

Performance of the Energy Sector: The Impact of Financial and Non-Financial Factors with the Role of Women on the Board as Moderator

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ABSTRACT: This study investigates the effect of profitability, liquidity, dividend policy, and ESG disclosure on firm performance, with women board representation as a moderating variable, in energy sector companies listed on the Indonesia Stock Exchange during 2021–2023. Profitability is measured by Return on Assets (ROA), liquidity by Current Ratio (CR), dividend policy by Dividend Payout Ratio (DPR), ESG disclosure by ESG disclosure, firm performance by Tobin's Q (TQ), and the moderating variable by women boards (GEN). The population includes 79 listed energy companies, with a purposive sample of 10 companies. Data analysis was conducted using panel data regression and Moderated Regression Analysis. The results show that ROA has a positive effect on Tobin's Q, while CR negatively affects Tobin's Q. In contrast, DPR, ESG disclosure, and women board representation do not significantly influence Tobin's Q. Moderation testing reveals that the women board only moderates the relationship between liquidity and firm performance. Among all variables, ROA is found to be the most influential factor on firm performance.

KEYWORDS: Return on Assets, Current Ratio, ESG Disclosure, Women Board, Tobin's Q

I. INTRODUCTION

Nowadays, having a competitive edge is essential for company success (Eyadat et al., 2024). Businesses will find it difficult to thrive in a cutthroat market without this edge (Silvia, 2011). Competitive advantage must be maintained to achieve the company's goals, namely increasing shareholder wealth, which can be achieved through the optimization of firm performance (Jihadi et al., 2020). The company's performance during a specific time period essentially explains its success (Christopher, 2007). Firm performance is always taken into account by stakeholders and investors. The efficacy, efficiency, and outcome of an organization's activities are reflected in its performance (Nguyen et al., 2019).

A company's financial performance reflects the effectiveness and efficiency of management in utilizing company resources (Eldomiaty et al., 2023). The concept of financial performance represents the overall financial health of a company over a specific period (Chung et al., 2015). Analysts and investors use performance levels to compare similar companies operating within the same industry (Lui et al., 2025). Investors are interested in current, future, and expected earnings, as well as the stability of those earnings (Jia & Li, 2022). Financial performance helps various investors and stakeholders make investment decisions (Cocis et al., 2021). The higher the company's performance, the higher the stock returns, thereby increasing shareholder wealth. Therefore, it is important for companies to maximize their performance (Kim et al., 2023).

The energy sector is a conventional one. The energy sector has been split into two segments: the traditional energy sector and the new energy sector. The term "traditional energy industry" describes the process of creating secondary energy from a variety of natural energy resources. Coal, oil, and natural gas are mined and smelted as part of production (Fu & Shen, 2020). Indonesia, an archipelago nation rich in natural resources, is poised to become a significant player in the energy sector (Asean Business Partners, 2025), making energy companies among the most profitable and most actively traded issuers on the stock exchange (Hasanudin et al., 2020). To assess company performance, Tobin's Q is often used to measure firm performance, which is the ratio between the market value of an asset and its replacement cost (Kim et al., 2023). In Indonesia's energy sector, firm performance has become highly dynamic, primarily due to fluctuations in energy prices. Figure 1 shows the movement of Tobin's Q in the Energy Sector due to surging energy commodity prices such as oil and gas during the 2021–2022 period, along with the resurgence of geopolitical conflicts in 2023. Additionally, market concerns over the global economy caused by inflation,

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high interest rates, and sluggish economic activity in major economies like the United States and the Eurozone have significantly affected the performance of this sector (Bappenas, 2023).

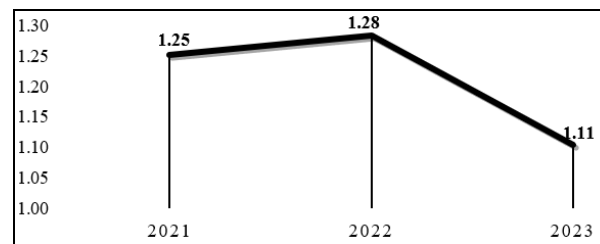


Figure 1. Firm Performance (Tobin's Q) Energy Sector in 2021-2023

Source: Author, 2025

Both financial and non-financial factors are regarded as important determinants of firm performance in order to address these issues. Important components for improving company performance include profitability, liquidity, dividend policy, and ESG (Environmental, Social, and Governance) disclosure.

Because investors believe that profitable businesses are better at managing their capital, high profitability improves firm performance and fosters investor confidence (Mudjiono & Osesoga, 2023). A key measure of financial performance, profitability acts as a yardstick for assessing the success of a business. Because it shows the return on their capital investment, it is especially alluring to shareholders (Badía et al., 2022). Profitability, usually measured by Return on Assets (ROA), has a significant positive impact on firm performance, according to a number of studies, including Dang et al. (2019), Ahamed et al. (2023), Jihadi et al. (2020) and others. The more profitable a company is, the better it does.

Another key factor is liquidity, which refers to a company's ability to meet its short-term obligations promptly without selling fixed assets or facing major financial issues (Cambrea et al., 2020). A higher current ratio indicates stronger short-term financial health (Pattiruhu & Paais, 2020). According to some research, liquidity has a positive impact on firm performance (Jihadi et al., 2020). Others, however, such as Li et al. (2020), Boshnak et al. (2023), Onsongo et al. (2020), Saleh et al. (2020) and Quoc et al. (2024), report a negative relationship.

Academic research continues to focus heavily on the debate surrounding dividend policy and how it affects company performance (Akinlo & Olayiwola, 2021). The primary objective of increasing shareholder wealth is influenced by dividend decisions (Ahmed et al., 2020). Dividend-paying companies are viewed as less risky and more financially stable (Hankins et al., 2008). Consistent dividend payments are often interpreted as signs of strong financial performance (Li & Zao, 2008). Investors can also learn about a company's health from its dividend policy (Athari, 2022). Since shareholders view higher dividend payouts favorably, they can improve firm performance (Buertey et al., 2024). Investors want dividend policies that pay out, but managers have to weigh this against internal funding requirements (Abdulkadir et al., 2016). According to signalling theory, dividend payments are perceived as positive signals of future performance (Kim et al., 2021). Studies by Seth & Mahenthiran (2020) and Huang et al. (2012) confirm a positive and significant effect of dividend policy on firm performance.

Environmental, social, and governance (ESG) disclosure is a well-known non-financial factor that affects a company's performance (Zhou et al., 2022). A company's reputation, capital availability, and general success are all impacted by its ESG performance (Alodat & Hao, 2024). In light of growing stakeholder expectations, businesses must manage their social impact, including labor, diversity, and human rights (Hadisurya et al., 2025). Therefore, maintaining universal principles and advancing the global sustainability agenda are crucial elements of corporate sustainability (Lee et al., 2022). According to studies, incorporating ESG into business plans enhances non-financial results like market acceptability, customer satisfaction, reduced debt costs, and the creation of social value (Mohammad & Wasiuzzaman, 2021). However, findings on ESG's impact remain mixed. ESG and firm performance were found to be positively and significantly correlated by Ajay & Dipti (2021), Wu et al. (2022) and Hadisurya et al. (2025). However, no significant effect was found by Gholami et al. (2022).

The board of directors is essential to corporate governance because it oversees management, guides strategic decisions, communicates with stakeholders, and engages with external parties (Endrikat et al., 2021). By supervising management, directing strategic choices, informing stakeholders, and interacting with outside parties, the board of directors plays a crucial part in corporate governance (Endrikat et al., 2021). Many studies have examined how board characteristics affect company performance and market value (Villiers & Dimes, 2020). Laws to increase the number of women on boards have recently been passed in several countries (Carmo et al., 2022). By fostering a range of viewpoints, external connections, and problem-solving abilities, diversity in gender, age, nationality, or ethnicity improves oversight and settles stakeholder disputes (Baker et al.,

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2020). Due to their individual traits, women are more likely to be concerned about social, environmental, and ethical issues (Carmo et al., 2022). Female board representation significantly improves firm performance, according to studies by El-Khatib & Joy (2020), Ararat & Yurtoglu (2020), Carmo et al. (2022), Brahma et al. (2020), and Ozdemir (2020). Mumtaz et al. (2021) did note a negative effect, though.

Numerous previous studies have examined the effects of profitability, liquidity, dividend policy, and ESG disclosure on firm performance; however, the inconsistent results and different geographical and sectoral contexts highlight the need for more thorough research that accounts for moderating factors such as gender diversity on the board of directors. This offers a special context that hasn't been thoroughly examined in similar research. This study is expected to expand and complement the existing literature. By considering both financial and non-financial factors, it illustrates how companies carry out their value creation processes and swiftly translate them into inputs for investment decision-making. This research is essential, as every company seeking to improve its performance must be capable of strategically managing its corporate governance.

II. LITERATURE REVIEW

A. Tobin's Monetary Theory

James Tobin's Monetary Theory significantly advanced modern economic understanding, particularly regarding the links between money, investment, and interest rates. Tobin (1969) introduced Tobin's q , the ratio of a company's market value to the replacement cost of its assets, to explain how market conditions influence corporate investment. When market value exceeds replacement cost, firms are likely to invest more; when it is lower, investment slows or declines.

Tobin also expanded Keynes's liquidity preference theory by incorporating risk and return into asset allocation decisions. He argued that investors balance their desire for liquidity with their risk tolerance: risk-averse investors favor safer assets like cash or bonds, while risk-tolerant investors pursue higher-return, riskier assets like stocks. Together, Tobin's ideas highlight how financial markets shape corporate and investor decisions on capital and resource allocation.

B. Agency Theory

Agency theory, as proposed by Jensen and Meckling (1976), describes the relationship arising from a contract between a principal and an agent, in which the principal delegates certain tasks to the agent. The principal refers to shareholders, creditors, and investors—those who provide capital to the company and expect financial returns, which are then managed by the company's management and reported through financial statements. Jensen and Meckling (1976) argue that management tends to prioritize short-term financial gains over long-term sustainability due to goal misalignment between shareholders (principals) and management (agents). To mitigate this misalignment, companies disclose financial and non-financial information to shareholders, thereby reducing agency costs.

C. Signalling Theory

Signalling theory stems from Akerlof's "The Market for Lemons" (1970), which introduced information asymmetry—where buyers lacking product details value all products equally, harming high-quality sellers. Akerlof argued that sellers could reduce this gap by sending quality signals. Spence (1973) expanded the idea through the basic equilibrium signalling model, showing that high-performing companies signal their condition and future prospects to the market using financial information. Ross (1977) further noted that positive financial reports act as signals of good company performance, with information serving as an indicator of past, present, and future conditions essential for the firm's sustainability.

D. Dividend Policy Theory

The dividend irrelevance theory by Modigliani and Miller (1961) states that dividend policy does not affect a company's value or cost of capital, as firm value depends solely on earnings from its assets, not on how profits are split between dividends and retained earnings. In contrast, Gordon and Lintner (1962) argue that dividend policy impacts market value by influencing stock prices. Higher dividends lower the required return because investors see dividends as more certain than future capital gains, preferring current payouts over uncertain reinvested earnings.

E. Stakeholder Theory

The widely cited definition of stakeholders comes from Freeman (2001), who described them as groups or individuals who can affect or be affected by a company's objectives. Responding to stakeholder needs fosters positive relationships, creating a competitive advantage. Stakeholders include shareholders, employees, customers, government, creditors, media, local communities, suppliers, environmental groups, and others. The stakeholder approach suggests that managers should develop strategies that balance the interests of all parties involved, integrating these relationships to ensure long-term success.

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Donaldson and Preston (1995) expanded this theory, emphasizing that companies must consider the interests of all affected groups, not just shareholders. They describe stakeholder theory as addressing corporate governance and management practices that collectively shape a stakeholder-oriented philosophy.

F. Hypothesis Development

The Impact of Profitability, Liquidity, Dividend Policy, ESG Disclosure and Women Board on Firm Performance

Jihadi et al. (2020) states that within signalling theory, good news—such as high profitability performance—acts as a positive signal that is well received by the market. Therefore, a strong firm performance is likely to follow when profitability reaches a satisfactory level. Return on Assets gives analysts, investors, and managers information about how well assets are being managed. According to studies by Dang et al. (2019), ROA positively affects firm performance; the higher the ROA, the better the firm performance (Chen & Chen, 2011). High profitability, according to Mohamad & Saad (2010), indicates a high rate of return on investment and can improve firm performance. Additionally, Ahamed et al. (2023) stress that the most important factor is profitability, suggesting that it is the main variable that investors take into account before buying shares.

Quoc et al. (2024) discovered a negative correlation between liquidity and firm performance, as businesses favor short-term assets or cash reserves over higher-return investments. Similar to this, Onsongo et al. (2020) and Saleh et al. (2020) contended that maintaining a high level of liquid assets, which suggests higher liquidity ratios, frequently does not improve firm performance but rather raises maintenance costs and opportunity costs from lost investment income. Boshnak et al. (2023) also verified that corporate liquidity has a negative correlation with market performance (Tobin's Q), meaning that companies with more liquidity typically do worse in the market than companies with less liquidity.

The bird-in-the-hand theory is supported by research by Bossman et al. (2022), which demonstrates that dividend payouts have a significant impact on Tobin's Q. In a similar vein, dividend payments significantly improve firm performance, according to Diab et al. (2024) and Iqbal et al. (2024). According to these results, companies in emerging markets can improve their performance and shareholder wealth by putting in place efficient dividend policies. Kim et al. (2021) revealed that higher dividend payments to shareholders increase firm performance, reflecting investors' perception of the company's loyalty and financial stability. Furthermore, Seth & Mahenthiran (2020) argued that investors are more attracted to dividends than capital gains because dividends are considered safer and more reliable. As more investors become interested in dividend-yielding companies, they invest more funds, which can increase stock prices and enhance firm performance (Huang et al., 2012).

According to Wu et al. (2022), there is a positive correlation between ESG disclosure and firm performance. They found that companies that perform well in terms of ESG tend to receive more government recognition, consumer trust, and investor support. According to Wong et al. (2021), there is a positive correlation between ESG performance and firm performance. Specifically, they found that ESG certifications can lower the cost of capital and improve firm performance as indicated by Tobin's Q, which reflects market confidence in businesses that prioritize ESG. Positive reactions from stakeholders who are not shareholders can increase the firm's market value, according to Nguyen et al. (2020). Similarly, Hadisurya et al. (2025) claim that ESG activities, such as environmental protection, social responsibility, and good governance practices, improve firm performance by lowering information asymmetry between the company and its stakeholders. As a result, the company's reputation improves, increasing stakeholder trust and productivity (Ajay & Dipti, 2021). Finally, companies with a strong focus on the environmental, governance, and social pillars tend to generate more market value because investors tend to associate better ESG performance with longer-term sustainability, which raises market valuations, according to Bhaskaran et al. (2020) and Naeem et al. (2021).

Using two measures of firm performance, Tobin's Q and ROA, research by Brahma et al. (2020) shows that gender diversity has a positive and significant impact on financial performance, a finding also supported by El-Khatib and Joy (2020). Carmo et al. (2022) further revealed a positive relationship between Tobin's Q and the presence of at least 20% women on the board of directors. These findings confirm the positive effect of board gender diversity on financial performance. In today's evolving business landscape, which demands innovative solutions to emerging issues and challenges, the value of diversity on boards—enriched by varied skills, knowledge, experience, and cultural perspectives—is undeniably crucial for companies and their performance (Ozdemir, 2020).

- H1: Firm performance is positively and significantly influenced by profitability
- H2: Firm performance is negatively and significantly influenced by liquidity
- H3: Firm performance is positively and significantly influenced by dividend policy
- H4: Firm performance is positively and significantly influenced by ESG disclosure
- H5: Firm performance is positively and significantly influenced by women board

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The Moderating Effect of Women Board on Profitability, Liquidity, Dividend Policy and ESG Disclosure on Firm Performance

Female board members increase profitability and conform to company policies, according to research by Gharios et al. (2024) and Ararat & Yurtoglu (2020). According to Pidani et al. (2020) and Shakil et al. (2024), having more women on boards improves the performance and value of the company. Benefits like creativity and efficient problem-solving were mentioned by Song et al. (2020). Raihan (2021) discovered a positive correlation between ROA and female board representation, emphasizing the role that women play in board coordination and operational efficiency. In particular, it has been demonstrated that a diverse board, including in terms of gender and experience, improves company performance (Awad et al., 2023). According to Sieweke et al. (2023), gender diversity in top management teams has a positive effect on corporate growth, liquidity, and profitability. According to Aljughaiman et al. (2023), even in banks with higher cash ratios, women continue to have a propensity to adopt conservative risk management techniques and uphold greater financial resilience. Varouchas (2023) indicates that gender diversity on the board has a positive effect on firm performance, with varying impacts across different levels of performance distribution. Ahmed et al. (2020) reveal that firms with more women on their boards tend to issue higher dividends compared to those with fewer female members. Trinh et al. (2021) find that female-led companies are more inclined to distribute free cash flow to shareholders. Halaoua & Boukattaya (2023) suggest that female board members can improve financial reporting and corporate transparency, while reducing agency costs and managerial opportunism through dividend payments. Miao et al. (2022) show that the more diverse a company's board, the larger the cash dividend and dividend payout ratio, indicating that board diversity contributes to enhanced firm performance and value. Board gender diversity has been found to improve governance, social, environmental, and ESG performance (Alahdal et al., 2024), boost corporate reputation (Arayssi et al., 2020), and positively moderate the effect of CSR on firm performance (Kahloul et al., 2022). Its beneficial effect on overall corporate outcomes is supported by evidence from Malaysia (Zahid et al., 2020) and more general findings (Shakil et al., 2024).

- H6: Firm performance is significantly influenced by profitability with women board moderating
- H7: Firm performance is significantly influenced by liquidity with women board moderating
- H8: Firm performance is significantly influenced by dividend policy with women board moderating
- H9: Firm performance is significantly influenced by ESG disclosure with women board moderating

III. METHOD

This study was conducted on all energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2021 to 2023. The population consisted of 79 energy sector companies listed on the IDX as of 2023. Using a purposive sampling method, 10 companies were selected as the research sample, based on criteria including consistent publication of annual and sustainability reports for three consecutive years, reported profits, dividend distribution, and female representation on the board of directors. The dependent variable in this study is firm performance (Tobin's Q), while the independent variables are profitability (ROA), liquidity (CR), dividend policy (DPR), and ESG disclosure, with the women board (GEN) serving as the moderating variable. The analytical technique applied is multiple linear regression and Moderated Regression Analysis.

Table 1. Sample Selection Mechanism

Criteria	Beyond Criteria	Fit
Energy sector companies listed on the Indonesia Stock Exchange (IDX) in 2023	-	79
Energy sector companies that recorded profits during 2021–2023	8	71
Energy sector companies consistently publishing sustainability reports from 2021–2023	26	45
Energy sector companies distributing cash dividends from 2021–2023	25	20
Energy sector companies with female directors from 2021–2023	10	10
Total samples selected		10

Source: Author, 2025

This study used descriptive statistical analysis and MRA to analyse the data. The regression equation used in this study is as

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follows:

$$TQ = \alpha + \beta_1ROA + \beta_2CR + \beta_3DPR + \beta_4ESG + \beta_5GEN$$

$$TQ = \alpha + \beta_1ROA + \beta_2CR + \beta_3DPR + \beta_4ESG + \beta_5GEN + \beta_6ROA*GEN + \beta_7CR*GEN + \beta_8DPR*GEN + \beta_9ESG*GEN$$

Where:

TQ	= Firm performance
α	= Constanta
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9$	= Multiple regression coefficient
ROA	= Profitability
CR	= Liquidity
DPR	= Dividend policy
ESG	= ESG disclosure
GEN	= Women board

IV. RESULT AND DISCUSSION

A. Descriptive Statistical Tests

All the results of the descriptive data analysis are systematically summarized in Table 2.

Table 2. Descriptive Statistics

Variable	N	Minimal	Maximal	Mean	St. Dev
TQ	30	0.65739	12.91819	2.02781	2.86802
ROA	30	0.01057	0.58336	0.16718	0.14869
CR	30	0.92838	21.71331	2.58680	3.88624
DPR	30	0.11951	1.91444	0.55588	0.38422
ESG	30	0.26496	1	0.59202	0.23112
GEN	30	0.07143	0.33333	0.21678	0.07033

Source: Output Eviews 12, 2025

The average Tobin's Q is 2.03, suggesting good market perception of firm performance. The highest score of 12.92, this high figure shows that the market gave a very high valuation to the company's performance and prospects. One of the influencing factors was the large number of outstanding shares, which boosted its market capitalization. The lowest value of 0.01, implying that at that time the company's market value was far below its asset value, indicating poor performance. A high standard deviation (2.87) shows significant variation in firm performance.

The highest ROA value of 58.3 indicates that each unit of asset generated over 58% in profit, indicating high asset management efficiency and profitability potential. The average ROA is 16.7%. Conversely, the lowest score of 1% indicates that the company only made 1% profit from its assets, which could be a sign of operational difficulties, declining profitability, or inefficiency during that year. Significant variations in firm profitability are reflected in a standard deviation of 0.15.

Strong liquidity is indicated by the average CR, which is 2.59. This indicates sound liquidity and the ability to fulfill immediate obligations. The highest CR of 21.71, reflecting extremely high liquidity—either a cautious liquidity strategy or underutilized current assets. Conversely, the lowest value of 0.93 implying that its current assets were insufficient to meet its short-term liabilities, indicating potential liquidity risks. The standard deviation (3.89) indicates wide disparity in short-term solvency.

The average Dividend Payout Ratio (DPR) is 55.6% indicating that on average, companies used about 55.6% of their net income for dividend distribution. The highest value, 191% showing that dividends exceeded net income—due to the use of retained earnings approved by shareholders. The lowest score of 12%, due to company policy on setting aside funds. The wide spread (SD = 0.38) indicates varying dividend policies among firms.

On a scale of 0 to 1, the companies' ESG disclosure is comparatively good, as indicated by the ESG variable's mean score of 0.59, which is near 0.6. This implies that while there is still opportunity for improvement, the majority of businesses give sustainability a fair amount of thought. Consistent sustainability practices and complete compliance with all ESG indicators are reflected in the highest score of 1. Additionally, it shows a high degree of social responsibility and transparency. The lowest score of 0.26, indicating a low level of ESG engagement and minimal policy implementation. The standard deviation (0.23) shows uneven ESG practices across companies.

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The GEN variable has a mean score of 21.7%, meaning around 21.7% female representation in company leadership—still relatively low. The best score of 33%, indicating that about one-third of the board members were women, reflecting a commitment to gender diversity. The lowest score of 7.1%, suggesting minimal gender diversity and male dominance in strategic positions. Low variation ($SD = 0.07$) suggests consistently limited gender diversity in leadership roles. No more than three levels of headings should be used.

B. Data Panel Regression Model Test

In Panel Data Regression Model Testing, there are three tests, including Chow Test, Hausman Test, and Lagrange Multiplier Test. These can be used to select a model (estimation approach) to evaluate the regression equation to be estimated.

1) Chow Test

Table 3. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.093392	(9,15)	0.0990
Cross-section Chi-square	24.408270	9	0.0037

Source: Output Eviews 12, 2025

The probability value of the Cross-section Chi-Square is 0.0037, which is lower than the significance level of 0.05. According to the decision-making criteria, this result indicates that the most appropriate model to use is the Fixed Effect Model (FEM). Since the Chow test has already pointed to the selection of FEM, the next stage of analysis is the Hausman test.

2) Hausman Test

Table 4. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.001535	5	0.0513

Source: Output Eviews 12, 2025

In the Hausman test, a probability above 0.05 indicates the Random Effect Model (REM) is more suitable, while a value below 0.05 favors the Fixed Effect Model (FEM). Since Table 4.9 shows a probability of 0.0513, REM was chosen, and the analysis continued with the Lagrange Multiplier test.

3) Lagrange Multiplier Test

Table 5. Lagrange Multiplier Test

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.376815 (0.5393)	0.171082 (0.6792)	0.547896 (0.4592)

Source: Output Eviews 12, 2025

Based on the results shown in Table 4.10, the Breusch-Pagan cross-section value is 0.5393, which exceeds the 0.05 significance threshold. Therefore, the Common Effect model was selected as the appropriate approach for the panel data regression analysis in this study.

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C. t-Test

Table 6. t-Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.460025	1.308745	0.351501	0.7283
ROA	16.57184	3.236780	5.119855	0.0000
CR	-0.258950	0.113205	-2.287449	0.0313
DPR	-0.891469	1.099231	-0.810993	0.4253
ESG	-0.063093	1.743418	-0.036189	0.9714
GEN	1.198700	6.123940	0.195740	0.8465

Source: Output Eviews 12, 2025

Based on Table 6, ROA reports a coefficient of 16.5718 with a probability of 0.0000 (<0.05), indicating that ROA has a positive and significant effect on Tobin's Q, thus H1 is accepted. CR has a coefficient of -0.2589 with a probability of 0.0313 (<0.05), showing that CR has a negative and significant effect on Tobin's Q, so H2 is accepted. The DPR variable has a coefficient of -0.8914 with a probability of 0.4253 (>0.05), indicating that DPR has no significant effect on Tobin's Q, thus H3 is rejected. The ESG variable has a coefficient of -0.0630 with a probability of 0.9714 (>0.05), meaning ESG has no significant effect on Tobin's Q, so H4 is rejected. The GEN variable reports a coefficient of 1.1987 with a probability of 0.8465 (>0.05), indicating that GEN has no significant effect on Tobin's Q, and thus H5 is rejected.

D. Moderated Regression Analysis (MRA)

Table 7. MRA Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	28.89523	17.04197	1.695533	0.1055
ROA	25.56694	5.770294	4.430787	0.0003
CR	0.084240	0.240489	0.350286	0.7298
DPR	-1.883965	2.758113	-0.683063	0.5024
ESG	-18.59963	9.105226	-2.042742	0.0545
GEN	-29.23354	26.56747	-1.100351	0.2842
ROAGEN	-0.825676	0.809810	-1.019592	0.3201
CRGEN	-3.417023	1.458603	-2.342668	0.0296
DPRGEN	1.668531	1.720502	0.969793	0.3437
ESGGEN	9.924337	4.803815	2.065928	0.0520

Source: Output Eviews 12, 2025

Based on Table 7, the interaction effect between ROA and GEN on Tobin's Q shows a probability of 0.3201 > 0.05 with a coefficient of -0.8256, thus H6 is rejected. The interaction effect between CR and GEN on Tobin's Q reports a probability of 0.0296 < 0.05 with a coefficient of -3.417, thus H7 is accepted. The interaction effect between DPR and GEN on Tobin's Q reports a probability of 0.3437 > 0.05 with a coefficient of 1.668, thus H8 is rejected. The interaction effect between ESG and GEN on Tobin's Q has a probability of 0.0520 > 0.05 with a coefficient of 9.9243, thus H9 is rejected.

E. Coefficient of Determination (R^2)

Table 8. R^2 Test Result

R-squared	0.555354	Mean dependent var	2.027811
Adjusted R-squared	0.462719	S.D. dependent var	2.868023
S.E. of regression	2.102244	Akaike info criterion	4.500744
Sum squared resid	106.0663	Schwarz criterion	4.780984
Log likelihood	-61.51116	Hannan-Quinn criter.	4.590395
F-statistic	5.995105	Durbin-Watson stat	1.252295
Prob(F-statistic)	0.000982		

Source: Output Eviews 12, 2025

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The Adjusted R-squared in Table 8 is 0.462719. Expressed as a percentage, this figure indicates that the independent variables used in the regression model explain approximately 46.27% of the variation in Firm Performance (Tobin's Q). Meanwhile, the remaining 53.73% of the variation in firm performance is influenced by factors not included in the model, falling outside the scope of this study. This suggests that, although the model explains a significant portion of the variation, there is still room for external variables to play a role in determining firm performance.

Meanwhile, the coefficient of determination (Adjusted R-squared) in the model involving the interaction with the women board is recorded at 0.587643, as shown in Table 9. This value indicates that 58.76% of the variation in firm performance can be explained by the model, demonstrating that the inclusion of the women board interaction provides a stronger contribution to explaining variations in firm performance.

Table 9. R² Test Result with Interaction

R-squared	0.715616	Mean dependent var	2.027811
Adjusted R-squared	0.587643	S.D. dependent var	2.868023
S.E. of regression	1.841702	Akaike info criterion	4.320459
Sum squared resid	67.83736	Schwarz criterion	4.787525
Log likelihood	-54.80689	Hannan-Quinn criter.	4.469878
F-statistic	5.591928	Durbin-Watson stat	1.475077
Prob(F-statistic)	0.000667		

Source: Output Eviews 12, 2025

F. The Impact of Profitability, Liquidity, Dividend Policy, ESG Disclosure and Women Board on Firm Performance

Based on the test results, the first hypothesis in this study, which states that profitability as measured by Return on Assets has a positive and significant relationship with firm performance represented by Tobin's Q during the 2021 to 2023 period, is supported. This finding is consistent with the results of Jihadi et al. (2020), who reported that Return on Assets has a positive effect on firm performance. The higher the ROA, the greater the tendency for firm performance to increase. ROA itself serves as a crucial indicator for managers, investors, and analysts in measuring how effectively management utilizes company assets to generate profits. A high ROA value indicates that the company has successfully optimized its assets to increase productivity, ultimately leading to higher net income (Chen & Chen, 2011). This positive relationship illustrates that an increase in profitability leads to an increase in firm performance. This finding is further confirmed by Kristi & Yanto (2020), who stated that high profitability reflects a good return on investment, sending a positive signal for firm performance growth. The finding also confirms that profitability is the most influential factor. It indicates that profitability is often the primary consideration for investors when deciding to purchase a company's stock (Dang et al., 2019). According to Mohamad & Saad (2010), a company's profitability level affects investor interest in owning its shares. Companies that demonstrate strong performance or profitability are generally viewed positively by investors. In accordance with Signalling Theory, good news conveys a positive signal that is responded to favourably by the market. Therefore, when profitability reaches a satisfactory level, firm performance tends to increase (Ahamed et al., 2023). This finding is aligned with the Signalling Theory proposed by Ross (1977), which asserts that strong financial information is an indicator that the company is operating effectively.

For the second hypothesis confirms that liquidity, as measured by the Current Ratio, has a negative and significant effect on firm performance, as measured by Tobin's Q during the 2021 to 2023 period. This hypothesis is supported. This finding may be attributed to the tendency of firms to maintain high levels of liquid assets as a precautionary measure, yet fail to allocate those assets to value-generating investment activities. The accumulation of liquid assets that are not productively utilized can lead to inefficiencies in resource allocation and reduce opportunities to earn higher returns. In this context, high liquidity may be perceived by investors as a signal of weak financial management in utilizing funds optimally, which ultimately affects the firm's market value negatively. This is consistent with the findings of Quoc et al. (2024), who reported a negative relationship between liquidity and firm performance, as companies tend to retain cash or invest in short-term instruments rather than in higher-return investments. Similar to this, Onsongo et al. (2020) and Saleh et al. (2020) contend that a company's high level of liquid assets, which results in a higher liquidity ratio, typically does not increase the company's value but rather raises maintenance costs and opportunity costs from lost investment income that could have been generated had the assets been invested more profitably. This conclusion is further reinforced by Boshnak et al. (2023), who discovered a negative correlation between corporate liquidity and market performance, meaning that companies with more liquidity typically perform worse in the market than those with less liquidity. Similarly, Kristi & Yanto (2020) note that although maintaining a larger proportion of current assets

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to cover short-term obligations can reduce the risk of incurring additional costs such as late penalties, it does not necessarily translate into improved firm performance. These results are also aligned with Keynesian theory, as further developed by Tobin, which suggests that high liquidity preference—arising from uncertain market conditions—leads investors to prefer holding cash or liquid assets rather than investing in stocks or bonds. This behaviour can exert downward pressure on stock prices and, in turn, reduce the firm's market value.

That dividend distribution is not the primary objective for investors when purchasing shares. An increase in dividend payouts to shareholders does not have a significant impact on firm performance. This finding is consistent with the study by Bon & Hartoko (2022), which also found that dividend policy has no effect on firm performance. High dividend payments do not necessarily indicate a positive firm performance. These findings are consistent with the Dividend Irrelevance Theory, which holds that a company's capital structure and value are unaffected by its dividend policy. According to this theory, which was put forth by Modigliani & Miller in 1961, a company's worth is entirely based on its capacity to make money off of its operations, whether or not those profits are kept as earnings or given out as dividends. According to their view, dividend policy is merely a technical decision that does not significantly affect shareholders, as any dividend payment will be offset by adjustments in external or internal financing. As a result, investor welfare remains unchanged.

The fourth hypothesis—that ESG disclosure improves firm performance (Tobin's Q)—is unsupported. This aligns with Ma et al. (2024), who found no significant link between ESG scores and firm value, noting weak market reactions to sustainability efforts in developing countries like Indonesia due to low awareness and limited reporting systems. While Stakeholder Theory suggests ESG engagement should boost profitability, the costs of implementing and disclosing ESG often outweigh short-term benefits (Gholami et al., 2022). Similarly, Kristi & Yanto (2020) observed that environmental initiatives demand high investment, yet market responses are slow, explaining the lack of measurable impact on firm performance.

The performance of the company is not significantly impacted by the presence of women on the board. The low number of female CEOs in Indonesian companies may account for this finding, as it creates statistical uncertainty when estimating their influence on business performance. Because women's influence is diminished by their underrepresentation on corporate boards, it is statistically insignificant. The male-dominated composition of boards in Indonesian companies further exacerbates the inability of female directors to significantly improve company performance. According to agency theory, the presence of women on boards is believed to help reduce conflicts of interest (Song et al., 2020). However, in practice, the presence of women on boards does not show a significant impact on firm performance or investor responses.

G. The Moderating Effect of Women Board on Profitability, Liquidity, Dividend Policy and ESG Disclosure on Firm Performance

The sixth hypothesis, according to which the relationship between firm performance and profitability can be moderated by having women on the board, is disproved. This finding supports the study by Simionescu et al. (2021), which found that a major reason why board diversity as a moderating variable does not strengthen the effect of profitability on firm performance is the low level of female participation on boards of directors. In addition, women have faced several barriers in the past when attempting to obtain board positions, and they are still often perceived as being less capable of handling strategic responsibilities at the board level. Women are not always able to fully utilize their potential and capabilities because they are sometimes thought to have less experience in roles that are traditionally performed by men. It is argued that the appointment of female managers has little effect on the performance of the company, despite the fact that male and female directors may have comparable levels of personal competence. Similarly, Ararat & Yurtoglu (2020) found no significant difference in ROA between companies with and without women on their boards.

Based on the test results, the seventh hypothesis, which states that women on the board can moderate the relationship between liquidity and firm performance, is accepted. The results show that there is a negative and significant impact on firm performance from the interaction variable between liquidity and the number of women on the board of directors. This implies that having women on the board tends to reduce the positive correlation between liquidity and firm performance, perhaps as a result of women's propensity to use current assets more conservatively. This outcome is in line with research by Cambrea et al. (2020), who contend that women in oversight positions strengthen the board's control function by closely monitoring the company's cash holdings. All things considered, this result confirms earlier empirical data showing that women are typically better monitors than men. Since high levels of liquidity, when paired with cautious oversight by female board members, may result in current assets, like cash or cash equivalents, being retained rather than being distributed to high-risk investments that could yield higher market returns, liquidity has a negative impact on firm performance, as was previously discussed. As a result, this could lead to a drop in market performance.

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The eighth hypothesis—that more women on the board can lessen the effect of the dividend payout ratio on business performance—is unsupported by any data. This outcome is in line with studies by Arora (2021) and Essel (2023), which demonstrate that a more diverse board does not always translate into higher dividend payments. Board members must strike a balance between retaining earnings and distributing the highest dividends to maximize shareholder value in order to achieve long-term objectives. According to agency theory, the board of directors is responsible for overseeing management to ensure that financial decisions, including dividend policy, serve the interests of shareholders. However, the ability of women on the board to carry out this role may be limited, especially if they do not occupy strategic positions (like CEO or CFO) or if their percentage is still low. In such cases, their role in influencing dividend policy may be minimal. If female board members are limited to supervisory roles without strategic authority, their ability to act as effective moderators between dividend policy and firm performance becomes insignificant.

The ninth hypothesis, according to which having women on the board can mitigate the impact of ESG disclosure on company performance (Tobin's Q), is disproved. This result is in line with research by Kumari et al. (2022) and Chebbi & Ammer (2022), which demonstrated that gender diversity has no bearing on or modifies the association between financial performance and ESG disclosure. The low number of female executives is one of the main causes of the lack of a significant relationship, which restricts the influence of gender diversity on financial results. Concerns that women might encourage greater levels of information transparency to shareholders—resulting from perceived feminine traits—are another reason why women are underrepresented on boards. The profitability of the business may be impacted by this. These problems contribute to the explanation of why women are still prohibited from holding senior positions on corporate boards.

V. CONCLUSIONS AND SUGGESTION

Based on the findings of the panel data regression analysis, the Common Effect Model was identified as the most appropriate estimation model for this study. This model was selected following a series of model selection tests that demonstrated its superior fit in representing the relationship between the independent and dependent variables compared to other alternatives. After testing the research hypotheses, Hypotheses 1, 2, and 7 were accepted as they confirmed statistically significant effects within the defined significance level. Meanwhile, the other hypotheses were rejected because the model did not reveal any significant relationships.

Among all the independent variables analysed, Return on Assets (ROA) emerged as the most influential factor on firm performance, as measured by Tobin's Q. In addition to ROA, the Current Ratio (CR) also showed a significant effect on the dependent variable, confirming that liquidity and profitability play crucial roles in explaining firm value. Furthermore, the presence of women on the board was found to moderate the relationship between liquidity and firm performance, indicating that the women board variable serves purely as a moderator in this research.

Overall, the regression model explains approximately 46.27% of the variation in the dependent variable, while the remaining 53.73% is influenced by factors outside the model. Meanwhile, the coefficient of determination for the model involving the interaction with the women board shows that 58.76% of the variation in firm performance is explained, demonstrating that the inclusion of women board interaction provides a stronger contribution to explaining variations in firm performance.

Practical implications of these findings provide several recommendations for companies, including the importance of strategic consideration, effective management, and sustainable oversight of corporate performance. This includes optimizing net income, controlling assets, efficient use of funds, supporting active participation and substantive contributions of female board members, and becoming more proactive in ESG disclosure—so that ESG is not merely a reporting obligation but also a reflection of the company's accountability for its operational activities. For business stakeholders such as investors and potential investors, the study encourages incorporating these factors as key investment considerations.

The limitation of this study lies in its relatively small sample size, as not all companies had female board members consistently throughout the three-year observation period. Therefore, the study recommends that the measurement of women on boards should be represented in a proportional figure or dummy variable, serving as an indicator of female presence in company leadership, in order to obtain more representative results and stronger empirical findings.

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