Labuan Bulletin of International Business &Finance
Volume 21 Issue 2 eISSN 2600- 7894

UMS
UNIVERSITI MALAYSIA SABAH

THE MODERATING EFFECT OF BOARD INDEPENDENCE ON THE RELATIONSHIP BETWEEN SUSTAINABILITY REPORTING AND FIRM PERFORMANCE

Jocelyn Mok Pau Chee[a], Mohd Ashari Bakri[b*]

[a,b] Labuan Faculty of International Finance, Univerisiti Malaysia Sabah, Labuan International Campus, Labuan F.T., Malaysia.
**Corresponding author's email: mohd.ashari@ums.edu.my*

ABSTRACT
The purpose of this study is to investigate the moderating effect of board independence on the relationship between sustainability reporting and corporate performance. The study examined a total number of top 200 firm in Malaysia (based on market capitalization) from the period of 2012 to 2021. The data for the study was obtained from DataStream and the annual report was extracted from Bursa Malaysia's website. To examine the data, the study used panel data analysis, specifically pooled OLS, random and fixed analysis were used. We also use robust standard error estimation as a robust analysis to mitigate the potential problems of serial correlation and heteroskedasticity. The study reveals that board independence play significant role in moderating the relationship between sustainability reporting and firm performance. The results indicate that board independence enhances corporate transparency in a way it promotes firm participation in sustainability reporting and as a results investor that value sustainability reporting stand and proposition would place better firm valuation. The results of the study shed light on how crucial board independence in enhancing the sustainability reporting and firm performance relationship. Additionally, it also helps managers tailor their investment strategies to the needs of their clients, especially to those investors that concern on sustainability reporting.

JEL classification: *G30, G32, G34*
Keywords: *Board independence, firm performance, sustainability reporting, Malaysia.*

Received: July 15, 2023
Revised: November 20, 2023
Accepted: December 4, 2023

1. INTRODUCTION
Corporate performance of a company and sustainability reporting are key variables that have been studied over the last 10 decades. Elkington (2006) defined sustainability reporting as "the integration of social, environmental and economic reporting in corporate reporting", or in other words, "tipple bottom line concept". In Malaysia, sustainability reporting is now mandatory for all listed companies. Every listed company is now required to provide a comprehensive statement on its CSR initiatives as stipulated in the

Capital Market and Service Act 2007 (CMSA). Bursa Malaysia requires companies to prepare a separate sustainability statement that does not have to be included in the CEO's statement. To make sustainability reporting a standard like financial reporting, the Global Reporting Initiative (GRI), a network-based organization, has created a complete framework for sustainability reporting (GRI, 2010).

According to a 2017 study by KPMG, many firms are increasingly addressing social and environmental issues in their sustainability reporting. In 1997, up to 35% of the top 250 Fortune 500 companies by revenue participated in sustainability reporting, and by 2020, this had increased to nearly 96% (Threlfall et al., 2020). Based on KPMG's 2022 Sustainability Reporting Survey, now in its 12th edition, the survey also analyses the sustainability reports of 5,800 companies from 58 countries and jurisdictions, including Malaysia. The increase concern over sustainability reporting triggered not only practitioner but also scholar. Thus, the concern creates many subjects of interest by scholars. One of the recent popular topics on sustainability reporting is, what is the relationship between board independence and sustainability reporting. Aliyu (2019) discovered a significant positive relationship between board independence and environmental reporting. According to Ortiz-de-Mandojana et al. (2016), there is a strong and positive correlation between board independence and environmental performance, and this correlation increases as board independence increases.

In addition, board independence is critical for companies firms, as management must effectively monitor and defend the interests of shareholders while avoiding personal enrichment (Naciti, 2019).Independent board members must ensure that the company firm complies with laws and regulations (Nguyen and Thanh, 2022). In addition, independent board members should keep an eye on the CEO’s actions and decisions in the boardroom. It is generally accepted that independent board members are more inclined to act as effective controllers and objectively evaluate the management and performance of the company (Kesner & Johnson, 1990; Kosnik, 1987). To ensure better environmental performance, a board with a higher proportion of independent directors may not have the necessary basic knowledge (De Villiers et al., 2011). According to Hussain et al. (2018), independent outside directors may be willing to keep their position on the board by maintaining their reputation. Consequently, they should feel responsible and take action to support the company’s efforts to improve its environmental performance.

Corporations can be catalysts for promoting sustainability because of their availability of resources, technologies, and global reach (Starkey & Welford, 2001). The board of directors is regarded as the most significant individual and part of the corporate governance structure that may affect whether a firm decides to reveal more or less of its sustainability reporting to society. The aim of this study is to determine whether governance practices, in particular board independence, can moderate the relationship between sustainability reporting and improved firm performance. The study period covers ten years from 2012 to 2021 and contributes to the body of knowledge in this area by investigating the neglected relationship between board independence as a moderator between sustainability reporting and corporate performance in the Malaysian context. The discovery may help stakeholders to better analyse the firm’s financial performance and its potential for future growth and provide stakeholders with important sustainability reports to ponder on. In addition, the firm can reflect on its past performance while providing an outlook on where Malaysian investors are heading in the future, particularly in terms of economic, environmental and social performance.

2. LITERATURE REVIEW

2.1 Sustainability reporting and firm performance

The sustainability report is indeed very important for the company, as it serves to communicate the company's economic, social and environmental performance to the public. It suggests that this report serves as a basis for external assessments of the company's progress. According to Rikhardsson and Holm (2008), the decision of stakeholders, investors, creditors, suppliers, communities, governments and others related to the company mainly depends on the company's sustainability report. Thus, the factors we focus on in this study are board independence, which may potentially moderate the relationship between sustainability reporting and firm performance.

The impact of corporate sustainability reporting on business performance has been explored in recent years. Buys et al. (2011) found that companies that report according to GRI perform better financially than companies that do not voluntarily report according to GRI. Based on Hussain (2015), the relationship between the financial performance of 100 companies and their sustainability reporting was investigated. The results show that the social and environmental aspects of sustainability significantly increase a company's performance.

In Malaysia, Abd Rahman et al. (2013) examined the relationship between environmental reporting and corporate performance. Using content analysis, an environmental report was produced which showed that 68% of Malaysian companies devote specific sections to environmental practices in their annual reports. It was found that environmental reporting transparency and corporate performance are positively correlated in Malaysia. Nevertheless, there are few studies on the relationship between sustainability reporting and corporate performance in Malaysia. In contrast, Kasbun et al. (2016) found that there is insufficient evidence to support the claim that companies that disclose sustainability reports have better corporate performance than companies that do not. They attribute this to inadequate reporting and lack of research in Malaysia.

In addition, the study by Ortas et al. (2015) used content analysis to assess sustainability reporting in 59 countries using the GRI framework. They examined how the financial aspects of the company and sustainability reporting relate to each other. The results indicate a significant correlation between sustainability reporting and the performance of companies when they actively publish sustainability reports. According to the study by Lourenço et al. (2012), which examined a sample of U.S. companies, investors are primarily interested in companies that have a higher level of sustainability reporting and that have an appropriate business strategy. They also concluded in their study that there is a correlation between sustainability reporting and the market value of firms.

2.2 Board independence

According to agency theory, independent directors help monitor the link between shareholders and management by assigning independent directors a greater monitoring role than internal directors (Faleye, 2015). To monitor management's actions and protect shareholders' interests, independent directors are recommended by agency theory (Chen, Hsu, & Chang, 2016). According to previous research (Berle & Means, 1932; Fama & Jensen, 1983; Jensen 1993), independent directors are more effective than corporate insiders in reducing agency problems. Fama and Jensen (1983) hypothesize that a larger number of independent directors can monitor more effectively, i.e., they have greater control over management decisions. Independent directors are more likely to push companies to disclose more information to outside investors. Successful independent directors are therefore able to make better decisions and also bring focus, clarity, and perspective dialog to the board.

According to Michelon and Parbonetti (2012), independent directors also have a duty to increase the openness of the company and help other stakeholders ensure that their requirements are met. Their main role is to monitor and control management, and they can also influence all decisions made by a company. According to Sundarasen et al. (2016), this condition can both reduce the risk of hidden information and motivate companies to improve their sustainability reporting.

According to agency theory, board independence serves as an internal safeguard to protect shareholders' interests from management opportunism and to regulate top management's actions to ensure that they are in the best interest of shareholders (Fama & Jensen, 1983). The presence of independent directors on the board has a positive impact on a company's operations because they are able to provide a check and balance mechanism to increase board effectiveness and can influence the company's decision making regarding sustainability reporting (Kim & Cheong, 2015). Previous research shows that independent directors and sustainability reporting are positively related (Htay et. al, 2012; Belal, Cooper & Khan, 2015; Shaukat, Qiu & Trojanowski, 2016; Rao & Tilt, 2016). Therefore, the following hypothesis is proposed:

H1: Board independence moderates the relationship between sustainability reporting and firms performance.

3. METHODOLOGY

The methodology of this study is to examine the moderating effect of board independence on the relationship between sustainability reporting and corporate performance in Malaysia over a 10-year period, from 2012 to 2021. Bursa Malaysia repositioned its framework for corporate social reporting framework in 2012, emphasizing the importance of corporate sustainability in achieving value creation. As a result, the study's year begins in 2012 and ends in the most recent year, 2021. The objective of this study aims is to ascertain determine whether board independence can moderate the relationship between sustainability reporting firm performance in Malaysia. The study uses the 200 largest Malaysian companies by market capitalization in 2021, with data for this study sourced from Bursa Malaysia and DataStream. The top 200 largest corporations were selected because the sample size is sufficient for a thorough investigation, which is supported by previous empirical evidence. For example, previous empirical studies examining the relationship between sustainability reporting and corporate performance use relatively similar sample sizes and years of observation, ranging from 64 to 146 companies (Kwaghfan, 2015; Norhasimah, 2016; Berthelot et al., 2012). In fact, we are increasing our sample size and should therefore deliver a much robust result.

The dependent variable in this study's methodology is firm performance, which is measured using ROE to examine the moderating effect of board independence on firm performance. The independent variable is the relationship between sustainability reporting, it uses the dummy variables with a value of 1 if sustainability reporting was published, and corporate performance in Malaysia over a period of 10 years, from the year 2012 to 2021, with a value of 0 if it was not. As a moderating variable, the study uses board independence to calculate the percentage of independent boards of the 200 largest Malaysian companies based on a company's market capitalization. In addition, 2021, using data for this study also obtained some control variables, including company size, leverage, from Bursa Malaysia and historical beta from DataStream. These variables could affect the relationship between board independence, sustainability reporting and corporate performance. Table 1 shows all the variables for this study.

In the study, data are analyzed using Pooled Ordinary Least Square, random effects analysis, and fixed effects analysis. For example, Ntim and Osei (2011) and Ntim and Soobaroyen (2013) use three-panel data techniques in their studies, namely simple pooled ordinary least squares (OLS), fixed effects model, and random effects model, to control for possible unobserved heterogeneities at the firm level. The Breusch-Pagan and Hausman tests are used to determine which method is most appropriate for the data. Prior to the primary analysis, several diagnostic tests are performed to identify issues such as multicollinearity, heteroskedasticity, and serial correlation. We used the following equation to analyze the data:

Equation:

$$ROE_{i,t} = a_{i,t} + \beta 1 Sustainability\ reporting_{i,t} + \beta 2 Board\ Independence_{i,t} + \beta 3 Sustainability\ Reporting * Board\ Independence_{i,t} + \beta 4 Firm\ size_{i,t} + \beta 5 Leverage_{i,t} + \beta 6 Historical\ beta_{i,t} + Year_{i,t} + Industry_{i,t} + \varepsilon_{i,t}$$

Where,

$ROE_{i,t}$ = Firm Performance
β1-β10= Regression Coefficient
ε = Error Model

Table 1: Measurement of variables.

Variables	Measurement	Sources	References
Dependent Variable:			
Return of Equity (ROE)	Company’s net income divided by the value of its total shareholders’ equity	DataStream	Marimuthu and Kolandaisamy(2009)
Independent Variable:			
Sustainability Reporting	Dummy variables. “1” is for the company that got published sustainability reporting or whereas “0” is otherwise.	Annual report/ Bursa Malaysia	Sobhani et al. (2012)
Moderator Variable:			
Board Independence	The number of independent directors on the board (in percentage).	Annual Report	Eng and Mak (2003)
Control Variables:			
Firm Size (Lnsize)	The natural logarithm of the firm’s total assets	Bursa Malaysia / DataStream	Noordin et al. (2017)
Leverage	Total debt/Total assets	Bursa Malaysia / DataStream	Jiang et al., (2017)
Historical Beta	Dividing the security's standard deviation of returns by the benchmark's standard deviation of returns.	DataStream	Bakri et al. (2021)

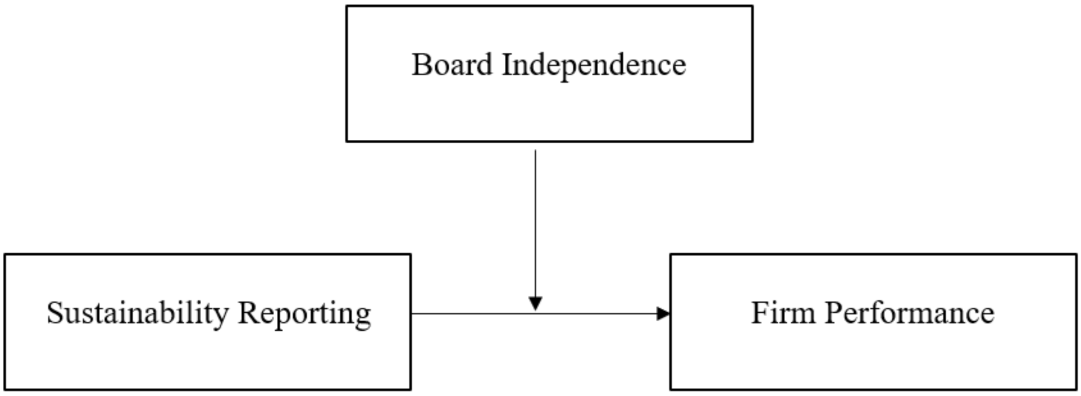

Figure 1: Research framework
Agency Theory.

4. RESULTS AND DISCUSSION
4.1 Descriptive statistics

Table 2: The descriptive statistics + VIF analysis.

Variables	Obs	Mean	Std. Dev	Min	Max	VIF
Susreport	1875	0.7568	0.4291	0	1	1.02
ROE	1888	11.8841	20.0866	-30.6400	121.4000	N/A
Board_Ind	1874	0.4657	0.1158	0.2308	0.7500	1.03
log(total asset)	1928	14.1653	1.6983	10.6249	18.1177	1.32
Beta	1867	0.9931	0.7017	-0.4400	3.0350	1.03
Leverage	1923	0.2151	0.1732	0	0.6248	1.28

*N/A: Not Available

For the 200 largest Malaysian companies, the above table shows the descriptive statistics for the variables under study. From Table 2, it can be seen that the largest mean value of the variables is the logarithmic value (total assets), which has a value of 14.17, while the lowest value is the leverage value, which is 0.22. However, Roe has the largest standard deviation of 20.09, while Leverage has the smallest standard deviation of 0.17.

In addition, Table 2 shows the lowest and highest values for each variable. Table 2 also includes an analysis of the variation inflation factor (VIF), which is an alternative test for multicollinearity. Any VIF value above four should be taken as an indication of multicollinearity. (Hair, Black, Babin, and Anderson, 2010)

It is clear that there is no multicollinearity problem because the largest value of the VIF in this table is 1.32. We also test for multicollinearity using the Pearson correlation matrix, which helps us determine the validity of our test for multicollinearity. Any correlation value above 0.60 is considered to indicate multicollinearity (Hair et al. ,2010). Fortunately, as shown in Table 2, the natural logarithm (Ln) of total assets did not exceed 0.60.

Table 3: Pearson correlation matrix.

	ROE	SusReport	Board_Ind	Lnsize	Leverage	Beta
ROE	1					
SusReport	0.0603***	1				
Board_Ind	-0.0445*	0.0390*	1			
Lnsize	-0.0011	0.1281***	0.1306***	1		
Leverage	-0.0841***	0.0125	0.0386*	0.4549***	1	
Beta	-0.1350***	-0.0006	0.0877***	0.1402***	0.1241***	1

*Denotes significance at the 10% level.
** Denote significance at the 5% level.
*** Denote significance at the 1% level.

To ensure that the results were robust, numerous diagnostic tests were performed in the study. Multicollinearity is evident in Tables 2 and 3, and we also test for heteroskedasticity and autocorrelation. To detect heteroscedasticity, we used the Breusch-Pagan heteroscedasticity test. To address these issues, following Ofori-Sasu, Abor, and Osei (2017), we used a robust standard error to reduce the problem of heteroskedasticity and serial correlation throughout the analysis. The results of this analysis are presented in Table 3.

The study conducts three analyzes, using pooled ordinary least squares (OLS), random effects analyzes, and fixed effects analyzes, to examine the research hypothesis, which is the moderating influence of board independence on the relationship between sustainability reporting and firm performance. To reduce the possibility of heteroskedasticity and autocorrelation as revealed by the Breusch-Pagan and Hausman tests in the previous study, the full analysis is conducted using a robust standard error calculation. In addition, the study also included the year and industry in the OLS analysis.

Table 4 shows that the interaction term between board independence and sustainability reporting has a t-value of -0.24, indicating that it has a negative moderating effect on sustainability reporting and corporate performance. The remaining control variables in Model 1, log (total assets), debt, and historical beta, have a large effect on firm value. Asset growth and leverage are the last two factors that are not highly correlated with firm performance. In addition, year and industry are included in model 1 using OLS.

Furthermore, the interaction term in Model 3 between board independence and sustainability reporting shows a positive moderating effect between sustainability reporting and corporate performance with a t-value of 17.32. The relationship between corporate performance and the control variables in Model 3 are all significant except for the historical beta. Model 2 shows that the interaction term between board independence and sustainability reporting also has a positive impact on corporate performance and sustainability reporting, with a z-value of 17.85. The control variables in this model 3 have shown a significant correlation between corporate performance, except for the historical beta.

Table 4: Main result.

Variables	Model 1: Pooled Ordinary Least Square		Model 2 : Random Effect (RSE)		Model 3: Fixed effect (RSE)	
	Regression Coefficient	T-value	Regression Coefficient	Z-value	Regression Coefficient	T-value
Constant	-0.6098	-0.10	-16.5605	-1.20	-36.4672	-1.68*
Sustainability Reporting	2.5276	0.63	-8.1558	-2.65***	-8.5127	-2.66***
board independence	-1.1289	-0.15	-22.5651	-3.78***	-22.2743	-3.46***
board independence *sustainability reporting	-2.0571	-0.24	17.8511	2.80***	17.3176	2.55**
Lnsize	0.8239	2.47**	3.0725	3.06***	4.4817	2.85***
Leverage	-12.5833	-4.40***	-27.8141	-5.49***	-29.5255	-5.23***
Beta	-2.0698	-3.05***	0.9845	1.09	1.3540	1.40
With Industry and Year	YES		NO		NO	
Breush Pagan	4331.59 (0.0000)				-	
Hausman test	-		87.2 (0.0000)			

*RSE: Robust Standard Error
*Denotes significance at the 10% level.
** Denote significance at the 5% level.
*** Denote significance at the 1% level.

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We also found that leverage consistently had negative results with respect to the control variables in the study, which is consistent with the findings of Hovakimian et al. (2004), who found that leverage can have a negative impact on performance in the long run. Similar results were also obtained by Alipour et al. (2019), who found that a company's leverage has a negative impact on all performance parameters over a period of six years for listed Iranian countries.

5. CONCLUSION

This paper examines the moderating effect of board independence on the relationship between sustainability reporting and firm performance, particularly among Malaysia's 200 largest companies by market capitalization in 2021. Using Ordinary Least Square, Random Effect, and Fixed Effect analyzes for the period of ten years between 2012 to 2021, the results show that board independence has a positive and significant moderating effect on the relationship between sustainability reporting and firm performance.

Furthermore, there is currently a lack of evidence that firms disclose or report on their economic, social, and environmental sustainability perform better than firms that do not. This may be due to inadequate reporting in the Malaysian media. Due to inadequate implementation and inconsistent sustainability reporting, Malaysian sustainability reporting may also demonstrate inconsistent results relative to that of other developed countries.

Nevertheless, there are some limitations in this study. First and foremost, the sample size is limited to the 200 largest companies by market capitalization in 2021. However, there are also some limitations in this study. First, banking institutions and financial services must be excluded from the data. Therefore, the results need to be extended to other sectors to replace them. Second, only Malaysia is considered in this study. Different circumstances and regulations in other countries could lead to a different result that requires further research.

Finally, future studies on sustainability reporting could collect information not only from annual reports but also from company websites to learn more about this area. In-depth interviews could also provide data to help explain, validate and support the findings of the statistical study.

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