summarize digital data and information related to theoretical frameworks, financial reports, and various relevant journal websites.

Data Collection Technique

The data used in this study are secondary data. Secondary data refer to data that have been provided by other parties and are typically available in the form of publications, statistical reports, databases, or other documents. The data used in this research consist of audited financial statements published over a consecutive five-year period (2019–2023), obtained from the Indonesia Stock Exchange (IDX) website and the respective company websites.

RESULT AND DISCUSSION

Panel Data Regression Model Selection Test

The regression models used in this study consist of three regression models, all of which were tested to determine the most appropriate model to be applied.

Table 3.

Results of Panel Data Regression Model Selection Test

	Regression Model 1	Regression Model 2	Regression Model 3
<i>Chow Test</i>	0,0001	0,0000	0,0010
<i>Hausman Test</i>	0,0866	0,0014	0,0001
<i>Lagrange Multiplier Test</i>	0,0003	-	-
Selected model	<i>Random Effect</i>	<i>Fixed Effect</i>	<i>Fixed Effect</i>

Source: Processed Data

From the three regression model tests conducted, the following conclusions were obtained:

1. The regression model without the moderating variable is best analyzed using the Random Effect Model.
2. The regression model with the moderating variable as an independent variable is best analyzed using the Fixed Effect Model.
3. The regression model with the interaction between independent and moderating variables is best analyzed using the Fixed Effect Model.

Classical Assumption Tests

Since the purpose of this study is to determine the effect of profitability, leverage, liquidity, and firm size on earnings management with gender diversity as a moderating variable, the regression model used for the classical assumption tests is the third regression model. The third model represents the regression with interactions between the independent and moderating variables. As established from the model selection tests, the most appropriate model for the third regression is the Fixed Effect Model.

Multicollinearity Test

To test for multicollinearity, one of the indicators used is the Variance Inflation Factor (VIF). The VIF test can only be performed on the regression model using the Common Effect

Model. However, this does not affect the main research model, which uses the Fixed Effect Model.

According to James et al. (2017), if the VIF value of a variable exceeds 10, that variable is suspected of having multicollinearity. The results of the multicollinearity test are presented in the following table:

Table 4.
Results of Multicollinearity Test for Regression with Interaction between Independent and Moderating Variables

Variable	VIF	Conclusion
Firm Size × Gender Diversity	317.68	Multicollinearity occurs
Gender Diversity	308.24	Multicollinearity occurs
Leverage × Gender Diversity	11.48	Multicollinearity occurs
Liquidity × Gender Diversity	4.17	No multicollinearity
Liquidity	1.90	No multicollinearity
Firm Size	1.83	No multicollinearity
Leverage	1.76	No multicollinearity
Profitability × Gender Diversity	1.68	No multicollinearity
Profitability	1.33	No multicollinearity

Source: Processed Data

The multicollinearity test results indicate very high multicollinearity, particularly for the interaction variable between firm size and gender diversity (VIF = 317.68) and the gender diversity variable itself (VIF = 308.24). This is likely caused by the interaction terms that all involve gender diversity, thereby increasing correlations among variables.

To address this high multicollinearity issue, the mean-centering method was applied to reduce the high interaction effects between independent and moderating variables. The results after applying mean-centering are shown below:

Table 5.
Results of Multicollinearity Test after Applying Mean-Centering

Variabel	VIF	Kesimpulan
Leverage x Gender Diversity	2,24	No multicollinearity
Liquidity x Gender Diversity	2,10	No multicollinearity
Firm Size x Gender Diversity	1,95	No multicollinearity
Liquidity	1,90	No multicollinearity
Firm Size	1,83	No multicollinearity
Leverage	1,76	No multicollinearity
Profitability x Gender Diversity	1,45	No multicollinearity
Profitability	1,33	No multicollinearity
Gender Diversity	1,19	No multicollinearity

Source: Processed Data

Based on the VIF test results after applying mean-centering, all variables in the third model have VIF values below 2.50, with an average of 1.75. This indicates that there is no sign of multicollinearity among the independent variables or between the interaction terms. Therefore, the regression model can be considered free from multicollinearity that might distort coefficient estimation.

Autocorrelation Test

Table 6.
Results of Autocorrelation Test for Regression with Interaction between Independent and Moderating Variables

F Value	Prob > F	Description
3,615	0,0627	No autocorrelation

Source: Processed Data

The autocorrelation test in this study was conducted using the Wooldridge Test for panel data. The results show an F-value of 3.615 with a probability value of 0.0627. Since the probability value is greater than the 5% significance level, it can be concluded that there is no autocorrelation problem. Thus, the Fixed Effect regression model in this study does not experience autocorrelation issues.

Heteroskedasticity Test

The heteroskedasticity test results for the regression model with interaction terms are presented below:

Table 7.
Results of Heteroskedasticity Test for Regression with Interaction between Independent and Moderating Variables

Chi2 Value	Prob > Chi2	Description
9.721,95	0,0000	Heteroscedasticity occurs

Source: Processed Data

The heteroskedasticity test results show a Chi² value of 9,721.95 with a probability of 0.0000, leading to the rejection of Ho. This indicates that heteroskedasticity exists in the panel Fixed Effect regression model. To address this issue, the use of robust standard errors is recommended to maintain the validity and unbiasedness of coefficient estimations, as suggested by Wooldridge (2012) and Greene (2012).

Hypothesis Testing

After completing the model and classical assumption tests, the next stage is hypothesis testing to determine the effect of each independent and moderating variable on earnings management.

Simultaneous Significance Test (F-Test)

Table 8.
F-Test Results

	Regression Model 1	Regression Model 2	Regression Model 3
<i>F/Chi2 Statistic</i>	0,0000	0,0000	0,0000

Source: Processed Data

Based on the results in Table 8, all regression models show a probability (p-value) of 0.0000, indicating that regression models 1, 2, and 3 are simultaneously significant. Thus, it can be concluded that the independent variables used in all three models simultaneously influence earnings management.

Coefficient of Determination (R² Test)

Table 9.

R² Test Results

	Model Regresi 1	Model Regresi 2	Model Regresi 3
<i>R-Squared</i>	0,2655	0,3404	0,3966

Source: Processed Data

Based on the results in Table 9, regression model 3 has the highest coefficient of determination (R²) of 0.3966, indicating that 39.66% of the variation in earnings management practices can be explained by the tested variables. Compared to regression models 1 and 2, model 3 is the strongest in explaining earnings management variations.

Hypothesis Test for Regression Model 1

Based on the model selection results in Table 3, the regression model without the moderating variable is best analyzed using the Random Effect Model.

Table 10.

Hypothesis Test Results for Regression Model 1

Variable	Coefficient	t-Value	p-Value	Conclusion
Profitability (ROA)	0.4780	9.79	0.000	Positive effect
Leverage (DAR)	0.0872	3.15	0.002	Positive effect
Liquidity (CR)	-0.0009	-0.22	0.827	No effect
Firm Size (FS)	-0.0030	-0.64	0.523	No effect
Constant	-0.0044	-0.03	0.974	—

Source: Processed Data

From Table 10, it is found that profitability and leverage have a positive and significant effect on earnings management, while liquidity and firm size have no significant effect. The regression equation for Model 1 is:

$$EM = - 0,0044 + 0,4780ROA * + 0,0872DAR * - 0,0009CR - 0,0030FS + \epsilon$$

Hypothesis Test for Regression Model 2

Based on the model selection results in Table 3, the regression model with the moderating variable as an independent variable is best analyzed using the Fixed Effect Model.

Table 11.

Hypothesis Test Results for Regression Model 2

Variable	Coefficient	t-Value	p-Value	Conclusion
Profitability (ROA)	0.4969	8.52	0.000	Positive effect
Leverage (DAR)	0.1322	2.70	0.008	Positive effect
Liquidity (CR)	0.0046	0.65	0.516	No effect
Firm Size (FS)	0.0623	1.93	0.055	Positive effect
Gender Diversity (GD)	-0.0916	-3.24	0.001	Negative effect
Constant	-0.0044	-0.03	0.974	—

Source: Processed Data

From Table 11, profitability, leverage, and firm size have positive and significant effects on earnings management. Additionally, gender diversity also influences earnings management, with a negative coefficient value. This means that as gender diversity increases, earnings management tends to move toward reducing profit fluctuations from year to year to appear more stable. Liquidity, however, has no significant effect on earnings management. The regression equation for Model 2 is:

$$EM = -0,0044 + 0,4969ROA^* + 0,1322DAR^* + 0,0046CR + 0,0623FS^* - 0,0916 GD^* + \varepsilon$$

Hypothesis Test for Regression Model 3

Table 12.
Hypothesis Test Results for Regression Model 3

Variable	Coefficient	t-Value	p-Value	Conclusion
Profitability (ROA)	0.5451	6.22	0.000	Positive effect
Leverage (DAR)	0.0867	1.51	0.137	No effect
Liquidity (CR)	-0.0025	-0.42	0.675	No effect
Firm Size (FS)	0.0547	1.04	0.301	No effect
Gender Diversity (GD)	-0.1372	-3.42	0.001	Negative effect
Profitability × Gender (ROA × GD)	-0.5374	-2.08	0.042	Negative effect
Leverage × Gender (DAR × GD)	0.0602	0.34	0.733	No effect
Liquidity × Gender (CR × GD)	0.0172	1.33	0.189	No effect
Firm Size × Gender (FS × GD)	0.0333	1.84	0.071	Positive effect
Constant	0.3505	2.00	0.051	—

Source: Processed Data

Based on Table 12 and using a 10% significance level ($\alpha = 0.10$), only four variables significantly affect earnings management: profitability, gender diversity, the interaction between profitability and gender diversity, and the interaction between firm size and gender diversity. The regression equation for Model 3 is:

$$EM = 0,3505 + 0,5451ROA^* + 0,0867DAR - 0,0025CR + 0,0547FS - 0,1372GD^* - 0,5374ROAxGD^* + 0,0602DARxGD + 0,0172CRxGD + 0,333FSxGD^* + \varepsilon$$

The regression results indicate that profitability has a positive and significant effect on earnings management (coefficient = 0.5451, p-value = 0.000 < 0.10). This supports **H1**, meaning that the higher a company's profitability, the greater the tendency for management to engage in earnings management practices.

For **H2**, which tests the effect of leverage, the coefficient is positive but not significant (p-value = 0.137 > 0.10), leading to the rejection of H2.

For **H3** (liquidity), the coefficient is negative with a p-value of 0.675 (> 0.10), thus H3 is rejected, indicating liquidity has no effect on earnings management.

For **H4** (firm size), the coefficient is 0.0547 with a p-value of 0.301 (> 0.10), so H4 is also rejected.

For **H5**, the interaction between profitability and gender diversity is significant (coefficient = -0.5374, p-value = 0.042 < 0.10), indicating that gender diversity weakens the effect of profitability on earnings management.

For **H6**, the interaction between leverage and gender diversity is not significant (p-value = 0.733), showing that gender diversity does not moderate the relationship between leverage and earnings management.

For **H7**, the interaction between liquidity and gender diversity is also not significant (p-value = 0.189), indicating no moderating effect.

For **H8**, the interaction between firm size and gender diversity is significant (coefficient = 0.0333, p-value = 0.071 < 0.10), suggesting that gender diversity strengthens the effect of firm size on earnings management.

Discussion

From an accounting perspective, earnings management is the effort by management to adjust figures in financial statements by selecting certain accounting policies or estimates that are still permitted under accounting standards. This practice is not necessarily illegal, but it can obscure relevant information for stakeholders. Accountants play a strategic role in this process because, through their technical understanding and knowledge of accounting policies, they can prepare financial statements that align with management's objectives whether to show stable performance, meet certain targets, or make company profits appear more consistent across periods, even when actual earnings may fluctuate significantly.

In practice, management can manipulate the recording of revenues or expenses so that these fluctuations are less visible, thereby presenting financial statements that appear more stable and reliable to investors and creditors. Understanding the motivations behind earnings management including those explained by behavioral accounting theories such as the Bonus Hypothesis is crucial to assess financial statements more critically.

The research findings indicate that profitability has a positive effect on earnings management. This supports the research hypothesis and aligns with agency theory, which highlights the divergence of interests between managers (agents) and shareholders (principals). The findings also support the Bonus Hypothesis theory proposed by Watts and Zimmerman (1986), which posits that managers with performance-based compensation contracts such as those tied to profit or profitability ratios tend to engage in earnings management to maximize their bonuses. The higher the reported profitability, the greater the likelihood that managers will receive financial incentives. This motivates them to manipulate earnings so that the financial statements appear stable and convincing, thereby increasing the chances of receiving bonuses or incentives. In other words, management leverages its informational advantage to present financial reports that align with corporate objectives, even if they do not fully reflect the company's real condition. These findings are consistent with studies conducted by Putri and Naibaho (2022), Hasty and Herawaty (2017), Kalbuana et al. (2021), Jaunanda and Oktaviyanti (2023), and Purnama and Nurdiniah (2019), which found that profitability drives companies to engage in earnings management to maintain the appearance of financial stability in the eyes of investors.

The leverage variable was found to have no effect on earnings management. This means that the company's debt level whether high or low does not determine management's decision to engage in earnings management. This finding suggests that creditor pressure or debt obligations do not always trigger managerial pressure as assumed in agency theory. In some cases, companies may have sufficiently strong internal control and monitoring systems to prevent earnings management, even with high leverage levels. This result contradicts previous studies by Hasty and Herawaty (2017), Moghaddam and Abbaspour (2017),

Kalbuana et al. (2021), Jaunanda and Oktaviyanti (2023), Prawida and Sutrisno (2021), and Bestari (2020), which found a positive relationship between leverage and earnings management.

Liquidity also showed no significant effect on earnings management. This indicates that a company's ability to meet short-term obligations is not a determining factor influencing management's behavior in preparing financial statements. Companies with high liquidity do not experience pressure to adjust earnings. This result contradicts prior studies by Moghaddam and Abbaspour (2017), Ani and Hardiyanti (2022), Novitasari and Desitama (2023), and Putri (2023), but supports findings by Marchellina and Firnanti (2021), Adi et al. (2020), Hasanuddin et al. (2021), and Purwaningsih and Mayangsari (2023), which concluded that liquidity has no effect on earnings management.

Similarly, firm size was found to have no significant effect on earnings management. This implies that company size large or small does not determine management's tendency to manipulate earnings. Large firms, which are subject to stricter public and regulatory scrutiny, may have limited or no room for earnings management practices. This finding is consistent with studies by Adi et al. (2020), Marchellina and Firnanti (2021), Hutauruk et al. (2022), and Hasanuddin et al. (2021), which also found that firm size does not affect earnings management.

Furthermore, the interaction between profitability and gender diversity has a negative and significant effect on earnings management. This means that gender diversity moderates the relationship between profitability and earnings management where the presence of women on the board of directors weakens the effect of profitability on management's tendency to manipulate earnings. This can be explained through agency theory, which addresses conflicts of interest between managers (agents) and company owners (principals). In highly profitable firms, managers have greater incentives to manage earnings to maintain image and market expectations. However, the presence of women on the board can strengthen oversight functions, reducing opportunistic managerial behavior. From the perspective of the Bonus Hypothesis, this suggests that women on boards tend to bring ethical perspectives, tighter monitoring, and higher sensitivity to reputational risk and compliance, acting as a counterbalance to manipulative behavior. This finding aligns with studies by Bae and Skaggs (2019), Gavius et al. (2012), and Purwaningsih and Mayangsari (2023).

However, gender diversity did not moderate the relationship between leverage and earnings management. This indicates that the presence of women on the board does not influence managerial decisions related to debt financing. Gender diversity has not yet demonstrated sufficient supervisory or influential power to curb earnings management tendencies that may arise due to high debt pressure. This finding contradicts studies by Attia et al. (2024), Karina et al. (2023), Ramadana et al. (2024), Ramadan (2021), and Kyaw et al. (2015).

Similarly, gender diversity did not moderate the relationship between liquidity and earnings management, suggesting that the presence or absence of women on the board does not affect company policies in managing liquidity that could lead to earnings manipulation. Cash flow sufficiency or asset availability appears unrelated to gender-based oversight. This result is inconsistent with the findings of Sumira and Prihandini (2022) and Anh & Khuong (2022).

On the other hand, gender diversity was found to moderate the relationship between firm size and earnings management. In this case, the presence of women on the board can influence managerial decisions regarding asset management related to earnings manipulation. Both large and small companies have the potential to engage in earnings management. In larger firms, the opportunity to receive bonuses is generally greater due to the scale of operations and profit potential. The presence of women on the board may strengthen the relationship between firm size and earnings management when they support reporting strategies that maximize profit performance for corporate reputation or personal incentives. The positive coefficient indicates that gender diversity on the board actually strengthens the effect of firm size on earnings management tendencies. In other words, the larger the firm size combined with gender diversity, the higher the likelihood of earnings management.

This finding contrasts with studies by Peni & Vähämaa (2010), Gaviious et al. (2012), Kyaw et al. (2015), and Karina et al. (2023). However, it can be explained by considering that in large firms, operational complexity and performance pressure may drive management to continue practicing earnings management even with gender diversity present. This aligns with Al-Absy (2022), who found that gender oversight does not always reduce earnings management unless women hold influential positions within managerial structures or audit committees. Additionally, Kumar and Ravi (2023) noted that in large corporations, women in high-power roles may engage in similar levels of earnings management as men. These findings are also supported by Guo et al. (2025), who found that women in top executive positions sometimes engage in higher levels of earnings management than their male counterparts.

CONCLUSION

This study aims to examine the effect of profitability, leverage, liquidity, and firm size on earnings management, with gender diversity as a moderating variable. The results show that profitability has a positive and significant effect on earnings management. This means that the higher the company's profitability level, the greater the tendency of management to engage in earnings management practices. This may occur because companies with high profits tend to maintain or improve their performance to preserve the confidence of shareholders and other external parties. Meanwhile, leverage, liquidity, and firm size have no significant effect on earnings management. There is insufficient evidence to suggest that the level of debt, liquidity, or the size of the company are factors that drive earnings management practices in this study's sample.

The interaction between profitability and gender diversity shows a negative and significant effect on earnings management practices. This indicates that gender diversity moderates the relationship between profitability and earnings management, where the presence of women on the board of directors weakens the influence of profitability on management's tendency to conduct earnings management. Conversely, the interaction between firm size and gender diversity has a positive and significant effect on earnings management. This suggests that gender diversity moderates the relationship between firm size and earnings management. The presence of women on the board of directors can also strengthen the influence of company size on management's tendency to perform earnings management. These differing directions are not contradictory but reflect that the moderating

role of gender diversity is contextual and adaptive depending on the variable being moderated. However, the analysis results indicate that gender diversity does not significantly moderate the effect of leverage and liquidity on earnings management.

Overall, this study concludes that profitability, the interaction between profitability and gender diversity, and the interaction between firm size and gender diversity are the main factors influencing earnings management. Meanwhile, the effects of leverage, liquidity, firm size, the interaction between leverage and gender diversity, and the interaction between liquidity and gender diversity are not significant.

REFERENCES

- Adi, S. W., Putri, W. A. P., & Permatasari, W. D. (2020). Profitability, Leverage, Firm Size, Liquidity, and Total Assets Turnover on Liquidity, and Total Assets Turnover on Real Earnings Management (An Empirical Real Earnings Management (An Empirical Study on the Mining Company Classification Study on the Minin. *Riset Akuntansi Dan Keuangan Indonesia*, 5(2), 129–140. <https://doi.org/10.23917/reaksi.v5i2.12403>
- Al-Absy, M. S. M. (2022). Impactful women directors and earnings management. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2148873>
- Anh, L. H. T., & Khuong, N. V. (2022). Gender diversity and earnings management behaviours in an emerging market: a comparison between regression analysis and FSQCA. *Cogent Business and Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2101243>
- Ani, F. H., & Hardiyanti, W. (2022). Pengaruh Likuiditas, Profitabilitas, Leverage, dan Ukuran Perusahaan terhadap Manajemen Laba. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, 4(6). <https://doi.org/10.36418/syntax-literate.v8i12.14108>
- Attia, E. F., Yassen, S., Chafai, A., & Qotb, A. (2024). The impact of board gender diversity on the accrual/real earnings management practice: evidence from an emerging market. *Future Business Journal*, 10(1). <https://doi.org/10.1186/s43093-024-00307-7>
- Bae, K. Bin, & Skaggs, S. (2019). The impact of gender diversity on performance: The moderating role of industry, alliance network, and family-friendly policies - Evidence from Korea. *Journal of Management and Organization*, 25(6), 896–913. <https://doi.org/10.1017/jmo.2017.45>
- Bayu, D. J. (2021). *Daya Tahan Industri Makanan dan Minuman di Masa Pandemi Covid-19*. www.katadata.co.id. <https://katadata.co.id/analisisdata/6108e72a74512/daya-tahan-industri-makanan-dan-minuman-di-masa-pandemi-covid-19>
- Bestari, I. (2020). *Pengaruh Asimetri Informasi, Leverage, dan Profitabilitas terhadap Manajemen Laba pada Perusahaan perbankan yang Terdaftar di Bursa Efek Indonesia Periode 2014 - 2017*. Universitas Esa Unggul.
- Caraka, R. E. (2017). *Spatial Data Panel* (T. W. Publish, Ed.; Cetakan Pe). WADE Group.
- Dang, C., (Frank) Li, Z., & Yang, C. (2018). Measuring firm size in empirical corporate finance. *Journal of Banking & Finance*, 86, 159–176. <https://doi.org/10.1016/j.jbankfin.2017.09.006>
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting Earnings Management. In *The accounting Review* (Vol. 70, Issue 20, pp. 193–225). The Accounting Review.

- Enofe, A. O., Iyafekhe, C., & Eniola, J. O. (2017). Board ethnicity, gender diversity and earnings management: Evidence from quoted firms in Nigeria. *International Journal of Economics, Commerce and Management*, *V*(6), 78–90. <http://ijecm.co.uk/>
- Gavious, I., Segev, E., & Yosef, R. (2012a). Female directors and earnings management in high-technology firms. In *Pacific Accounting Review* (Vol. 24, Issue 1). <https://doi.org/10.1108/01140581211221533>
- Gavious, I., Segev, E., & Yosef, R. (2012b). Female directors and earnings management in high-technology firms. *Pacific Accounting Review*, *24*(1), 4–32. <https://doi.org/10.1108/01140581211221533>
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro.
- Gozali, E. O. D., Hamzah, R. S., Pratiwi, C. N., & Octari, M. (2021). Firm Characteristics and Earnings Management in Listed Singaporean Corporations. *Jurnal Riset Akuntansi Kontemporer*, *13*(2), 72–81. <https://doi.org/10.23969/jrak.v13i2.4102>
- Greene, W. H. . (2012). *Econometric analysis*. Prentice Hall.
- Guo, P., Wu, Z., Yao, Q., & Chen, Y. (2025). Female CEOs and earnings management: examining risk aversion versus social identity theories. *Applied Economics*, *57*(36), 5486–5506. <https://doi.org/10.1080/00036846.2024.2364934>
- Hasanuddin, R., Darman, D., Taufan, M. Y., Salim, A., Muslim, M., Halim, A., & Kusuma, P. (2021). The Effect of Firm Size, Debt, Current Ratio, and Investment Opportunity Set on Earnings Quality : An Empirical Study in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(6), 179–188. <https://doi.org/10.13106/jafeb.2021.vol8.no6.0179>
- Hasty, A. D., & Herawaty, V. (2017). Pengaruh Struktur Kepemilikan, Leverage, Profitabilitas dan Kebijakan Dividen terhadap Manajemen Laba dengan Kualitas Audit sebagai Variabel Moderasi. *Media Riset Akuntansi, Auditing & Informasi*, *17*(1), 1–16. <https://doi.org/10.25105/mraai.v17i1.2023>
- Healy, P. M., & Wahlen, J. M. (1999). A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons*, *13*(4), 365–383. <https://doi.org/10.2308/acch.1999.13.4.365>
- James, Gareth., Witten, Daniela., Hastie, Trevor., & Tibshirani, Robert. (2017). *An introduction to statistical learning : with applications in R*. Springer : Springer Science+Business Media.
- Jaunanda, M., & Oktavianti, D. (2023). the Effect of Profitability, Leverage, Firm Size, and Firm Age on Earnings Management. *Jurnal Penelitian Akuntansi*, *4*(1), 53–66.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kalbuana, N., Prasetyo, B., Asih, P., Arnas, Y., Simbolon, S. L., Abdusshomad, A., Kurnianto, B., Rudy, R., Kardi, K., Saputro, R., Yohana, Y., Sari, M. P., Zandra, R. A. P., Pramitasari, D. A., Rusdiyanto, R., Gazali, G., Putri, I. A. J., Nazaruddin, M., Naim, M. R., & Mahdi, F. M. (2021). Earnings Management Is Affected By Firm Size, Leverage And Roa: Evidence From Indonesia. *Academy of Strategic Management Journal*, *20*(SpecialIssue2), 1–12.
- Karina, R., Mardianto, M., & Wahyuni, S. (2023). Female Board of Directors and Earnings

- Management: The Mediating Role of Profitability. *Jurnal Akuntansi Riset*, 15(2), 347–358.
- Kasmir. (2019). *Analisis Laporan Keuangan*.
- Keuzenkamp, H. A., & Magnus, J. R. (1995). On tests and significance in econometrics. *Journal of Econometrics*, 67(1), 5–24. [https://doi.org/10.1016/0304-4076\(94\)01624-9](https://doi.org/10.1016/0304-4076(94)01624-9)
- Kumar, S., & Ravi, R. (2023). Earnings management: Are men from Mars and women from Venus? *Managerial Finance*, 49(6), 1017–1035. <https://doi.org/10.1108/MF-04-2022-0154>
- Kurniawati, Y., Kananlua, P. S., & Susetyo, S. (2019). Pengaruh Return on Asset, Debt To Equity Ratio, Net Profit Margin Terhadap Income Smoothing Dengan Variabel Moderasi Proporsi Wanita Di Dalam Dewan Direksi (Studi Kasus Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Pada Tahun 2013-2015. *Managament Insight: Jurnal Ilmiah Manajemen*, 12(2), 89–100. <https://doi.org/10.33369/insight.12.2.89-100>
- Kusuma Dewi, A., Shinta Aminda, R., & Rumiasih, N. (2023). The Effect of Company Size and Profitability on Earnings Management in Non-Financial Companies in the Agriculture Sector. *Journal of International Trade*, 1(2), 12–17. <https://ejournal2.uika-bogor.ac.id/index.php/JIT/about>
- Kyaw, K., Olugbode, M., & Petracci, B. (2015). Does gender diverse board mean less earnings management? *Finance Research Letters*, 14, 135–141. <https://doi.org/10.1016/j.frl.2015.05.006>
- Marchellina, V., & Firnanti, F. (2021). Financial Ratio and Company Characteristics Effect on Earnings Management. *Proceedings of the Ninth International Conference on Entrepreneurship and Business Management (ICEBM 2020)*, 174(Icebm 2020), 178–183. <https://doi.org/10.2991/aebmr.k.210507.027>
- Martinus Robert Hutauruk, Agus Riyanto, & Greacela Utami Putri. (2022). The Factors Impact On Earnings Management On Indonesia Mining Company. *Jurnal Akuntansi*, 26(3), 443–463. <https://doi.org/10.24912/ja.v26i3.1067>
- Moghaddam, A., & Abbaspour, N. (2017). International Review of Management and Marketing The Effect of Leverage and Liquidity Ratios on Earnings Management and Capital of Banks Listed on the Tehran Stock Exchange. *International Review of Management and Marketing*, 7(4), 99–107. <http://www.econjournals.com>
- Nathania, V. (2022). Pengaruh Gender Diversity, Intellectual Capital, Sales Growth, Arus Kas Operasi Dan Kepemilikan Institusional Terhadap Financial Distress. *Jurnal Ekonomi Trisakti*, 2(2), 331–342. <https://doi.org/10.25105/jet.v2i2.14318>
- Novitasari, D. P., & Desitama, F. S. (2023). Analisis Rasio Likuiditas, Solvabilitas, Dan Profitabilitas Terhadap Kinerja Perusahaan Dengan Manajemen Laba Sebagai Variabel Intervening. *Journal of Business, Finance, and Economics (JBFE)*, 4(1), 79–93. <https://doi.org/10.32585/jbfe.v4i1.3781>
- Prawida, N., & Sutrisno, S. (2021). Leverage, profitability, corporate governance mechanism and earning management: cases in manufacturing company in Indonesia Stock Exchange. *Asian Management and Business Review*, 1(1), 35–45. <https://doi.org/10.20885/ambr.vol1.iss1.art4>
- Purnama, I., & Nurdiniah, D. (2019). Profitability, Firm Size, and Earnings Management: the

- Moderating Effect of Managerial Ownership. *Advances in Economics, Business and Management Research*, 73(September). <https://doi.org/10.2991/aicar-18.2019.10>
- Purwaningsih, E., & Mayangsari, M. (2023). *Pengaruh Profitabilitas Dan Leverage Terhadap Manajemen Laba Dengan Eksekutif Wanita Sebagai Variabel Moderasi* (Vol. 4, Issue 2).
- Putri, M. (2023). Pengaruh Kinerja Keuangan Terhadap Manajemen Laba Perusahaan. *Jurnal Penelitian Dan Pengkajian Ilmiah Sosial Budaya*, 2(1), 14–19. <https://doi.org/10.47233/jppisb.v2i1.656>
- Putri, M., & Naibaho, E. A. B. (2022). the Influence of Financial Distress, Cash Holdings, and Profitability Toward Earnings Management With Internal Control As a Moderating Variable: the Case of. *Jurnal Akuntansi Dan Keuangan Indonesia*, 19(1), 120–138. <https://doi.org/10.21002/jaki.2022.06>
- Qi, B., Lin, J. W., Tian, G., & Lewis, H. C. X. (2018). The impact of top management team characteristics on the choice of earnings management strategies: Evidence from China. *Accounting Horizons*, 32(1), 143–164. <https://doi.org/10.2308/acch-51938>
- Ramadan, G. R. (2021). Board Of Directors Gender Diversity And Real Earnings Management: Does Female Board Of Director Matter? *Jurnal Reviu Akuntansi Dan Keuangan*, 11(2), 306–320. <https://doi.org/10.22219/jrak.v11i2.15915>
- Ramadana, M., Pratama, V. T., & Butar-Butar, D. T. M. (2024). Breaking Barriers: Female Directors, Earnings Management, and the Influence of Education and Sustainability Reporting. *Jurnal Akuntansi Bisnis*, 17(2), 198. <https://doi.org/10.30813/jab.v17i2.4983>
- Stock, J. H., & Watson, M. W. (2008). Heteroskedasticity-Robust Standard Errors for Fixed Effects Panel Data Regression. *Econometrica*, 76(1), 155–174. <https://doi.org/10.1111/j.0012-9682.2008.00821.x>
- Sugiyono. (2020). *Metodologi Penelitian Kuantitatif, Kualitatif dan R & D*.
- Sulistyanto, H. S. (2014). *Manajemen Laba Teori dan Model Empiris, Edisi Revisi*. PT Grasindo.
- Sumira, S., & Prihandini, W. (2022). Gender Diversity as The Moderating Factor in The Influence of Financial Factors on The Firm Value: A Study on Companies Listed in KOMPAS 100 INDEX in 2015-2019. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 6(1), 597. <https://doi.org/10.29040/ijebar.v6i1.4711>
- Syafiqoh, N., & Rochmatullah, M. R. (2024). The Effect of Profitability, Liquidity, Company Size, and Institutional Ownership On Earning management In Industrial Sector Companies Listed On The Indonesia Stock Exchange In 2019-2022. *Dinasti International Journal of Economics, Finance & Accounting*, 5(3), 1734–1747. <https://doi.org/10.38035/dijefa.v5i3.3117>
- Watts, R. L., & Zimmerman, J. L. (1986). *Positive Accounting Theory*. Prentice-Hall.
- Wooldridge, J. M. (2012). *Introductory Econometrics*.