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Article

Institutional shareholders as moderators: Uncovering the link between accounting information and sustainability in Thailand, Malaysia, and Singapore

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Abstract: This study seeks to explore the information value of financial metrics on corporate sustainability and investigate the moderating effects of institutional shareholders on the association between net cashflows (NCF) and corporate sustainability of the leading ASEAN countries. The dataset consists of companies listed on the Stock Exchange of Thailand, Malaysia and Singapore during 2013–2023. Fixed effects panel regression is executed in this study. Subsequently, the conditional effects served to evaluate the influence of institutional shareholders on the association between NCF and corporate sustainability. This study employs agency theory to explore how the alignment of institutional shareholders influences sustainability outcomes. This study found that institutional shareholders themselves supply information for the sustainability indicator in Thailand and Singapore, but not in Malaysia. Furthermore, adversely correlated with sustainability metrics in all three nations is the interaction term between institutional shareholders and net cashflows. Further investigation reveals that for each nation's sustainability measures the institutional shareholders offer value relevant to net cashflows at certain amounts. This study not only contributes to existing academic research on sustainability and financial indicators, it also provides practical strategies for companies and investors trying to match financial performance with sustainability goals in a fast-changing global market.

Keywords: financial ratios; sustainability; GDP; ASEAN; ADF test; Thailand

1. Introduction

In both developed and developing countries, where businesses are expected to not only provide strong financial performance but also contribute positively to social and environmental goals, the quest for corporate sustainability has progressively taken front stage (Arora et al., 2018; Amouzesh et al., 2011; Altahtamouni et al., 2022; Fonseka et al., 2012; Pinto, 2020; Pasalao et al., 2024). With a growing corpus of research examining how accounting measures could affect or predict a company's sustainability practices, this dual expectation has focused attention on the financial forces supporting sustainability results. Notwithstanding significant progress that has been made in this area, there are still important gaps in this sector particularly with regard to the moderating influence institutional shareholders have on the link between accounting information and sustainability indicators.

Often having great control over corporate governance and strategic decisions, institutional shareholders can directly and indirectly affect a company's sustainability policies according to some studies (Choi et al., 2020; Dogen, 2021; Fang et al., 2018;

Yilmaz et al., 2022). Previous analyses mostly focused on the independent effects on sustainability outcomes of financial indicators, for instance debt to equity ratios (Jensen 1986; Modigliani and Miller, 1958), earnings per share (EPS) (Cheng et al., 2014; Orlitzky et al., 2003), net cashflows (Hart, 1995; King and Lenox, 2001), and firm size (Cowen et al., 1987; Russo and Fouts, 1997). Especially with reference to developing markets, relatively little research has looked at how institutional shareholders could change or attenuate the implications of these financial variables on sustainability. In Southeast Asia, where economic systems and investor profiles vary greatly from those in more developed nations, this control is particularly relevant. Operating under various legislative, cultural, and financial systems, institutional shareholders in Thailand, Malaysia, and Singapore might impact business sustainability policies differently than their Western counterparts. Therefore, analyzing this link in the framework of Southeast Asia is not only important; it is also demanded to acquire sophisticated knowledge of sustainability drivers in developing countries.

The present work aims to close this void by offering empirical data on the moderating influence of institutional shareholders in the interaction between accounting information and sustainability. Beyond conventional profit-oriented measurements, this study gathers a whole assessment of a company's sustainable performance by using the sustainability indicator advised by Higgins (1977). In this study, independent variables comprise generally used financial indicators such debt-to-equity ratio, EPS, net cashflows, and firm size as well as macroeconomic and business-specific elements including GDP and firm age. Furthermore, included is the interplay between institutional shareholders and net cashflows in order to investigate the cumulative impact these factors might have regarding the results concerning sustainability. Covering factors in financial, governance, and macroeconomic spheres, this model offers a complete framework so that how institutional shareholders might affect the path of sustainable development of a company, is understood.

Focusing on Thailand, Malaysia, and Singapore, this study uses a dataset from three nations with different corporate governance practices and institutional traits even though they are geographically close and have close economic links. This geographical approach makes possible a thorough investigation of how institutional shareholders could especially affect sustainability in various but similar settings in Southeast Asia. Furthermore, the results of this research should provide important insights into the dynamics of corporate sustainability in developing countries, subsequently impacting investors, legislators, and corporate managers who are negotiating the changing terrain of sustainable business practices.

By looking at the moderating effect of institutional shareholders on the link between accounting information and sustainability metrics in Thailand, Malaysia, and Singapore, this study fills a major gap in the research. According to this research, institutional shareholders themselves supply information for the sustainability indicator in Thailand and Singapore, but not in Malaysia. Furthermore, adversely correlated with sustainability metrics in all three nations is the interaction term between institutional shareholders and net cashflows. Further investigation reveals data on each nation's sustainability measures that institutional shareholders offer value relevant to net cashflows at certain amounts. This study helps to clarify how

institutional shareholders could either promote or impede sustainable development in Thailand, Malaysia, Singapore, and consequently, other developing countries. Hence, this study not only expands the academic research on sustainability and financial indicators, it also guides the practical strategies of companies and investors trying to match financial performance with sustainability goals in a fast-changing global market.

The rest of the paper is structured as follows. Section 2 discusses supporting or underpinning theories, namely agency and stakeholder theories as well as sustainability notions, institutional shareholders, and their major impacts. The conceptual basis of this research is delivered in Section 3. Section 4 explains the research methodology. Section 5 documents important results and debate and application. Section 6 concludes the paper with a summary of the main themes covered here.

2. Literature review

2.1. Underpinning theories

Agency stakeholder ideas are the foundation hypotheses of this research. These ideas set the framework for the investigation of the interaction among accounting information, sustainability, and the moderating function of institutional shareholders. Agency theory helps to clarify the link between agents (business leaders) and principles (shareholders). Agency problems arise when management teams are unlikely to perform in the best interests of shareholders, especially with reference to long-run sustainability investments that can affect immediate financial performance (Jensen, 1986). However, institutional shareholders as principals probably have the ability to reduce agency conflicts and spread sustainability. They could advocate policies that fit long-term value development, hence reducing the link between sustainability and financial metrics (such as debt to equity, EPS). In addition, according to stakeholder theory, companies answer not just to their owners but also to a larger set of stakeholders—such as workers, consumers, the wider society—who are affected by their activities (Freeman et al., 2010). This theory relates to sustainability practices because it highlights the accord between social obligations and financial success. This study explores how institutional shareholders could inspire companies to incorporate sustainable practices into their business operations. This would help to explain corporate sustainability as a strategic preference under the impact of institutional shareholder influences.

2.2. Previous studies

2.2.1. Sustainability indicators

As stakeholders expect accountability in corporate operations, accurate sustainability indicators are now required to evaluate how well companies handle resources to fulfill current and future needs. Higgins's (1977) proposed sustainability indicator is unique because it blends financial stability with growth possibilities into sustainability evaluation. Higgins's indicator emphasizes internal capacity for sustainable development rather than many others, for example ESG criteria which

concentrate on qualitative aspects and outside concerns. The indicator represents a natural capacity for sustainable development connected to financial performance and reinvestment capability. Often referred to as the sustainable growth rate (SGR), the sustainability indicator suggested by Higgins (1977) indicates the highest rate of development a firm may attain without resorting to more financial leverage. It gauges a company's ability to keep its present debt to equity ratio while nevertheless increasing its internal generated capacity for growth.

Higgins's sustainable growth rate is calculated as ROE times (1−Dividend Payout Ratio). Therefore, the SGR shows the ability of a company to finance its internal expansion by reinvesting earnings to increase without resorting to outside debt. Because it takes both profitability and the firm's reinvestment plan into account, this indicator is especially helpful in evaluating sustainable development since it provides a reasonable estimate of growth potential founded on the financial situation. Previous research has consistently embraced the sustainability metrics advised by Higgins (1977). For instance, the model had growth potential and was one with practical merit in investing techniques concerning better stock returns (Huang and Zhang, 2015; Lockwood and Prombutr, 2010). In the banking sector, SGR can help to direct risk management and financial planning (Mukherjee and Sen, 2017). According to the recent work by Pasalao et al. (2024), the sustainability index suggests free cashflows, thereby essentially reflecting the fact that there are less female board members in smaller companies.

2.2.2. Institutional shareholders and sustainability

Within the scope of corporate sustainability, ownership structure is quite crucial as different types of investors influence corporate policies, governance, and decision-making processes. Shareholders can normally be categorized as institutional or individual investors. While individual shareholders are more likely to have smaller portions that limit their influence, while institutional shareholders like mutual funds, insurance companies, and other large entities typically hold significant rights in companies. This substantial ownership allows institutional shareholders to influence corporate strategies, including sustainability creativities. Previous studies have shown that institutional shareholders are particularly crucial in defining a company's approach to sustainability (Aguilera and Jackson, 2003; Dimson et al., 2015; Gillan and Starks, 2000; Saleh et al., 2010). This is because they are large shareholdings which always engage with corporate management, vote at annual general meetings, and occupy board seats. This strategic approach helps institutional shareholders shape sustainability agendas. By aggressively supporting excellent corporate governance inside the firms in which they invest, institutional shareholders may directly, favorably shape company sustainability (Chung et al., 2019). Reflecting a rising awareness of the long-term risks connected with environmental and social aspects, several institutional shareholders have included ESG criteria into their investing strategies (Ioannou and Serafeim, 2015). Apart from their direct impact, institutional shareholders also significantly moderate things, especially in the link between financial performance and environmental results. In this sense, they influence how company sustainability initiatives are shaped by financial information including accounting measurements (Dyck et al., 2019; Johnson and Greening, 1999).

Companies whose institutional shareholders stress long-term value creation may inspire management to apply earnings not just for shareholder returns but also for financing sustainability projects such social impact programs or energy efficiency projects. By stressing the distribution of resources to long-term, sustainability-oriented projects, institutional shareholders might therefore help to reduce the direct financial incentives for profitability. In the same vein, institutional shareholders can help to control how capital flows affect sustainability investments (Cheng et al., 2014). Strong cash flow companies might instead give first priority to short-term financial profits or investments directly related to rapid company development. Furthermore, helping to reduce the effect of debt on environmental practices are institutional shareholders. When companies mostly rely on debt, institutional shareholders may argue for responsible use of leverage including sustainability issues. For instance, they can urge businesses to create sustainability-linked loans or green bonds, therefore matching finance with ESG targets. Previous research, however, has contradicted the added impact of institutional shareholders on sustainability (Cheng et al., 2022; Graves and Waddock, 1994). García-Sánchez et al. (2020) examined how institutional investors affected sustainability reporting openness. Foreign institutional shareholders and pension funds pioneered company alignment with the UN's Sustainable Development Goals. In 2020, Aksoy et al. explored how ownership and board characteristics affected business sustainability. They found that foreign and institutional shareholders encouraged sustainability. In China, Liu and Wang (2022) examined media attention and the dynamic interaction of institutional shareholders. Both factors were more likely to drive corporations toward sustainability. Kordsachia et al. (2022) found that institutional shareholders in Europe were green adventurers who promoted environmental issues and carbon reduction. In the US, Lopez-de-Silanes et al. (2024) explored ESG investment. They found that institutional shareholders liked high ESG ratings but were hesitant to invest in such companies; however, governance continually attracted more institutional shareholders. To confirm the role of institutional shareholders to the agency theory, the hypothesis in these regards are as follows:

Hypothesis 1: Institutional shareholders relate to the sustainability indicator.

Hypothesis 2: Institutional shareholders moderate the relationship between financial metrics and the sustainability indicator.

2.2.3. Accounting information and sustainability

Accounting information provides essential insights into a firm's financial health, which is fundamental for assessing its ability to sustain long-term commitments. This information helps stakeholders evaluate a firm's capacity to meet sustainability goals, balancing short-term returns with long-term investments. Additionally, accounting measures offer a standardized, comparable basis for assessing sustainability across companies, enhancing transparency and accountability. Integrating accounting information with sustainability metrics thus provides a more comprehensive view of a firm's overall resilience and commitment to responsible business practices. This study adopts significant accounting information including debt-to-equity ratio, measuring financial leverage and risk. (Jensen, 1986; Modigliani and Miller, 1958). Earnings per share (EPS) reflects a firm's profitability on a per-share basis, an indicator of

operational efficiency and profit allocation. Firms with higher EPS may have more retained earnings and resources to invest in sustainable practices, aligning with the sustainable growth model, which emphasizes reinvestment and operational efficiency. In addition, profitability is central to funding growth sustainably, suggesting that higher EPS can enhance a firm's ability to finance sustainability-focused projects (Cheng et al., 2014; Orlitzky et al., 2003). Net cashflows indicate a firm's liquidity and cash-generating capacity, which are essential for funding growth initiatives without external financing. Positive cashflows provide businesses with the flexibility to invest in long-term sustainability projects, such as energy-efficient processes or CSR initiatives. In addition, internally generated funds are deemed to be a core element of sustainable growth, positioning net cashflows as a critical determinant of a firm's capacity to maintain sustainable operations without excessive reliance on debt (Hart, 1995; King and Lenox, 2001).

2.2.4. Control variables

Firm size represents the ability to commit to sustainability projects. Larger companies have greater assets, economies of scale, and enable them to carry out thorough sustainability projects and practices. Furthermore, firm size always relates to sustainable growth as larger companies can use their resources for more substantial investments in sustainability (Cowen et al., 1987; Russo and Fouts, 1997). Macroeconomic GDP growth creates a suitable atmosphere for corporate sustainability as, usually, economic development produces additional resources and investment possibilities for businesses. Increased GDP growth can help a company's growth rate to provide opportunities for sustainable development, in which case outside economic conditions assist a company's potential to expand in a sustainable way. Moreover, GDP growth might raise stakeholder expectations for corporate sustainability, which would force companies to match national growth patterns by means of sustainable development strategies (El et al., 2011; Porter and Linde, 1995). Firm age can point to experience, consistency, and reputation. Older companies might have established policies and consistent cashflows that help with long-term sustainability projects. Furthermore, established companies have the means and industry understanding to strike a mix between expansion and long-term objectives. Older companies might be more suited to investing in sustainable practices since they usually have reserves and a market reputation that supports sustainability and makes it viable (Coad and Guenther, 2014; Sørensen and Stuart, 2000).

3. Conceptual framework

The above literature review gives rise to a research opportunity for this study. **Figure 1** suggests that financial reporting variables (debt to equity, earnings per share, and net cashflows), moderating factors (institutional shareholders), and directly influence corporate sustainability (size, GDP, and firm age). This integrated approach highlights the multifaceted influences on corporate sustainability, emphasizing the need for companies to manage both financial indicators and institutional shareholders factors effectively to achieve sustainable growth.

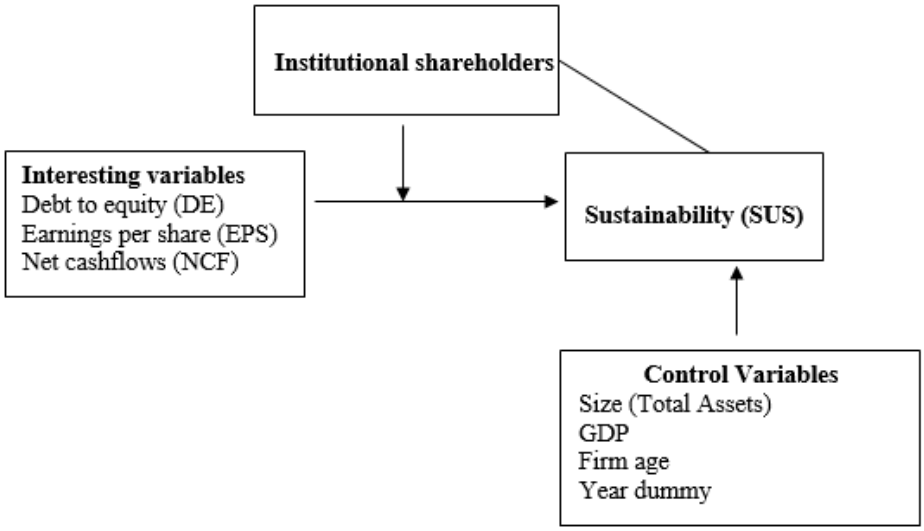


Figure 1. Conceptual framework.

4. Research methodology

4.1. Dataset and statistical analysis

Using data from Bloomberg, this study analyzes all listed companies listed on the Stock Exchange of Thailand, Malaysia, and Singapore from 2013 to 2023. This empirical analysis intends to examine the informative value of institutional shareholders as a moderating role in support of financial metrics on corporate sustainability. These countries are prominent, fast-growing economies in Southeast Asia, providing the basis for analyzing business sustainability in developing market economies. As well, as ASEAN leaders they face worldwide pressure to include ESG in their global supply networks. Through analysis of these countries, this study reveals how environmental policy changes internationally are important and have an effect on rapidly expanding economies. Furthermore, these nations implement different strategies for balancing economic progress with ESG obligations; in this way they are very different from the developed nations. The regulatory context of each nation governs its sustainability strategy; Singapore leads with sophisticated governance norms while Thailand and Malaysia are not as legislatively advanced, and they are promoting ESG through their stock exchanges.

4.2. Measurements for the variables

Table 1 summarizes the information on the measurement of study variables, both dependent and independent, along with references to previous studies that have used these measurements.

Table 1. Summary of variables.

Variables	Measurement	Previous studies
Dependent variable		
SUS	ROE × (1−Dividend Payout Ratio)	Amouzesh et al. (2011); Arora et al. (2018); Altahtamouni et al. (2022); Fonseka et al. (2012); Pinto (2020); Pasalao et al. (2024)
Independent variables		
$SUS_{(t-1)}$	Previous year sustainability	Spät et al. (2024)
DE	Debt to equity	Jensen (1986); Modigliani and Miller (1958)
EPS	Net income divided by the number of common shares	Cheng, et al. (2014); Orlitzky et al. (2003)
NCF	Cash flows from operations + Cash flows from investing + Cash flows from financing	Hart (1995); King and Lenox (2001)
Moderating variables		
INS	Institutional shareholders divided by total shareholders	Choi et al. (2020); Dogen (2021); Fang et al. (2018); Yilmaz et al. (2022)
Control variables		
Size	Total Assets	Cowen et al. (1987); Russo and Fouts (1997)
GDP	% GDP growth	El et al. (2011); Porter and Linde (1995)
Firm age	Firm age since inception	Coad and Guenther (2014); Sørensen and Stuart (2000)

4.3. Model specifications

In order to complete the study's aim, the analysis frames the equation as given below:

$$SUS_{it} = \alpha + \beta_1 SUS_{t-1} + \beta_2 DE_{it} + \beta_3 EPS_{it} + \beta_4 NCF_{it} + \beta_5 SIZE_{it} + \beta_6 GDP_{it} + \beta_7 AGE_{it} + \beta_8 (INS_{it} \times NCF_{it}) + \varepsilon$$

4.4. Data validity and reliability

Table 2 shows the descriptive data and the data validity and reliability tests. The Box-Cox transformation is applied to achieve normality in the data distribution. Key observations indicate that post-transformation, the normality of the data is tested using Z-skewness (Zskew) and Z-kurtosis (Zkur). According to the document, for the data to be normally distributed, the Zskew and Zkur values should lie within the range of (−1.96, 1.96) at a 0.05 significance level and (−2.58, 2.58) at a 0.01 significance level (Hair et al., 2010). The study employs Tukey's Biweight M-Estimator (Sinova and Aelst, 2018). This method is used to check for outliers with a weighting constant of 4.685. Tukey's Biweight M-Estimator is robust against outliers, providing a more reliable central tendency measure in the presence of anomalies. In summary, the analysis results indicate that the data conforms to normal distribution assumptions, facilitating more accurate and reliable statistical modeling and inference.

Table 2. Descriptive statistics.

VARIABLES	λ	MEAN	SD	MAX	MIN	Skewness	Kurtosis
THAILAND							
SUS	1.190	9.154	8.147	33.980	−15.160	0.503	0.508
DE	0.280	1.278	1.786	8.960	0.001	2.258	3.772
EPS	0.550	1.300	3.089	18.140	−7.120	3.528	14.139
NCF	0.720	0.074	0.188	1.210	−1.350	2.959	11.580
INS	0.630	10.183	6.618	53.000	5.000	2.655	9.177
SIZE (10^8)	1.160	2.450	5.730	35.900	0.01	4.113	7.210
GDP	0.820	2.282	1.855	7.200	−6.100	−1.384	2.427
AGE	0.670	36.473	18.658	87.100	5.600	0.467	−0.465
INS_NCF	1.070	1.633	7.800	88.102	−47.301	6.323	15.529
MALAYSIA							
SUS	0.990	7.075	16.7940	97.990	−83.670	−.088	6.028
DE	0.130	0.937	1.3082	9.740	−7.310	1.985	9.804
EPS	0.660	0.120	0.2432	1.450	−0.790	2.243	7.582
NCF	0.580	0.118	0.1658	0.980	−0.590	.610	2.681
INS	0.710	5.384	7.381	32.000	0.000	1.491	1.649
SIZE (10^8)	1.250	0.140	1.84	1.520	0.008	2.361	7.467
GDP	0.710	4.126	3.340	8.700	−5.500	−1.918	3.640
AGE	0.620	24.003	12.962	60.000	5.000	1.866	5.344
INS_NCF	1.150	0.546	1.4289	15.730	−9.380	3.043	15.598
SINGAPORE							
SUS	1.080	2.467	16.870	70.541	−32.680	−5.820	13.509
DE	0.230	1.228	2.008	12.353	−4.362	3.159	12.601
EPS	0.590	4.892	7.094	17.330	−5.330	17.322	22.547
NCF	0.520	0.070	0.195	0.940	−2.270	3.673	5.889
INS	0.770	5.889	6.268	29.000	0.000	0.947	0.611
SIZE (10^8)	1.050	39.990	1.500	7.650	0.0001	4.112	15.887
GDP	0.740	3.336	2.887	8.900	−3.900	−0.797	1.903
AGE	0.610	25.683	19.472	90.000	1.000	0.960	0.708
INS_NCF	1.090	0.445	1.759	7.892	−22.690	−3.576	15.498

Table 3 shows that VIF values for Thailand, Malaysia, and Singapore range from 1.059–14.069, 1.220–23.175 and 1.101–26.342, respectively. These values are over the acceptable level (VIF < 10), indicating multicollinearity issues among the independent variables (Hair et al., 2010). The Durbin-Watson statistics range from 1.026 to 1.301 which are close to 2, thus indicating no autocorrelation; however, if values are below 2 this suggests positive autocorrelation. The findings reveal potential positive autocorrelation in all countries, but it is not extreme. Breusch-Pagan Test (Breusch and Pagan, 1979) for heteroskedasticity shows that all countries exhibit significant values (*p*-values = 0.000), indicating the presence of heteroskedasticity. This means the variance of errors is not constant and depends on the values of the

independent variables. The Wooldridge Test (Wooldridge, 2008) for autocorrelation in Panel Data indicates significant results (p = 0.000), suggesting autocorrelation. Wald Test for Heteroskedasticity in Panel Data indicates that all sectors highlight significant values (p-values = 0.000), confirming the presence of heteroskedasticity in the panel data. Pesaran CD Test (Pesaran, 2006) for cross-sectional dependence shows no significant cross-sectional dependence across all countries (p-values > 0.05). Implied here is that the residuals are not correlated across different cross-sections. ADF Test for Stationarity (Chang and Park, 2002) indicates that the data is stationary in all countries, with significant negative values showing the absence of unit roots.

In summary, the analysis finds that the tests consistently reveal the presence of heteroskedasticity, autocorrelation, across all countries. These issues need to be clarified to ensure the validity of the regression models used in the analysis. Further, data transformations are proceeded. For multicollinearity concern, the analysis eliminates some variables which VIF is higher than 10. For autocorrelation concern, the analysis uses Lag1 of sustainability to correct autocorrelation (Spät et al., 2024). Finally, on the issue of the heteroskedasticity concern, the analysis employs the standard errors recommended by Driscoll and Kraay (1998) to solve this particular problem.

Table 3. Data validation testing.

Statistics Tests	THAILAND	MALAYSIA	SINGAPORE
VIF	1.059–14.069	1.220–23.175	1.101–26.342
Durbin-Watson	1.206	1.301	1.178
Breusch-Pagan test	33.918 (0.000)	67.355 (0.000)	42.691 (0.0000)
Wooldridge test for autocorrelation in panel	104.126 (0.000)	57.806 (0.000)	7.649 (0.007)
Wald test for heteroskedasticity in panel	16086.14 (0.000)	24588.1 (0.000)	44622.5 (0.000)
Pesaran CD test for cross-sectional dependence	−0.715 (0.474)	−0.925 (0.355)	−1.337 (0.203)
ADF test for Stationary	−17.593 (0.000)	−22.763 (0.000)	10.076 (0.000)

5. Findings

5.1. Regression analysis results

The results of data validation are shown in **Table 4**. The model diagnostics reveal moderate explanatory power for the models in each country, with Thailand's model explaining nearly half of the variance in sustainability, followed closely by Malaysia and then Singapore. In addition, the variance inflation factor (VIF) values denote low multicollinearity. The Durbin-Watson values close to 2 indicate that no serious issues of autocorrelation are detected, while the ADF test values indicate the stationarity of the data. Finally, the Hausman test results validate the model specification, meaning that a fixed-effects model is appropriate for each country.

Table 4. Regression results.

VARIABLES	THAILAND	MALAYSIA	SINGAPORE
CONST	14.2167*** (2.2400)	4.2984** (1.4108)	−53.6441 (42.0232)
SUS_{t-1}	0.2662*** (0.0278)	0.6233*** (0.0343)	0.3589*** (0.0347)
DE	0.0560 (0.0896)	1.7557*** (0.4105)	−1.6167** (0.5613)
EPS	0.5221* (0.0546)	19.8578*** (1.9223)	−0.0120 (0.0104)
NCF	4.0197*** (0.9884)	0.5718 (2.8132)	21.1322*** (5.8415)
INS	−0.0616** (0.0241)	−0.0185 (0.0587)	0.2926*** (0.0871)
SIZE	-0.0001 (0.0001)	−0.0007** (0.0002)	0.0003** (0.0001)
GDP	0.1126* (0.0492)	−0.0043 (0.0805)	15.6379 (12.0813)
AGE	−0.0080 (0.0186)	−0.1186*** (0.0244)	−0.0433 (0.0299)
INS*NCF	−0.1247*** (0.0300)	−0.0467* (0.0190)	−2.4107*** (0.5242)
Year Dummy	Yes	Yes	Yes
R^2	0.4975	0.4829	0.3331
ADJ R^2	0.4890	0.4719	0.3133
VIF	1.0592- 4.0693	1.220- 3.175	1.101- 4.342
Durbin-Watson	1.8207	1.7940	1.7225
ADF TEST (tau_c (1))	24.5239 (0.000)	20.4463 (0.000)	18.1964 (0.000)
Hausman test (*p-value*)	267.625 (0.000)	311.516 (0.000)	287.316 (0.000)

Note: * significance at the 0.05 level, ** significance at the 0.01 level, *** significance at the 0.001 level

Table 4 shows the results of regression analysis. The analysis of the findings reveals distinct differences across Thailand, Malaysia, and Singapore in terms of how various financial and governance indicators relate to sustainability. Starting with the constant term, Thailand and Malaysia show significant positive values, suggesting a notable baseline effect on the sustainability indicator even without the influence of other variables. Thailand's baseline effect is the highest, indicating a strong foundation for sustainability, while Malaysia's effect is smaller but still significant. In contrast, Singapore's constant is negative and not significant, implying no baseline effect on sustainability in this context.

The debt-to-equity ratio behaves differently across the three countries. In Thailand, it shows no significant impact on sustainability, indicating that debt levels do not constrain or promote sustainability efforts. However, in Malaysia, the debt-to-equity ratio is positively significant, while Singapore, displays a negative and significant relationship to the sustainability indicator. In Thailand, EPS is positively related to sustainability, Malaysia, however, shows a strong positive relationship

between EPS and sustainability. For Singapore, EPS does not have a significant impact, indicating that profitability alone is not a determinant of sustainability within its corporate context. Meanwhile, net cashflows, reflecting a firm's liquidity, are significant drivers of sustainability in both Thailand and Singapore. Malaysia, however, shows no significant relationship between net cashflows and sustainability.

Form institutional shareholders, in Thailand, higher institutional ownership is associated with a negative impact on sustainability. In Malaysia, institutional shareholders do not significantly influence sustainability. In Singapore, however, institutional shareholders have a positive and significant effect in the sustainability indicator.

Firm size does not significantly influence sustainability in Thailand. In Malaysia, firm size has a slightly negative effect on sustainability. Conversely, in Singapore, firm size is positively associated with sustainability.

GDP growth as a broader economic context, only shows a weakly positive effect on sustainability in Thailand; however, it is not found that GDP growth relates to the sustainability indicators in Malaysia and Singapore.

Firm age is another variable with mixed outcomes. In Thailand and Singapore, no significant relationship between firm age and sustainability is found; however firm age has a significant negative impact on sustainability in Malaysia.

For the interaction between institutional shareholders and net cashflows, the analysis shows that Thailand, Malaysia and Singapore show significantly negative effects on the sustainability indicator in various levels.

5.2. Further analysis: The incremental value of institutional shareholders on net cashflows affecting sustainability

Table 5 shows that conditional effects of institutional shareholders (INS) on values of the net cashflows are applied to identify the conditional impacts of institutional shareholders (INS) on sustainability at different levels of the control variables. INS constitute a reasonable moderator among other control variables. As shown in **Table 5**, in Thailand the R-squared change was 5.70% ($p < 0.001$) when INS moderates NCF. This means that INS adds incremental value to the association between NCF and sustainability. The analysis shows that the impact of NCF on sustainability bank value is moderated by INS. Specifically, when NCF is at a moderate level (the mean) or high level (one standard deviation above the mean), the interaction effect is significantly negative at a 0.001 level, with coefficients of −0.053 and −0.132, respectively.

In Malaysia the R-squared change is 2.50% ($p < 0.005$) when INS moderates NCF. This means that INS adds incremental value to the association between NCF and sustainability. The analysis reveals that the impact of NCF on sustainability bank value is moderated by INS. Specifically, when NCF is at a moderate level (the mean), the interaction effect is significantly positive at a 0.001 level, with coefficients of 0.093.

In Singapore the R-squared change is 4.10% ($p < 0.001$) when INS moderates NCF. This means that INS adds incremental value to the association between NCF and sustainability. The analysis shows that the impact of NCF on sustainability bank value is moderated by INS. Specifically, when NCF is at a moderate level (the mean) or high

level (one standard deviation above the mean), the interaction effect is significantly negative at a 0.001 level, with coefficients of −0.103 and −0.103, respectively.

In summary, the association between NCF and sustainability is moderated by INS, showing a stronger negative (positive) effect when the NCF proportion decreases (increase). To illustrate the varying impacts of INS on sustainability across different NCF levels (high, moderate, and low), the conditional effects are plotted in **Figure 2**.

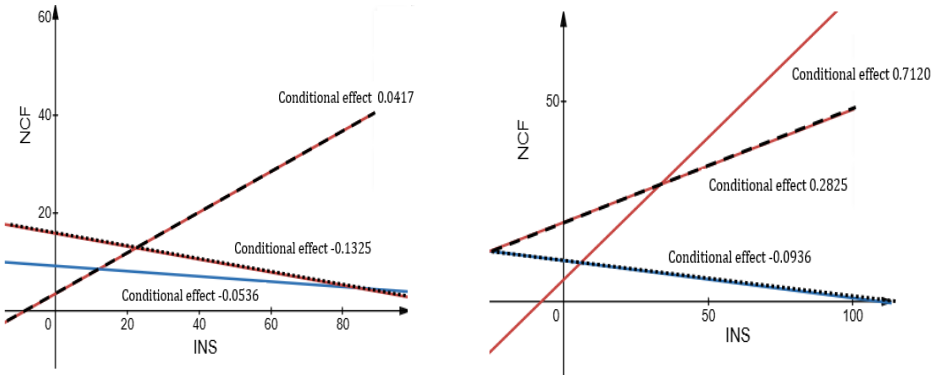
Table 5. Conditional effects of INS on the sustainability indicators at different levels of NCF.

Country		**R^2-change**	***F***	**df1**	**df2**	***p***
THAILAND	X × W	0.057	12.608	1	1069	0.001
MALAYSIA	X × W	0.025	7.115	1	992	0.005
SINGAPORE	X × W	0.041	10.326	1	706	0.001

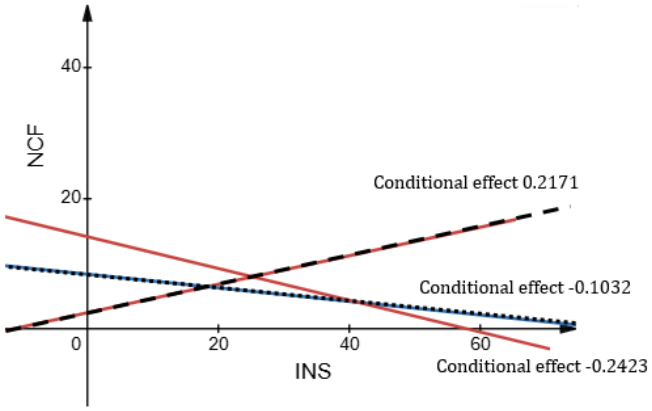
Focal predictor: NCF (X), moderator variable: INS (W)

Table 6. Conditional effects of the focal predictor at values of the moderator.

	NCF		**Effect**	**se**	***t***	***p***
THAILAND	Low	3.564	0.041	0.035	1.178	0.195
	Moderate	9.242	−0.053	0.014	−3.671	0.001
	High	15.882	−0.132	0.036	−3.640	0.001
MALAYSIA	Low	5.564	0.712	0.435	1.635	0.125
	Moderate	10.242	0.093	0.014	−6.411	0.001
	High	19.882	0.282	0.236	1.195	0.324
SINGAPORE	Low	2.591	0.217	0.112	1.931	0.073
	Moderate	8.442	−0.103	0.023	−4.487	0.001
	High	14.159	−0.103	0.015	−6.490	0.001



(a) **(b)**



(c)

Figure 2. Conditional effects of INS on sustainability indicators at different levels of net cashflows. **(a)** THAILAND; **(b)** MALAYSIA; **(c)** SINGAPORE.

5.3. Discussions, implications and contributions

Based on the comparative findings for Thailand, Malaysia, and Singapore, the study offers significant theoretical and practical contributions. These enhance our understanding of the dynamics between financial health, institutional shareholder influence, and corporate sustainability in these countries.

Theoretical contributions

The results of this study add to agency theory by showing how institutional shareholders can impart different effects on sustainability. This result supports the hypothesis 1 and 2 and in line with previous studies (García-Sánchez et al., 2020; Kordsachia et al., 2022; Liu and Wang, 2022). In Thailand and Malaysia, institutional shareholders often focus on short-term gains and not the long-term sustainable growth. In Singapore, on the other hand, institutional shareholders tend to support sustainability. This difference in outcomes means that what is understood in terms of agency theory actually requires a more complex explanation. The study shows that agency conflicts may diminish in Singapore where institutional owners believe that long-term sustainability is aligned with shareholder value. The results also add to stakeholder theory by proving how institutional shareholders can either help or harm company's shareholders in Thailand, Malaysia and Singapore. These shareholders should pay attention to the level of net cashflow. The study adds to the existing literature by proposing that not all stakeholders have the same effect on sustainability, depending on their investment plans and financial goals.

5.4. Practical contributions and implementations

5.4.1. Thailand

This study finds that historical sustainability performance, EPS, net cashflows, and GDP positively relate to sustainability. This means strong liquidity and high EPS point to financial stability, which lets companies make investments in environmentally friendly methods without compromising shareholder returns. Furthermore, GDP positively relates to sustainability. This indicates that a beneficial economic development helps companies to allocate resources toward sustainability. However,

institutional shareholders are less likely to impact sustainability. This gives short-term financial benefit top priority over long-term goals.

Implications

Management teams are recommended to use economic development and profitability to apply strong sustainability plans. This should explain to institutional shareholders the long-term financial advantages of sustainability. Regulators should inspire institutional shareholders by focusing on incentives, for example, tax benefits for sustainable investments. Sustainability should also be given top priority in financial management techniques as good cash flows enable initiatives to strike a compromise between profitability and environmental impact. Furthermore, the favorable correlation between GDP and sustainability implies that Thai companies should match their ESG projects with national economic development targets, thereby presenting them as essential component of the national development plan.

5.4.2. Malaysia

The results for Malaysia indicate that debt to equity ratio, EPS, and past sustainability performance affect sustainability favorably. Sustainability seems to be a beneficial long-term investment. Similarly, EPS emphasizes how feasible it is to balance environmental initiatives with shareholder profits. Larger companies, however, could prevent their adoption of sustainable practices. Moreover, institutional investors could prioritize short-term gains, therefore restricting the application of net cashflows for environmental projects.

Implications

By carefully supporting sustainability initiatives with finance, Malaysian companies show the long-term profitability of sustainability. The positive relationship between EPS and sustainability encourages both financial development and sustainability. Bigger companies should take governance changes to increase sustainability elasticity. Policymakers may help by setting ESG disclosure rules and providing incentives to institutional investors to follow sustainable investing strategies. Encouragement of institutional investors to see the long-term benefits of sustainability will increase their readiness to give ESG top priority above short-term financial rewards.

5.4.3. Singapore

The results for Singapore show the positive link between prior sustainability performance, net cashflows, and firm size to sustainability. Institutional shareholders are more likely to promote sustainability. High debt to equity ratios, however, might delay sustainability as companies give debt payback top priority. Also, occasionally large financial flows might be redirected to short-term profits instead of long-term investments.

Implications

Using net cashflows strategically can help Singaporean businesses finance ESG projects, hence matching liquidity management with stakeholder expectations for sustainability. Companies should improve the allocation of cashflows to satisfy institutional investors. Green bonds are one of the sustainable finance instruments that policymakers can encourage to match debt use with ESG goals and lessen the negative

consequences of high debt levels on sustainability. Finally, big companies in Singapore are especially qualified to set industry-wide ESG criteria. These companies may promote sustainable practices across supply chains by using their resources, therefore establishing benchmarks for more general acceptance and generating a knock-on impact on the local corporate scene.

Lastly, Comparative results across Thailand, Malaysia, and Singapore expose different regional variations in sustainability factors. While strategic financial management is crucial in Malaysia and institutional frameworks assist sustainability in Singapore, economic development is quite important in Thailand. These realizations provide insightful information for ASEAN officials and companies trying to coordinate sustainability initiatives. Initiative projects might be ASEAN green funding, ASEAN ESG standards, ASEAN sustainability frameworks. This speaks to local communities, worldwide investors, and international alliances.

6. Conclusions

This analysis finds that there are complex relationships among financial metrics, institutional shareholder power, and sustainability in Thailand, Malaysia, and Singapore. The paper points out that GDP growth and net cashflows and earnings per share help Thailand to foster sustainability. However, the negative influence of institutional shareholders suggests that short-term financial goals are more likely to overwhelm long-term sustainability initiatives. Thai businesses should link institutional shareholder expectations more with sustainable growth goals. Malaysian businesses effectively utilize debt and EPS to support sustainability; however, larger and older firms struggle, and institutional shareholders appear to give priority to short-term profits over long-term investments when net cashflows are available. Institutional shareholders are more likely to contribute to creating a more favorable environment for sustainable projects. According to Singapore's statistics, institutional shareholders, firm size, and net cashflows all contribute to creating a favorable sustainability level. However, too much leverage appears to limit sustainability projects, suggesting that businesses working at sustainable goals have debt management such as the repayment of loans as their top priority. Moreover, even if sustainability is generally supported, institutional shareholders may sometimes give quick gains first priority—especially in relation to large cashflows. This implies that Singapore businesses should cautiously manage their debt and ensure that institutional shareholders engage in line with long-term sustainable goals.

The outcomes emphasize the importance of nation-specific legislation in furthering corporate sustainability. These findings underscore to lawmakers and corporate leaders the need tailored solutions addressing both financial and governance elements in supporting sustainable growth. The study extends theoretical models by demonstrating how contextual changes in agency, stakeholder aspirations, and resource allocation affect corporate sustainability initiatives. Eventually, this study provides a framework for developing strategic plans that balance the specific strengths and challenges of emerging economic countries to promote a more sustainable business environment throughout Southeast Asia.

7. Limitations

One should take into account the numerous restrictions of this study. First of all, its concentration on Thailand, Malaysia, and Singapore restricts generalizability to other areas with diverse economic, legal, and cultural features. The study regards institutional shareholders as an identical group. Furthermore, depending only on yearly statistics reduces the capacity to detect temporary changes in the economy and how these can influence sustainability. Important factors like board composition or regulatory demands were omitted which can affect the assumptions of the conclusions. Though useful, the Higgins (1977) sustainability measure could not completely take into account all the sustainable factors. Further restricting the breadth are regulatory changes and the stationary character of the data as changing standards could affect company policies. Finally, the cross-sectional technique restricts causal interpretation, implying the necessity of longitudinal research to investigate causation; meanwhile, qualitative insights into this topic might provide more support and nuance for the quantitative results.

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