

## **Is Being Good Valuable? Analysing the Effects of Environmental, Social, and Governance (ESG) Practises in Asian Countries.**

**By**

**Nor Edi Azhar Mohamad**  
University Tenaga Nasional  
Email: [NorEdi@uniten.edu.my](mailto:NorEdi@uniten.edu.my)

**Noriza Mohd Saad**  
Universiti Teknologi Mara  
Email: [Noriza@uitm.edu.my](mailto:Noriza@uitm.edu.my)

**Fatihah Norazami Abdullah**  
Universiti Teknologi Mara  
Email: [fatih876@kelantan.uitm.edu.my](mailto:fatih876@kelantan.uitm.edu.my)

### **Abstract**

While making an investment decision, consider not just internal performance indicators such as sales growth, reduced leverage, or stable share price, but also integration components in environmental, social, and governance issues. In light of this, the study's objective is to determine the impact of ESG factors on company performance as a benchmark for enterprise value in all Asian nations. Secondary data for dependent and independent variables was gathered from Bloomberg databases between 2014 and 2020. To achieve the goal, fixed and random effect models were tested, with the best-fit technique being used for the most appropriate model after testing for Hetero and Serial Correlation. The study reveals that the ESG disclosure of ES, GS, and SS, as well as the risk and size of the firm, are significant in predicting firm value. The firm's leverage and liquidity, on the other hand, indicate insignificant results. According to the stakeholder theory, disclosing ESG information to all stakeholders is critical to improving a company's long-term performance and gaining a strategic competitive advantage. The findings of this study can be utilised as a benchmarking tool to raise stakeholder value creation standards across Asian countries on the level of ESG practices, by comparing a firm's performance to levels of socially responsible practices.

**Keyword:** Environment; Social; Governance; Firm Value; Asian

### **Introduction**

The era of being "good" in an organisation through "ESG-awareness" is progressively being incorporated into corporate investment decisions across Asia. ESG investing is garnering substantial recognition from policymakers, investors, and the general public for supporting sustainable working practises and business operations (Korwatanasakul, 2020). The debate on ESG is also widely discussed in past literature, interchanged with socially responsible investment (SRI) and corporate social responsibility (CSR). ESG is a phrase that refers to the incorporation of three critical indicators of environmental, social, and governance into a firm's operations that have an impact on the firm's decision-making and investment activities. Hence, it resembles a practise initiated by firms to be sustainable through implementing strategies beyond the profit measure in creating value not only for investors but also for society and stakeholders as a whole.

The interests of Asian investors, regulators, and consumers are headed for positive impacts as a signpost that Asian issuers show regional leadership in embracing the sustainability agenda. HSBC's Asian report (2021) revealed a slight increase from last year, with approximately 58 percent of Asian issuers stating that environmental and social issues are extremely critical to their organisation. This was the highest percentage among issuers globally, indicating that ESG integration in Asia is primarily driven by pressure from employees, customers, and regulatory requirements. Additionally, a recent survey conducted within the Asia-Pacific region indicates an increase in ESG investment by the region's investors due to COVID-19. Furthermore, by the end of 2021, many corporations wanted to include ESG into their investment research and decision-making processes (Borneo Post Online, 2021). The significant shift in the ESG landscape in Asia was driven, among others, by the issues of climate change and the advancement of sustainability regulations. According to a recent analysis by Verisk Maplecroft, Asian cities are the most vulnerable to environmental threats such as severe heat, climate change, and natural catastrophes (Nichols, 2021).

There is an immediate necessity for ESG studies in Asian countries, driven by Asian investors' growing interest in integrating ESG factors into their investment analyses and also by a growing percentage of publicly traded Asian companies implementing sustainability strategies and revealing ESG information (Alsayegh et al., 2020). However, the value of being "good" amongst the Asian firms in upholding the ESG principles is yet to be confirmed. Previous literature converges on its added value from different countries' perspectives (e.g., Ismai, Isa, Rahman & Mazlan, 2020; Duque-Grisales & Aguilera-Caracuel, 2019; Yoon, Lee & Byun, 2018; Atan et al., 2018; Van Brecht, Maga, Luciani, Sahakijpicharn & Semmerling, 2018; Amel-Zadeh & Serafeim, 2017; Velte, 2017). However, issues focusing on the Asian ESG are still limited with inconclusive results to confirm such benefits. Therefore, this study is motivated to stipulate the outcome of being "good" as measured by the disclosure indicators using an ESG score towards the Asian public listed firms' performance through the dimension of firm value.

## **Literature Review and Hypothesis Development**

### ***Underpinning Theory***

Drawing from the stakeholder theory (Freeman, 1984; Freeman et al., 2010), past literature demonstrates the importance of virtuous association with various stakeholder groups in improving a firm's sustainable performance. Long-term value is created when a firm engages in ESG operations, performing social commitments, meeting environmental obligations, and strengthening its image (Rezaee, 2016). This theory emphasises the ESG activities that bring benefits to firms' performance. As such, Peng and Isa (2020) describe these synergies through the possibility of grooming exceptional employees from satisfied and happy employees; sustaining loyalty from satisfied customers; and buying cheaper materials from satisfied suppliers, hence contributing towards increasing the firm's reputation perceived by financial performance and sustainability. Furthermore, the legitimacy theory is also widely used in explaining ESG disclosure. This theory emphasises the significance of reporting specific information about a firm, such as civic engagement, human resources, material assets, environmental accomplishments, and product and service contributions, in order to build society's trust in the firm's legitimate activities, thereby contributing to social value (Alsayegh et al., 2020)

The opposition to ESG-supporting theories gave birth to the agency theory (Jensen & Meckling, 1976), which examines the possibility of agency conflict between managers and

shareholders as a result of ESG engagement. The conflict arises as a result of managers' decision to divert their attention away from core managerial responsibilities and toward social activities and investments in order to improve their personal reputation (Jensen, 2002). (Barnea & Rubin, 2010). As a result, they contributed to declining firm value by directly benefiting shareholders' expenses (Kruger, 2015) and thus reducing the firm's profit (Peng & Isa, 2020).

### ***Past Literature on ESG in Asia***

The preceding ESG issues were based on a variety of investment practises that incorporated ESG indicators throughout Asian literature. Numerous ESG publications were available, with a focus on developed countries. Prior to this, however, there is a dearth of literature focusing on Asian perspectives, necessitating attention.

Past literature on Asian countries has focused on the ESG mechanism using various indicators. As such, Loh et al. (2016) investigated the sustainability disclosure rate of ESG among ASEAN countries and reported that Malaysia shows the highest sustainability disclosure rate (64.5%) followed by Singapore (61.7%), Thailand (60%), the Philippines (56.3%), and the lowest score by Indonesia (53.6%). Meanwhile, Aik et al. (2020) examine the presence of a cyclic correlation between ESG disclosure and the financial performance of Malaysian, Singaporean, and Thai listed corporations. They identified a substantial positive cyclical correlation for Malaysian companies, a negative cyclical correlation for Singaporean companies, and no significant cyclical correlation for Thai companies using ESG disclosure and profits per share. Thus, they argue that only Malaysian firms benefit financially from sustainability reporting by eliminating knowledge disparity between stakeholders. Mohamad et al. (2021) conducted a recent study in which they compared the ESG implementations in six Asian countries, namely Japan, Hong Kong, Singapore, the Philippines, Taiwan, and Malaysia, using ESG scores. They conclude that a significant difference exists for each component of the ESG indicators, with Taiwan demonstrating the greatest commitment to ESG implementation and having one of the lowest mean scores throughout all nations for the environment.

Abdul Rahman and Alsayegh (2021) measured business characteristics and confirmed the disclosure of extra ESG information across Asian enterprises using economic performance, profitability, leverage, and size. Their study demonstrates the firm's continued existence through increased ESG reporting, thereby correlating with the legitimacy theory. Furthermore, Alsayegh et al. (2020) conclude that disclosing a firm's environmental and social strategies contributes to the strengthening of Asian firms' corporate sustainability performance. Moreover, they observed statistically significant positive relationships between environmental and social performance, indicating the possibility of economic sustainability. Melinda and Wardhani (2020) discovered substantial correlations between the ESG index score and the controversy score regarding the value of companies, as evaluated by Tobin's Q. Moreover, they discovered that each indicator of ESG-environmental, ESG-social, and ESG-governance has an effect on the businesses' value, implying the critical nature of reporting ESG factors in enhancing firm value and establishing the company's long-term sustainability.

## **Description of Methodology**

### ***Sample***

The current study covered a period of seven years ranging from 2014 until 2020 for six Asian countries, which are Japan (197), Taiwan (105), Malaysia (56), Singapore (27), Hong Kong (20) and the Philippines (22). The selected company is based on the availability of the ESG data.

### Variable Selection

The company's valuation serves as the dependent variable. The Tobin's Q (TQ) equation was chosen to represent the firm's value since it is one of the most extensively used metrics of firm value (Al-Slehat et al., 2020). It is calculated as the ratio of the firm's market value to its book value of assets or book value of owners' equity (Kim et al., 2015)

Meanwhile, the environmental, social, and governance scores were used as independent variables to reflect ESG implementation in ASEAN. According to Verga Matos et al. (2020), the ESG score is widely used in academic literature as a measurement for corporate sustainability. It is regarded as a prudent strategy since it helps investors balance social impact and financial returns while retaining the advantages of portfolio diversification. (2018, Blacksell). The current research will use the environmental, social, and governance scores to assess the ESG policies of publicly traded companies throughout the nation. The current study will be reflected by the scores of each company by country. The score was measured based on the readily calculated ESG Disclosure Score from Bloomberg's database. Table 1 depicts the indicators used to calculate the score disclosed by Bloomberg. Bloomberg's ESG disclosure scores were in the range of 1 to 100. The score eventually measures the transparency of disclosure on ESG-related information but not the performance. The more information is disclosed, the higher the disclosure score will be.

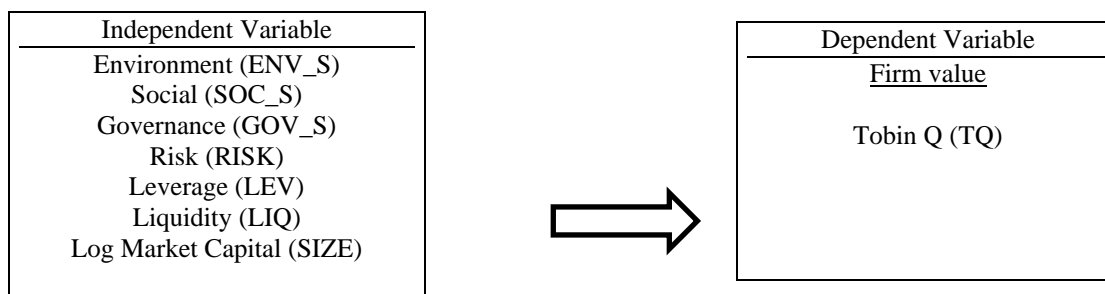
**Table 1** *Indicators used to calculate the score disclosed by Bloomberg*

No	Score	Indicator	Score
1	Environment (ENV_S)	Total GHG Omission	Proprietary Bloomberg's score is calculated using the amount of a company's environmental, social, and governance (ESG) data that is publicly available. A firm that is not part of the ESG group will not have a score and will display N/A. Companies who made no disclosures will have a value of "0." The ratings will range from 0.1 for firms that provide the bare minimum of E, S, and G data to 100 for companies that share every data point disclosed by Bloomberg. Across sectors and regions, a consistent set of themes, data fields, and field weights apply. The score is based on the quantity of ESG data disclosed publicly by a corporation and does not reflect the company's success on any one data point.
		Total Energy Consumption	
		Total water use	
		Hazardous Waste	
		Total waste	
		Environmental Fines (#)	
		Environmental Fines (\$)	
		Number of Employee	
		Employee Turnover %	
		% Employees Unionized	
2	Social (SOC_S)	% Women in workforces	
		% Women in management	
		Lost time from Accidents	
		Fatalities- Contractors,	
		Fatalities- Employee,	
		Fatalities- Total	
3	Governance (GOV_S)	Community Spending	
		Size of Board	
		Independent Directors	
		% Independents Director	
		Board Duration (Years	
		#Board Meeting	
		Board Meeting Attendance	
		Political Donations	

**Sources:** *All the indicators and score were extracted from Bloomberg*

Additionally, the control variables used are risk (RISK), leverage (LEV), liquidity (LIQ), and firm size (SIZE). The Weighted Average Cost of Capital (WACC) was used as an

indicator for RISK. The WACC represents the combination of the cost of capital from various sources (i.e., common shares, preferred shares, and debt). For each type of capital, the cost was weighted by its proportion. It was used for risk debt and bankruptcy assessment in several studies (e.g., Koziol, 2019; Mari & Marra, 2019; Ceron, 2014). In addition, leverage using Debt to Equity was used to calculate the volume of financing across Asian firms for their operations through debt versus totally owned funds. It represents the level of debt used to operate the business and also measures the level of risk allied to the firm's capital structure. The greater the ratio value, the more leveraged the firm was, while the ratio of current assets to current liabilities was used to determine liquidity. It specifies the firm's ability to satisfy its short-term debts. A higher ratio indicates highly liquid firms that have efficient utilisation of their current assets in the timely servicing of their current liabilities, thus minimising the risks (Sonia & Khafid, 2020). Meanwhile, the log value of market capitalisation was used as an indicator for firm size. The good performance of Asian firms can be benchmarked through their capital foundations by larger firms (Husna & Ibnu, 2019).



**Figure 1: Theoretical Framework**

### Methodology

Static Panel Data Analysis using Stata 13 will be performed to validate the proposed hypotheses. Panel data allows for the identification of certain parameters without assuming any restrictive expectations (Verbeek, 2008). Additionally, it includes time series and cross-sectional data.

The following Model 1 was used to assess the effect of ESG score on firm value:

$$TQ_{it} = \alpha + \beta_1 ENV\_S_{1it} + \beta_2 GOV\_S_{2it} + \beta_3 SOC\_S_{3it} + \beta_4 RISK_{4t} + \beta_5 LEV_{5it} + \beta_6 LIQ_{3it} + \beta_7 Size_{7it} + \mu_i + \lambda_t + \varepsilon_{it} \quad \dots (1)$$

The subscripts *i* and *t* denote firms (cross-sectional data) and time (time series data), whereas  $\mu_i$  is the firm-specific variable,  $\lambda_t$  is the time-specific variable, and  $\varepsilon_{it}$  is the appropriately defined disturbance term. Meanwhile, all the indicators used were explained as per figure 1. In confirming the associations between the selected variables, the current study utilised the Multivariate Panel Regression Analysis (MPRA). The effects of pooled Ordinary Least Squares (OLS) (within the firms as Random Effect (RE), Generalised Least Squares (GLS), or Fixed Effect (FE) are tested for the panel model observation.

## Finding Discussion

### Descriptive Statistics

The data of 427 for 6 Asian countries for the time spent from 2014 to 2020 pertinent to the selected variables and also the ESG scores are depicted in Table 2. The descriptive table discloses that the mean value of TQ is 1.28, which is higher than 1. Consequently, this implies that the firm is generating a higher rate of return than its replacement cost. Amongst the ESG indicators, the governance score depicts the highest mean scores, followed by the

social score, while the environmental score is the lowest over the study period, with the standard deviation value also indicating high variability for all three ESG indicators. On average, most Asian firms heavily rely on debt in their financing, given higher leverage with a mean value of 68.15, which is higher than 50 percent with very high variability in standard deviation. The Asian firms also had moderate liquidity, with a mean value of 1.98, indicating the ability of the firm to meet its obligations for short-term debt.

**Table 2** *Descriptive Statistics*

Variable	Obs	Mean	Std. Dev.	Min	Max
T_Q	2,981	1.548432	1.282138	0	18.864
SOC_S	2,903	30.13799	16.65036	0	85.9649
GOV_S	2,964	52.21711	13.7888	0	96.1168
ENV_S	2,887	27.70343	18.54007	0	86.0465
LIQ	2,967	1.980051	1.540963	0	15.2419
RISK	2,981	7.576725	2.992644	0	23.2183
LEV	2,982	68.1562	891.4394	-2342.19	48385.98
SIZE	2,944	7.933962	1.442337	2.241097	13.1004

### *Multicollinearity among Variables*

The presence of multicollinearity issues among variables was examined before further analysis using the Variance Inflation Factor (VIF) and the pairwise correlation (PWC). Results reported in Table 3 indicate a VIF value of less than 10 for all tested variables, thus confirming the absence of multicollinearity among variables (García, García, López Martín & Salmerón, 2014; O'Brian, 2007). Furthermore, the pairwise correlation (PWC) analysis suggests that there is no significant issue of multicollinearity as seen in Table 3. According to Gujarati (2014), coefficients of regressors larger than 0.8 indicate major multicollinearity issues that necessitate the variable's deletion. The current study reported a correlation coefficient of less than the threshold (<0.80) with the highest values being for the EG score (0.596) and the EE score (0.507). Meanwhile, negative significant associations were observed between EE and TQ, while LIQ, RISK, and SIZE had positive associations with TQ. Even though there are significant coefficients across the variable, the coefficient value is too small to be concerned about. Thus, both the VIF value and pairwise correlation coefficients indicate the presence of multicollinearity, indicating that the created model is predictively valid.

**Table 3:** *Result of VIF and Pairwise correlation (PWC)*

Variables	(TQ)	(SOC_S)	(GOV_G)	(ESG_E)	(LIQ)	(RISK)	(LEV)	(SIZE)	VIF
TQ	1.000								-
SOC_S	-0.007	1.000							1.98
GOV_S	0.020	0.447***	1.000						1.64
ENV_S	0.122***	0.596***	0.507***	1.000					1.39
LIQ	0.121***	0.107***	0.026	0.081***	1.000				1.14
RISK	0.262***	0.088***	0.105***	0.147***	0.294***	1.000			1.19
LEV	-0.029	-0.033*	-0.068***	-0.034*	-0.021	-0.035*	1.000		1.10
SIZE	0.114***	0.096***	0.215***	0.353***	0.036*	0.120***	-0.008	1.000	1.19

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Panel Data Analysis

Next, The Regression Results Of Pooled Regression (Pols), Fixed Effects Model (Fem), And Random Effects Model (Rem) Are Depicted In Table 4.

To Begin With, In Separating The Pooled Ols And The Re, The Breuch-Pagan Lagrange Multiplier (Bp-Lm) Test (Breusch And Pagan, 1980) Was Applied To Confirm The Presence Of A Specific Effect Or Heterogeneity In The Model Prediction. The Results In Table 4 Confirmed That Re Was The Best Fit Model For Explaining The Relationship Between The Esg Score Indicators And Others Chosen By Iv And The Firm's Value As Measured By Tobin Q. The Bb-Lm Confirms The Null Hypothesis Of  $\Sigma\mu^2 = 0$  With Significant Probability At A 99% Confidence Level ( $P < 0.01$ ) With A Chi-Bar-Square Value Of 4379.52. Therefore, It Is Proposed That The Data Was Unable To Be Pooled Due To The Similarity Of The Slopes And Intercepts Across Firms. Thus, The Current Study Establishes The Existence Of Firm-Specific Random Effects On The Data, Implying A More Accurate Estimation Using The Re Model.

Next, To Confirm The Existence Of Endogeneity In The Model Estimation And To Conclude The Best-Fit Model Prediction Between The Re And Fe, The Durbin–Wu–Hausman (Dwh) Specification Test (Hausman, 1978) Was Performed. The Dwh Result In Table 4 Reported The Chi-Bar-Square Value Of 6.64 With Significant Probability, Thus Rejecting The Null, As The P-Value ( $\text{Prob} > \text{Chi}^2$ ) Is Less Than 5%. Henceforth, The Fe model justified the firm's effects, which confirms the consistency and efficiency of the FE estimators. Thus, the results were interpreted based on the FE model.

Subsequently, the modified Wald statistics for heteroskedasticity diagnostic test and the Woolridge test for autocorrelation in panel data were performed. The results depicted in Table 4 report the non-constant variances and heteroskedasticity issues. The chi-bar-squared of  $1.7e+06$  with a probability significant to 99% confidence level was reported for the modified Wald Statistic of group-wise heteroskedasticity in the residual of a fixed effects regression model (Greene, 2000). Also, the testified  $X^2$  value of the Woolridge test was significant at 1% with an F-value of 12.071, implying the presence of variance inequality to confirm the serial correlation problems. Hence, the current study performed the OLS with heteroskedasticity and serial correlation robust standard error (Hoechle, 2007) to rectify both problems. The results are summarised in Table 4.

The results of all model estimations are also summarised in Table 4. The robust results after cluster regression for both time and industry effects indicate the ESG indicators of ENV\_S, GOV\_S, SOC-S, and the firm's risk and size are significant in predicting the firm value. While the firm's leverage and liquidity indicate insignificant results, the current study observes that the existence of relationships is significant at the 1% significance level, thus concluding the importance of ESG disclosure towards firm value.

The consistency of results was observed with positive relationships at a 1% significant level with TQ for the GOV\_S and SOC\_ scores. This can be seen through each part of the regression analysis for all four models, indicating positive significant relations for ES and EG, with the robust results justifying positive associations (+0.00539) and (+0.00678), respectively. The social indicators, in line with Yordudom and Suttipun (2020) and Yoon et al. (2018), imply the importance of maintaining stronger relationships with various stakeholders. Hence, it contributed towards reducing the asymmetric information between a firm and its stakeholders, which led to better operating performance (Amritha & Balasubramanian, 2019). The social sustainability focus on the impact of business management on people by delving into the

quality of a firm's relationships and engagement with all its stakeholders, such as employees, customers, and local communities, becoming the main elements of firm sustainability (Ting et al., 2020).

The governance indicators demonstrate the importance of transparency in governing firms that are able to reduce their agency costs. Hence, it leads to a more efficient use of various sources of capital for business operations. Subsequently, better governance will build trust and predictability, thereby generating investors' confidence (Adinegara & Sukamulya, 2021), which in turn induces firm value. The results thus corroborate with previous studies (e.g., Adinegara & Sukamulya, 2021; Dao, 2020; Yordudom & Suttipun, 2020; Kaur & Vij, 2018) that also indicate the positive relationship between good corporate governance and firm value. A recent report by Bloomberg Intelligence (2021), based on their analysis of quarterly data from the beginning of 2015 to 2021, suggested that stronger governance practises and improvement in ESG performance disclosure scores could be a driver of excess returns over time for the U.S. corporate index. Based on Sustainalytics' ESG rankings, an increase of 10–30 bps in excess returns was observed among better-governed and higher momentum companies. However, higher-rated companies do not necessarily have higher ESG rankings.

However, the results for the environmental score do not align with some of the priori empirical findings supporting the importance of environmental improvement. A negative coefficient was observed across all four models, with a robust coefficient of (-0.0104) at a 1% significant level with TQ. Thus, this is corroborated by the study by Aybars et al. (2019), indicating that a lower EE score leads to a higher Tobin's Q. Hence, a higher Tobin's Q is found to be less sensitive to environmental issues (Aybars et al., 2019) compared to social and governance indicators. This reverse influence of the association between environmental score and firm value implies that a firm's expenses for setting up environmentally friendly operations across Asian countries will not be compensated with better firm value. The facts that Asian's economic contribution towards the alarming climate and natural resources issues might justify the inverse relationships. Asia, which accounts for half of the world's population, consumes 75% of the world's coal now. This enables the building or development of 75% of the world's coal power plants in Asia (Sengupta, 2018). Additionally, as illustrated in Table 2, the environment score has the lowest mean score when compared to the other two indicators. The current study contrasts with Yoon et al. (2018) for the Korean airline industry, Yordudom and Suttipun (2020) for Thailand, and Abdi and Càmarà-Turull (2021) for the airline industry in general.

The results for risk indicators for three models suggest a significant positive with a robust coefficient (0.0216) at 1% level between the firm's risks and value. Thus, an increase in the WACC value is able to upsurge the Tobin Q to improve the firm's value across Asia. Consequently, this consistently supports the risk-return trade-off, signifying the acronym for rising potential return with an increase in risk. The results are coherent with past literature supporting positive impacts such as Deuis et al., (2021), Ibrahim & Badara (2020), Mohamad (2020), and Abdul Sattar (2015), indicating that WACC are drivers in enhancing the firm's value. In theory, the firm's value is composed of all predicted future cash flows created by the assets, discounted at the firm's WACC (Bringham & Ehrhard, 2002), thus affecting the firm's value. Additionally, a greater WACC indicates that the firm's sustainable development was funded by higher operating expenses for debt and equity capital, indicating more risky investment selections. Hence, supporting the importance of an appropriate financing mix towards significant improvement in firm value (Mohamad, 2020).



Having consistency for all four models, the firm size's robust coefficient (+0.461) posits a positive significant relationship at a 1% significant level with TQ. Being the benchmark in measuring firm performance with larger firms posits a greater impact on firms' valuations. Current findings also reaffirm previous studies by Jihadi et al. (2021), Mohamad (2020), Dang et al. (2019), Husna and Satria (2019), and Erlangga and Mawardi (2016), which also indicate a positive impact of size on firm value. Larger firms will be more competitive in gaining internal or external sources of funds to finance their sustainable growth. Those sources provide a better opportunity for growth diversification and, hence, provide positive signals to shareholders and potential investors that lead to a significant improvement in firm value. Additionally, a better future profit achievement is possible for bigger firms (Setiadharna & Machali, 2017).

**Table 4:** Results of Pooled OLS, Random Effect GLS and Fixed Effect and Robust OLS with Hetero & Serial Correlation

Variable	Model (1)	Model (2)	Model (3)	Model (4)
	Pooled OLS	Random Effect	Fixed Effect	RE with Hetero & Serial Correlation
SOC_S	0.00927***	0.00539***	0.00252*	0.00539***
GOV_S	0.00484**	0.00678***	0.00612***	0.00678***
ENV_S	-0.0230***	-0.0104***	-0.00510***	-0.0104***
LIQ	0.00971	-0.0316**	-0.0527***	-0.0316
RISK	0.112***	0.0216***	0.00236	0.0216***
LEV	-5.61E-05	-0.000185*	-0.000146	-0.000185
SIZE	0.162***	0.461***	0.655***	0.461***
Constant	-0.499***	-2.423***	-3.822***	-2.423***
Observations	2,841	2,841	2,841	2,841
R-squared		0.208	0.221	0.208
Model Fit(F-stat)	61.37***		97.84***	
BP- LM Test		4379.52		
Hausman Test			120.63***	
Multicollinearity (mean VIF)	1.38	1.38	1.38	1.38
Heteroskedasticity (-Stat)			1.7e+06***	
Serial Correlation (F-Stat)			12.071***	

Figure in the parentheses is t-statistics, except for Bruech-pagan LM test, hausman test, heteroskedasticity and serial correlation test, which are p-values.

Asterisks \*, \*\* and \*\*\* denote statistical significance level respectively at 10%, 5% and 1%.

## Conclusion

Referring to the evidence presented in this study, the robust results clustering for both time and industry effects indicate that disclosing ESG indicators such as ES, GS, and SS, as well as the firm's risk and size, provides greater value for Asian firms. Thus, the current study validates both stakeholder and shredder value theories by demonstrating the benefits of ESG integration among Asian firms. Thus, it is critical to disclose all the ESG information to all

stakeholders in order to foster a stronger competitive advantage, which is a critical factor in corporate sustainability performance. The findings of this study can be used as a benchmark for Asian countries to raise the bar on ESG-related stakeholder value creation. As a result, it assists investors in categorising businesses and industries based on their socially responsible practises, resulting in more informed investment decisions. Additionally, this study is able to instil an appreciation for the importance of responsible investment among practitioners, academics, and policymakers by incorporating ESG factors into the measurement and evaluation of a corporation's performance as an added value.

## Acknowledgment

This work was supported by the grant UNITEN BOLD J510050002/2021024 Research Grant 2021.

## References

- U., Korwatanasakul, "Environmental, Social, and Governance Investment: Concepts, Prospects, and the Policy Landscape," in *Environmental, Social, and Governance Investment: Opportunities and Risks for Asia*, N. Nemoto and P. J. Morgan, Eds. Tokyo, Japan: Asian Development Bank Institute, 2020, pp. 1-31. Accessed on: Mar. 11, 2022. [Online]. Available: <https://www.adb.org/sites/default/files/publication/610771/adbi-environmental-social-governance-investment-opportunities-risks-asia.pdf>
- HSBC, "Sustainable financing and investing survey 2021: Global report- Capital markets undergo powerful shift in embrace of environmental and social issues," 2021. Accessed on: Mar. 11, 2022. [Online]. Available: <https://www.gbm.hsbc.com/en-gb/campaigns/sfi-survey>
- "ESG in Asean: A shared vision of sustainable recovery," Borneo Post Online, April 11, 2021, Accessed on: Mar. 11, 2022. [Online]. Available: <https://www.theborneopost.com/2021/04/11/esg-in-asean-a-shared-vision-of-sustainable-recovery/>
- W. Nichols, (2021), "Asian cities in eye of environmental storm – global ranking: Environmental Risk Outlook 2021," 2021. Accessed on: Mar. 11, 2022. [Online]. Available: <https://www.maplecroft.com/insights/analysis/asian-cities-in-eye-of-environmental-storm-global-ranking/>
- M. F. Alsayegh, R., Abdul Rahman, and S. Homayoun, "Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure," *Sustainability*, vol. 12, no. 9, p. 3910, 2020.
- R. Atan, M. M. Alam, J. Said, and M. Zamri, "The impacts of environmental, social, and governance factors on firm performance: Panel study of Malaysian companies," *Manag. Environ. Qual.*, vol. 29, no. 2, pp. 182-194, 2018.
- N. Ismai, M. A. M. Isa, N. H. A. Rahman, and N. F. Mazlan, "Sustainability performance using environmental, social and governance (ESG) scores: Evidence from public listed companies (PLCS) in Malaysia," *Int. J. Account.*, vol. 5, no. 30, pp. 183-194, 2020.
- D. Van Brecht, A.,Maga, K.,Luciani, D. Sahakijpicharn, and A. Semmerling, "Exploring the link between environmental, social and governance (ESG) disclosure and market value of the firm: Evidence from Thai listed companies," *AJMI-ASEAN J. Manag. Innov.*, vol. 5, no. 2, pp. 95-106, 2018.
- B. Yoon, J. H. Lee, and R. Byun, "Does ESG performance enhance firm value? Evidence from Korea," *Sustainability*, vol. 10, no. 10, p. 3635, 2018.

- R. E. Freeman, *Strategic management: A stakeholder approach*. Marshfield, MA: Pittman, 1984.
- R. E. Freeman, J. S. Harrison, A. C. Wicks, B. L. Parmar, and S. De Colle, *Stakeholder theory: The state of the art*. United Kingdom Cambridge University Press, 2010.
- Z. Rezaee, "Business sustainability research: A theoretical and integrated perspective," *J. Account. Lit.*, vol. 36, pp. 48–64, 2016.
- L. S. Peng, and M. Isa, "Environmental, social and governance (ESG) practices and performance in shariah firms: Agency or stakeholder theory?," *Asian Acad. Manag. J. Account. Finance*, vol. 16, no. 1, pp. 1–34, 2020.
- M. C. Jensen, and W. H. Meckling, "Theory of the firm: Managerial behaviour, agency costs and ownership structure," *J. Financ. Econ.*, vol. 3, no. 4, pp. 305-360, 1976. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.1016/0304-405X(76)90026-X
- M. C. Jensen, "Value maximisation, stakeholder theory and the corporate objective function," *Bus. Ethics Q.*, vol. 12, no. 2, pp. 235–257, 2002. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.7312/chew14856-001
- A. Barnea, and A. Rubin, "Corporate social responsibility as a conflict between shareholders," *J. Bus. Ethics*, vol. 97, no. 1, pp. 71–86, 2010. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.1007/s10551-010-0496-z
- P. Kruger, "Corporate goodness and shareholder wealth," *J. Financ. Econ.*, vol. 115, no. 2, pp. 304–325, 2015. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.1016/j.jfineco.2014.09.008
- L. Loh, T. Thomas, S. P. Lee, L. Lim, H. Pan, M. Malek, and R. Wynne, "Sustainability reporting in ASEAN countries. Centre for Governance, Institutions & Organisations NUS Business School," 2018. Accessed on: Mar. 11, 2022. [Online]. Available: [https://www.m-culture.go.th/mculture\\_th/download/king9/Glossary\\_about\\_HM\\_King\\_Bhumibol\\_Adulyadej's\\_Funeral.pdf](https://www.m-culture.go.th/mculture_th/download/king9/Glossary_about_HM_King_Bhumibol_Adulyadej's_Funeral.pdf).
- N. C. Aik, C. K. Chin, P. L. Hena Lai, and S. L. Neo, "The cyclic relationship between environmental, social and governance (ESG) disclosure and corporate financial performance (CFP) in a regional economy," *J Contemp. Issues Thought*, vol. 11, no. 1, pp. 82-96, 2020. Articles in press. Accessed on: Mar. 11, 2022. [Online]. Available: <https://ojs.upsi.edu.my/index.php/JCIT/article/view/4500>
- N. E. A. Mohamad, N. M. Saad, and F. N. Abdullah, "Comparative analysis of environmental, social and governance (ESG) implementations across Asia," *Global Bus. Manag. Res.*, vol. 13, no. 4, pp. 554-563, 2021.
- R., Abdul Rahman, and M. F. Alsayegh, "Determinants of corporate environment, social and governance (ESG) reporting among Asian firms," *J. Risk Financ. Manag.*, vol. 14, no. 4, p. 167, 2021.
- A. Melinda, and R. Wardhani, "The effect of environmental, social, governance, and controversies on firms' value: Evidence from Asia," in *Advanced Issues in the Economics of Emerging Markets (International Symposia in Economic Theory and Econometrics, Vol. 27)*, W. A. Barnett, and B. S. Sergi, Eds. Bingley: Emerald Publishing Limited, pp. 147-173, 2020. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.1108/S1571-038620200000027011
- Z. A. F. Al-Slehat, C. Zaher, A. Fattah, and P. O. Box, "Impact of financial leverage, size and assets structure on firm value: Evidence from industrial sector, Jordan," *Int. Bus. Res.*, vol. 13, no. 1, pp. 109-120, 2020.
- J. Y. Kim, J. Kwak, and K. Lee, "Estimating Tobin's Q for listed firms in Korea (1980-2005): Comparing alternative approaches and an experiment with investment functions," *Seoul J. Econ.*, vol. 28, no. 1, pp. 1-30, 2015.

- P. Verga Matos, V. Barros, and J. Miranda Sarmiento, "Does ESG affect the stability of dividend policies in Europe?," *Sustainability*, vol. 12, no. 21, p. 8804, 2020. Accessed on: Mar. 11, 2022. [Online]. Available: <https://doi.org/10.3390/su12218804>
- Bloomberg Intelligence, "Which ESG factor drives excess return? Turns out it's governance," June 07, 2021. Accessed on: Mar. 11, 2022. [Online]. Available: <https://www.bloomberg.com/professional/blog/which-esg-factor-drives-excess-return-turns-out-its-governance/>
- C. Koziol, "A simple correction of the WACC discount rate for default risk and bankruptcy costs," *Rev. Quant. Financ. Account.*, vol. 42, pp. 653–666, 2014.
- C. Mari, and M. Marra, "Valuing firm's financial flexibility under default risk and bankruptcy costs: A WACC based approach," *Int. J. Manag. Financ.*, vol. 15, pp. 688–699, 2019.
- J. Ceron, "Going Distress on the WACC," *SSRN Electron. J.*, pp. 1–56, 2014.
- D. Sonia, and M. Khafid, "The effect of liquidity, leverage, and audit committee on sustainability report disclosure with profitability as a mediating variable," *Account. Anal. J.*, vol. 9, no. 2, pp. 95-102, 2020.
- A. Husna, and I. Satria, "Effects of return on asset, debt to asset ratio, current ratio, firm size, and dividend payout ratio on firm value," *Int. J. Econ. Financial Issues*, vol. 9, no. 5, p. 50, 2019.
- M. Verbeek, *A guide to modern econometrics*, Hoboken, NJ: John Wiley & Sons, 2008.
- C. B. García, J. García, M. M. López Martín, and R. Salmerón, "Collinearity: Revisiting the variance inflation factor in ridge regression. *J. Appl. Stat.*, vol. 42, no. 3, pp 648-661, 2015. Accessed on: Mar. 11, 2022. [Online]. Available: doi: 10.1080/02664763.2014.980789
- D., Gujarati, *Econometrics by Example*, 2nd ed. New York: Palgrave Macmillan, 2014.
- T. S. Breusch, and A. R. Pagan, "The lagrange multiplier test and its applications to model specifications in econometrics," *Rev. Econ. Stud.*, vol. 47, no. 1, pp. 239-253, 1980.
- J. A. Hausman, "Specification tests in econometrics," *Econometrica*, vol. 46, pp. 1251–1271, 1978.
- W. H. Greene, *Econometric analysis*, 4th ed. Englewood Cliffs: Wiley, 2000.
- D. Hoechle, "Robust standard errors for panel regressions with cross-sectional dependence," *Stata J.*, vol. 7, no. 3, pp. 281-312, 2007.
- T., Yordudom, & M. Suttipun, "The influence of ESG Disclosures on firm value in Thailand. *GATR J.* Accessed on: Mar. 11, 2022. [Online]. Available: <https://ideas.repec.org/p/gtr/gatrjs/jfbr178.html>
- M. Amritha, and P. Balasubramanian, "A study on relationship between corporate financial performance and Environmental Social & Governance Score (Esg Score)," *FIFI-2019*, 2019.
- I. W. K. Ting, N. A. Azizan, R. K. Bhaskaran, and S. K. Sukumaran, "Corporate social performance and firm performance: Comparative study among developed and emerging market firms," *Sustainability*, vol. 12, no. 1, p. 26, 2020.
- G. Adinegara, and S. Sukamulya, "The effect of good corporate governance on the market value of financial sector companies in Indonesia," *Jurnal Akuntansi dan Keuangan*, vol. 23, no. 2, pp. 83-94, 2021.
- T. T. B. Dao, and P. H. C. Nguyen, "Analysis of corporate governance index using ASEAN balanced score card and firm performance (September 4, 2020). *Res. J. Finance Account.*, vol. 11, no. 6, pp. 11-16, 2020.
- M. Kaur, and M. Vij, "Corporate governance index and firm performance: empirical evidence from Indian banking." *Afro-Asian J. Finance Account.*, vol. 8, no. 2, pp. 190-207. 2018.
- A. Aybars, L. Ataünal, and A. O. Gürbüz, "ESG and financial performance: impact of environmental, social, and governance issues on corporate performance," in *Handbook*

- of Research on Managerial Thinking in Global Business Economics, H. Dinçer, Hasan and S. Yüksel, Eds. Hershey, PA: IGI Global, 2019, pp. 520-536.
- S. Sengupta, "The world needs to quit coal. why is it so hard?," *The New York Times*, November 11, 2008. [Online]. Available: at <https://www.nytimes.com/2018/11/24/climate/coal-global-warming.html> [Accessed March. 11, 2022].
- Y., Abdi, X., Li, and X. Càmara-Turull, "Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age," *Environ. Dev. Sustain.*, 2021.
- M. S. Abdul Sattar, "Cost of capital–The effect to the firm value and profitability; empirical evidences in case of personal goods (textile) sector of KSE 100 Index," *J. Poverty, Invest. Dev.*, vol. 17, pp. 24–28, 2015.
- K. Deuis, D. Jhoansyah, and M. Z. Faizal, "Analyze return on equity and weighted average cost of capital linkages to firm value," *Almana: Jurnal Manajemen dan Bisnis*, vol. 5, no. 1, pp. 1-6, 2021.
- A. S. Ibrahim, and M. S. Badara, "Moderating effects of cost of capital on equity financing and firm value in Nigeria," *Academic J. Econ. Stud.*, vol. 6, no. 3, pp. 81-84, 2020.
- N. E. A. Mohamad, "Do Environmental, Social, and Governance Practices (ESG) signify firm value? Evidence from FTSE4Good Bursa Malaysia (F4GBM)," *Glob. Bus. Manag. Res.*, vol. 12, no. 4, pp. 365-376, 2020.
- E. F. Brigham, and M. C. Ehrhardt, *Financial management: theory and practice*, 10th ed. Melbourne: Thomson Learning. 2002).
- O. P. Erlangga, and I. Mawardi, "Pengaruh total aktiva, capital adequacy ratio (CAR), finance to deposit ratio (FDR) dan non performing financing (NPF) terhadap return on assets (ROA) bank umum syariah di Indonesia periode 2010-2014," *Jurnal Ekonomi Syariah Teori dan Terapan*, 3(7), 561-574, 2016.
- H. N. Dang, V. T. T. Vu, X. T. Ngo, and H. T. V. Hoang, "Study the impact of growth, firm size, capital structure, and profitability on enterprise value: Evidence of enterprises in Vietnam," *J. Corp. Account. Finance.*, vol. 30, no. 1, pp. 144-160, 2019.
- M. Jihadi, E. Vilantika, S. M. Hashemi, Z. Arifin, Y. Bachtiar, and F. Sholichah, "The effect of liquidity, leverage, and profitability on firm value: Empirical evidence from Indonesia," *J. Asian Finance Econ. Bus.*, vol. 8, no. 3, pp. 423-431, 2021.
- S. Setiadharna, and M. Machali, "The effect of asset structure and firm size on firm value with capital structure as intervening variable," *J. Bus. Financial Affairs*, vol. 6, no. 4, pp. 1-5, 2017.