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The effect of environmental, social and governance criteria on the corporate value of listed companies in Malaysia

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ABSTRACT

Environmental, social, and governance (ESG) criteria are used by most corporations to achieve and maintain the best management quality. Thus, implementing ESG might assist firms in Malaysia to improve their corporate performance. The purpose of this research is to analyze the effect of ESG on corporate performance in terms of the value of Malaysian listed firms. A total of 45 companies listed on Bursa Malaysia that have complete ESG data from 2011–2021 were selected from Bloomberg's ESG database. Corporate value was measured using three indicators – return on assets (ROA), return on equity (ROE) and Tobin's Q. According to the results, the ESG scores have an insignificant positive influence on ROE and Tobin's Q. However, the ESG scores have a negative but insignificant impact on ROA. The individual Environmental score has a negative impact on ROA but a positive impact on ROE and Tobin's Q. Meanwhile, Social on its own has an insignificant negative impact on all variables, and Governance has a positive but insignificant impact on all variables. Based on the inconsistencies between the results of this study and those of previous research, the conclusions on whether ESG criteria promote business value and performance cannot be reached. ESG practices have become increasingly important, not only for policymakers but for governments and stakeholders. Hence, the outcome of this study will be useful for the government to reduce costs and implement policies to improve corporate performance in Malaysia.

Contribution/Originality: To the best of the authors' knowledge, this research is among the few studies that investigate the influence of ESG criteria on the corporate performance of Malaysian firms in terms of the value of the corporation.

1. INTRODUCTION

Environmental, Social, and Governance (ESG) is a set of standards that most corporations use to ensure the highest possible management quality. Amran, Lee, and Devi (2014) indicated that corporations should have a strategic ESG plan for their future to avoid zero value gain. Most investors evaluate a corporation's value, performance, and efficiency by viewing its ESG criteria. Giljum, Hak, Hinterberger, and Kovanda (2005) stated that there are many previous scholars, practitioners, and policymakers who have been involved in a discussion about the need for a global transition to create new opportunities to advance the ESG systems. Additionally, ESG has had so many advances that it has become a concern to the public, investors, and stakeholders in many countries, including Malaysia. ESG initiatives have drastically increased and many corporations aim to apply ESG criteria.

As corporations nowadays are pressured with a competitive environment, the combination of ESG criteria can assist in strengthening the corporate performance of firms in Malaysia. Atan, Alam, Said, and Zamri (2018) stated that the government of Malaysia has been steadily encouraging corporations to enhance their overall standard, such as exercising corporate social responsibility (CSR), particularly in improving the quality of living to minimize pollution and be more concerned with their impact on the environment. Thus, this research aims to study the effect of ESG criteria on the corporate value of listed firms in Malaysia.

Environmental criteria, which are included in ESG, mainly focus on evaluating and mitigating risks that may result in environmental degradation, such as avoiding pollution that contributes to climate change or utilizing animals for experimentation. According to Murad and Pereira (2019), Malaysia is confronted with environmental health issues as a consequence of industrial emissions that contribute to pollution, climate change, and depletion of the ozone layer. Suki, Sharif, Afshan, and Suki (2020) also stated that Malaysia's ecology is deteriorating. According to 2017 statistics from the Department of the Environment (DOE), 219 (46%) of 477 rivers surveyed were deemed to be clean, 207 (43%) were mildly contaminated, and 51 (11%) were polluted, a small rise from 2011 levels. Ibrahim et al. (2021) noted that in June 2019, approximately 2000 individuals and 111 schools were forced to shut down due to water contamination in the Pasir Gudang river in Sungai Kim. As a result, the report recommended that corporations in Malaysia should embrace Corporate Environmental Responsibility (CER). Given that environmental health has become a critical concern, organizations need to make more effort to mitigate environmental hazards in their operations.

Effective social criteria include safeguarding human rights, promoting equity, and managing relationships among workers, suppliers, and consumers. On the other hand, without a suitable structure, preserving social standards may be difficult. Kumar (2020) asserts that corporations that adhere to ESG criteria demonstrate excellent governance, a greater concern for the environment and sustainable development, increased earnings, and may have lower cost funds.

According to Aupperle, Carroll, and Hatfield (1985), corporate social responsibility (CSR) activities tend to increase firm cost, leading to a position of economic disadvantage. Sadiq, Singh, Raza, and Mohamad (2020) indicated that ESG procedures were seen as a cost, and as the cost exceeds the minimum legal requirements, the firm value starts to reduce. Nevertheless, past researchers have also encouraged the value-enhancing theory that CSR and ESG activities enhance firm performance. Earlier evidence focused more on the impact of ESG on firm performance. Atan et al. (2018) discovered that the current status of ESG standards and their effects in emerging countries have not been well examined.

The involvement of different levels of management and expertise and numerous opinions may lead to disagreement regarding ESG criteria. Due to the lack of research that focuses on the three criteria together, it may be difficult for corporations to create awareness and to practice ESG in accurate ways. Abdul Rahman, Yusoff, and Wan Mohamed (2009) stated that many previous research outcomes were inconclusive because of mixed results. Therefore, this research will study the measurement of the combination of all criteria and each criterion individually to improve the corporate performance in terms of corporate value. Malaysia's government is also concerned with social and governance, and it endeavors to ensure that corporations in Malaysia practice and improve it. Hence, the outcome of this study will be useful for the government to reduce the associated costs in the future and implement policies to improve corporate performance in Malaysia.

2. LITERATURE REVIEW

2.1. Corporate Social Responsibility (CSR)

CSR is a method that is used and adapted by firms, governments, and individuals to demonstrate their responsibility to society. American economist Howard Bowen originated the phrase CSR in 1953 in his book Social Responsibilities of the Businessman. He is known as the "father of CSR" due to his pioneering work in this field. Research and CSR practices have grown tremendously, and groups of investors started to voice their concerns

regarding social and environmental practices. Teoh and Thong (1984) indicated that firms in Malaysia prioritize profits and employees more than corporate social involvement. Malaysia began raising awareness of CSR in 2000 and has made significant efforts to promote CSR standards. In December 31, 2007, all publicly traded firms were mandated to include CSR in their annual reports (Bursa Malaysia, 2006). To highlight the significance of CSR, Bursa Malaysia established a CSR framework for publicly traded firms in the country. Santhirasegar, Ramakrishnan, Hishan, and Jamal (2018) indicated that Bursa Malaysia has made it more convenient for corporations to promote awareness by establishing a CSR framework that would assist publicly traded firms in reporting their CSR practices. "Silver Book" was the first collection of CSR principles and standards for Malaysian government-linked companies to help government-affiliated companies integrate CSR into their business strategies.

Numerous researchers have attempted to study the relation between CSR and firm performance in a variety of industries. The difference between CSR and ESG is that ESG includes corporate governance, while CSR focuses on environmental and social concerns only. Thus, ESG criteria cover broader aspects compared to CSR. Gillan, Koch, and Starks (2021) found a substantial correlation between CSR and financial performance. Jadiyappa, Iyer, and Jyothi (2021) found a positive influence between customer expectations and CSR practice. Zahidy, Sorooshian, and Abd Hamid (2019) indicated that CSR has become an essential agenda item in today's corporate settings, with its reach expanded from taking responsible actions to also include strategic decision making. Additionally, Laili, Djazuli, and Indrawati (2019) stated that CSR is still viewed as a problem that lowers earnings in vain, but the benefits of implementing CSR will be perceived in the long run. However, if a business wants to enhance its performance via corporate governance and CSR, this would be extremely beneficial.

2.2. ESG Practices

Research on ESG practices has grown remarkably in recent years. Corporations may perform badly by neglecting ESG criteria. Mohammad and Wasiuzzaman (2021) indicated that corporations can lose their reputation due to unethical social or environmental practices, which will have a severe impact on their financial performance. Practicing ESG has become one way in which the government reinforces its concerns regarding communities, and the planet as a whole. As a result, applying ESG practices in business operations can improve a corporation's image.

CSR is not a new idea (the term "Corporate Social Responsibility" was coined by Howard Stern in 1953), but ESG criteria were only developed in early 2004 in response to a request by Kofi Annan, United Nations Secretary-General (Gillan et al., 2021). In 2010, the United Nations Environment Programme Finance Initiative (UNEPFI) and the World Business Council for Sustainable Development (WBCSD) encouraged corporations to include ESG elements in their decision making to reduce risks. Moreover, the Malaysian Code on Corporate Governance (MCCG) statement in 2012 has promoted sustainability and advised corporations to disclose ESG in their annual reports (Atan, Razali, Said, & Zainun, 2016). Moreover, the Securities Commission Malaysia (SCM) has developed a Sustainable Responsible Investment (SRI) Sukuk Framework to encourage responsible finance and investment practices. Numerous organizations define ESG and SRI differently, but the main goal is to include ESG criteria in investing decisions. The United Nations also recommended that corporations should disclose their ESG practices by 2030 (Sustainable Stock Exchanges (SSE), 2015).

ESG criteria can improve the country's image due to ethical practices. A study by Atan et al. (2016) stated that government involvement in encouraging corporations to apply more ethical corporate practices could improve corporations' concerns regarding the public and the world and enhance a country's image in the eyes of the world. ESG criteria can play a key role due to high sustainability that corporations can take advantage of to avoid risks and become stable during a financial crisis. This is supported by Hoepner, Masoni, and Kramer (2019), who stated that ESG practices can lower risk. Moreover, Broadstock, Chan, Cheng, and Wang (2021) studied the role of ESG performance during the financial crisis caused by the COVID-19 pandemic and stated that ESG practices could reduce

risks during a financial crisis. Hence, government support would greatly help corporations to apply ESG practices to help their business value chain and their shareholders (Jallai, 2020).

ESG investing has grown rapidly over the past decade, indicating ethical investment and minimizing risk in the long term. Collin (2009) noted that investors should include ESG in investment analysis to minimize risks. Past financial crises and scandals have driven investors to become more cautious when making decisions. An article by Ellis (2020) stated that corporations with high ESG performance can reduce risks, offer higher returns, and be more secure during a financial crisis. ESG practices are well recognized to influence corporate images and secure investors' trust. A study by Ramba, Joseph, and Said (2018) stated that investors' trust and loyalty would reduce if corporations were involved in unethical practices. Furthermore, firms with high ESG practices will lead to higher potential gains for investors due to the high level of influence on market performance.

Research on the influence of ESG criteria on firms' value, efficiency, and performance has grown rapidly. A study by Fatemi, Glaum, and Kaiser (2018) on the impact of ESG strength on firm value discovered that ESG enhances firm value. Zahid, Rehman, and Khan (2019) found that ESG adds value to Malaysian publicly traded firms that have continued to improve their ESG disclosure in their annual reports. Sadiq et al. (2020) examined the connection between ESG criteria and the impact on firm value by extracting data from 122 firms listed on Bursa Malaysia from 2011 to 2019 and discovered that ESG enhances firm value. Additionally, Mohamad (2020) studied the influence of ESG scores on the value of Malaysian listed firms based on the FTSE4Good Bursa Malaysia Index (F4GBM) and revealed a strong correlations between firm value and the ESG score. On the contrary, a study by Atan et al. (2018) found that the relationship between profitable firms with ESG practices and firm value is negative.

Kweh, Alrazi, Chan, and Abdullah (2017) studied the effect of ESG practices on the efficiency of government-linked companies (GLCs) in Malaysia and discovered that effective governance had a beneficial influence on firm efficiency, whereas social and environmental variables had no such influence. Subsequently, Friede, Busch, and Bassen (2015) indicated that ESG practices have a long-term positive impact on a firm's performance. Additionally, Zhao et al. (2018) found that excellent ESG performance can enhance financial performance. Similar results were also found by Ramić (2019), and Okpa, John, Nkwo, and Okarima (2019) found that ESG practices in the United Kingdom positively impact firm performance in terms of profitability, value and cash flow.

On the other hand, a study by Junius, Adisurjo, Rijanto, and Adelina (2020) examined the impact of ESG performance on firm performance. The study was conducted on 271 publicly traded companies in Indonesia, Malaysia, Singapore, and Thailand over five years using multiple regression analyses. The results showed a negative correlation between the ESG score and firm performance.

Previous research on the study of whether ESG criteria can improve corporate value, efficiency, and performance has grown significantly. However, due to the discrepancies between the findings of this study and those of previous studies, a conclusion on whether ESG criteria can improve corporate value, efficiency, and performance cannot be drawn.

2.3. ESG Disclosure

Friede et al. (2015) stated that ESG disclosures are viewed as a socially responsible and ethical investment since they have become vital indications of risk management, non-financial performance, and management skills. Moreover, ESG disclosure allows investors to make more rational decisions on their investments by assessing risks that may be avoided (Zainon et al., 2020). Meanwhile, in a recent study by Mohammad and Wasiuzzaman (2021), the sustainability framework has conditioned firms to disclose ESG, which resulted in a rising number of ESG disclosures in 2016. Alareeni and Hamdan (2020) found that ESG disclosure has grown positively in different dimensions over the last 20 years. Peiris and Evans (2010) reported that the ESG disclosures that were illustrated in scores have a positive link with operational performance and market evaluation. There is a rising inequity premium and value after ESG criteria were included in the analysis. A vast amount of knowledge is available in Malaysia to help promote ESG disclosure

among listed firms in Malaysia. One of the alternatives is the FTSE4Good Bursa Malaysia, which was formed via a partnership between Bursa Malaysia and FTSE Russell to promote the recommended standards of ESG disclosure among listed companies and help investors consider ESG factors in their investment decisions.

Kweh, Alrazi, Chan, Abdullah, and Lee (2017) researched the influence of ESG variables on firm performance based on government-linked firms in Malaysia. The results showed that governance criteria positively influence firm efficiency, whereas social and environmental criteria do not. Yen-Yen (2019) studied the influence of ESG disclosure on structured warrants and firm value in Malaysia and found that ESG disclosure positively affects firm value. A study by Sadiq et al. (2020) on ESG practices and the outcome of the disclosures using data collected from Bursa Malaysia concluded that firms can use ESG disclosure to improve the strength of the corporation. Alareeni and Hamdan (2020) conducted a study to verify whether ESG disclosure impacts firms' operational, financial, and market performance and found that ESG disclosure has a positive impact on firm performance. This is supported by Mohammad and Wasiuzzaman (2021), who analyzed the effect of ESG disclosure on firm performance based on firms listed on Bursa Malaysia and found that ESG disclosure can improve corporate performance. As a result of the above, it is reasonable to assume that awareness of the effect of ESG disclosure on firm performance, value, and efficiency has shown a positive outcome and has risen significantly.

2.4. Sustainability Development Goals (SDGs)

The legacy and accomplishments of the millennium development goals (MDGs) equip us with invaluable insights and experience as we work on new objectives. However, for millions of individuals worldwide, the task remains incomplete. Inequalities are widening, and many people are finding that the conventional social contract no longer works. No country has yet combined very high levels of population growth with a negligible ecological impact, and the consequences of climate change and species extinction are growing more severe.

Malaysia, together with 192 other world leaders, endorsed the 2030 Agenda for Sustainable Development during the United Nations General Assembly in New York on September 25, 2015. Global issues are addressed via the Sustainable Development Goals. Despite past development agendas aimed only at economic growth, the SDGs encompass a wide range of potentially conflicting policy objectives in the economic, social, and environmental areas.

According to Kroll, Warchold, and Pradhan (2019), SDGs can have a positive or a negative effect. Attaining the objectives requires a greater knowledge of the underlying processes. Amid a global economic crisis and slowing growth, firms must urgently establish sustainable business strategies to guarantee that they can continue to produce value for stakeholders and society, even during times of disruption and uncertainty. Although corporations promise to work toward social and environmental objectives, a lack of knowledge regarding the SDGs impairs the efficacy of corporations and international agendas. As a result, it is vital to examine current business processes from a sustainability perspective to ensure that corporate issues are handled properly and that the SDGs are implemented globally.

The study by Rosati and Faria (2019) examined institutional factors that impact the decision to incorporate the SDGs in sustainability reports at the national level. The results revealed that corporations that comply with the SDGs are more likely to be situated in nations with a greater degree of sensitivity to climate change, employment protection, etc. Additionally, the study notes that organizations globally can substantially advance the Sustainable Development Agenda by implementing SDGs into their strategies and operations and proposing new solutions to global sustainable development challenges.

Ashrafi, Adams, Walker, and Magnan (2018) stated that corporate social responsibility and corporate sustainability are two separate concepts. Even though both offer advantages for society and the environment, the two aspects of corporate sustainability cover a broader range of activities than corporate social responsibility. Corporations need a framework they can rely on to identify opportunities and threats and adopt measures to enhance society's sustainability prospects while also increasing goal achievement.

2.5. Leverage

Two main theories commonly relate to capital structures: trade-off theory and pecking order theory. According to Simatupang, Purwanti, and Mardiati (2019), in terms of capital structure, both approaches point in opposite ways. Many previous studies have been done on these two theories, but the results are inconsistent. The trade-off theory states that tax benefits of debt are balanced against bankruptcy costs to determine the firm leverage. On the other hand, the pecking order theory argues that firms prefer to choose financing sources in sequential order. Leverage is a method that firms use to maximize corporate funds and value involving debt and reduce the risk of insolvency and bankruptcy. The risks are due to the obligation to pay the debts and interest owed to providers. However, it is said that the more risks that businesses take, the greater the future returns and value will be. Therefore, there are plenty of corporations that have applied this method to aid expansion. There are two main types of leverage. The first type is operating leverage, which is a sum of debt that the company owes to fund operations, and the second type is financial leverage, which is a method that assists corporations in managing their expenses, estimating the corporate breakeven point, and assisting in the determination of selling prices to avoid risks on returns (Investopedia, 2021).

Many researchers have proved the impact of leverage on corporate value, efficiency, and performance. Jensen (1986) and Ofek (1993) have shown that greater leverage leads to higher performance. Greater leverage can quickly implement financial measures, and great investment and high collateral assets will assist leveraged corporations to lessen the chances of bankruptcy Gharsalli (2019). A study by Sulong, Gardner, Hussin, Mohd Sanusi, and Mcgowan (2013) suggested that leverage is one of the external factors that decision makers use to reduce expenses. Low expenses lead to greater productivity for corporations, thus improving efficiency. This is supported by Ansari (2020), who found a positive correlation between leverage and corporate efficiency. Moreover, Ramli, Latan, and Solovida (2019) found a positive correlation between leverage and financial performance in Malaysia. They also found that using more debt and a lower equity ratio can improve financial performance. Thus, firms can invest in fixed assets to improve the value for shareholders, which can also be used as collateral for leverage, and through increased leverage, it can boost financial performance.

A study by Berger and Di Patti (2006) indicates that leverage is linked to improved profit efficiency. Sulong et al. (2013) and Detthamrong, Chancharat, and Vithessonthi (2017) discovered a significant link between leverage and firm performance. Furthermore, Shazlin, Hisyam, Shan, and Lau (2020) stated that corporations must make leverage decisions, and Chaleeda, Islam, Ahmad, and Ghazalat (2019) suggested that a good mix of debt and equity will assist firms in obtaining profit in the long run.

On the contrary, research by Danso, Lartey, Fosu, Owusu-Agyei, and Uddin (2019) that examines the relationship between leverage and financial distress has shown a positive result, which indicates that firms with debts may be at greater risk of financial difficulty. Danso et al. (2019) stated that higher leverage minimizes firm performance due to complications in raising the equity. Furthermore, corporations that have high leverage have an increased risk level (Dungey and Gajurel, 2015). Deesomsak, Paudyal, and Pescetto (2004) discovered varied and contradictory empirical evidence on the impact of leverage. A study by Osazuwa and Che-Ahmad (2016) on the link between eco-friendliness and corporate value has shown that leverage had no significant influence. According to González (2013), leverage has a negative impact on corporate performance. This finding aligns with Suhaila, Mahmood, and Mansor (2008), who found no evidence between growth prospects and leverage in Malaysia. Equally as important, Buvanendra, Sridharan, and Thiyagarajan (2017) stated that most of the studies ignore optimum leverage in emerging countries, resulting in few studies on the context of emerging economies and placing them in a nascent stage.

2.6. Firm Size

Firm size is used as an independent variable to measure whether it contributes to improving corporate performance, value, and efficiency in Malaysia. It should receive more attention as it is one of the characteristics that

affect corporations in many aspects. Firm size has been categorized into micro, small, medium, and large. The differences between the sizes can be analyzed based on the manufacturing and services. For micro enterprises, the sales turnover is less than 300,000 Malaysian ringgit (RM) and they employ fewer than five people for both manufacturing and services and other sectors. For small enterprises, the sales turnover is between RM300,000 and RM15 million and they hire 5 to 75 employees for the manufacturing sector, and the sales turnover is between RM300,000 and RM3 million and they hire 5 to 30 employees for services and other sectors. For medium enterprises, the sales turnover is between RM15 million and RM 50 million and they employ 75 to 200 employees for manufacturing, and the sales turnover is between RM3 million and RM20 million and they hire 30 to 75 employees for services and other sectors. Any higher than the above numbers are considered large firms.

Putu, Moeljadi, and Djazuli (2014) stated that firm size has an impact on corporate value through financial performance. Hahn and Kühnen (2013) stated that firm size positively affects sustainability reporting. Beerbaum and Puaschunder (2019) indicated that sustainability reporting allows corporations to present clear statements of risks and opportunities. Ekadjaja and Wijaya (2021) indicated that larger firms have bigger advantages in growing their businesses. Thus, firm size affects sustainable growth and affects the profitability level of a corporation. A prior study by Alarussi and Alhaderi (2018) has shown that profitability has become the main concern in Malaysia because it involves other related parties, and firm size characteristics can impact profitability. Firm size improves investors' trust due to firm value on the stock exchange price. Consistent with prior findings, Begenau, Farboodi, and Veldkamp (2018) found that firm size impacts the cost of capital and investment decisions. On the contrary, Doaei, Ahmad Anuar, and Ismail (2015) discovered that firm size has a negative influence on efficiency due to the inability to efficiently utilize resources.

M'ng, Rahman, and Sannacy (2017) revealed that larger firms have a lower risk of bankruptcy than small and medium firms. Larger firms are commonly known to have privileges, such as the ability to generate revenues and economies of scale, and the ability to invest more in marketing, which leads to lower bankruptcy risks. Younis and Sundarakani (2020) stated that larger firms have more adequate resources and are better at applying green supply chain management practices, which lead to advanced performance. Moreover, larger firms can present their products faster due to brand recognition. They can also attract customers faster than small and medium-sized firms due to customer loyalty. In addition, having extensive data guarantees that it will be converted into useful information for the business and will lead to better and more efficient decision making (Rialti, Zollo, Ferraris, & Alon, 2019). Moreover, larger firms have more data, which may give them an advantage that enables them to present a better image to investors.

Begenau et al. (2018) indicated that larger firms are involved more in economic activity, have a longer history, and have bigger data. They also stated that larger firms could grow rapidly due to the ability of investors to process the big data. Melitz and Ottaviano (2008) predicted that larger firms are more influential in the market, and Tongli, Ping, and Chiu (2005) stated that it could speed up corporate growth due to better performance.

Despite the advantages of larger firms, small and medium enterprises (SMEs) play a vital role in Malaysia. According to Malaysian Prime Minister Tan Sri Dato' Haji Muhyiddin bin Md. Yasin, in the annual report of SME Insights (2021), SMEs form 98.5% of business establishments and account for 38.9% of the contribution to gross domestic product (GDP).

Additionally, SMEs benefited from unemployment issues as they employ 7.3 million people. Through SMEs, people who are not employed by larger firms can find employment (Eniola and Entebang, 2015). The government has shown support by introducing many alternatives and assisting SMEs in Malaysia. The Prihatin Economic Stimulus Package and the PENJANA Recovery Plan were introduced by the Malaysian government in 2020 to assist SMEs during the Covid-19 pandemic. The 2021 budget report stated that the Malaysian government had invested RM38.7 billion to help SMEs in Malaysia.

3. METHOD

The 551 firms used in this study are listed on Bursa Malaysia and the data were extracted from 2011–2021; however, only 74 were discovered on the Bloomberg website and only 45 companies have complete data. A quantitative data approach and data collection methods that consist of secondary data are used. Corporate value is calculated using financial statements from Bursa Malaysia, and the ESG scores are extracted from the Bloomberg database. In this research, the pooled ordinary least squares, fixed effects, and random effects methods are utilized to assess whether the combined ESG scores, the individual E, S and G scores, and firm-specific factors impact corporate performance using the Gretl programme.

3.1. Corporate Value

3.1.1. ROA/ROE

The ROA and ROE approaches are increasingly utilized to investigate the relationship between independent factors and company performance. Alareeni and Hamdan (2020) found that ESG disclosure has an effect on the ROA and ROE indicators of corporate performance. Thus, the ROA and ROE methods are applied using the following formulas:

$$ROA = Net\ income / Average\ total\ assets$$
$$ROE = Net\ income / Average\ total\ equity$$

3.1.2. Tobin's Q

This study uses the Tobin's Q ratio to determine corporate value. Nicholas Kaldor created the Tobin's Q ratio in 1966 to determine if a firm or market is overvalued, and it is increasingly used to examine independent variables and corporate value. Mohamad (2020) used the Tobin's Q ratio as a corporate value indicator to determine the effect of the ESG score on listed firms in Malaysia. A study by Atan et al. (2018) on the impacts of ESG factors on firm performance used firm value as indicator. In order to measure firm value, this study uses the Tobin's Q to examine whether the ESG criteria will improve corporate performance using corporate value as an indicator.

- Tobin's Q formula:

$$Tobin's\ Q = \frac{Total\ market\ value\ of\ firm}{Total\ asset\ value\ of\ firm}$$

4. DATA ANALYSIS

This study conducted an F test and Breusch–Pagan and Hausman tests to identify which regression is the most appropriate, and the results showed that pooled ordinary least squares is the best choice.

4.1. The Impact of ESG, E, S and G Scores and Firm-Specific Variables Towards ROA

Table 1 presents the results of the impact of ESG, E, S and G scores and firm-specific variables on ROA. The ESG scores have a negative but insignificant influence on firm value (ROA). This is the same for Environmental and Social scores, which have a negative but insignificant influence on firm value (ROA). The Governance scores show an insignificant positive influence on ROA, Firm Size shows a negative but insignificant influence on ROA, and Revenue Growth and Leverage show a positive insignificant influence on ROA.

4.2. The impact of ESG, E, S and G Scores and Firm-Specific Variables on ROE

Table 2 presents the impact of the ESG, E, S and G scores and firm-specific variables on ROE. According to the results, ESG has a positive but insignificant influence on ROE. This is the same for Environmental and Governance scores, which showed a positive but insignificant influence on ROE. The Social scores show a negative and significant

influence on ROE, Firm Size and Revenue Growth show a negative but insignificant influence on ROE, while Leverage shows a positive but insignificant influence on ROE.

Table 1. The impact of the ESG, E, S, and G scores and firm-specific variables on ROA.

Variable ROA	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed effects	Random effects
	−0.05	0.12**	−0.04	-	-	-
ESG	−1.06	2.21	−1.09	-	-	-
	-	-	-	−0.01	0.04	−0.02
E	-	-	-	−0.81	1.49	−0.92
	-	-	-	−0.02	0.04	−0.02
S	-	-	-	−0.81	0.85	−0.69
	-	-	-	0.0002	0.04	0.01
G	-	-	-	0.01	0.78	0.35
	−1.99	−21.1***	−2.48	−2.02	−21.1***	−2.58
SIZE	−1.06	−3.17	−1.07	−1.06	−3.18	−1.07
	0.005	−0.04	−0.02	0.003	−0.04	−0.02
REV	0.17	−0.76	−0.73	0.11	−0.73	−0.68
	0.41	−2.99**	0.34	0.40	−3.00**	0.32
LEV	0.86	−2.26	0.79	0.84	−2.28	0.77
	22.7	212***	27.5	21.8	212***	26.4
Constant	1.07	3.19	1.08	1.07	3.20	1.08
Observations	408	408	408	408	408	408
R-Squared	0.056	0.54	-	0.06	0.55	-
Number of companies	45	45	45	45	45	45
F-test	-	53.9	-	-	59.3	-
Breusch–Pagan test	-	-	0.13	-	-	0.12
Hausman test	-	-	1.13	-	-	4.36

Note: *** significant at the 1% level; ** significant at the 5% level.

Table 2. The impact of ESG, E, S and G scores and firm-specific variables on ROE.

Variable ROE	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed effects	Random effects
	0.008	−0.002	−0.0002	-	-	-
ESG	1.54	−1.26	−0.15	-	-	-
	-	-	-	0.008	0.002	0.002
E	-	-	-	1.63	1.31	1.65
	-	-	-	−0.006	−0.003	−0.003
S	-	-	-	−1.11	−1.74	−1.75
	-	-	-	0.005	−0.0001	0.0005
G	-	-	-	0.75	−0.07	0.22
	−0.13	0.07	0.0006	−0.16	0.06	−0.005
SIZE	−1.47	0.93	0.01	−1.38	0.84	−0.08
	−0.0007	−0.005	−0.004	−0.004	−0.005	−0.004
REV	−0.11	−1.04	−0.93	−0.49	−1.07	−0.97
	0.12	0.0004	−0.004	0.11	−0.005	−0.01
LEV	1.03	0.03	−0.31	1.02	−0.32	−0.69
	1.10	−0.48	0.20	0.98	−0.38	0.25
Constant	1.55	−0.58	0.32	1.82	−0.48	0.47
Observations	408	408	408	408	408	408
R-squared	0.07	0.79	-	0.10	0.78	-
Number of companies	45	45	45	45	45	45

Variable ROE	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed effects	Random effects
F-test	-	10.4	-	-	12.1	-
Breusch–Pagan test	-	-	1.56	-	-	1.41
Hausman test	-	-	0.02	-	-	0.03

Table 3. The impact of ESG, E, S and G scores and firm-specific variables on Tobin's Q.

Variable TOBIN'S Q	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed effects	Random effects
	0.52	−0.01	0.02	-	-	-
ESG	1.21	−0.24	0.30	-	-	-
	-	-	-	0.38	−0.10	−0.05
E	-	-	-	1.52	−1.62	−1.65
	-	-	-	−0.06	0.14	0.12
S	-	-	-	−0.58	1.19	1.09
	-	-	-	0.04	−0.07	−0.06
G	-	-	-	0.33	−1.16	−1.04
	−3.65	0.49	−0.83	−3.02	0.92	−0.69
SIZE	−0.97	0.44	−0.99	−0.92	0.66	−0.79
	0.74**	0.34***	0.36***	0.64*	0.35***	0.37***
REV	2.04	3.19	3.14	1.72	2.96	3.03
	−0.01	−0.32	−0.50	−0.02	−0.06	−0.33
LEV	−0.01	−0.62	−1.40	−0.01	−0.10	−0.81
	23.5	4.20	16.0**	29.3	3.80	18.6*
Constant	1.02	0.32	2.06	1.10	0.26	1.85
Observations	408	408	408	408	408	408
R-Squared	0.13	0.84	-	0.15	0.85	-
Number of companies	45	45	45	45	45	45
F-test	-	21.0	-	-	34.0	-
Breusch–Pagan test	-	-	8.77	-	-	1.58
Hausman test	-	-	6.34	-	-	0.17

Note: *** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level.

4.3. The Impact of ESG, E, S and G Scores, and Firm-Specific Variables on Tobin's Q

Table 3 presents the results of the impact of ESG, E, S and G scores and firm-specific variables on Tobin's Q. ESG has a positive but insignificant effect on Tobin's Q, the Environmental and Governance scores provide positive but insignificant results, and the Social scores have positive but insignificant outcomes. Insignificantly, Firm Size and Leverage have a positive effect on Tobin's Q. Overall, Tobin's Q reveals that revenue growth is positive and significant.

5. CONCLUSIONS

The ROA, ROE and Tobin's Q methods are increasingly being used to analyze the link between independent variables and corporate value. The measurement of a portfolio's performance to highlight its significant benefit is still in substantial doubt about the role of ESG in shaping corporate value. This study has examined whether the ESG criteria will improve corporate performance using corporate value as indicator. Based on the result of this study, the ESG scores have a negative but insignificant influence on ROA. This is also the case for the Environmental and Social scores, but the Governance scores have shown an insignificant positive influence on ROA. Meanwhile, ESG has a positive but insignificant influence on ROE and Tobin's Q. Individually, the Environmental and Governance scores showed a positive but insignificant influence on ROE and Tobin's Q, and the Social scores have a negative and insignificant influence on ROE and Tobin's Q.

To summarize, most of the data on the association between ESG and corporate value has proved insignificant. Research by Atan et al. (2018) showed that the association between ESG and firm value is negative. On the other hand, research by Junius et al. (2020) assessed the influence of ESG on company performance. The research was performed on 271 publicly listed firms in Indonesia, Malaysia, Singapore, and Thailand over five years by employing multiple regression analysis. The research demonstrated a negative association between the ESG score and company performance. Based on the inconsistent results of this study and those of the previous research, a conclusion on whether ESG criteria promote business value and performance cannot be reached.

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