

ESG Pillars and Corporate Equity Financing Behaviour in Asia Pacific Firms

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Abstract: The study examines whether environmental, social, and governance performance is associated with equity issuance by non-financial firms across Asia-Pacific economies. While previous studies have mainly examined aggregate ESG scores, there is limited evidence on whether individual ESG pillars have distinct associations with equity issuance decisions among Asia-Pacific firms. The empirical sample covers 11,646 firm-year observations for 1,825 firms operating in 14 economies during 2010–2024. Fixed-effects estimation is used, along with alternative ESG specifications, Driscoll–Kraay estimation, dynamic analysis, and country-level estimation to test the robustness of the results. There are no statistically significant relationships between environmental performance and equity issuance, whereas the social and governance pillars exhibit relatively weak, statistically negative associations with equity issuance. Robustness evidence suggests that aggregate ESG measures provide broader sustainability signals, although the main findings remain pillar-based. Country-level analysis reveals substantial cross-economy variation, indicating that sustainability-related financing behaviour differs across institutional settings. The evidence extends the financing literature by showing how pillar-level sustainability signals relate to corporate equity financing across Asia-Pacific markets. The findings provide implications for managers, investors, and policymakers in understanding the role of ESG pillar-level information in corporate equity financing decisions across institutional settings.

Keywords: Asia Pacific, corporate financing behaviour, corporate sustainability, equity issuance, ESG pillars, sustainability signals.

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INTRODUCTION

ESG performance increasingly forms part of corporate financing and capital market assessment. ESG information helps investors assess corporate transparency, reputation, risk exposure, stakeholder orientation, and long-term value creation. Earlier studies show that ESG and corporate social responsibility are now closely connected with investor evaluation, sustainability disclosure, and financial market behaviour (Amel-Zadeh & Serafeim, 2018; Christensen, Hail, & Leuz, 2021; Gillan, Koch, & Starks, 2021). Therefore, ESG information is no



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longer only a voluntary sustainability concern, but also a relevant signal in firms' engagement with external capital markets.

The significance of corporate financing decisions is due to the fact that when investment opportunities increase, internal funds are insufficient, or market conditions change, the firm needs external funds. One of these financing tools is equity issuance, which is affected by information asymmetry, investor confidence, market timing, corporate reputation, and perceived firm quality. Previous research has addressed equity issuance in terms of financing requirements, firm location, market conditions, and access to capital markets (DeAngelo, DeAngelo, & Stulz, 2010; Gatchev, Spindt, & Tarhan, 2009; Loughran, 2008). Meanwhile, ESG research indicates that improved sustainability performance can lead to better access to finance through better information quality and stakeholder confidence (Cheng, Ioannou, & Serafeim, 2014). Evidence from initial public offerings suggests that mandatory ESG disclosure may limit information gaps and exposure to litigation risk (Boulton, 2024).

Previous studies have mainly examined ESG in relation to firm value, cost of capital, financing constraints, risk, disclosure, and broad market outcomes. Although this literature is useful, two issues remain less developed. First, many studies treat ESG as an aggregate score, even though environmental, social, and governance pillars may provide different signals to capital providers. Environmental performance may reflect ecological responsibility, social performance may reflect stakeholder trust, and governance performance may reflect transparency and accountability. Second, there is uncertainty about how ESG is measured, as ratings vary by provider and market, and disclosure levels and sustainability indicators vary as well (Berg, Kölbel, & Rigobon, 2022; Bissoondoyal-Bheenick, Bennett, Lehnher, & Zhong, 2024; Drempetic, Klein, & Zwergel, 2020). Therefore, relying solely on an aggregate ESG score can mask significant differences between the ESG scores within the pillars in the equity issuance decision.

This investigation is further strengthened by the Asia-Pacific context. There are economies with varying governance characteristics, disclosure demands, investor protection, sustainability regulations, and capital market development in the region. This may lead to different interpretations of ESG information in institutional settings. Existing research indicates that ESG disclosure and sustainability performance in Asian and emerging markets are context-specific and influenced by institutional and market variations (CFA Institute, 2019; Rahman & Alsayegh, 2021). Despite this significance, there is less evidence to explain whether there is a relationship between ESG pillars and equity issuance decisions of non-financial firms in the Asia-Pacific region. This is significant because equity issuance is one specific external financing decision, and ESG pillars do not necessarily have the same financial connotations in different markets.

To address this gap, the analysis focuses on the separate associations of the ESG pillars with equity issuance in the context of non-financial companies in the Asia-Pacific region. It examines whether there are links between environmental, social, and governance performance and equity issuance, and whether environmental, social, and governance are distinct explanations for external equity-financing behaviour. The goal is to offer evidence at the pillar level across a multicountry Asia-Pacific context, with different sustainability practices, governance standards, and capital-market structures in different economies.

The importance of this study is that it directly targets the ESG pillars and equity issuance decisions. Previous studies have linked ESG to access to finance, financing constraints, disclosure quality, firm value, and market outcomes, but the pillar-level connection between ESG and equity issuance remains less developed (Cheng et al., 2014; Dutordoir, Strong, & Sun, 2018; Hao & Wu, 2024). This study uses firm-level panel data from listed non-financial firms in Asia Pacific and examines a regional context where sustainability information and institutional conditions differ across economies. The findings are relevant for investors, corporate managers, regulators, policymakers, and researchers because they clarify how sustainability-related information is connected with external equity financing decisions.

Three contributions emerge from the study. The first is pillar-level evidence that treats environmental, social, and governance performance separately. Second, it links ESG pillars with equity issuance, a specific corporate financing decision that remains less examined than firm value, financing constraints, or cost of capital. Third, it highlights the Asia-Pacific context by showing that ESG-related financing behaviour may depend on institutional and market conditions. The study therefore offers a more detailed understanding of

ESG and equity financing without assuming that all ESG pillars have the same capital market relevance. Accordingly, this study investigates whether the environmental, social, and governance pillars are associated with corporate equity issuance among non-financial firms in the Asia-Pacific region. To address this objective, the study tests three hypotheses (H1–H3), which examine the respective relationships between the environmental, social, and governance pillars and equity issuance. The theoretical development and justification of these hypotheses are presented in the following literature review section.

The remainder of the manuscript presents the literature review and hypothesis development, followed by the data and methodology, empirical findings, and conclusion.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The equity issue is a crucial external financing decision since it involves issuing shares to fund investment opportunities, expansion activities, and long-term growth. External equity financing is much more reliant on investor perception, information quality, and market confidence as opposed to internal financing. Thus, firms make decisions on financing based on the signals they send to capital market participants, as well as their performance. In this study, equity issuance is defined as firms' external equity financing behaviour, and the environmental, social, and governance (ESG) pillars are defined as separate dimensions of sustainability performance. Existing research indicates that the ESG dimensions could have a differential impact on financial results (Berg et al., 2022; Gillan et al., 2021; London Stock Exchange Group, 2024). Firm size, leverage, and profitability are also included as control variables, as previous corporate finance studies indicate that financing behaviour is different across firm characteristics. In general, the literature indicates that sustainability-related activities can enhance firms' access to external finance, as they can help reduce uncertainty, boost stakeholder confidence, and enhance information quality. Improved ESG performance can lead to reduced financing constraints and better financing opportunities, as sustainability practices can reduce perceived risk and information asymmetry (Cheng et al., 2014; Goss & Roberts, 2011). Previous studies also show that high ESG ratings could lower capital costs and boost investor confidence in company operations (Malik & Kashiramka, 2024). However, past studies have mixed results on the connection between ESG and financing decisions. Some studies suggest that ESG activities could raise compliance costs or create ambiguous financial returns, diminishing their financial relevance. There can also be variations in ESG outcomes by industry, institutional setting, disclosure environment, and investor preference. In addition, there is ongoing debate about the validity of aggregate ESG measures, as rating agencies can use different weighting and disclosure criteria (Berg et al., 2022; Drempetic et al., 2020). Further evidence from Asia-Pacific markets indicates that the positive impacts of ESG can vary significantly by context, depending on institutional and market conditions (CFA Institute, 2019; Rahman & Alsayegh, 2021). The discrepancies underscore the need for a better understanding of the financing impact of each individual pillar of ESG.

One reason for the connection between ESG pillars and equity issuance decisions is given by stakeholder theory. Stakeholder theory extends corporate responsibility beyond shareholders to employees, customers, suppliers, regulators, and surrounding communities (Freeman, 1984). The ESG pillars represent various aspects of stakeholder accountability and sustainability focus. Environmental, social, and governance performance measures environmental responsibility, stakeholder engagement and social legitimacy, and accountability and transparency, respectively. Stakeholder-oriented practices are also associated with other stakeholder-oriented literature in the field of corporate sustainability and long-term outcomes of firms (Mahajan, Lim, Sareen, Kumar, & Panwar, 2023). Therefore, better ESG bases can help enhance stakeholder trust and affect financing behaviour. Signaling theory also lends support to the connection between ESG pillars and equity issuance. In capital markets, outside investors might not have all the information about the quality of the firm, its prospects, and managerial decisions. Therefore, firms have to rely on external investors to send signals of credibility and quality (Connelly, Certo, Ireland, & Reutzel, 2011; Spence, 1973). The pillars of ESG can serve as such signals, as they reflect the orientation towards sustainability, quality of governance, and responsible business conduct. These signals can be especially significant if companies are looking for outside equity financing, as investors could consider sustainability credibility and governance transparency in financing decisions.

Another theory that sheds light on the importance of ESG in equity financing is information asymmetry theory. Information asymmetry arises because managers normally possess more knowledge about firm value and prospects than outside investors (Akerlof, 1970). In conditions of high information asymmetry, investors could ask for discounts or respond negatively to equity issuance decisions. This uncertainty can be mitigated by better transparency and information quality through ESG disclosure and sustainability performance. Some previous research has indicated that sustainability disclosure and CSR could be related to improved access to finance and capital market assessment (Cheng et al., 2014; Christensen et al., 2021). Thus, the ESG pillars could affect the issuance of equity shares by affecting investor confidence and external assessment of firm quality.

Table 1: Variable and Theory Mapping

Variables	Role	Theoretical link	Conceptual logic
Equity issuance	Dependent variable	Corporate financing decision	Reflects firms' external equity financing behavior
Environmental pillar	Independent variable	Stakeholder theory; signaling theory	May reflect environmental responsibility and sustainability credibility
Social pillar	Independent variable	Stakeholder theory; signaling theory	May reflect stakeholder trust and social legitimacy
Governance pillar	Independent variable	Information asymmetry; signaling theory	May reflect transparency, accountability, and investor protection
Firm size	Control variable	Corporate finance logic	Larger firms may have different access to external capital
Leverage	Control variable	Financing structure logic	Existing debt position may affect financing choices
Profitability	Control variable	Financing preference logic	Internal profitability may affect reliance on external equity

Table 1 summarizes the main variables, theoretical links, and conceptual logic applied in the study. Figure 1 presents the conceptual framework connecting ESG pillars with equity issuance while controlling for firm size, leverage, and profitability.

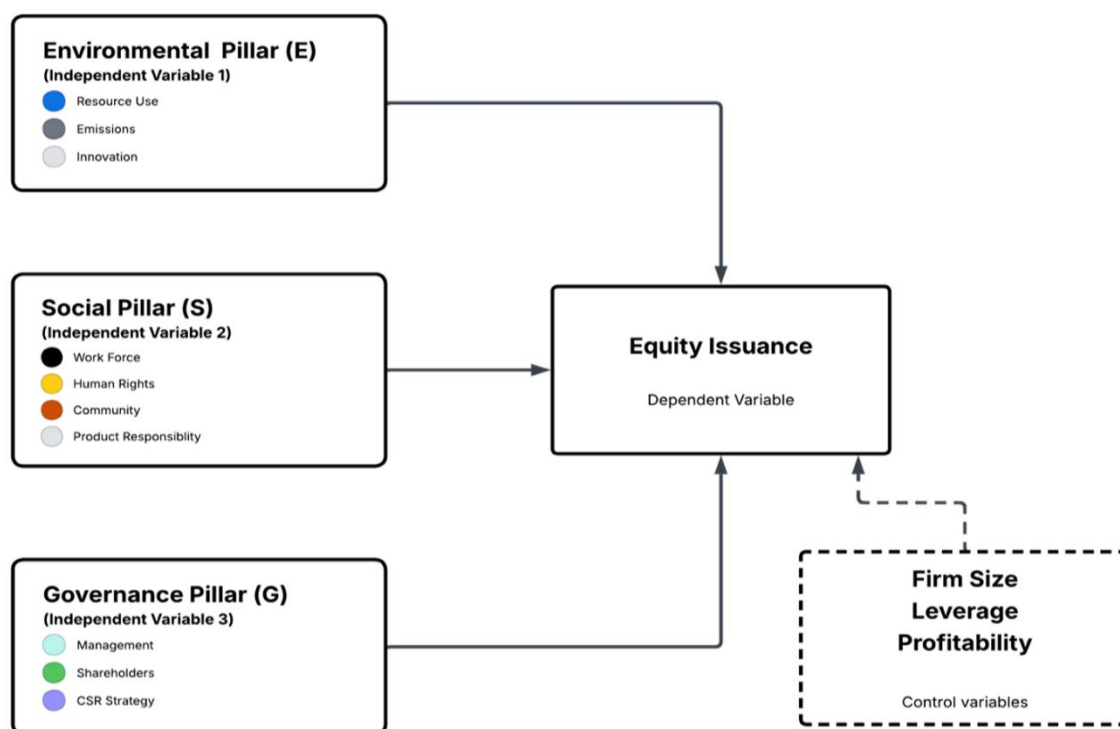


Figure 1: Conceptual Framework

Given the mixed and context-dependent findings reported in prior studies, particularly across Asia-Pacific markets, the hypotheses are intentionally formulated in a nondirectional manner to examine whether statistically significant associations exist between the environmental, social, and governance pillars and corporate equity issuance.

Environmental performance measures the environmental responsibility, sustainability orientation, and long-term resource management of firms. Environmental performance from stakeholder and signaling viewpoints could potentially enhance external perceptions of sustainability credibility and corporate quality. Past research suggests that green policies can influence investor evaluation via information and reputation mechanisms (Cheng et al., 2014; Gillan et al., 2021). However, previous research has yielded mixed results in markets and financing contexts. Therefore, the following hypothesis is proposed.

H₁: Environmental pillar has a statistically significant association with equity issuance.

Social performance is a measure of companies' obligations to their employees, customers, communities, and the general welfare of their stakeholders. Improved social performance could help build stakeholder confidence and convey responsible business practices to outside investors. Past research indicates a potential relationship between stakeholder-driven sustainability practices and financing conditions and market perceptions (Cheng et al., 2014; Gillan et al., 2021). However, social expectations and disclosure environments vary by market, and the financing implications of social performance are unclear. Accordingly,

H₂: Social pillar has a statistically significant association with equity issuance.

Governance performance is an indicator of transparency, accountability, shareholder protection, and the quality of internal monitoring. Governance is closely linked with information asymmetry, in that better governance may help lower uncertainty and enhance the credibility of disclosure (Akerlof, 1970; Connelly et al., 2011). There is also some prior evidence that could suggest that the quality of governance can affect capital market assessment and access to finance (Boulton, 2024; Cheng et al., 2014). Therefore, governance performance can affect equity issuance decisions by creating better investor confidence and monitoring quality. It is therefore hypothesized that:

H₃: Governance pillar has a statistically significant association with equity issuance.

Despite the growing role of ESG in corporate finance, evidence at the pillar level remains limited. Existing literature often uses overall ESG scores, and evidence of the relationship between ESG components and equity issuance is limited, especially in Asia-Pacific markets, where institutional diversity is high. This study fills these gaps by exploring the relationships between ESG and equity issuance at the pillar level from the stakeholder, signaling, and information asymmetry perspectives.

The following section discusses the data, variable measurements, econometric models, and estimation methods used in this study.

DATA AND METHODOLOGY

The empirical design investigates the relationship between equity issuance decisions of Asia-Pacific non-financial companies and environmental, social, and governance pillars. The analysis is conducted on the ESG pillars and external equity financing behaviour after adjusting for firm-level characteristics and unobserved firm-specific heterogeneity. This design is appropriate because ESG has become relevant in the field of corporate finance, and financing decisions continue to be influenced by characteristics of the firm, the quality of the information, and market conditions (Gatchev et al., 2009; Gillan et al., 2021).

The dataset consists of listed non-financial firms from Asia-Pacific economies observed between 2010 and 2024. LSEG ESG data are appropriate because the database contains structured ESG pillar scores and firm-level financial data, and it is used for sustainability and corporate finance research (London Stock Exchange Group, 2024). Asia-Pacific is chosen because economies differ with regard to ESG disclosure, governance standards, investor protection, sustainability practices, and capital market development (CFA Institute, 2019; Rahman & Alsayegh, 2021). The sample comprises firms from Australia, Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. Financial firms are not included due to differences in regulatory requirements, leverage structures, and accounting treatments

between the two types of firms. After applying variable-overlap requirements for the ESG pillars, equity issuance, and control variables, the final estimation sample is 11,646 firm-year observations from 1,825 firms. The panel is unbalanced because the firms' data vary by year.

Data screening included missing-value treatment, outlier diagnosis, and winsorization. Winsorization was applied only to equity issuance, firm size, leverage, and profitability because corporate finance variables can contain extreme observations across firms and time (Frank & Goyal, 2009; Graham, Leary, & Roberts, 2015). ESG pillar scores and aggregate ESG measures were not winsorized because they were already bounded by the LSEG scoring scale. Environmental, social, governance, ESG score, and controversy-adjusted ESG measures were originally reported on a 0–100 scale and were rescaled to 0–1 for coefficient readability.

Table 2: Variable Measurement and Definition

Variables	Symbol	Measurement	Supporting source
Equity issuance	EI	Equity issuance amount scaled by total assets	DeAngelo et al. (2010); Dutordoir et al. (2018); Gatchev et al. (2009) and Loughran (2008)
Environmental pillar	ENV	LSEG environmental pillar score scaled from 0-100 to 0-1	Gillan et al. (2021) and London Stock Exchange Group (2024)
Social pillar	SOC	LSEG social pillar score scaled from 0-100 to 0-1	Gillan et al. (2021) and London Stock Exchange Group (2024)
Governance pillar	GOV	LSEG governance pillar score scaled from 0-100 to 0-1	Gillan et al. (2021) and London Stock Exchange Group (2024)
Firm size	SIZE	Natural logarithm of total assets	Frank and Goyal (2009) and Graham et al. (2015)
Leverage	LEV	Total debt divided by total assets	Frank and Goyal (2009) and Graham et al. (2015)
Profitability	PROF	Return on assets	Frank and Goyal (2009) and Graham et al. (2015)

Table 2 presents the measurement and operational definitions of the dependent, independent, and control variables used in the empirical analysis, together with their supporting literature.

Repeated observations for the same firms make a panel framework suitable for the analysis. Panel estimation controls for cross-sectional differences between firms and time-based variation across years, while fixed effects account for unobserved firm characteristics that remain relatively stable over time (Hsiao, 2022; Wooldridge, 2010). The study estimates the relationship between equity issuance and ESG pillars, controlling for firm characteristics, making regression analysis appropriate. The baseline specification features equity issuance as a function of environmental, social, and governance scores, firm size, leverage, profitability, firm effects, and year effects. In corporate finance, panel-based specifications are popular due to the fact that they minimize omitted-variable concerns when compared to simple cross-sectional designs (Baltagi, 2021; Wooldridge, 2010).

The baseline empirical model is specified as follows:

$$EI_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 PROF_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

Where EI_{it} represents equity issuance for a firm i in year t . ENV_{it} , SOC_{it} , and GOV_{it} represent environmental, social, and governance pillar scores, respectively. $SIZE_{it}$, LEV_{it} , and $PROF_{it}$ represent firm size, leverage, and profitability. μ_i captures unobserved firm-specific effects, λ_t captures year effects, and ε_{it} represents the error term.

Several diagnostic and model selection procedures were conducted before estimating the final specifications. Descriptive statistics, correlation analysis, and variance inflation factors were used to examine variable distribution and multicollinearity. The Hausman (1978) test was applied to determine which model was best suited to the data, and pooled ordinary least squares, fixed effects, and random effects models were estimated. Further diagnostics were performed for heteroskedasticity, serial correlation, cross-sectional dependence, and stationarity, as these can impact panel inference (Hsiao, 2022; Wooldridge, 2010). The Hausman result favoured fixed effects over random effects ($\chi^2 = 301.21$, $p < .001$). Diagnostic tests further

indicated the presence of heteroskedasticity, serial correlation, and cross-sectional dependence, while Fisher-type ADF tests confirmed that all variables were stationary. Detailed diagnostic statistics are provided in the online supplementary material.

Additional specifications were estimated to assess whether the results remained stable. To check that the results were not sensitive to the ESG measurement, alternative ESG measures were used, such as the aggregate ESG score and the controversy-adjusted ESG score. To handle institutional heterogeneity, dependence structures, persistence testing, Driscoll–Kraay estimation, and lag sensitivity were also used (Arellano & Bond, 1991; Blundell & Bond, 1998; Roodman, 2009). These additional specifications strengthen the robustness of the empirical findings while preserving the study's primary focus on ESG pillars.

The next section presents the empirical findings, diagnostic results, model estimates, robustness analyses, and discussion in relation to the study objectives and hypotheses.

EMPIRICAL RESULTS AND DISCUSSION

The empirical results are reported gradually. Descriptive statistics are presented to describe the distributional properties of the study variables. Second, the results of correlation and multicollinearity are shown. Third, diagnostic and model selection tests are discussed to justify the empirical specification. Fourth, the results of the main fixed effects are reported and discussed with respect to the hypotheses, theory, and previous literature. Finally, robustness-, sensitivity-, and endogeneity-oriented results are presented to assess the stability of the findings.

Table 3: Descriptive Statistics

Variables	N	Mean	SD	Minimum	Maximum
Equity Issuance	11,646	0.012	0.073	-0.089	0.739
Environmental Pillar	11,646	0.440	0.274	0.000	0.988
Social Pillar	11,646	0.449	0.240	0.002	0.973
Governance Pillar	11,646	0.513	0.225	0.001	0.985
Firm Size	11,646	22.130	1.525	16.261	24.889
Leverage	11,646	0.227	0.169	0.000	0.749
Profitability	11,646	0.047	0.076	-0.467	0.285

Note: Equity issuance and control variables are winsorized at the 1st and 99th percentiles. ESG pillars are scaled from 0 to 1. SD = Standard deviation.

Table 3 presents the descriptive statistics of the study variables used in the empirical analysis. Equity issuance averaged 0.012, while its standard deviation of 0.073 indicates considerable dispersion across observations. This suggests that, on average, equity issuance represented a low share of assets and that the positive maximum value and negative minimum value highlight differences in equity financing across firms. There was also variation in the ESG pillar scores. The mean scores indicated that the sample had relatively more advanced practices in the governance pillar, followed by the social and environmental pillars. The dispersion in ESG pillar scores also supports using firm-level panel analysis since sustainability performance varied between firms and years. Firm size, leverage, and profitability also showed sufficient variation, supporting their inclusion as control variables in the empirical models.

Table 4 shows that equity issuance was negatively correlated with all three ESG pillars, indicating an initial inverse association between ESG dimensions and equity financing activity. The strongest correlation with equity issuance was observed for profitability, followed by firm size and environmental performance. The correlations among ESG pillars were positive, particularly between environmental and social pillars, suggesting that ESG dimensions may develop jointly within firms. However, the VIF values ranged from 1.09 to 2.41, with a mean VIF of 1.60. The reported VIFs therefore do not indicate problematic multicollinearity.

Table 4: Correlation Matrix and Variance Inflation Factors

Variables	1	2	3	4	5	6	VIF
1. Equity Issuance	1.000						
2. Environmental Pillar	-0.155*	1.000					2.41
3. Social Pillar	-0.078*	0.712*	1.000				2.22
4. Governance Pillar	-0.075*	0.402*	0.470*	1.000			1.31
5. Firm Size	-0.247*	0.491*	0.327*	0.216*	1.000		1.42
6. Leverage	-0.040*	0.091*	0.063*	0.005	0.278*	1.000	1.18
7. Profitability	-0.290*	-0.008	0.030*	0.035*	-0.054*	-0.276*	1.09

Note: Pairwise Pearson correlations are reported. * indicates statistical significance at the 5% level ($p < 0.05$). VIF = variance inflation factor; mean VIF = 1.60.

Model selection and diagnostic tests supported the use of fixed-effects estimation with robust standard errors. The Hausman test favoured fixed effects, while diagnostic tests indicated heteroskedasticity, serial correlation, and cross-sectional dependence. Fisher-type ADF tests suggested that unit roots were not a major concern. Detailed diagnostic outputs are provided in the online supplementary material.

Table 5: Main Fixed Effects Regression Results

Variables	B	Robust SE	t	p-value
Environmental Pillar	-0.008	0.006	-1.41	0.160
Social Pillar	-0.012*	0.006	-1.90	0.058
Governance Pillar	-0.009*	0.005	-1.73	0.083
Firm Size	-0.007	0.005	-1.58	0.114
Leverage	-0.072***	0.017	-4.32	< 0.001
Profitability	-0.151***	0.034	-4.48	< 0.001
Constant	0.219**	0.101	2.16	0.031

Note: Model information. Firm effects = Yes; Year effects = Yes; Observations = 11,646; Firms = 1,825; Within R^2 = 0.041; Overall R^2 = 0.115; $F(20, 1824) = 6.42$, $p < 0.001$. Dependent variable = equity issuance. Robust standard errors are clustered at the firm level. *, ** and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

Table 5 indicates that the overall fixed-effects model was statistically significant, $F(20, 1824) = 6.42$, $p < .001$, suggesting that ESG pillars and control variables jointly explained variation in equity issuance. The within R^2 of 0.041 indicates that the model explained 4.1% of the within-firm variation in equity issuance. This level of explanatory power is reasonable in firm-level panel settings because equity financing decisions are affected by firm-specific, market-specific, and time-varying factors that are not fully observable. However, the relatively low within R^2 also represents a limitation of the model, indicating that ESG pillars explain only a small proportion of the within-firm variation in equity issuance. This suggests that equity issuance decisions are also influenced by other firm-specific, market-specific, and institutional factors not captured in the model.

The environmental pillar showed a negative but statistically insignificant coefficient ($B = -0.008$, $p = 0.160$). Therefore, H1 was not supported in the baseline model. This result indicates that environmental performance alone did not provide sufficient evidence of a statistically significant association with equity issuance after controlling for firm effects, year effects, and financial characteristics. The finding suggests that environmental initiatives might not be a stand-alone financing signal in the baseline specification. This is in line with the general sentiment that ESG may not have a consistent effect on financing, and that investors may respond differently to the components of sustainability than to ESG (Berg et al., 2022; Gillan et al., 2021).

The social pillar had a negative, but not strongly statistically significant, coefficient ($B = -0.012$, $p = 0.058$). Therefore, the 10% level of support for H2 was low. This result indicates that companies with better social scores were less likely to issue equity. This is consistent with the stakeholder and signaling arguments, as a higher level of social responsibility can enhance stakeholder relationships and external confidence and mitigate financing frictions (Cheng et al., 2014; Connelly et al., 2011; Freeman, 1984; Gillan et al., 2021). It is also consistent

with previous research showing that improved stakeholder engagement and ESG performance can help mitigate financing tensions and external financing constraints (Cheng et al., 2014).

The governance pillar also had a negative coefficient with a weakly statistically significant association ($B = -0.009$, $p = 0.083$). Hence, support for H3 was weak at the 10% level. This finding indicates that better governance quality could help lower the need for equity issuance due to increased transparency, accountability, and investor confidence. This interpretation is compatible with the information asymmetry and signaling logic, as better governance might help lower uncertainty in capital markets and enhance the credibility of firm disclosure (Armstrong, Guay, & Weber, 2010; Connelly et al., 2011; Myers & Majluf, 1984). The finding is also in line with the theory that agency and information issues can be mitigated through governance mechanisms, which in turn can influence financing decisions.

Leverage ($B = -0.072$, $p < 0.001$) and profitability ($B = -0.151$, $p < 0.001$) were negative and statistically significant among the control variables. This suggests that the more highly leveraged and profitable companies had fewer equity offerings. This profitability is similar to that predicted by the pecking-order theory, which implies that companies with better internal resources would be less dependent on outside equity financing (Myers & Majluf, 1984). Firm size was negative but statistically insignificant ($B = -0.007$, $p = 0.114$), suggesting that firm size did not have a statistically strong direct association with equity issuance in the main model.

Table 6: Robustness Analysis

Variables	ESG Score Model	ESG Combined Model	Driscoll-Kraay Model
Environmental Pillar	—	—	-0.008 (0.006)
Social Pillar	—	—	-0.012** (0.005)
Governance Pillar	—	—	-0.009** (0.004)
ESG Score	-0.028*** (0.008)	—	—
ESG Combined Score	—	-0.028*** (0.007)	—
Firm Size	-0.007 (0.005)	-0.007 (0.005)	-0.007 (0.005)
Leverage	-0.072*** (0.017)	-0.072*** (0.017)	-0.072*** (0.022)
Profitability	-0.151*** (0.034)	-0.150*** (0.034)	-0.151*** (0.025)
Firm effects	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
Observations	11,646	11,646	11,646
Firms	1,825	1,825	1,825
Within R ²	0.0409	0.0412	0.0410

Note: Standard errors are in parentheses. The dependent variable is equity issuance. Columns 1 and 2 use firm-clustered standard errors; Column 3 uses Driscoll–Kraay standard errors. ** and *** indicate statistical significance at 5%, and 1%, respectively.

Robustness estimates based on alternative ESG measures and standard-error treatments appear in Table 6. The ESG Score model showed a negative and statistically significant association with equity issuance ($B = -0.028$, $p = 0.001$). The ESG Combined Score model also showed a negative and statistically significant association ($B = -0.028$, $p < 0.001$). The findings provide robust evidence that the ESG-equity issuance relationship remains observable when ESG is assessed through aggregate sustainability indicators, although the main analysis remains focused on the individual ESG pillars.

The Driscoll-Kraay model was also used to provide support for the results obtained at the pillar level, after controlling for cross-sectional dependence, heteroskedasticity, and serial correlation. The social pillar ($B = -0.012$, $p = 0.043$) and governance pillar ($B = -0.009$, $p = 0.027$) were statistically significant and negative, and the environmental pillar was not. This suggests that the social and governance aspects were more uniformly associated with reduced equity issuance compared to the environmental aspect. Hence, the robustness evidence was more supportive of H2 and H3 than of H1.

The robustness evidence indicates that aggregate ESG measures provide a broader sustainability signal, while the pillar-level results show that environmental, social, and governance dimensions do not carry equal financing relevance. The results support signaling and information asymmetry theories, as a higher reputation

for ESG could enhance external confidence and diminish the need for equity issuance (Connelly et al., 2011; Myers & Majluf, 1984). This is also aligned with previous research that has linked higher ESG or CSR ratings to lower financing constraints and capital-market advantages (Cheng et al., 2014; Gillan et al., 2021). Concurrently, the weaker environmental finding indicates that the Asia-Pacific context did not carry equal financing relevance across ESG dimensions.

Table 7: Dynamic and Endogeneity Results

Model	Main variable	Coefficient	p-value	AR(1)	AR(2)	Hansen p	Instruments
Persistence FE	Lagged Equity Issuance	-0.033	0.303	—	—	—	—
System GMM Two-step	Lagged Equity Issuance	1.387***	0.006	0.003	0.091	0.852	23
System GMM Two-step	Environmental Pillar	0.015	0.331	0.003	0.091	0.852	23
System GMM Two-step	Social Pillar	-0.005	0.721	0.003	0.091	0.852	23
System GMM Two-step	Governance Pillar	0.006	0.426	0.003	0.091	0.852	23

Note: AR(1) and AR(2) are Arellano–Bond serial correlation tests. Hansen p reports instrument validity. *** indicate statistical significance at 1%, respectively.

Table 7 presents the dynamic panel analysis used to examine whether the ESG and equity issuance relationship remained stable after accounting for persistence and dynamic adjustment. The persistence specification showed that the lagged equity issuance coefficient was statistically insignificant ($B = -0.033$, $p = 0.303$), indicating that current equity issuance decisions were not strongly determined by prior issuance behaviour.

The two-step System GMM estimation showed a positive and statistically significant lagged dependent variable coefficient ($B = 1.387$, $p = 0.006$), suggesting the presence of dynamic adjustment after controlling for potential endogeneity. The AR(2) test was statistically insignificant, and the Hansen test probability remained within an acceptable range, indicating no evidence of second-order serial correlation and supporting instrument validity under the dynamic panel framework (Arellano & Bond, 1991; Blundell & Bond, 1998; Roodman, 2009).

Under the dynamic specification, the environmental, social, and governance pillars were statistically insignificant. This indicates that the pillar-level ESG relationships became weaker after dynamic adjustment was introduced. The finding qualifies the baseline fixed-effects and robustness results by showing that ESG-related financing relationships were sensitive to model specification.

Overall, Table 7 strengthens the empirical interpretation by showing that the ESG equity issuance relationship was subjected to additional dynamic testing rather than being accepted only based on fixed-effects estimates. The results suggest that aggregate ESG measures showed stronger evidence in robustness specifications, while individual ESG pillars became weaker under dynamic modelling. Therefore, the findings indicate that the relationship between ESG performance and equity issuance in Asia-Pacific firms was conditional on ESG measurement and econometric specification.

Additional country-level fixed-effects estimations were conducted to examine whether the relationships between ESG dimensions and equity issuance remained consistent across Asia-Pacific economies. The findings suggested that the ESG–equity issuance relationship was heterogeneous across countries rather than uniformly distributed throughout the region.

Australia showed relatively stronger sustainability effects, with social performance ($B = -0.072$, $p = 0.027$) and governance performance ($B = -0.081$, $p = 0.003$) negatively associated with equity issuance. The effects in Hong Kong were also significant and negative for both environmental ($B = -0.030$, $p = 0.048$) and social dimensions ($B = -0.057$, $p = 0.043$). This contrasts sharply with most other countries, such as India, Japan, South

Korea, Taiwan, and Singapore, where relationships were either statistically weaker or insignificant across the ESG pillars.

The country-level evidence suggests that the signals of sustainability are not necessarily understood in the same way across capital markets. The differences in relationships could be due to relatively more developed sustainability disclosure environments in Australia and Hong Kong, while weaker relationships in several markets could be linked to differences in market structure, disclosure quality, investor attention, and/or the integration of sustainability considerations into financing decisions. These results align with institutional and signaling theories, which suggest that market conditions affect the way sustainability information is used in financing decisions (CFA Institute, 2019; Connelly et al., 2011; Gillan et al., 2021; Rahman & Alsayegh, 2021).

Overall, the country-level evidence supports the broader findings by showing that ESG-related financing behaviour differs across individual economies. Detailed country-level estimates are provided in the online supplementary material. Therefore, sustainability-related financing behaviour within Asia-Pacific appears to be context-dependent rather than homogeneous. In summary, the empirical results indicate that there are mixed relationships across ESG dimensions and the equity issuance of Asia-Pacific firms. The evidence for the individual ESG pillars was mixed, while aggregate ESG measures provided additional robustness support. Dynamic estimations showed that some relationships were weakened after controlling for endogeneity, and country-level estimations showed significant cross-country variation. Overall, the results indicate that firm characteristics and institutional context shaped sustainability-related financing decisions. The results, implications, limitations, and future research are summarized below.

CONCLUSION

This paper investigated the association between environmental, social, and governance (ESG) pillars and equity issuance decisions of non-financial firms in Asia-Pacific economies. Using firm-level panel data from 1,825 firms across 14 economies from 2010 to 2024, the study examined whether ESG pillars carry different meanings for external equity financing behaviour. The results were tested for stability using alternative specifications of ESG, Driscoll–Kraay standard errors, dynamic estimation, and country-level analysis. The findings suggest that the behaviour of sustainability-related financing is not uniform across the ESG dimensions and is affected by ESG measurement and institutional context.

The empirical results showed mixed relationships between individual ESG dimensions and equity issuance decisions. Environmental performance did not show a statistically meaningful association with equity issuance, while social and governance dimensions showed relatively weak negative relationships. Aggregate ESG measures provided additional robustness support, but the main evidence remained pillar-based. Dynamic estimation showed that some ESG relationships weakened after persistence and endogeneity concerns were considered. Country-level analysis also showed cross-country variation in the ESG–equity issuance relationship. These findings suggest that firm-level characteristics and institutional conditions shape sustainability-related financing decisions.

The results partially confirm previous studies suggesting that sustainability-related information can serve as a signaling mechanism that enhances external assessment and reduces information frictions in capital markets (Cheng et al., 2014; Connelly et al., 2011). The findings also support prior evidence that better sustainability performance can be linked with financing-related benefits and stakeholder confidence (Cheng et al., 2014; Gillan et al., 2021). The study adds to the literature in three ways. First, it shows that ESG pillars do not carry equal financing relevance, as social and governance dimensions appear more relevant than environmental performance. Second, it links ESG pillars with equity issuance, a specific corporate financing decision that remains less examined than firm value, cost of capital, or financing constraints. Third, it shows that ESG-related financing behaviour in Asia-Pacific markets is conditional and context-dependent rather than uniform across economies.

The findings have policy, regulatory, company, and investor implications. The usefulness of sustainability information in capital markets could be enhanced if there were more clarity and comparability in ESG reporting.

Regulators can boost investor confidence by enhancing disclosure quality and consistency. The integration of ESG practices into financial and strategic planning can be advantageous to firms, not just a reporting exercise. Investors can also look at the ESG data, as well as ESG reputation, at the company level when assessing a company's approach to raising external equity capital.

From a policy perspective, securities regulators and standard-setting bodies in Asia-Pacific economies may enhance the usefulness of sustainability information by promoting greater consistency and comparability in pillar-level ESG disclosure. Given that the financing relevance of the environmental, social, and governance pillars differs across firms and institutional settings, improved disclosure practices, while considering institutional differences across economies, may support more informed financing decisions and strengthen investor confidence.

A few limitations should be noted. The findings are specific to the Asia-Pacific economies and may not be directly applicable to financial institutions or other economies. ESG observations at the firm level and LSEG ESG measures may not reflect all aspects of sustainability performance. Despite the use of several econometric techniques to address endogeneity concerns, unobserved institutional and market-specific factors could impact financing behaviour. The evidence could be expanded in the future with the application of different ESG ratings, market-based ESG indicators, other regions, and institutional and macroeconomic moderators.

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