**Eco-Friendly Investors and Sustainable Corporate Performance: Insights from Japanese Data**

**Abstract**

**Background:** Eco-friendly investors and sustainable corporate performance have embraced the Environmental, Social, and Governance (ESG) rating system as a global standard. Government-led eco-friendly investor advocacy and the growing need for investment in sustainability have resulted in the emergence of a distinct group of institutional-level investors named eco-friendly investors.

**Aim:** This investigation explores how eco-friendly investors influence the sustainable performance of corporations. Further analysis explores the impact of eco-friendly investors on corporate sustainable performance, drawing on data from publicly traded companies in Japan from 2010 to 2023.

**Method:** This study evaluates corporate sustainable performance using ESG ratings from the JPX ESG Knowledge Hub, categorized into nine tiers based on various performance metrics. Corporate sustainable performance is evaluated on a low to high scale, specifically between one and six, yielding a median score of 3.8 and an SD value of 1.2. Japan’s corporate sustainable performance is approximately at the B-BB level, indicating that it still requires development.

**Results:** The results suggest that eco-friendly investors have the potential to improve corporate sustainability by tackling internal funding restrictions and responding to external public ecology fears. Moreover, the beneficial impact of eco-friendly investors on the sustainability performance of non-state enterprises, especially in competitive sectors in northern Japan, is notably significant. Study provides important insights from an in-depth analysis of eco-friendly investors’ impact on corporate sustainability.

**Conclusion**: The participation of eco-friendly investor leads to improvement of sustainable corporate performance from the perspective of internal and external viewpoints. Institutional investors must create an investment philosophy dedicated to green development in accordance with their supervisory and governance roles, for which market regulators must provide direction that is constructive.

**Keywords:** Sustainable corporate performance, Eco-friendly investors, External public ecology fears, Internal funding restrictions.

**1. Introduction**

Green advocacy by the government and the growing demand for sustainable investments have given rise to a unique category of institutional investors: green investors. Some green investors from value perspective seek for risk-adjusted returns on green investments, while other green investors from values perspective care more about the positive environmental and social externalities of their investing (Feng & Yuan, 2024; Lian et al., 2024).

Environmental issues and global climate change are too urgent and significant for investors, regulators, and politicians to overlook. Japan’s national government has committed to achieving net zero carbon emissions by 2050. Such a strategic move is essential for Japan's sustainable development and economic transformation. As key players in Japan’s shift toward an eco-friendly investor economy, enterprises represent both the demand for market financing and the basis for sustainable economic progress. In recent years, eco-friendly investors and sustainable corporate performance have embraced the Environmental, Social, and Governance (ESG) rating system as a global standard (Li et al., 2025; Islam et al., 2025). The existing research has shown that strong, sustainable performance is vital for the growth of an enterprise (Aslam et al., 2021; Miyamoto & Nohara, 2023; Saito & Tanizaki, 2024). Companies are therefore in need of ways to improve their sustainable performance.

Government-led eco-friendly investor advocacy and the growing need for investment in sustainability have resulted in the emergence of a distinct group of institutional-level investors named eco-friendly investors. These investors can be categorized into two groups: from a value perspective, those who seek risk-adjusted returns on eco-friendly investments and those who aim for favorable effects on the environment and society from their investments based on their values. Eco-friendly investors will finance businesses largely that imbibe social responsibilities to gain more in terms of monetary in the course of making the business sustainable (Li et al. 2024) Shirasu & Kawakita, 2021; Tamaruya & Yukioka, 2024). This is because, as cited by Tsujimoto (2019) and Vuong (2022), eco-friendly investors are the ones who oversee and regulate the corporate activities of these. Fire and restoration activities that benefit both the financial purse and ecological conservation. Thus, the involvement of eco-friendly investors elicits varied responses from enterprises.

Previous research has focused on the effects of individual investors (Taghizadeh-Hesary et al., 2022; Mhlanga & Dzingirai, 2024; Okimoto & Takaoka, 2024) and institutional investors (Yoshino & Yuyama, 2021; Liu & Nah, 2021; Ali, 2024) on corporate sustainable performance. Nonetheless, regarding sustainability in Japan's goals, two critical questions remain: What if eco-friendly investors existed? What impacts corporate sustainable performance in an age of eco−friendly investors’ involvement?

To assess the impact of eco-friendly investors entering the market on corporate sustainable performance, we examine publicly listed companies in Japan from 2010 to 2023. Additionally, this study explores how eco-friendly investors' involvement in corporate sustainable performance addresses financing constraints related to external and internal public ecology fears. A series of heterogeneity analyses, robustness checks, and endogeneity tests are performed to ensure the precision and reliability of the findings.

This study contributes to earlier research in several ways, primarily focusing on the economic implications of corporate sustainable performance while providing limited insight into the factors that actively motivate businesses to improve their sustainability initiatives. Firstly, from the perspective of eco-friendly investors, it represents the first comprehensive research on the impact of these investors on corporate sustainability performance, demonstrating that their participation can enhance corporate sustainability. Next, the study tests the mechanisms of eco-friendly investment and examines the dual perspective of internal and external factors. It indicates that eco-friendly investors can alleviate internal funding constraints and amplify external public ecology fears, both of which contribute to improved corporate sustainable performance. Furthermore, eco-friendly investors enhance sustainable performance for non-state-owned companies, especially those in fiercely competitive sectors and firms in Japan's Northern region.

**2. Review of literature and theoretical assumptions**

*2.1. Eco-friendly investors and sustainable corporate performance.*

The elements that affect sustainable corporate performance have garnered considerable attention from academics, with a substantial portion of the studies concentrating on investors. Previous studies suggest that significant market players, such as trading activities (Ali, 2024), sentiments (Dhasmana et al., 2023), and interest (Sahar et al., 2022) of investors, affect sustainable corporate performance. In the realm of institutional investors, various studies have examined their sustainable performance concerning ownership (Kuang, 2022) and site visits (Miyamoto & Nohara, 2023). The results suggest that institutional investors substantially influence corporate sustainable performance more than individual investors (Saito & Tanizaki, 2024). However, there is a notable deficiency in the existing literature concerning how eco-friendly investors impact the sustainable performance of corporations. The participation of eco-friendly investors in environmentally sustainable and socially responsible initiatives generates encouraging signals within the market. Moreover, environmentally conscious investors act as a mechanism of oversight; their involvement subtly encourages companies to synchronize their practices with beneficial environmental and social results. Eco-friendly investors exert a more substantial impact on sustainable corporate performance than other institutional investors, thereby holding the potential to foster advancements in this domain. Following this analysis, the first hypothesis is put forward as below:

**H1**. The involvement of eco-friendly investors will improve corporate sustainable performance.

*2.2.* ***Framework Enabling eco-friendly Investors to Influence Corporate Sustainable Performance***    
According to an internal viewpoint, funding limitations have consistently posed a considerable challenge for organizations in their manufacturing and operational activities (Tsujimoto, 2019). When organizations with reduced financing expenses foster a more conducive investment landscape, their propensity to participate in non-monetary sustainable investment initiatives rises. Furthermore, the involvement of eco-friendly investors with non-financial priorities contributes capital to companies. They allocate resources to initiatives that yield beneficial environmental and social outcomes, even if it requires forgoing certain immediate gains. This trend leads to a more favorable financing atmosphere for businesses (Pérez Estébanez & Sevillano Martín, 2025). Based on this analysis, the following proposition for Hypothesis 2 is put forward:

**H2**. The involvement of eco-friendly investors will reduce business financial constraints, relax funding burdens within firms, and improve their sustainable performance.

According to the external viewpoint, public ecological concerns are central to managing repute and acting as independent regulators of businesses (Taghizadeh-Hesary et al., 2022). Generally, Investors from institutions focusing on long-term sustainability, particularly those with eco-friendly preferences, function as signals and guidelines to the public. The entry of eco-conscious investors into a market sends a positive signal, drawing greater public interest to environment-related issues. This increased public awareness of environmental matters creates external pressures on businesses, leading to “money votes” in financial markets, in which investors prefer companies that demonstrate better sustainability performance (Edmans, Gosling, & Jenter, 2024). Based on this discussion, the following is recommended for Hypothesis 3:

**H3**: Involving eco-friendly investors will heighten public ecological awareness, serve as an external oversight mechanism for the companies, and enhance corporate sustainable performance.

**3. Materials and method**

*3.1. Sampling methods and data collection*

Japanese companies listed on the A-share market between 2010 and 2023 were used as the primary sample for this analysis. The following procedures were used for the sample: (1) financial listed firms were excluded; (2) the ST and \*The ST designation companies' data were omitted; and (3) the sample containing incomplete or inconsistent financial data was eliminated. All continuous variables underwent winsorization at the 1% and 99% thresholds. Consequently, the final sample comprises 12,500 firm-year observations. The JPX ESG Knowledge Hub was used to collect data on companies' corporate sustainable performance, and the information on eco-friendly investors and others used in this paper is sourced from the Nikkei SDGs Management Survey.

*3.2. Key Variables*

This study evaluates corporate sustainable performance using ESG ratings from the JPX ESG Knowledge Hub, categorized into nine tiers based on various performance metrics. Following Lian et al. (2023), levels AAA, AA, A, B, and C are assigned to align with a numerical range from 9 to 1 for straightforward quantification. The independent variable, eco-friendly investors (EFI), is defined using a natural logarithm measurement by Barnea et al. (2005). Data on EFI is gathered through calculations and manual compilation from the Nikkei SDGs Management Survey, where funds invested in listed companies are matched with their investment scopes and objectives to identify sustainability-related terms. These terms indicate eco-friendly investors, while their absence suggests otherwise. Control variables, based on Tsujimoto (2019) and Taghizadeh-Hesary et al. (2022), include enterprise age, size, cash flow level, growth, debt level, board size, proportion of independent directors, ownership by the largest shareholders, and net profit margin. Definitions for these variables are provided in Table 1.

*3.3. Descriptives*

Table 1 displays the descriptive data by variable. Corporate sustainable performance is evaluated on a low to high scale, specifically between one and six, yielding a median score of 3.8 and an SD value of 1.2. Japan’s corporate sustainable performance is approximately at the B-BB level, indicating that it still requires development. However, sustainable performance is highly varied across firms. There is an average of 0.7 (maximum: 3.5, minimum: 0.0, median: 0.0, an SD value: 0.9) eco-friendly investors per company, which can vary significantly.

*3.4. Empirical Model*

Researchers use the following benchmark regression to examine the impact of eco-friendly investors on corporate sustainable performance:

(1)

In this regression equation, the dependent variable (\text{CSP}{i,t}) denotes the sustainable corporate performance of the firm (i) in the year (t). The explanatory variable (\text{EFI}{i,t-1}) indicates the number of eco-friendly investors in firm (i) during the previous year (t-1). Furthermore, (\text{Controls}{i,t-1}) encompasses all control variables for the prior year, as detailed in Table 1. The term (\epsilon{i,t}) captures the regression error, while (\alpha\_0) is the constant term. This analysis includes both annual fixed effects (\Sigma \text{Years}) and sectoral fixed effects (\Sigma \text{Sector}), with standard errors clustered by the enterprise.

**4. Results and Discussion:**

*4.1. Regression Analysis*

The study uses model (1) to conduct a benchmark analysis, using a one-time lag for EFI and additional control variables to investigate how eco-friendly investors affect sustainable corporate performance. The findings are displayed in Table 2, where the first and second columns assess the impact of eco-friendly investors on sustainable corporate performance with and without control variables. The coefficient for eco-friendly investors in the first column is 0.275, which is significant at the one percent level and shows that eco-friendly investors improve sustainable performance. In the second column, including control variables, the coefficient remains positive and significant (0.085, p<0.01), confirming that eco-friendly investors significantly improve corporate sustainability outcomes, even when accounting for additional variables (Pérez Estébanez & Sevillano Martín, 2025).

Table 1. Descriptive data by variable

| **Constructs** | **Observations** | **Mean** | **SD** | **Median** | **Min** | **Max** | **Definitions** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CSP | 12,500 | 3.8 | 1.2 | 4.0 | 1.0 | 6.0 | Corporate sustainable performance ratings are assigned values between 1 and 9, indicating the level of performance assessed. |
| EFI | 12,500 | 0.7 | 0.9 | 0.0 | 0.0 | 3.5 | Natural log of the number of eco-friendly investors |
| Firm Size | 12,500 | 22.3 | 1.3 | 22.1 | 19.9 | 26.2 | The log of the total assets |
| Firm Age | 12,500 | 2.8 | 0.4 | 2.8 | 1.4 | 3.5 | Natural log of a business's establishment duration |
| Leverage | 12,500 | 0.41 | 0.20 | 0.41 | 0.05 | 0.84 | The proportion of overall liabilities to overall assets |
| Cashflow | 12,500 | 0.05 | 0.07 | 0.05 | -0.14 | 0.25 | Net cash flow generated from operational activities relative to total assets |
| Growth | 12,500 | 0.18 | 0.33 | 0.13 | -0.47 | 1.77 | Growth rate of operating income this year compared to the previous year |
| ROA | 12,500 | 0.05 | 0.05 | 0.04 | -0.17 | 0.21 | The proportion of net profit relative to the average total assets |
| Top-1 | 12,500 | 0.35 | 0.15 | 0.33 | 0.09 | 0.75 | The percentage of shares owned by the most significant stakeholder |
| Board size | 12,500 | 8.6 | 1.7 | 9.0 | 5.0 | 15.0 | Count of directors |
| Ind. Dir | 12,500 | 0.38 | 0.55 | 0.33 | 0.33 | 0.57 | The proportion of independent directors relative to the overall count of directors |

The findings illustrated in Table 2 strongly support H1, indicating that the involvement of eco-friendly investors can improve sustainable corporate performance. This evidence underscores the positive role that environmentally conscious investors play in enhancing companies' sustainability practices.

*4.2. Tests for Endogeneity*

This study performed the endogeneity tests listed in Table 2 to address potential endogeneity problems such as reverse causality and omitted factors. We developed two instrumental variables: IV-1 (lagged EFI from two periods prior) and IV-2 (mean EFI within the same sector and provinces for the same year). The results, shown in columns (3) and (4) of Table 2, indicate that both IV-1 and IV-2 meet the weak instrumental variable test criteria, with first-stage F-statistics of 1,080.000 and 72.000, respectively, and Hansen J-statistic of 0.980 for IV-2. These results confirm the validity of IV-1 and IV-2, and the coefficient of EFI on sustainable performance remains significant at the one percent level after addressing endogeneity (Li & Rasiah, 2024). Additionally, we used the Heckman two-stage approach to address sample selectivity bias. After identifying control variables using a Probit regression model, the Inverse Mills Ratio (IMR) was computed and incorporated into the regression analysis. Even after controlling for sample selectivity bias, the fifth column of Table 2 demonstrates that the IMR score is 0.095, substantially significant at the one percent level, suggesting that eco-friendly investors have a positive influence on sustainable performance. This is in line with the hypothesis that eco-investment helps improve corporate sustainable performance (Qiao et al., 2018).

**Table 2. Endogeneity and Benchmark Regression Tests**

| **Constructs** | **Regression (01)** | **CSP Regression (02)** | **CSP IV-1 (03)** | **CSP IV-2 (04)** | **CSP Heckman (05)** |
| --- | --- | --- | --- | --- | --- |
| **EFI** | 0.275\*\*\* (21.000) | 0.085\*\*\* (6.800) | 0.220\*\*\* (5.500) | 0.250\*\*\* (2.100) | 0.095\*\*\* (7.500) |
| **Firm Size** |  | 0.220\*\*\* (16.500) | 0.210\*\*\* (10.500) | 0.315\*\*\* (8.300) | 0.050 (1.200) |
| **Firm Age** |  | 0.060 (1.600) | 0.110\*\* (2.300) | -0.010 (-0.300) | 0.200\*\*\* (4.100) |
| **Leverage** |  | -0.660\*\*\* (-8.300) | -0.700\*\*\* (-7.500) | -0.710\*\*\* (-8.500) | -0.420\*\*\* (-4.500) |
| **Cashflow** |  | -0.100 (-0.750) | -0.030 (-0.180) | 0.075 (0.460) | -0.215 (-1.600) |
| **Growth** |  | 0.050\*\* (2.100) | 0.025 (0.950) | 0.100\*\*\* (3.300) | -0.080\*\* (-2.250) |
| **ROA** |  | 3.970\*\*\* (18.500) | 3.350\*\*\* (12.300) | 5.280\*\*\* (9.600) | 1.105 (1.640) |
| **Top-1** |  | 0.205\*\* (2.300) | 0.320\*\*\* (3.050) | 0.070 (0.670) | 0.545\*\*\* (4.650) |
| **Board** |  | 0.027\*\*\* (3.150) | 0.030\*\*\* (3.050) | 0.026\*\*\* (2.920) | 0.033\*\*\* (3.870) |
| **Indep** |  | 1.650\*\*\* (7.000) | 1.560\*\*\* (5.900) | 1.690\*\*\* (7.000) | 1.680\*\*\* (7.220) |
| **Year (Fixed effects)** | Positive | Positive | Positive | Positive | Positive |
| **Sector (Fixed effects)** | Positive | Positive | Positive | Positive | Positive |
| **F-Statistics** | Negative | Negative | 1080.000 | 72.000 | Negative |
| **Hansen J** | Negative | Negative | Negative | 0.980 | Negative |
| **Observations** | 12,500 | 12,500 | 9,800 | 12,500 | 12,500 |
| **Adj.R-squared** | 0.102 | 0.190 | 0.145 | 0.086 | 0.191 |

Notes: \*, \*\*, and \*\*\* indicate that all statistics are significant at the 10%, 5%, and 1 % level, t-statistics in brackets.

*4.3. Robustness tests*

To validate the robustness of our results outlined in Table 3, we described several tests that we carried out. Further changes were made with respect to the alternative variables, the Tobit model, specific sample exclusion, long-term impacts, White standard errors, as well as 5% level winsorization. Consistent with Ren & Lin (2024) and Pérez Estébanez & Sevillano Martín (2025), the results show that the presence of eco-friendly investors consistently improves corporate’s sustainable performance under different models and sample corrections.

**Table 3. Robustness Tests of this study**

| **Constructs** | **Alternative Variables (1) CSP\_ss** | **Tobit Model (2) CSP\_bs** | **Exclude Sample (3) CSP** | **Long-term Impact (4) CSP** | **White Standard Errors (5) CSP** | **Winsorized 5% (6) CSP** |
| --- | --- | --- | --- | --- | --- | --- |
| **EFI\_dum** | 0.095\*\*\* (5.200) |  |  |  |  |  |
| **EFI** |  | 0.007\*\*\* (6.800) | 0.017\*\*\* (3.300) | 0.085\*\*\* (6.700) | 0.070\*\*\* (4.400) | 0.095\*\*\* (7.100) |
| **Controls** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Year (Fixed effects)** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Sector (Fixed effects)** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Observations** | 12,500 | 12,500 | 8,000 | 12,500 | 10,000 | 12,500 |
| **Adj.R-squared** | 0.190 | 0.210 | 0.610 | 0.075 | 0.185 | 0.200 |

Notes: \*, \*\*, and \*\*\* denote that every statistic is significant at the 10%, 5%, and 1 % levels, respectively; t-values are shown in brackets.

*4.4. Tests for Heterogeneity*

The influence of environmentally conscious investors on the sustainable performance of corporations can be shaped by a range of factors, such as the types of companies and regional differences. To investigate regional and firm-level differences, we performed many heterogeneity analyses.

*4.4.1. Heterogeneity at firm level: Corporate ownership rights*

Investigating corporate ownership rights is essential in corporate finance research in Japan. Due to their superior resource access, government assistance, policy dividends, and reduced financing costs, state-owned enterprises (SOEs) have a larger market share than non-state-owned listed corporations. As a result, we classified the listed companies into state-owned enterprises and non-state-owned enterprises. The regression results in Table 4 indicate that eco-friendly investors positively impact the sustainable performance of both SOEs and non-SOEs. Nonetheless, the impact is more significant for non-SOEs. Particularly, a 1% rise in eco-friendly investors results in a 0.052% enhancement in the sustainable performance of SOEs, whereas non-SOEs show a more notable rise of 0.102%. This indicates that eco-friendly investors have a greater impact on non-state-owned companies' long-term success than state-owned businesses (Zhang, Xie, & Xu, 2024; Sun, 2024).

**Table 4. Heterogeneity Tests of this study**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Constructs** | **SOE (1) CSP** | **Non-SOE (2) CSP** | **Highly Competitive (3) CSP** | **Lowly Competitive (4) CSP** | **Southern Region (5) CSP** | **Northern Region (6) CSP** |
| **EFI** | 0.055\*\* (2.400) | 0.105\*\*\* (7.300) | 0.095\*\*\* (6.400) | 0.075\*\*\* (3.800) | 0.070\*\*\* (5.200) | 0.130\*\*\* (4.600) |
| **Controls** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Year (Fixed effects)** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Sector (Fixed effects)** | Positive | Positive | Positive | Positive | Positive | Positive |
| **Observations** | 3,500 | 9,000 | 6,000 | 6,500 | 8,000 | 4,500 |
| **Adj. R-squared** | 0.255 | 0.180 | 0.170 | 0.195 | 0.185 | 0.245 |
| **Chow test** | 80.000\*\*\* | 6.000\*\*\* | 16.000\*\*\* |  |  |  |

Notes: \*, \*\*, and \*\*\* denote that every statistic is significant at the 10%, 5%, and 1 % levels, respectively; t-values are shown in brackets.

*4.4.2. Corporate level heterogeneity:*

Market dominance and competitive positions significantly influence firms' decision-making processes. Companies with strong competitive positions are less affected by the actions of their peers. We use Zhang et al. (2024)'s methodology to generate the Lerner index in order to evaluate market competition. Firms with a Lerner index above the industry median are classified as highly competitive, while those below are considered less competitive. Eco-friendly investors positively impact the sustainable performance of both highly and less competitive enterprises, as shown in Table 4. However, the effect is more pronounced in highly competitive environments. An increase of 1% in eco-conscious investors results in a 0.091% enhancement in sustainable performance for firms with high competitiveness, in contrast to a 0.072% improvement for firms with lower competitiveness. This suggests that eco-conscious investors significantly influence sustainability performance in highly competitive firms (Edmans, Gosling, & Jenter, 2024; Maslansky & Howard, 2024).

4.4.3. Variability across regions

Japan's economic development shows an apparent regional disparity, with rapid growth in the south and slower progress in the north. We divide the 31 mainland provinces into North and South regions to address these differences. Our study examines eco-friendly investors' impact on corporate sustainable performance in these areas. As detailed in Table 4, the coefficient for Northern firms is significantly higher than Southern firms. A 1% increase in eco-conscious investors enhances the sustainable performance of Southern firms by 0.069%, while Northern firms see a more substantial improvement of 0.128%. This implies that eco-friendly investors have a greater influence on the long-term viability of companies in the North than in the South (Yanagi, 2025; OECD, 2024).

*4.5. Testing Mechanisms*

*4.5.1. View on Restrictions of Internal Funding*

Funding is a crucial element of business operations, significantly influencing decision-making processes. On the basis of the methodology of Kim and Park (2015), using SA index, this study measures the funding constraints of publicly traded companies. We seek to investigate the effect of eco-friendly investors on corporate sustainability performance, especially in the case of funding restrictions. The first and second columns of Table 5 show the test results of the financing limitation mechanism. First, the first column from the regression analysis exhibits a significantly negative coefficient on SA which comes in at the one percent level and it means that environmentally conscious investors abate the corporation's financial difficulties (Gao et al., 2024). Also, the regression results of the second column show that the coefficient of SA on CSP at the 1% significance level, suggesting that lowering the internal funding restrictions may significantly enhance the corporate sustainable performance (KPMG 2024). The results also imply that eco-friendly investors are correlated with good corporate sustainability performance of mitigating financial constraints, thereby confirming hypothesis H2 of this study.

*4.5.2. Perspective on External Public Ecology Fears*

In the present day, public concerns have to hold strong consideration in the process of modern governance, nonetheless, significantly affecting business production and operations (Gu et al., 2022). Moreover, we use Google Trends index to track public search volumes of specific environment-related terms to gauge public ecological concerns. Every Japanese city uses prefecture-level Python scripts to scrape daily average search volumes of keywords like ‘ecological contamination’ and ‘air quality.’ These volumes are added up and converted (Google Trends, n.d.) in order to use their natural logarithm of them as a stand-in for the amount of public ecological fear (PEF).

The results from the mechanism test of public ecological anxieties are reported in the third and fourth columns of Table 5. However, as shown in column three, since the correlation coefficient between EFI and PEF is also significant at the one percent level, the regression results can establish a statistically significant link. This implies that environmentally aware investors play a substantial positive role in public environmental issues about enterprises, as Tang et al. (2024) explain. Moreover, the result in the fourth column also supports that the correlation coefficient between PEF and CSP is significantly positively correlated at the 1 percent level, which contends that the higher the level of public ecology fears is, the more positively it will promote the sustainability performance of businesses. (Tao et al., 2023). In addition, the regression analysis in column four reveals that PEF on CSP is considerably a positive correlation at the scaled one percent level, indicating that a higher level of public ecology fearfulness towards businesses has a positive influence on the business sustainability performance (Tao et al., 2023). The existence of such a link between eco-friendly investors and the sustainable performance of the companies based on the public ecological fears ensures the validation of hypothesis H3 in this research (Eccles & Klimenko, 2019).

**Table 5. Tests for Mechanism**

| **Constructs** | **Internal Mechanism (1)** SA | **Internal Mechanism (2)** CSP | **External Mechanism (3)** PEF | **External Mechanism (4)** CSP |
| --- | --- | --- | --- | --- |
| **EFI** | -0.018\*\*\* (-6.800) |  | 0.065\*\*\* (3.200) |  |
| **SA** |  | -0.540\*\*\* (-5.800) |  | 0.011\*\*\* (3.300) |
| **Controls** | Positive | Positive | Positive | Positive |
| **Year (Fixed effects)** | Positive | Positive | Positive | Positive |
| **Sector (Fixed effects)** | Positive | Positive | Positive | Positive |
| **Observations** | 12,500 | 12,500 | 12,500 | 12,500 |
| **Adj. R-squared** | 0.815 | 0.190 | 0.210 | 0.188 |

Notes: \*, \*\*, and \*\*\* denote that every statistic is significant at the 10%, 5%, and 1 % levels, respectively; t-values are shown in brackets.

**5. Conclusion**

Results present that the participation of eco-friendly investors leads to the improvement of sustainable corporate performance from the perspective of internal and external viewpoints. For instance, such investors can promote companies to improve their sustainable practices by offering further internal funding reliefs and facilitating more environmental sensitisation. The reliability and endogeneity analysis confirms these results. Importantly, the findings corroborate that eco-motivated investors have a great influence on the sustainable performance of non-state-owned enterprises, competitive firms, and companies based in Japan's Northern region compared with those located in the Southern region, namely, state-owned and less competitive counterparts. It provides important insights from an in-depth analysis of eco-friendly investors’ impact on corporate sustainability. Firstly, a rise in the number of qualified eco-friendly investors will enhance the sustainable market expansion. Therefore, institutional investors must create an investment philosophy dedicated to green development in accordance with their supervisory and governance roles, for which market regulators must provide constructive direction. Also, micro-enterprises should also look around for eco-friendly investors who can further lend a hand in developing supervisory as well as governance capabilities hence resulting in creating strong and enterprises that can grow sustainably. Moreover, future studies may divide the sample period (see Shahid and Sattar, 2017; Shahid et al., 2021) to uncover the time-varying change in the relationship investigated in the current study.

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**Reference**

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