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Board Diversity and Profitability: The Moderating Role of Firm Size

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Abstract : *This study investigates the impact of board diversity on firm performance and examines the moderating role of firm size in this relationship. Board diversity is assessed across three dimensions: age, gender, and educational background, while firm performance is measured using Return on Assets (ROA). The research utilizes secondary data drawn from the annual reports of consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2019–2023, selected through a purposive sampling method. Data analysis was conducted using moderated regression analysis. The findings indicate that age diversity on the board of directors has a significant negative effect on firm performance. Furthermore, firm size moderates the relationship between gender diversity and performance, with the influence of gender diversity found to be weaker in larger firms. These results carry managerial implications, particularly regarding board composition, suggesting that excessive age diversity may reduce firm value and that the benefits of gender diversity may diminish as firm size increases.*

Keywords - *Board of Directors Diversity,Profitability,Firm Size,Good Corporate Governance,Moderation Regression Analysis.*

I. INTRODUCTION

Profitability is a key indicator that reflects the extent to which a company can consistently generate profits and serves as a primary measure of the company's success in achieving its goals (Praditya & Muazaroh, 2024). Return on Assets (ROA) is commonly used to measure profitability, as it represents how effectively management utilizes company assets to generate earnings and create value for shareholders and other stakeholders (Fanesha & Sebrina, 2024). Although companies in the consumer non-cyclicals sector typically face relatively stable demand, several firms still experience declining ROA, indicating that profitability is not solely driven by external factors but also by internal strategies and operational effectiveness. Operational efficiency, business innovation, and the quality of leadership in managing assets and market opportunities are crucial for sustaining profitability.

In this context, the implementation of good corporate governance plays a fundamental role in enhancing a firm's effectiveness and goal achievement. Effective governance requires not only a clear leadership structure but also a well-defined and functional distribution of roles within the organization. The board of directors, as a key governance body, is responsible for determining strategic policies both short-term and long-term and for overseeing the company's operations in accordance with the company's bylaws and decisions made in General Meetings of Shareholders (GMS), under the supervision of the board of commissioners (Zulkarnain & Mirawati, 2019).

Efforts to improve governance quality and decision-making effectiveness have increasingly emphasized board diversity, particularly in terms of gender, age, and educational background. Board diversity offers multiple perspectives, enhances strategic quality, and contributes to firm competitiveness (Praditya & Muazaroh, 2024; Pratiwi, 2023). Specifically, gender diversity introduces a balance of characteristics between male and female directors. Female board members are considered more detail-oriented and empathetic, while male members are generally more assertive and risk-taking. This combination is believed to support more balanced and comprehensive decision-making (Lindhiasari & Muazaroh, 2022).

Similarly, diversity in educational background enhances board deliberation through varied knowledge and viewpoints. A diverse academic profile within the board can foster innovation, improve operational efficiency, and strengthen firm competitiveness (Boadi & Osarfo, 2019). However, this diversity may also introduce differences in values, thinking styles, and strategic approaches, which can lead to internal conflict, prolonged discussions, and slower decision-making processes ultimately hindering performance (EmadEldeen et al., 2021; Hernández-Atienza et al., 2024; Magnanelli et al., 2021).

Another important factor is firm size, which is commonly measured by total assets (Anandamaya & Hermanto, 2021). Firm size is closely related to financial performance, as larger firms typically have greater access to external financing, enabling expansion and achieving economies of scale. These advantages may result in improved operational efficiency, reduced production costs, and higher profitability. Larger asset bases also allow companies to generate greater revenue, which can positively influence ROA. This view is supported by Anandamaya & Hermanto (2021), who found a significant positive relationship between firm size and financial performance. Nevertheless, a large asset base may also lead to increased operational costs, managerial complexity, and difficulty adapting to market changes factors that can negatively impact performance. The more complex organizational structure of large firms may slow down decision-making and increase the risk of inefficiency(Syifa & Dewi, 2025).

Beyond operational efficiency, firm size also affects leadership dynamics and board-level decision-making. It not only influences cost structures but also shapes how internal factors such as board gender diversity contribute to firm performance. In this regard, firm size may act as a moderating variable that strengthens or weakens the effect of board diversity on performance (Li & Chen, 2018). Gender diversity, for example, may have a stronger influence in larger firms due to their access to more extensive resources (financial, human, and technological) that support the implementation of inclusive policies. Additionally, broader market scope, regulatory pressure, and operational complexity in larger firms tend to promote the institutionalization of gender diversity. Gender-diverse boards can also enrich strategic decision-making, foster innovation, and enhance CSR programs making diversity a strategic asset in improving corporate reputation and competitiveness.

Therefore, this study aims to analyze the effect of board diversity measured by gender, age, and educational background—on firm performance (proxied by ROA), and to examine the moderating role of firm size in the relationship between gender diversity and firm performance in consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange (IDX) during 2019–2023.

II. LITERATURE REVIEW

Upper Echelon Theory

The Upper Echelon Theory, introduced by Hambrick and Mason (1984), posits that the background and managerial characteristics of top executives significantly influence how they interpret information and make strategic decisions. In the context of the board of directors, such diversity reflects cognitive variation, which can enhance the quality of decision-making processes. A board composed of individuals with diverse backgrounds is better equipped to understand problems from multiple perspectives, ultimately leading to more innovative and adaptive solutions to dynamic business environments. Hambrick and Mason (1984) emphasize that diversity not only broadens strategic insight but also enables companies to respond to challenges more flexibly and effectively. Gender and educational diversity, for example, can foster broader dialogue and bring varied viewpoints to strategic planning. Magnanelli et al. (2021) support this notion, stating that gender and educational characteristics of board members directly affect firm performance as they reflect the cognitive and demographic bases of top-level decision-makers.

Resource-Based View (RBV) Theory

The Resource-Based View (RBV), developed by Barney (1991), emphasizes the role of internal resources as the key to achieving sustainable competitive advantage. RBV suggests that resources must be valuable, rare, inimitable, and non-substitutable (VRIN) to be considered strategic. Human resources including board members are essential elements in this framework. EmadEldeen et al. (2021) argue that diversity in board characteristics such as age, gender, nationality, and education represents strategic human capital that must be optimally utilized to enhance firm performance and generate value. This aligns with Barney's (1991) view that

organizational resources include all assets, capabilities, processes, information, and knowledge controlled by the firm to improve its efficiency and effectiveness. Therefore, RBV provides a relevant theoretical basis to explain how board diversity can be a valuable internal strength contributing to sustainable competitiveness.

Profitability

Profitability is a fundamental indicator of a firm's success in achieving its objectives, including profit growth, operational efficiency, and stakeholder satisfaction (Praditya & Muazaroh, 2024) . It reflects the company's ability to manage its operations effectively and efficiently. Strong financial performance not only supports financial stability but also enhances the firm's reputation among investors, creditors, and customers, thereby attracting more investment and supporting long-term growth (Jessica & Triyani, 2022). Profitability is commonly measured using ratios such as Return on Assets (ROA) and Return on Equity (ROE). ROA assesses the firm's ability to generate profit from its total assets, indicating how efficiently resources are utilized. ROE, on the other hand, measures how effectively a firm uses shareholders' equity to generate earnings (Kabir et al., 2023).

Board Gender Diversity

Board gender diversity refers to the variation in gender composition among board members, which is expected to introduce diverse perspectives in the decision-making process (Li & Chen, 2018). The presence of both men and women on the board can create a balance of characteristics in strategic thinking. According to Kabir et al. (2023), Li & Chen (2018), and Lindhiasari & Muazaroh (2022), board gender diversity is commonly measured using Blau's Index, which quantifies the degree of heterogeneity. A value close to zero indicates homogeneity, while a value approaching 0.5 reflects a more balanced gender distribution, signaling higher diversity.

Board Age Diversity

Age diversity among board members is a demographic factor that may influence firm performance through a mix of experience, innovation, and risk-taking abilities. Blau's Index is also used to measure age diversity by calculating the dispersion in age groups. A low index value denotes age homogeneity, whereas a higher value indicates a wider distribution. This diversity may enrich the decision-making process and promote dynamic interactions (Gustiana et al., 2021).

Board Educational Level Diversity

Educational diversity refers to the variation in academic qualifications among board members, typically ranging from undergraduate to postgraduate and doctoral levels (EmadEldeen et al., 2021). Such diversity contributes to strategic discussions that can lead to innovation and improved firm performance (Magnanelli et al., 2021). Board members with postgraduate education often possess strong analytical and critical thinking skills and a deeper understanding of market dynamics. Blau's Index is applied to measure this type of diversity; a higher index reflects more varied educational backgrounds, which can introduce diverse academic perspectives into corporate decisions (Gustiana et al., 2021).

Firm Size

Firm size, commonly measured by total assets, is an indicator of a company's scale (Li & Chen, 2018; Ressita et al., 2024). Larger firms tend to benefit from economies of scale, enabling cost efficiency through higher production volume and optimal resource utilization. However, unmanaged expansion can lead to diseconomies of scale such as increased operational costs and bureaucratic complexity which may reduce performance. Ressita et al. (2024) also suggest that firm size may act as a moderating variable in the relationship between board gender diversity and performance. Larger firms typically have the resources and systems to implement diversity initiatives more effectively, thereby enhancing decision-making, innovation, and corporate reputation.

Leverage

Leverage refers to the extent to which a firm uses debt financing to support its operations. It is commonly measured using the Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER). DAR indicates the proportion of assets financed through debt, while DER shows the balance between debt and equity in the capital structure (Kramarić & Miletić, 2022). Excessive leverage may reduce firm performance if the company fails to generate sufficient returns to cover its obligations. Shahfira & Hasanuh (2021) found that high DAR can negatively affect ROA, particularly when debt is not used efficiently. Hence, although leverage can support growth, it must be managed prudently to avoid compromising financial stability.

The Effect of Board Gender Diversity on Profitability

Board gender diversity reflects the representation of both men and women in strategic decision-making processes within a company. Diverse gender perspectives can enrich the quality of decisions and enhance the firm's capacity for innovation (EmadEldeen et al., 2021; Li & Chen, 2018). However, imbalance or poor management of gender diversity may lead to internal conflicts that negatively affect profitability (Lindhiasari & Muazaroh, 2022; Tania & Hesniati, 2022). The effect of gender diversity on profitability is significant and highly dependent on how effectively it is managed.

H_1: Board gender diversity has a significant effect on profitability.

The Effect of Board Age Diversity on Profitability

Age diversity combines the risk-taking tendencies of younger directors with the wisdom of more senior board members. Intergenerational synergy can enhance adaptability and competitiveness (Naseem et al., 2020). However, differences in values and decision-making approaches may lead to conflict, reducing board effectiveness (EmadEldeen et al., 2021; Lindhiasari & Muazaroh, 2022). The impact of age diversity on profitability depends on how well the diversity is managed.

H_2: Board age diversity has a significant effect on profitability.

The Effect of Educational Background Diversity on Profitability

Educational background diversity broadens cognitive approaches and strategic thinking within the board. This diversity can contribute to innovation, efficiency, and overall competitiveness (Boadi & Osarfo, 2019; Magnanelli et al., 2021). However, differing academic backgrounds may also cause varied viewpoints that prolong discussions and reduce decision-making effectiveness (EmadEldeen et al., 2021; Hernández-Atienza et al., 2024). The effect may be either positive or negative depending on the harmony in the decision-making process.

H_3: Board educational background diversity has a significant effect on profitability.

The Effect of Firm Size on Profitability

Firm size indicates the company's capacity to utilize its assets to generate profits. Larger firms benefit from better access to capital and economies of scale, potentially improving profitability (Anandamaya & Hermanto, 2021). However, operational complexity and managerial inefficiencies can hinder financial performance if not managed optimally (Jessica & Triyani, 2022). Profitability depends on the company’s ability to manage its resources effectively.

H_4: Firm size has a significant effect on profitability.

The Moderating Role of Firm Size in the Relationship Between Gender Diversity and Profitability

Larger firms typically possess the resources and systems necessary to support the effective implementation of gender diversity. Training programs, mentoring initiatives, and flexible work policies can strengthen the contributions of female directors in strategic processes (Ressita et al., 2024). These contributions can enhance innovation, corporate reputation, and financial performance. Therefore, firm size acts as a moderating factor that strengthens the relationship between gender diversity and profitability.

H_5: Firm size moderates the relationship between board gender diversity and profitability.

The Effect of Leverage on Profitability

Leverage reflects the proportion of company funding sourced from debt. An efficient capital structure can improve asset productivity and enhance profitability (Rahmadita & Amri, 2024). However, excessive debt may result in financial pressure, adversely affecting Return on Assets (ROA) (Shahfira & Hasanuh, 2021). Maintaining an optimal level of leverage is key to ensuring profitability and financial stability.

H_6: Leverage has a significant effect on profitability.

III. METHODS

This study adopts a quantitative approach with an explanatory, observational, and panel data design to analyze the relationship between board diversity and firm performance, as well as the moderating role of firm size. The research is explanatory in nature, aiming to explain the causal relationship between the independent variables namely board gender diversity, board age diversity, and board educational level diversity and the dependent variable, which is profitabilty. Methodologically, the study is observational, as the data are collected from financial and performance reports officially published by companies and the Indonesia Stock Exchange (IDX), without any direct intervention in the research objects. A panel data design is employed, combining cross-sectional and time-series data to examine the dynamics of the relationship between board diversity and firm performance over a defined period.

The research focuses on non-cyclical consumer sector companies listed on the IDX during the 2019–2023 period. Firm performance is measured using the Return on Assets (ROA) ratio (Y1) as the dependent variable. The independent variables consist of gender diversity (X1), age diversity (X2), and educational background diversity (X3) of board members. Firm size (Z) serves as the moderating variable, while leverage (C) is included as a control variable. The population in this study comprises all non-cyclical consumer sector firms listed on the IDX. The sample is selected using a purposive sampling method. Data collection is conducted through documentation, specifically by compiling annual financial reports published between 2019 and 2023. The analytical method employed is panel data regression analysis.

Table 1. Operational Definitions and Measurements of Variables

Variable	Operational Definition	Variable Measurement
Profitability	Describes the company's ability to generate profit from its assets. Profitability reflects management efficiency in utilizing assets.	ROA = Net Income / Total Assets
Board Gender Diversity	Indicates the gender distribution among members of the board of directors.	Indeks Blau = 1 - ΣPi^2
Board Age Diversity	Reflects the variation in age range among members of the board of directors.	Indeks Blau = 1 - ΣPi^2
Board Educational Level Diversity	Reflects the diversity of educational backgrounds among board members.	Indeks Blau = 1 - ΣPi^2
Firm Size	Describes the size of the company as measured by the natural logarithm of total assets.	Firm Size = Ln(Total Assets)
Leverage	Measures the proportion of company assets financed by liabilities (debt).	Leverage = Total Liabilities / Total Assets

IV. RESULT

This study focuses on companies operating in the consumer non-cyclicals sector listed on the Indonesia Stock Exchange (IDX) during the period 2019 to 2023. The initial sample consisted of 132 companies listed on the IDX within the consumer non-cyclicals sector up to 2025. From this total, 54 companies were excluded due

to the unavailability of annual reports for the full five-year period. Subsequently, 19 companies were removed from the sample due to incomplete data on key variables relevant to the study. Additionally, 3 companies were excluded because their financial statements were not presented in Indonesian Rupiah. After applying these selection criteria, the final sample consisted of 56 companies, resulting in a total of 280 firm-year observations over the five-year study period.

This research employs panel data regression analysis to examine the effect of board diversity on firm performance, with firm size as a moderating variable. Two regression models are utilized. The first model tests the direct effect of board diversity on firm performance. The second model tests the moderating role of firm size in the relationship between board diversity and firm performance. The panel data regression models used in this study are specified as follows:

$$\text{Model 1 } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 C + e$$

$$\text{Model 2 } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 (X_1.X4) + \beta_6 C + e$$

Prior to conducting the regression analysis based on the above model specifications, a descriptive statistical analysis is performed to provide an overview of the characteristics of the research data. The results of the descriptive analysis are presented in Table 2 below.

Table 2. Descriptive Statistics

	N	Min	Max	Mean	Std. Dev
Profitability	280	-0,5825	0,6072	0,0337	0,1257
Board Gender Diversity	280	0,0000	0,5000	0,1571	0,1968
Board Age Diversity	280	0,0000	0,6667	0,3550	0,2076
Boad Educational Level Diversity	280	0,0000	0,5000	0,3160	0,1901
Firm Size	280	136,200	308,037	224,439	59,490
Leverage	280	0,0521	23,119	0,5483	0,3133

Source : Data processed, 2025

The descriptive analysis in Table 1 presents a total of 280 observations obtained from the annual and financial reports of non-cyclical consumer sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2019–2023. In this study, firm performance is measured using Return on Assets (ROA), with a minimum value of -0.5825 (or -58.25%), indicating a substantial loss equal to 58.25% of total assets, as experienced by PT Bakrie Sumatera Plantations Tbk in 2019. On the other hand, the maximum ROA value of 0.6072 (or 60.72%) was achieved by PT FKS Food Sejahtera Tbk in the same year. The average ROA stands at 3.37% with a standard deviation of 12.57%, reflecting high heterogeneity in profitability across firms.

Board gender diversity has a minimum value of 0.0000, indicating no female representation on the board, as seen in PT Astra Agro Lestari Tbk in 2019. The maximum value of 0.5000 reflects gender balance, as found in PT Unilever Indonesia Tbk in 2022. The mean gender diversity is 15.71%, with a standard deviation of 0.1968, indicating that female representation on boards remains relatively low but varies across firms.

Age diversity among board members ranges from a minimum of 0.0000—signifying age homogeneity within the board, as in PT Akasha Wira International Tbk in 2023—to a maximum of 0.6667, indicating greater

age diversity as seen in PT Sariguna Primatirta Tbk. The mean age diversity is 0.3549, with a standard deviation of 0.2076, suggesting that most companies exhibit moderate diversity in board members' ages with relatively homogeneous variation.

Educational background diversity ranges from 0.0000 to 0.5000. The minimum was recorded at PT Buyung Poetra Sembada Tbk, where all board members held a Bachelor's degree (S1). In contrast, PT Uni-Charm Indonesia Tbk reached the maximum score, indicating a mix of educational levels below and above S1. The average education diversity is 0.3160, with a standard deviation of 0.1901, pointing to a fair level of variation in board members' educational backgrounds across firms.

Firm size is measured by the natural logarithm of total assets. The minimum value of 13.61995, equivalent to total assets of IDR 822.375 billion, was found in PT Akasha Wira International Tbk in 2019. The maximum value of 30.80366, equivalent to IDR 23.87 trillion, was recorded by PT Mayora Indah Tbk in 2023. The mean firm size of 22.44385 and standard deviation of 5.9490 highlight substantial variation in asset scale among the firms observed.

Leverage is proxied by the Debt to Asset Ratio (DAR), with a minimum of 0.0521—indicating that only 5.21% of total assets were financed by debt, as in PT Japfa Comfeed Indonesia Tbk in 2021 (total assets of IDR 28.59 trillion and liabilities of IDR 1.49 trillion). The maximum DAR of 2.3119 was recorded by PT Bakrie Sumatera Plantations Tbk in 2022, suggesting liabilities more than double the company's assets (liabilities of IDR 10.50 trillion versus assets of IDR 4.54 trillion). The average leverage ratio is 0.5483 with a standard deviation of 0.3133, showing significant differences in capital structure strategies, ranging from conservative to high-risk profiles.

Following the descriptive analysis, the next step involves determining the most appropriate panel regression model to test the research hypotheses. Three common approaches in panel data regression are the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection of the best-fitting model involves two stages of testing: the Chow Test, which compares the CEM and FEM, followed by the Hausman Test, which compares the FEM and REM.

Table 3. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.206.736	(55,219)	0.0000
Cross-section Chi-square	165.410.442	55	0.0000

Source : Data processed, 2025

Based on the results of the Chow test, the probability value of the Cross-section F is 0.0000, and the Chi-square probability is also 0.0000, both of which are lower than the significance level of 0.05. This indicates that the Fixed Effect Model (FEM) is more appropriate than the Common Effect Model (CEM) due to significant differences across cross-sections in the model.

The next step is to determine whether the Fixed Effect Model remains the best option or whether the Random Effect Model (REM) would be more suitable. This is done by conducting the Hausman test, which aims to decide whether the Fixed Effect Model should continue to be used, or whether the Random Effect Model provides a better fit for this research.

Table 4. Hausman Test

Effects Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.5564	5	0.0414

Source : Data processed, 2025

The results of the Hausman test indicate a probability value of 0.0414, which is also lower than the 0.05 significance level. This suggests that the Fixed Effect Model (FEM) is more appropriate than the Random Effect Model (REM). Therefore, the panel regression model employed in this study is determined to be the Fixed Effect Model.

Table 5. Hypothesis Testing Model 1

	Coefficient	Std. Error	t-Statistik	Prob.
C (Constant)	0.147007	0.066566	2,208,427	0.0283
Board Gender Diversity	-0.132496	0.081348	-1,628,753	0.1048
Board Age Diversity	-0.102884	0.049608	-2,073,940	0.0393
Board Educational Level Diversity	-0.092468	0.073097	-1,265,014	0.2072
Firm Size	0.001691	0.002364	0.715071	0.4753
Leverage	-0.117965	0.029602	-3,984,984	0.0001
R-squared	0.5007			
Adjusted R-squared	0.3639			
F-statistic	3.6607			0.0000

Source : Data Processed, 2025

Based on the results presented in Table 5, the R-squared value of 0.5007 indicates that approximately 50.07% of the variation in profitability (ROA) can be explained by the independent variables in the model, while the remaining variation is attributed to other factors outside the model. The Adjusted R-squared value of 0.3639 suggests that, after adjusting for the number of variables and observations, the model still explains 36.39% of the variation in the data.

The F-statistic value of 3.6607 with a probability of 0.0000 shows that the regression model is statistically significant as a whole, meaning all the independent variables jointly have a significant effect on the dependent variable (ROA). Furthermore, Table 5 presents the results of the t-test for the first model to assess the partial effect of each independent variable on the dependent variable. The results are as follows:

a. Board gender diversity has a t-statistic value of -1.628753 < 1.96 and a significance level of 0.1048 > 0.05. Therefore, H_0 is accepted, indicating that board gender diversity does not have a statistically significant effect on firm performance. Although the coefficient is negative, it is not statistically significant.

b. Board age diversity shows a t-statistic of -2.073940 < -1.96 and a significance value of 0.0393 < 0.05. Hence, H_0 is rejected, meaning that board age diversity significantly affects firm performance. The negative regression coefficient (-0.102884) suggests that greater age diversity tends to decrease firm performance.

c. Board educational level diversity has a t-statistic of -1.265014 < 1.96 and a significance level of 0.2072 > 0.05, thus H_0 is accepted. This implies that educational background diversity does not have a significant effect on firm performance.

d. Firm size has a t-statistic of 0.715071 < 1.96 and a significance value of 0.4753 > 0.05, indicating that H_0 is accepted. Therefore, firm size does not significantly influence firm performance in this model.

e. Leverage has a t-statistic of -3.984984 < -1.96 and a significance level of 0.0001 < 0.05, thus H_0 is rejected. This demonstrates that leverage has a significant impact on firm performance. The negative coefficient (-0.117965) indicates that higher leverage tends to reduce firm performance.

Table 6. Hypothesis Testing Model 2

	Coefficient	Std. Error	t-Statistik	Prob.
C (Constant)	0.043702	0.08879	0.492195	0.6231
Keberagaman Gender Direksi	0.243624	0.229937	1.059.524	0.2905
Keberagaman Usia Direksi	-0.09313	0.049691	-1.874.191	0.0622
Keberagaman Tingkat Pendidikan Direksi	-0.10908	0.073374	-1.486.589	0.1386
Ukuran Perusahaan	0.006174	0.003481	1.773.465	0.0775
Keberagaman Gender Direksi*Ukuran Perusahaan	-0.01625	0.009298	-1.747.693	0.0819
Leverage	-0.10971	0.029841	-3.676.335	0.0003
R-squared	0.5076			
Adjusted R-squared	0.3699			
F-statistic	36.845			0.0000

Source: Data processed, 2025

Based on the results in Table 6, which present the regression analysis for Model 2, the R-squared value is 0.5076, indicating that 50.76% of the variation in company profitability (ROA) can be explained by the independent variables in the model, including the moderating variable. Meanwhile, the Adjusted R-squared value of 0.3699 reflects the model's explanatory power after adjusting for the number of variables and observations, showing that the model still has a fairly good explanatory capability. The F-statistic value of 3.6845 with a probability of 0.0000 indicates that the regression model is simultaneously significant. In other words, all independent variables collectively have a significant effect on profitability.

Table 6 also presents the results of the t-test in the second model to examine the partial effect of each independent variable on the dependent variable, with the following details:

a. Board Gender Diversity has a t-statistic value of 1.059524 < 1.96 and a significance value of 0.2905 > 0.05. Therefore, H_0 is accepted, indicating that board gender diversity does not have a significant effect on firm performance.

b. Board Age Diversity shows a t-statistic of -1.874191 < 1.96 and a significance value of 0.0622 > 0.05. Thus, H_0 is accepted, meaning board age diversity does not have a significant impact on firm performance.

c. Board Educational Diversity has a t-statistic of -1.486589 < 1.96 and a significance value of 0.1386 > 0.05. This means that H_0 is accepted, indicating that board educational diversity does not significantly affect firm performance.

d. Firm Size has a t-statistic of 1.773465 < 1.96 and a significance value of 0.0775 > 0.05, indicating that H_0 is accepted. Therefore, firm size does not have a significant impact on firm performance.

e. The interaction variable between Board Gender Diversity and Firm Size has a t-statistic value of -1.747693 < 1.96 and a significance value of 0.0819 > 0.05. Based on the decision criteria, H_0 is accepted.

f. Leverage has a t-statistic of -3.676335 < -1.96 and a significance value of 0.0003 < 0.05. Thus, H_0 is rejected, indicating that leverage significantly affects firm performance. The negative coefficient value of -0.109706 shows that the effect is negative.

V. DISCUSSION

The Effect of Board Gender Diversity on Profitability

The results of the study indicate that board gender diversity does not have a significant effect on firm profitability. This is evidenced by the t-test, which shows a significance value of 0.1048 (> 0.05) and a t-statistic value lower than the t-table, indicating no statistically significant relationship between gender diversity and profitability. This finding suggests that the representation of both men and women on the board has not yet made a tangible contribution to improving financial performance. These results are consistent with the study by Tania & Hesniati (2022), which states that female directors tend to consider more aspects in decision-making, which may slow down the process and negatively impact profitability. In other words, although gender diversity may be structurally present, without effective empowerment and equal participation in decision-making, such diversity has not yet added value to the company's profit growth.

The Effect of Board Age Diversity on Profitability

Based on the analysis, board age diversity has a negative and significant effect on profitability, with a significance value of 0.0393 (< 0.05) and a t-statistic value greater than the t-table. These results show that increased age diversity among board members tends to decrease firm profitability. This finding aligns with the research of EmadEldeen et al. (2021) and Lindhiasari & Muazaroh (2022), who argue that age differences can lead to internal conflicts, especially in leadership styles, communication patterns, and decision-making orientation. While age diversity can be a strength when properly synchronized, without good coordination and integration mechanisms, it may hinder board effectiveness and negatively affect financial performance.

The Effect of Board Educational Level Diversity on Profitability

The study finds that diversity in educational level of board members does not have a significant effect on firm profitability, with a significance value of 0.2072 (> 0.05). Although in theory, educational diversity can enrich strategic discussions, this result indicates that differences in academic backgrounds have not yet contributed to an actual increase in ROA. These findings support the research of EmadEldeen et al. (2021) and Hernández-Atienza et al. (2024), who state that educational diversity can prolong the decision-making process due to differences in perspectives and problem-solving approaches. In other words, if educational diversity is not accompanied by strong integration among board members, it cannot be optimally utilized to improve firm performance.

The Effect of Firm Size on Profitability

Based on the t-test results, firm size does not have a significant effect on profitability, with a significance value of 0.4753 (> 0.05). This finding indicates that the total assets of a company do not necessarily drive profit growth. Although large firms have advantages in resources and market access, these factors alone are not sufficient to directly influence profitability. This is consistent with the findings of Jessica & Triyani (2022), who state that large firms may face challenges such as organizational complexity, high operating costs, and managerial inefficiencies. Therefore, asset size must be managed efficiently to contribute meaningfully to ROA growth.

The Moderating Effect of Firm Size on the Relationship between Board Gender Diversity and Profitability

The test results show that firm size does not moderate the relationship between board gender diversity and profitability, with a significance value of 0.0819 (> 0.05). This suggests that greater resources in larger firms do not necessarily strengthen the link between gender diversity and financial performance. This finding contrasts with the study of Ressita et al. (2024), which argues that larger firms are better equipped to manage gender diversity through training, mentoring, and inclusive policies. In other words, even with more comprehensive structures and systems, if a company does not implement effective diversity policies, gender diversity cannot significantly influence profitability.

The Effect of Leverage on Profitability

The analysis shows that leverage has a negative and significant effect on profitability, with a significance value of 0.0001 (< 0.05) and a negative coefficient of -0.1179. This implies that the higher the company's debt ratio, the lower the Return on Assets (ROA). This result supports the research by Shahfira & Hasanuh (2021), which states that high leverage can create financial pressure, especially if the company fails to manage its debt effectively. High interest expenses and payment obligations can erode profits, thereby negatively affecting profitability. Therefore, companies need to adopt prudent debt management practices so that leverage does not become a burden that hinders financial performance.

VI. CONCLUSION

Based on the findings from companies in the consumer non-cyclicals sector listed on the Indonesia Stock Exchange during 2019–2023 , it can be concluded that gender diversity on the board of directors has a positive but statistically insignificant effect on firm profitability. This suggests that the involvement of women in strategic decision-making has yet to make a statistically meaningful contribution to improving financial performance.

On the other hand, board age diversity is found to have a negative and significant effect on profitability. Greater heterogeneity in age within the board tends to reduce financial performance, possibly due to generational differences in values and approaches that may lead to conflict and slow down the decision-making process.

Furthermore, diversity in educational background among board members shows a positive but insignificant impact on profitability. This indicates that variations in educational attainment have not yet contributed meaningfully to enhancing Return on Assets (ROA), particularly if not accompanied by effective collaboration and cohesion among board members.

Firm size is also found to have a negative but insignificant influence on profitability, implying that a larger asset base does not necessarily ensure managerial efficiency or improved earnings. In addition, the interaction between gender diversity and firm size, as a moderating variable, does not significantly affect financial performance. This implies that firm size neither strengthens nor weakens the relationship between

gender diversity and profitability.

Lastly, leverage demonstrates a negative and significant effect on profitability, indicating that a high reliance on debt can suppress net income if not managed properly.

REFERENCES

[1] Anandamaya, L. P. V, & Hermanto, B. H. (2021). Pengaruh Good Corporate Governance, Ukuran Perusahaan, Dan Leverage Terhadap Nilai Perusahaan. Jurnal Ilmu Dan Riset Akutansi, 10(5). https://doi.org/10.31000/bvaj.v7i1.7657

[2] Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

[3] Boadi, I., & Osarfo, D. (2019). Diversity and return: the impact of diversity of board members' education on performance. Corporate Governance (Bingley), 19(4), 824–842. https://doi.org/10.1108/CG-01-2019-0017

[4] EmadEldeen, R., Elbayoumi, A. F., Basuony, M. A. K., & Mohamed, E. K. A. (2021). The effect of the board diversity on firm performance: An empirical study on the UK. Corporate Ownership and Control, 18(3, special issue), 337–347. https://doi.org/10.22495/cocv18i3siart8

[5] Fanesha, M., & Sebrina, N. (2024). Pengaruh Keberagaman Gender terhadap Kinerja Perusahaan dengan Corporate Sosial Responsibility sebagai Variabel Mediasi. Jurnal Eksplorasi Akuntansi, 6(3), 1066–1084. https://doi.org/10.24036/jea.v6i3.1717

[6] Gustiana, L., Darmayanti, Y., & Meihendri, M. (2021). Pengaruh Diversitas Dewan Komisaris dan Dewan Direksi Terhadap Kinerja Perusahaan (Studi Empiris: Perusahaan Manufaktur Di BEI Periode 2014-2018). Jurnal Kajian Akuntansi Dan Auditing, 16(1), 68–79. https://doi.org/10.37301/jkaa.v16i1.40

[7] Hambrick, D. C. ., & Mason, P. A. . (1984). Upper Echelons : The Organization as a Reflection of its Top Managers. In The Acadamy of Management Review (Vol. 9, Issue 2, pp. 193–206). www.jstor.org.

[8] Hernández-Atienza, F., Rodríguez-Sanz, J. A., & Tejerina-Gaite, F. (2024). The pathways of board diversity in European contexts: Exploring the influence of director types on firm performance. Research in International Business and Finance, 72(July). https://doi.org/10.1016/j.ribaf.2024.102501

[9] Jessica, J., & Triyani, Y. (2022). Pengaruh Struktur Modal, Likuiditas , Ukuran Perusahaan Dan Umur Perusahaan Terhadap Kinerja Keuangan. Jurnal Akuntansi, 11(2), 138–148. https://doi.org/10.46806/ja.v11i2.891

[10] Kabir, A., Ikra, S. S., Saona, P., & Azad, M. A. K. (2023). Board gender diversity and firm performance: new evidence from cultural diversity in the boardroom. LBS Journal of Management & Research, 21(1), 1–12. https://doi.org/10.1108/lbsjmr-06-2022-0022

[11] Kramarić, T. P., & Miletić, M. (2022). The influence of demographic, cultural, and educational background in the boardroom on firm performance – The Croatian evidence*. Zbornik Radova Ekonomskog Fakulteta u Rijeci / Proceedings of Rijeka Faculty of Economics, 40(1), 79–95. https://doi.org/10.18045/zbefri.2022.1.79

[12] Li, H., & Chen, P. (2018). Board gender diversity and firm performance: The moderating role of firm size. Business Ethics, 27(4), 294–308. https://doi.org/10.1111/beer.12188

[13] Lindhiasari, S., & Muazaroh, M. (2022). Pengaruh Diversitas Dewan Direksi Terhadap Kinerja Perusahaan. Dialektika: Jurnal Ekonomi Dan Ilmu Sosial, 1(2), 200–209. https://doi.org/https://doi.org/10.36636/dialektika.v9i2.3938

[14] Magnanelli, B. S., Paolucci, G., & Pirolo, L. (2021). Diversity in boardrooms and firm performance: The role of tenure and educational level of board members. Corporate Board Role Duties and Composition, 17(3), 31–41. https://doi.org/10.22495/cbv17i3art3

[15] Naseem, M. A., Lin, J., Rehman, R. ur, Ahmad, M. I., & Ali, R. (2020). Does capital structure mediate the link between CEO characteristics and firm performance? Management Decision, 58(1), 164–181. https://doi.org/10.1108/MD-05-2018-0594

[16] Praditya, R. F., & Muazaroh, M. (2024). The Influence of Gender , Age , Length of Service and Educational Level of Directors on Company Performance in the Consumer Goods Industry Sector. 21, 572–577.

[17] Pratiwi, D. N. (2023). Gender Diversity: Apakah Berdampak Pada Kinerja Keuangan Dan Csr Sebagai Mediasi? Edunomika, 7(2).

[18] Rahmadita, N., & Amri, A. (2024). Pengaruh Financial Leverage Dan Ukuran Perusahaan Terhadap Kinerja Keuangan Bank Umum Syariah Periode 2018-2022. Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA), 8(2), 207–227. https://doi.org/10.31955/mea.v8i2.4024

[19] Ressita, D., Wijaya, A. L., & Novitasari, M. (2024). Pengaruh Gender Diversity, Komite Audit, Struktur Modal terhadap Kinerja Kuangan Dengan Ukuran Perusahaan Sebagai Moderasi. September.

[20] Shahfira, D., & Hasanuh, N. (2021). The Influence of Company Size and Debt to Asset Ratio on Return On Assets. Moneter - Jurnal Akuntansi Dan Keuangan, 8(1), 9–13. https://doi.org/10.31294/moneter.v8i1.8807

[21] Syifa, F., & Dewi, N. G. (2025). Menganalisis Dampak Ukuran Perusahaan , Profitabilitas , dan Leverage terhadap Kinerja Keuangan. PERMANA : Jurnal Perpajakan, Manajemen, Dan Akutansi, 17(1), 215–224.

[22] Tania, K. S., & Hesniati, H. (2022). The effect of gender diversity on firm performance in Indonesia. Jurnal Manajemen Strategi Dan Aplikasi Bisnis, 5(2), 267–284. https://doi.org/10.36407/jmsab.v5i2.667