InCAF PROCEEDING OF INTERNATIONAL CONFERENCE ON ACCOUNTING AND FINANCE

Volume 4, 2026, PP: 212-225

The impact of carbon emission disclosure, ESG, and gender diversity on financial performance in oil and gas industry

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Abstract

This study examines the impact of carbon emission disclosure, Environmental, Social, and Governance (ESG) performance, and gender diversity on the financial performance of oil and gas companies in Malaysia and Indonesia. The sector was chosen due to its high-carbon nature and strategic economic role in both countries. Data were collected from companies listed on Bursa Malaysia and the Indonesia Stock Exchange for 2022–2024. Multiple linear regression analysis was used to assess the relationships among the variables. The results indicate that collectively, carbon emission disclosure, ESG performance, and gender diversity significantly affect financial performance. Individually, carbon emission disclosure positively impacts financial performance, suggesting that transparency in environmental reporting enhances credibility and investor confidence. Conversely, ESG performance negatively affects short-term profitability, reflecting the costs of implementing sustainable practices. Gender diversity shows no significant effect, indicating limited immediate financial contribution. These findings provide empirical evidence from the oil and gas sector in Malaysia and Indonesia, where sustainability and inclusivity efforts are evolving. The study highlights that transparency and responsible governance have not yet translated into clear financial gains but are essential steps toward aligning with global sustainability standards and supporting long-term economic advantages.

Keywords: Carbon Emission Disclosure, Environmental, Social, and Governance (ESG) Performance, Gender Diversity, Financial Performance, Energy Sector, Oil and Gas Industry.

INTRODUCTION

In developing countries, economic development is supported by many sectors, including the oil and gas sector. Crude oil, fuel oil, and gas exports and imports contribute to the income of developing countries. In Malaysia, the Ministry of Finance reported, as cited by The Edge Malaysia (2023), that the petroleum sector contributes 22.4% of the country's total revenue. Oil and gas services and equipment companies recorded a total revenue of RM83.9 billion (Malaysia Petroleum Resources Corporation, 2025). Similarly, in Indonesia, the Ministry of Energy and Mineral Resources (2024b) reported that state revenue from the oil and gas sector reached approximately IDR 116.98 trillion in 2023, showing a notable increase from IDR 97.98 trillion in 2021. These figures highlight the strategic importance and promising potential of the oil and gas industry in supporting the economies of developing countries, both as a source of revenue and as a driver of broader economic development.

However, numerous other factors must be considered in the sustainability of companies, especially in the oil and gas sector. One of them is Shell, a large oil and gas company headquartered in London, which has seen its presence in Indonesia's domestic market, a developing country, begin to diminish. It started with Shell's withdrawal as an investor in the Masela Block project in 2023. Based on the official report from Pertamina Hulu Energi (2023), Shell's withdrawal as an investor in the Masela Block project was followed by the acquisition of its shares by PT Pertamina (Persero) and Petroliam Nasional Berhad (PETRONAS). Both companies took the opportunity to acquire the 35% participating interest previously owned by Shell. Following this decline, coupled with Shell's inability

to survive in the domestic market, Shell has announced plans to divest its business in the Indonesian oil and gas sector in 2026 (Kompas, 2025).

The move by Pertamina and PETRONAS to take over this investment shows how developing countries still consider the oil and gas sector to be an important part of maintaining national energy security. However, beyond the public focus on the oil and gas industry, significant environmental sustainability challenges persist. Ironically, the operational activities of oil and gas companies impose substantial environmental burdens, particularly through the carbon emissions they generate. According to the International Energy Agency (2023b), Malaysia's total carbon emissions from the oil and gas industry in 2023 reached 159.6 $MtCO_2$. Similarly, in Indonesia, the oil and gas sector remains a significant contributor to national carbon emissions, accounting for 307.4 $MtCO_2$ (International Energy Agency, 2023a). This high intensity is certainly a concern for the market, given that the global community now demands that companies not only pursue financial gains, but also take responsibility for their environmental impact.

Malaysian and Indonesian oil and gas companies have begun to place greater emphasis on carbon emissions management in their reporting. For example, Petroliam Nasional Berhad (PETRONAS) has declared its commitment to achieving Net Zero Carbon Emissions by 2050 (Petroliam Nasional, 2023). Subsequently, Indonesia's government, through the Ministry of Energy and Mineral Resources (2024a), has also begun promoting regulatory targets for achieving Net Zero Emissions (NZE) by 2060, as part of Indonesia's long-term commitment to climate change mitigation and energy transition. These initiatives represent efforts to promote a responsible and sustainable energy transition in both countries and are aligned with their respective national environmental policies aimed at reducing carbon emissions. Furthermore, such carbon reduction strategies support the development of renewable energy and enhance the attractiveness of Malaysia and Indonesia to global investors who are increasingly concerned with environmental and sustainability issues.

Several factors, from regulations to the potential for carbon disclosure to investors, are reasons why the environment is one of the most important aspects of corporate sustainability. Greater pressure on companies regarding their environmental impact is encouraging them to improve their environmental performance. In addition, companies with a large environmental impact tend to provide transparent and high-quality voluntary disclosures in an effort to maintain the legitimacy of the company in the community (Zanra et al., 2020). In this case, responsible carbon reporting by oil and gas companies is expected to support the legitimacy of the surrounding community regarding carbon emission reduction initiatives, thereby attracting market attention and ultimately influencing the company's financial performance.

Environmental, Social, and Governance (ESG) has now also become a global indicator used by investors to assess a company's reputation and credibility. According to Zhang (2025), Environmental, Social, and Governance (ESG) performance can be an important indicator for companies in carrying out their social responsibility efforts as well as a major factor considered by investors in assessing the value and sustainability of a company. Then, from the company's perspective, Friede et al. (2015) through their study also proved that companies with good ESG management can simultaneously improve the company's financial performance. However, ESG implementation often requires substantial investment and operational costs, which can negatively affect financial performance, especially in the short term (Candio, 2024). Therefore, effective ESG management is an important part of a company's commitment to social responsibility, which can also enhance its reputation and credibility in the eyes of investors. But on the other hand, its impact on financial performance may vary depending on the time horizon.

On the corporate governance side, market attention is also focused on gender diversity in corporate management. The proportion of female directors is also beginning to be reported in corporate sustainability reports. Gender diversity, especially the participation of women on boards of directors, has been shown to improve the quality of decision-making on environmental issues (Peng et al., 2025). Thus, the participation of women on boards of directors is expected to strengthen environmental decision-making in oil and gas companies with high carbon emissions.

Therefore, given these two countries' status as developing countries status as developing countries that are still dependent on oil and gas but face different regulations, strategies, and sustainability implementations, this study is important to see how carbon emission disclosure, ESG performance, and gender diversity affect the financial performance of oil and gas companies in both countries. In addition, previous studies on these factors have been conducted mostly in developed countries, so this study can provide a new perspective in the context of developing countries, particularly Malaysia and Indonesia, which are still heavily dependent on the oil and gas sector while facing increasing pressure to transition toward sustainable energy.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Literature Review and Hypothesis Development

Variable Independent

Carbon Emission Disclosure

Environmental disclosure is one of the communication efforts between companies and the public to explain the extent to which business activities affect the environment and how companies manage them responsibly (Gray et al, 1988). In this context, carbon emission disclosure is part of environmental reporting that focuses on climate change issues and corporate responsibility for greenhouse gas emissions. Based on Luo et al. (2012), carbon emission disclosure is a voluntary reporting practice, whereby companies can demonstrate their accountability for climate change issues by disclosing information related to the amount of greenhouse gas emissions produced, emission reduction policies and strategies, and evaluations of the environmental impact of their operational activities. In addition to highlighting the company's past carbon performance, carbon emission disclosure also reports on future emission projections (Yuliandhari & Ramadhanty, 2024). With this, carbon emission disclosure becomes a form of corporate responsibility for the environmental impact of its operational activities (Ramadhan et al., 2023).

Carbon emission disclosure is a form of voluntary disclosure, an initiative by companies to gain legitimacy from the public. This is in line with the theory of legitimacy, which emphasizes the importance for companies to ensure that their activities are in line with the values, norms, and social expectations of the community so the company's existence is accepted (Suchman, 1995).

ESG Performance

According to Eccles et al. (2014), ESG performance measures the extent to which companies fulfill their environmental, social, and governance responsibilities to support business sustainability. This performance assesses companies' efforts to reduce environmental impact, improve social welfare, and implement ethical and accountable management practices. ESG performance can reflect the extent to which companies integrate sustainability and responsibility into their operations and strategies, enabling them to address environmental issues, fulfill social obligations, and maintain good governance practices (Naeem et al, 2022). In line with this, according to the Indonesian Stock Exchange (2024) concept, ESG performance is stated to cover three main aspects, namely environmental, social, and governance. This concept is used to assess the impact of sustainability and ethics in the investment decision-making process. These three aspects form the basis for evaluating the extent to which companies apply sustainability principles in their operational activities.

ESG also represents a company's responsibility towards the environmental, social, and governance sector, where companies must maintain relationships with stakeholders who are groups that can influence or be influenced by the achievement of organizational goals (Clarkson, 1995). In this case, ESG Performance also represents how well a company performs for its stakeholders, thereby maintaining relationships with the company's stakeholders.

Gender Diversity

Gender diversity refers to the significant presence and involvement of women in board positions, thereby bringing a balance of gender perspectives to corporate decision-making and strategy formulation (Terjesen et al., 2009). This diversity describes the proportion of women and men in an

organizational structure (Mishra and Jhunjhunwala, 2013). Gender diversity contributes to organizational effectiveness, as heterogeneous teams tend to be more productive and have more creative problem solving abilities. This diversity is also believed to strengthen corporate governance and improve social responsibility and environmental performance (Sahu et al., 2025). According to the report Women in Executive Leadership Teams in IDX200 Companies published by IBCWE (2023), gender balance in an organization is defined as a condition in which women fill at least 30% of positions in executive or leadership teams. This ideal ratio is equivalent to 30:70 between women and men, while companies with female representation between 20-29% are categorized as still in the process of achieving gender balance.

Gender diversity is considered to represent equality in the workplace, so that through the proportion of women in the organization, companies strive to meet public expectations regarding company activities, and they can gain legitimacy from the community. This is in line with the theory of legitimacy, where companies must pay attention to their activities so that they are well accepted by the community (Suchman, 1995).

Variable Dependent

Financial Performances

Financial performance can be understood as a description of the level of effectiveness and efficiency of a company in managing its resources to achieve its objectives. The assessment of financial performance is carried out through the analysis of financial statements, which provide comprehensive information about the condition and operational results of a company in a certain period (Prawironegoro, 2008). According to Safutri et al. (2023), financial performance is a financial analysis tool used to assess the extent of a company's performance in a certain period. One of the commonly used measures is the financial ratio, especially the profitability ratio, which describes the company's ability to generate profits from investments and sales. Frequently used profitability indicators include Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). A company's financial performance can be measured through analysis of financial statements using financial ratios as the main evaluation tool (Setiani, 2023). Financial ratios provide an overview of a company's ability to meet its financial obligations, generate profits, and maintain operational efficiency and stability.

In the context of stakeholder theory, financial performance is not only viewed as a result of internal efficiency but also as a form of corporate accountability to stakeholders. In this case, financial performance is not only oriented towards short-term profits, but also reflects how effective the company is in creating value for all interested parties.

Hypothesis Development

Carbon Emission Disclosure on Financial Performances

Several previous studies support associations between these variables, where Salsa & Tohir Pohan (2022) found that carbon emission disclosure had a positive effect on financial performance as measured by Return on Sales. A study of financial services companies in Nigeria also stated that carbon emission disclosure had a positive and significant effect on financial performance (Emmanuel et al., 2023). Although there are differences in the results of the study by Lu et al. (2021), which states that in non-carbon-intensive industries, carbon emission disclosure has a positive effect on significantly improving financial performance both in the current and subsequent periods, in carbon-intensive industries, carbon emission disclosure was found not to affect financial performance. However, Daud et al. (2023) found that the lower the greenhouse gas emission intensity, the higher the company's financial performance. A study in Malaysia shows that although participation in carbon disclosure incurs additional compliance costs, long-term emission management efficiency still contributes positively to financial performance (Vaicondam et al., 2025). It can be concluded that carbon emission disclosure is a manifestation of a company's commitment to gaining social legitimacy and meeting stakeholder expectations, which ultimately has the potential to improve the company's financial performance. Therefore, the hypothesis proposed is that carbon emission disclosure affects financial performance.

H_1: Carbon emission disclosure has pofeffects on financial performance

ESG Performances on Financial Performance

Several studies have found both positive and negative effects of ESG performances on financial performance. Naeem & Çankaya (2022), show that ESG performance has a positive effect on the profitability of global energy and power generation companies. Similar results were found by Naeem et al. (2022), who stated that the relationship between ESG and financial performance is stronger in developed countries than in developing countries.. On the other hand, there are inconsistencies based on studies in Europe, investing in ESG does not always provide direct financial returns and can even have a negative impact in the short term due to high implementation and disclosure costs (Candio, 2024). This is supported by Giannopoulos et al. (2022), where intensive ESG performance often increases a company's operational costs, which leads to a decline in financial performance in the short term. Therefore, it can be concluded that ESG performance, as part of a company's social responsibility and legitimacy effort, often involves substantial short-term implementation costs, which may negatively impact short-term financial performance. Accordingly, this study proposes the hypothesis that ESG performance significantly affects the financial performance of the company.

H_2: ESG performance has negative effects on financial performance.

Gender Diversity on Financial Performance

Several studies support this relationship between gender diversity and financial performance, including a previous study by Aljughaiman et al. (2023), which found that gender diversity has a positive effect on the financial strength of conventional and Islamic banks in the MENA region. Alshirah et al. (2022) also showed through their study that female representation in executive positions has a positive, albeit insignificant, effect on company performance in Jordan, which is a developing country. Sahu et al. (2025) found that gender diversity and the education level of board members have a significant effect on the performance of non-financial companies in developing countries. In Indonesia, Anggraini et al. (2023) also showed that gender diversity has a significant effect on financial performance. Meanwhile, Pathiranage et al. (2025) also found that gender diversity in top management is positively related to good environmental performance, which indirectly supports the legitimacy and sustainability of the company. Therefore, the hypothesis proposed is that gender diversity has a positive effect on financial performance

H_3: Gender diversity has positive effects on financial performance.

METHODS

This article was researched using causal research, in which the researcher aimed to determine the cause-and-effect relationship between independent and dependent variables. In this study, the researcher wanted to examine the effect of carbon emission disclosure, ESG performance, and gender diversity as independent variables on financial performance as a dependent variable. In addition, the population of this study was oil and gas industrial energy companies listed on the Malaysian Stock Exchange and IDX during the period 2022–2024. Oil and gas sector energy companies were chosen because they are carbon-intensive industries, making carbon emission disclosure and ESG practices highly relevant. The sample was taken using purposive sampling, a sampling technique based on specific criteria tailored to the research objectives. The companies to be studied are (1) oil and gas industry energy companies listed on the Malaysian Stock Exchange and IDX during the period 2022-2024, (2) oil and gas industry energy companies that published financial reports during that period, (3) companies that published sustainability reports during that period.

Carbon Emission Disclosure

Several carbon emission disclosure calculations have been used in previous studies, where carbon emission disclosure uses scores regarding company participation and response in the Carbon Disclosure Project (CDP) program, such as the studies by Emmanuel et al. (2023) and Lu et al. (2021). This study uses calculations from Bae Choi et al. (2013), where carbon emission disclosure calculations are represented by a checklist that assesses how companies disclose voluntary information related to climate change and carbon emissions in their annual reports or sustainability reports. This assessment is developed based on indicators in the Information Request Sheets published by the Carbon Disclosure Project (CDP), reflecting the level of corporate transparency on environmental issues, particularly carbon emission management. The indicators are as follows:

Table 1. Carbon Emission Disclosure Item

Carbon Emission Disclosure	Items
1 – Climate change: risks and opportunities	CC1 – assessment/description of the risks (regulatory, physical or general) relating to climate change and actions taken or to be taken to manage the risks CC2 – assessment/description of current (and future) financial implications, business implications and opportunities of climate change
2 – GHG emissions accounting	GHG1 – description of the methodology used to calculate GHG emissions (e.g. GHG protocol or ISO) GHG2 – existence external verification of quantity of GHG emission– if so by whom and on what basis GHG3 – total GHG emissions– metric tonnes CO2-e emitted GHG4 – disclosure of Scopes 1 and 2, or Scope 3 direct GHG emissions GHG5 – disclosure of GHG emissions by sources (e.g. coal, electricity, etc.) GHG6 – disclosure of GHG emissions by facility or segment level GHG7 – comparison of GHG emissions with previous years
3 – Energy consumption Accounting	EC1 – total energy consumed (e.g. tera-joules or peta-joules) EC2 – quantification of energy used from renewable sources EC3 – disclosure by type, facility or segment
4 – GHG reduction and cost	RC1 – detail of plans or strategies to reduce GHG emissions RC2 – specification of GHG emissions reduction target level and target year RC3 – emissions reductions and associated costsavings achieved to date as a result of the reduction plan RC4 – cost of future emissions factored into capital expenditur planning
5 – Carbon emission accountability	ACC1 – indication of which board committee (or other executive body) has overall responsibility for actions related to climate change ACC2– description of the mechanism by which the board (or other executive body) reviews the company's progress regardin climate change

ESG Peformances

Then, for the calculation of ESG Performance, according to the Global Reporting Initiative (GRI) guidelines, ESG performance covers three main pillars, namely environmental, social, and governance. In previous studies, including those by Suttipun & Yordudom (2022) and Ariasinta et al. (2024), ESG disclosure measurement was carried out with reference to the Global Reporting Initiative (GRI) Standards guidelines. This approach is considered relevant because GRI provides measurable indicators that enable quantitative analysis of the extent to which companies report their performance

in the three dimensions of ESG. This method is also widely used in international research as a tool for assessing the level of corporate transparency and accountability in sustainability practices. In this study, ESG performance measurements were carried out using the content analysis method, namely content analysis of companies' annual reports or sustainability reports to identify the extent to which ESG indicators are disclosed based on GRI indicators.

Gender Diversity

Gender diversity indicates the proportion of genders in a company's board of directors. This diversity reflects the extent to which companies provide equal opportunities for men and women in strategic decision-making positions. In previous studies, Aljughaiman et al. (2023), Alshirah et al. (2022), and Owen & Temesvary (2018) assessed gender diversity using the percentage of women on the board of directors. Therefore, this study uses the percentage of women on the board of directors to represent gender diversity.

Financial Performance

Financial performance shows the extent to which a company is able to achieve its economic goals, including revenue growth, profitability, and operational efficiency. According to previous research by Safutri et al. (2023), the indicators often used for financial performance are Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). In this study, the measurement used is Return on Assets (ROA), which reflects the company's ability to generate net profit from its total assets. This indicator was chosen because it provides a direct picture of the efficiency of the company's use of assets in generating profits, making it a relevant measure for assessing the company's overall financial performance.

Table 2. Measurement of Variables

Variables	Measurement	Authors
Carbon Emission Disclosure	Carbon Emission Disclosure = ΣCompany's disclosed items / Total carbon emission disclosure items	Bae Choi et al. (2013)
ESG Peformance	ESG Performances = ΣCompany's disclosed items / Total of GRI's disclosure standard items	Suttipun & Yordudom (2022)
Gender Diversity	Percentages of women on the board	Alshirah et al. (2022)
Financial Performance	*Ratio of Assets*	*Safutri et al. (2023)*

RESULT AND DISCUSSION

Descriptive Statistics Results

A summary of the descriptive statistical results for the dependent and independent variables in this study can be seen in Table 3 as follows:

Table 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Carbon Emission Disclosure	100	0.62	0.97	0.8708	0.08614
ESG Performance	100	-0.35	-0.01	-0.0936	0.05968
Gender Diversity	100	-1.08	-0.34	-0.6278	0.18360
Financial Performance	100	-2.82	-0.34	-1.3247	0.40694

The results of descriptive statistical testing with a sample size of 100 observations can be seen in Table 3. These results were obtained after data transformation. Carbon emission disclosure has a minimum value of 0.62 and a maximum of 0.97 with an average of 0.8708 and a standard deviation of

0.08614. Carbon emission disclosure has relatively small variations, indicating a relatively good and fairly uniform level of carbon disclosure among Malaysian and Indonesian oil and gas companies.

For the ESG performance variable, the minimum value recorded was -0.35, the maximum was -0.01, with an average of -0.0936 and a standard deviation of 0.05968. The sample data shows that ESG scores tend to be uniform, indicating that the application of sustainability principles is still homogeneous among oil and gas companies.

Meanwhile, the gender diversity variable had a minimum value of -1.08 and a maximum of -0.34, with an average of -0.6278 and a standard deviation of 0.18360. These results show the average proportion of women after data transformation, where when returned to its original form, the average proportion of women on the boards of Malaysian and Indonesian oil and gas companies reaches around 25.6%, which means that most companies already have female representation, although it is still relatively low.

The financial performance variable has a minimum value of -2.82 and a maximum of -0.34 with an average of -1.3247 and a standard deviation of 0.40694. This indicates that the profitability of oil and gas companies listed on the Malaysia Stock Exchange and IDX varies considerably, although most companies perform at a moderate level.

Model Test Results

Table 4. Model Test Results

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	0.293	0.086	0.057	0.39508

Overall, the regression results confirm that the model has a good level of feasibility with a value of R = 0.293, R^2= 0.086, and Adjusted R^2 = 0.057, which means that 5.7% of the variation in financial performance can be explained by the combination of carbon emission disclosure, ESG performance, and gender diversity. This indicates that carbon emission disclosure, ESG performance, and gender diversity collectively affect financial performance by 5.7%.

Simultaneous Test Results

Table 5. Simultaneous Test Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.410	3	0.470	3.010	0.034
Residual	14.984	96	0.156		
Total	16.394	99			

Based on the results of the F-test, a significance value of 0.034 was obtained, which is smaller than the significance level (α) of 0.05. This indicates that the regression model in this study is suitable for use (fit model) to test the relationship between independent and dependent variables. This means that carbon emission disclosure, ESG performance, and gender diversity simultaneously have a significant effect on financial performance

Multiple Linear Regression Results

Table 6 shows the results of multiple linear regression analysis that tests the effect of carbon emission disclosure, ESG performance, and gender diversity on the financial performance of oil and gas companies in Malaysia and Indonesia. This research model aims to evaluate the extent to which sustainability and corporate governance factors affect financial performance, which is measured through the profitability ratio (Return on Assets).

Table 6. Multiple Linear Regression Results

Independent Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	-2.337	0.518	—	-4.513	0.001
Carbon Emission Disclosure	1.190	0.516	0.252	2.308	0.023
ESG Performance	-1.678	0.753	-0.246	-2.229	0.028
Gender Diversity	0.289	0.229	0.130	1.262	0.210

Dependent Variable: Financial Performance

The results of this analysis show that carbon emission disclosure has a positive effect on financial performance with a β value of 0.252 and a significance value of 0.023, therefore H_1 is accepted. These results indicate that the level of corporate disclosure of carbon emission information can affect market perception or corporate financial performance. The results of this study are in line with previous findings by Naeem & Çankaya (2022) and Vaicondam et al. (2025). With carbon emission disclosure, companies demonstrate their accountability and responsibility for carbon emission reduction efforts, thereby gaining legitimacy and reputation from stakeholders, which has an impact on improving the financial performance of oil and gas companies in Malaysia and Indonesia.

Meanwhile, ESG performance has a negative effect on financial performance with a β value of -0.246 and a significance of 0.028, thus H_2 is accepted. This indicates that the higher the ESG performance, the lower the company's financial performance. This is consistent with previous studies by Giannopoulos et al. (2022), and Candio (2024), which found that ESG performance has a significant and negative effect on financial performance. This is because intensive ESG performance often increases a company's operational costs, which leads to a decline in financial performance in the short term (Giannopoulos et al., 2022). Increased compliance and operational costs in companies' efforts to report sustainability cause a decline in financial performance in the early stages of ESG implementation (Candio, 2024). The implementation of ESG practices in the early stages incurs high costs compared to the benefits, so it takes a long time to see the financial benefits of a company's ESG capabilities (Khoury et al., 2021). Therefore, in this study, a long period of time is needed to see the influence and potential of ESG performance on the financial performance of oil and gas companies in Malaysia and Indonesia.

On the other hand, gender diversity does not affect financial performance, with a β value of 0.130 and significance of 0.210, so that H_3 is not accepted. This finding is also in line with Simionescu et al. (2021) and Krisdatama et al. (2022). Although the presence of women in strategic positions can enrich perspectives and strengthen the quality of decision-making, their influence on financial results has not been substantial. This is also because the role of women is still limited to formalities or symbolism, so it has not yet had a real impact on the company's financial performance (Simionescu et al., 2021). Furthermore, the limited proportion of women in decision-making positions also means that there is no direct influence on strategic decision-making capabilities that can improve a company's financial performance (Marquez-Cardenas et al., 2022).

CONCLUSION

This study aims to analyze the influence of carbon emission disclosure, ESG performance, and gender diversity on the financial performance of oil and gas companies in Malaysia and Indonesia. Based on the results of multiple linear regression analysis, carbon emission disclosure, ESG performance, and gender diversity collectively influence the financial performance of companies.

Partially, the results of the study found that carbon emission disclosure had a significant positive effect on the financial performance of Malaysian and Indonesian oil and gas companies. This is in line with research by Naeem & Çankaya (2022), and Vaicondam et al. (2025). This is because carbon emission disclosure can demonstrate a company's accountability for carbon emissions resulting

from its operational activities, thereby enhancing the company's reputation among stakeholders, which in turn improves its financial performance.

Furthermore, ESG performance has a significant negative effect on the financial performance of Malaysian and Indonesian oil and gas companies, indicating that the implementation of sustainability practices and environmental social responsibility still incurs high costs, thereby suppressing profitability in the short term (Giannopoulos et al., 2022). However, this negative relationship does not necessarily indicate the adverse effects of ESG, because in the long term, the implementation of sustainability can improve a company's reputation, social legitimacy, and investor confidence (Khoury et al., 2021). Therefore, in the context of this study, ESG performance has not yet succeeded in achieving a positive relationship with the financial performance of Malaysian and Indonesian oil and gas companies due to the high cost of ESG implementation in the short term and the need for a long time to see the results of ESG performance.

On the other hand, gender diversity has no effect on financial performance. This finding is due to the limited representation of women in Malaysian and Indonesian oil and gas companies. This limitation means that there is no direct effect on strategic decision-making capabilities that can improve company financial performance (Marquez-Cardenas et al., 2022). In addition, the presence of women is often only a formality, so the impact is not felt significantly within the company (Simionescu et al., 2021). In the future, it is hoped that the representation of women, especially in Malaysian and Indonesian oil and gas companies, will be increased and actively involved in the company so that they can contribute to improving the company's financial performance.

The findings of this study suggest several important implications across governance, managerial practices, and society. In terms of governance, gender diversity on boards in the oil and gas industry in Indonesia and Malaysia should not merely be treated as symbolic representation, but as a strategic mechanism that requires government regulatory support, such as minimum gender diversity requirements, to ensure its potential impact on financial performance can be more consistently realized. From a managerial perspective, ESG implementation involves high upfront costs, particularly in capital-intensive industries like oil and gas, which means that its financial benefits may only become evident over a longer time horizon. ESG should be seen as a long-term corporate strategy rather than for short-term performance targets. Meanwhile, for society, carbon emission disclosure serves not only as a transparency tool but also as a value-enhancing mechanism, as companies with better carbon disclosure practices tend to gain greater legitimacy, investor trust, and market confidence, which ultimately contributes positively to their financial performance while simultaneously supporting broader sustainability objectives.

Overall, this study shows that corporate sustainability practices and governance in the Malaysian and Indonesian oil and gas companies are still in the process of adaptation or in their early stages in relation to global standards, where the financial benefits are likely to only be seen in the long term as commitment to Net Zero Carbon Emissions and sustainability increases. These results theoretically support stakeholder theory and legitimacy theory, which state that companies that are oriented towards social and environmental responsibility will gain public support, trust, and legitimacy, which in turn can strengthen their financial performance in the future as a long-term strategic orientation, rather than being pursued solely for short-term performance outcomes, particularly within the oil and gas industry in Indonesia and Malaysia.

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