Kamaludin *et al.*
Int J Corporate Soc Responsibility (2022) 7:4
https://doi.org/10.1186/s40991-022-00072-2

International Journal of
Corporate Social Responsibility

ORIGINAL ARTICLE

Open Access

ESG in the boardroom: evidence from the Malaysian market

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Abstract

This study examines the influence of boards' characteristics with respect to independence, diversity, and diligence on the environment, social, governance (ESG) disclosure among Bursa Malaysia companies. The board characteristics are proxied by the percentage of independent directors, women on the board, and the number of board meetings, respectively. We collected data from all 785 companies listed on the Kuala Lumpur Stock Exchange. Our final sample consisted of 91 companies that have an ESG disclosure score. Using GLS panel regression analysis, our findings overall indicate that board independence and diversity enhance ESG disclosure practice significantly for companies in all sectors. However, board diligence is related negatively to ESG disclosure. As expected, the significance of the relations among the board characteristics and the ESG disclosures are more profound from 2014 onward, largely because of changes in regulatory requirements. Our study provides new understanding and insights pertaining to the importance of board independence and board diversity on ESG initiatives and disclosures in the Malaysian context. This research complements studies in the areas of sustainability and strategy, and contributes to business practices with respect to the composition of boards of directors.

Keywords: ESG disclosure, Board independence, Women on the board, Board diligence, Malaysia

Introduction

Environmental, social, and governance (ESG) issues have received increasing recognition and are considered so important in value creation that it is becoming an integral part of corporate reporting. Market participants are scrutinizing firms' ability to articulate sustainable long-term value creation through their commitment to ESG initiatives (Eccles & Klimenko, 2019). Socially-conscious investors use ESG criteria to identify 'socially responsible' firms as potential investments candidates (Deng et al., 2013). Market regulators integrate ESG disclosure as part of their listing requirements, either voluntarily or mandatorily, to enhance the quality and transparency of financial reporting. Subsequently, firms pledge their commitments and strategies with respect to the ESG initiatives to fulfill market's expectations.

While external pressure from stakeholders may create incentives for firms to engage in sustainability practices, these goals conflict often with managers' short-term profit orientation. Managers are inclined to deliver abnormal returns for market participants (Mcnally et al., 2017), as these are consistent simultaneously with managerial financial interests (Jensen & Meckling, 1976). On the other hand, institutional investors seek sustainable investments delivered through strong ESG commitments (Eccles & Klimenko, 2019). Such inconsistency in incentives creates agency conflicts (Jensen & Meckling, 1976) that can be mitigated through effective corporate governance, particularly an effective board. An effective board provides monitoring, oversight, advice, and counsel that aligns managerial and shareholders' interests. As ESG practices are critical for firm's long-term value and success, we hypothesized that an effective board characterized by independence, diversity, and diligence, enhances

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firms' ESG practices and disclosure. The importance of ESG shapes the central issue addressed in this study, in which we intend to identify which board characteristics influence ESG initiatives and reporting.

Efforts to achieve sustainability practices through ESG initiatives and reporting are pertinent in both developed and emerging economies. In Malaysia, Bursa Malaysia amended its listing requirements in 2015 to integrate sustainability-related practices. Further, it issued a Sustainability Reporting Guide in 2018 to enhance ESG practices among Malaysian firms. However, despite market regulators' efforts to promote ESG, only 75 Malaysian companies were engaged in ESG reporting when the financial year ended on 31 December 2020.[1] In addition, news reports on environmental negligence and social malpractice (*Malay Mail*, 13 July, 2019) raised suspicion about Malaysian firms' ESG practices. According to insights from practitioners, KPMG stated that sustainability reporting may fulfil the regulatory requirements, but still appears to lack meaning, context, and influence.

Studies on ESG disclosure and reporting in the Malaysian context are still relatively limited and have shown mixed findings. Several leading studies have suggested that independent boards contribute negatively to ESG disclosure (Haniffa & Cooke, 2005 and Esa & Ghazali, 2012), women on Malaysian boards do not affect sustainability practices because of their minimal representation (Alazzani et al., 2019), and the frequency of board meetings does not contribute to sustainability reporting and practices (Ju Ahmad et al., 2017). Using extensive and current ESG data for the Malaysian market, our findings indicate strongly that board independence and diversity enhance ESG disclosure among the Malaysian listed firms, contradicting some earlier studies about the role boards play in ESG practices (Esa & Ghazali, 2012; Haniffa & Cooke, 2005; Ju Ahmad et al., 2017).

This study contributes to the literature in several respects. First, we provide new evidence and insights pertaining to the importance of board independence and board diversity on ESG practices and disclosures in the Malaysian context. Second, our study is comprehensive, as we examine ESG reporting for all firms listed on Bursa Malaysia and our data span from 2006 to 2020. Third, to enhance our results' validity, we analysed the environmental, social, and governance scores both individually and as a composite score. We also incorporated a sectorial and year-by-year analysis to ascertain further the relations between board independence and diversity and ESG practices and reporting. As expected, board independence and diversity enhance ESG disclosure practices significantly for all sectors and are more profound from 2014 onward, largely because of the regulatory requirements. These additional analyses serve as robustness tests for our empirical results. Lastly, we envision that our findings will help policymakers understand the current context of the Malaysian business sectors and formulate regulatory policies that reinforce meaningful and sustainable business practices rather than merely symbolic and legitimising practices.

The remainder of this paper proceeds as follows. Section 2 presents the study's theoretical framework and development of the hypotheses. Section 3 explains the data and methodology used, including the background for the ESG disclosure metrics. Section 4 presents the results of the empirical analysis, including the robustness tests. Section 5 discusses the findings and research implications, and finally, Sect. 6 presents the conclusions with some suggestions for future research.

Theoretical framework and hypothesis development

Many studies on ESG disclosure have drawn insights from the stakeholders' perspective that infers firm's success relates to fulfilling the needs of its multiple constituencies, maintaining good relationships with society, and demonstrating good morals and high values in its business management (Dienes & Velte, 2016). While stakeholder's theory could be insightful, the tenet of ESG disclosure is also consistent with the agency arguments. The primary agency conflict substantiates the need for extensive corporate disclosure. Corporate disclosure and managerial transparency reduce agency costs as they assure shareholders that managers' interests are aligned with theirs' (Jensen & Meckling, 1976). Advancing ESG initiatives does not conflict with shareholders' goal to maximize profits (Eccles & Klimenko, 2019), but actually creates values for firms (Hampton, 2012; Watson, 2011). ESG reporting highlights the importance of investing in firms' intangible and soft assets. The time during which value creation depended on sound investment of capital assets has passed and replaced with digital transformation leveraging on employees' expertise, client base, patents, and R&D.

Despite the claim that ESG creates long-term value for the firm, many managers are still focused on profit maximization in the short-term. Thus, we believe that effective corporate governance mechanisms, particularly an effective board, are critical to enhance ESG initiatives and disclosure. Arguably, if the company prioritises delivering ESG as part of its long-term success and future viability, an effective board would ensure that the company is

[1] Only 75 listed companies compliant with Bursa's ESG measures | The Edge Markets.

set to achieve this. We select three board characteristics that proxy for board effectiveness: Board independence, diversity and diligence. The following section discusses their influence on ESG disclosure, which subsequently helps to formulate our hypotheses.

Board independence

Boards are composed of internal and external directors. The internal directors, also known as the executive directors, are involved directly in the firm's daily operations and decision-making. The external directors or non-executive directors (NEDs) are independent members of the board who have no affiliations with the firm or its employees (Fama & Jensen, 1983), and are elected to the board to monitor managerial decision-making. Management may make decisions that are disadvantageous to the shareholders, and the agency assumptions argue that management behaves opportunistically and pursues their own financial gain at the shareholders' expense (Jensen & Meckling, 1976). As such, having independent and external directors on the board is critical to ensure effective monitoring (Eisenhardt, 1989; Fama & Jensen, 1983; Jensen & Meckling, 1976). As outsiders to the firm, independent directors can provide an objective perspective on management's performance and supervise management to achieve effective oversight and offer advice that is unclouded and unaffected by the daily operations and involvement with the Chief Executive Officer to reduce stakeholders' conflicts of interest (Birindelli et al., 2018; Jizi, 2017). Hence, independent directors promote board effectiveness (Rao et al., 2012).

Investors value ESG disclosure because it provides useful information about environmental risks and policies, in particular, and company's risk management policies in general (Solomon & Solomon, 2006). Any changes to these risks and policies may directly affect companies' values and future prospects (Iatridis, 2013). An independent board provides monitoring to ensure that ESG disclosure takes place in a highly consistent and meaningful manner to inform investors accordingly. Many studies have found that independent directors have a positive and significant influence on ESG disclosure (Barako & Brown, 2008; Iatridis, 2013; Kiliç et al., 2015; Rao et al., 2012). For example, Iatridis (2013), who examined 529 listed Malaysian firms in environmentally sensitive industries between 2005 to 2011, found a positive relation between board independence and the level of environmental performance and disclosures. Independent directors serve as a monitoring mechanism and exert pressure on management to improve the quality of their environmental disclosure. High quality environmental disclosure is value-relevant and improve investors' perceptions. Similarly, Ibrahim et al. (2003) also suggested that an independent board with the presence of NEDs can enhance firms' involvement in ESG activities, as the NEDs have greater organizational roles compared to the executive directors.

However, some studies have also documented a negative relation between board independence and ESG disclosure. Haniffa and Cooke (2005) found that independent or NEDs dominated boards affected firms' sustainability efforts and disclosure negatively. Their study was based on 139 non-financial companies on Malaysia's stock exchange. They argued that this was because most of the NEDs were relatively inexperienced and lacked essential knowledge. In addition, some directors appeared indifferent to societal causes (Haniffa & Cooke, 2005). Esa and Ghazali's (2012) study in the Malaysian context, which investigated 27 government-associated companies between 2005 to 2007, also found results similar to those of Haniffa and Cooke. The authors found that companies that have a greater number of independent directors on their boards appear to disclose less than others. They believed that sustainability engagement may not be these independent directors' primary concern and financial performance is still key in their deliberations.

Despite the mixed findings on the relationship between board independence and sustainability disclosures amongst Malaysian-listed firms, we strongly argue that independent boards with a larger number of independent directors provide effective board monitoring and oversight that is consistent with managerial interest in shareholders' needs, in this instance, on matters pertaining to sustainability issues and disclosures. Hence, we hypothesize the following:

> $H1_a$: Board independence positively affects the level of ESG disclosure.
>
> $H1_{b\text{-}d}$: Board independence affects the level of Environmental, Social and Governance disclosure respectively.

Board diversity

Another board characteristic that is believed to influence ESG disclosure positively is women's participation on boards. Women have a different nature, personality, and views from men that contribute to more effective corporate governance. Women directors showed consideration of the interests of firms' multiple stakeholders (Hillman et al., 2002), and their perceptive consideration enhances the board of directors' service role (Arayssi et al., 2016;

Mallin & Michelon, 2011). Previous studies have found that, compared to their male counterparts, women on the board are academically more qualified (Hillman et al., 2002), have usually gained board experience in small firms (Singh et al., 2008), are less likely to have held top management posts previously (Singh et al., 2008), and possess expertise outside the business field that brings different perspectives to the board (Hillman et al., 2002). Women on boards were also found to be support specialists and influential members of their communities (Hillman et al., 2002). As such, all of the various ways in which women differ from men allow them to contribute greater insights in their roles as board members.

Bear et al., (2010a, 2010b) suggested that women on the board are also more sensitive to sustainability issues. Firms that have a greater number of women board members appear to be more charitable and philanthropic (Wang & Coffey, 1992; Williams, 2003), have a better work environment (Bernardi et al., 2006; Johnson & Greening, 1999), and support a greater number of environmental initiatives (Post et al., 2011). In addition, women, who are usually known for their nurturing nature, are found to be more passionate about social causes (Arayssi et al., 2016; Bear et al., 2010a, 2010b). Bear et al., (2010a, 2010b) argued that women directors determine the type of ESG initiatives a company undertakes. This is measured by the increased number of social activities or the quality of the initiatives reported. Enhanced ESG disclosure and performance demonstrate that the firm is a good corporate citizen. Notably, having women on the board in and of itself is a representation of a socially responsible organization that is aware of gender inclusivity issues (Kiliç et al., 2015). Lastly, women on the board also signal board independence, which has been associated with enhanced ESG disclosure (Barako & Brown, 2008; Carter et al., 2003; Fernandez-Feijoo et al., 2012; Lone et al., 2016; Rao et al., 2012; Velte, 2016).

Arayssi et al. (2016) examined the effects of women on boards on the Financial Times Stock Exchange 350 index between 2007 to 2012, and found that an increase in the number of women on boards enhanced the level and efficiency of ESG disclosure and firm performance. Particularly, gender diversity induces a firm to invest in social engagement and reporting that transmits positive signals about its sustainability orientation, and leads to lower risk and enhanced firm performance (Arayssi et al., 2016). Studies of women on the board and their influence on ESG disclosure and initiatives in emerging markets, including Malaysia, are limited (Alazzani et al., 2019). Foo (2016) reported that in 2015, only 14 percent of the directors on the boards of the top 100 Malaysian-listed companies were women, and this number increased only marginally to 17.9, as the media reported in June 2017, still far from the 30 percent target of women's participation required (Chong et al., 2018). Alazzani et al. (2019) examined the influence of women on boards and sustainability reporting for a sample of 133 firms listed on Bursa Malaysia in 2009 and found that women's representation was only 8 percent. While a positive association has been found between board gender diversity and CSR disclosure, their finding was not significant at the level required (Alazzani et al., 2019). As such, they argued that women on Malaysian boards do not improve CSR disclosure because such a marginal representation is insufficient to influence companies' decisions (Alazzani et al., 2019: cf., Katmon et al., 2019). However, an earlier study by Alazzani et al. (2017) argued that women's board representation affects the choice of sustainability practices, in that they prefer social rather than environmental causes. The authors attributed this preference to the Malaysian culture that "has significant humane orientation" (2019, p. 277).

Based on the foregoing discussion, we expect that women on the board would be a catalyst that encourages firms to focus on matters pertaining to sustainability initiatives and disclosure. As such, we posit that board gender diversity (as measured by the percentage of women on board) influences the level of ESG disclosure. Based on the arguments above, we hypothesize that:

> $H2_a$: Board diversity positively affects the level of ESG disclosure.
>
> $H2_{b\text{-}d}$: Board diversity affects the level of Environmental, Social and Governance disclosure respectively.

Board diligence

Board diligence is another attribute of the board process that enhances its effectiveness (Lipton & Lorsch, 1992). Board diligence is usually determined by the number of board meetings. The frequency of board meetings indicates that the board is monitored actively and managers are kept consistent with shareholders' interests (Vafeas, 1999). Further, a high frequency of board meetings allows better oversight of firm operations that is beneficial to the shareholders (Karamanou & Vafeas, 2005; Lipton & Lorsch, 1992). Board meetings serve as an important venue for discussion and decision-making, and important strategic and operational matters are discussed and deliberated during these meetings. This allows information to be shared that prompts quality decision-making (Birindelli et al., 2018).

Nonetheless, arguments about board diligence present a double-edged sword. While a higher frequency of board meetings is associated with better monitoring, some studies have argued the converse, and stated that more meetings could signal directors' inefficacy, in that more meetings are required because of poor performance in organizing and managing the board agenda during these meetings (Vafeas, 1999). This leads only to greater coordination costs (Vafeas, 1999) without any significant added benefits, particularly given the limited time in which independent directors are able to offer meaningful insights into company matters (Jensen, 1993). Further, more board meetings could simply indicate that the agenda is divided into several meetings without significant discussion of matters related to sustainability issues (Birindelli et al., 2018; Dienes & Velte, 2016).

Although it is simple to measure (Dienes & Velte, 2016), board diligence's effect on financial and non-financial performance, such as ESG initiatives, has not been established well (Birindelli et al., 2018). This may be attributable to the fact that the number of meetings may not necessarily be related to the work accomplished during them (Menon & Williams, 1994). Both Birindelli et al. (2018) and Dienes and Velte (2016) examined the potential relations between board diligence and ESG disclosure in different contexts and industries, and both failed to demonstrate any association between the frequency of board meetings and ESG disclosure and initiatives. In the Malaysian context, Ju Ahmad et al. (2017), who examined the effectiveness of board meetings' frequency on Corporate Social Responsibility (CSR) reporting on the part of public companies listed on the Main Market of Bursa Malaysia, also echoed a similar outcome, and postulated that board meetings should be an important mechanism that directors can use to deliberate on matters pertaining to CSR issues. Nonetheless, their finding for the 450 companies listed between 2008 to 2013 indicated that the frequency of board meetings is not associated positively with sustainability reporting. They argued that frequent board meetings become less beneficial when they discuss only matters related to the normal course of business rather than strategic matters that potentially enhance the company's performance. In addition, the authors argued that independent directors' cannot provide meaningful control over management when the chief executive officers set the meeting agendas.

Despite the lack of findings that support the relation between the frequency of board meetings and ESG disclosure and initiatives, we believe that the complexity of ESG issues requires more attention and deliberation beyond the usual financial performance and reporting issues. As such, we propose that more board meetings (or board diligence) may be required if the board is considering sustainability matters over and above those related to normal business operations. As such, we hypothesize:

> $H3_a$: Board diligence positively affects the level of ESG disclosure.
>
> $H3_{b\text{-}d}$: Board diligence affects the level of Environmental, Social and Governance disclosure respectively.

Data and variables

Data collection

Data were collected from the Bloomberg Professional Service, and we retrieved information about the Environmental, Social, and Governance (ESG) disclosure index from

Table 1 Measurement of variables

Name of variable	Measurement	Sources
Independent variables		
Percentage of independent directors on board	The percentage of independent directors divided by the total number of board members	Haniffa & Cooke, 2005; Herda et al., 2012; Birindelli et al., 2018
Percentage of women on board	The number of women directors on the board divided by the total number of board members	Rao et al., 2012; Alazzani et al., 2019; Birindelli et al., 2018
Number of board meetings	Number of board meetings per year	Lipton & Lorsch, 1992; Birindelli et al., 2018)
Control variables		
Firm size (LOG Firm Size)	Natural log of the firm's total assets	Dienes & Velte, 2016
Profitability (ROA)	Firm's net income divided by the value of its total assets	M. Jizi et al. 2014
Leverage (Leverage)	Firm's total debt divided by its total shareholders' equity	Herda et al., 2012
Dependent variables		
Environmental Disclosure score; Social Disclosure score; Governance Disclosure score, and composite ESG Disclosure scores	A proprietary score Bloomberg developed based on the extent of a company's environmental, social, and governance (ESG) disclosure individually and as a composite score	Tamimi & Sebastianelli, 2017

the company's financial analysis database. The ESG score is the composite score of three dimensions overall: Environmental (E); Social (S), and Governance (G). The ESG score draws from 120 quantitative and qualitative measures that are published in annual reports, sustainability and CSR reports, company websites, press releases, and direct communications from respective companies. The disclosure score ranges from 0 to 100. This score indicates the level of commitment to transparency in the metrics tracked. The types of metrics measured are energy and emissions, waste data, number and percentage of women on the board, independent directors, and workforce accidents, among others (cf., Tamimi & Sebastianelli, 2017).

We collected data for all 785 companies listed on the Main Market of the Kuala Lumpur Stock Exchange (KLSE). Our final sample consisted of 91 companies that reported their ESG disclosure score. We constructed a 15-year panel dataset (from 2006 to 2020) that included 854 firm-year observations after missing values were removed. The information on board independence, diversity, and diligence, and other control variables was also retrieved from the Bloomberg database.

Measurement of variables

Table 1 shows the measurement of all variables. The independent variables are the percentages of independent directors and women on the board, and the number of annual board meetings. To avoid model misspecification, our model controls for other variables that may affect ESG disclosure, among which we selected firm size, profitability, and leverage (Haniffa & Cooke, 2005; Herda et al., 2012). As further tests, we examine the effects of board independence, diversity, and diligence on ESG disclosure with respect to industry classification and calendar year.

Research design

Four models were specified for the analyses as follows:

$$\text{ESG Disclosure Score}_{it} = \beta_0 + \beta_1\%\text{ of INDEP\_DIR} + \beta_2\%\text{ of WOB}_{it} + \cdots \beta_3\#\text{ of BOARD\_MEET}_{it} + \beta_4\text{Log Firm Size}_{it} + \beta_5\text{ROA}_{it} + \beta_6\text{LEVERAGE}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{Environmental Disclosure Score}_{it} = \beta_0 + \beta_1\%\text{ of INDEP\_DIR} + \beta_2\%\text{ of WOB}_{t} + \cdots \beta_3\#\text{ of BOARD\_MEET}_{it} + \beta_4\text{Log Firm Size}_{it} + \beta_5\text{ROA}_{it} + \beta_6\text{LEVERAGE}_{it} + \varepsilon_{it} \quad (2)$$

$$\text{Social Disclosure Score}_{it} = \beta_0 + \beta_1\%\text{ of INDEP\_DIR} + \beta_2\%\text{ of WOB}_{t} + \cdots \beta_3\#\text{ of BOARD\_MEET}_{it} + \beta_4\text{Log Firm Size}_{it} + \beta_5\text{ROA}_{it} + \beta_6\text{LEVERAGE}_{it} + \varepsilon_{it} \quad (3)$$

$$\text{Governance Disclosure Score}_{it} = \beta_0 + \beta_1\%\text{ of INDEP\_DIR} + \beta_2\%\text{ of WOB}_{t} + \cdots \beta_3\#\text{ of BOARD\_MEET}_{it} + \beta_4\text{Log Firm Size}_{it} + \beta_5\text{ROA}_{it} + \beta_6\text{LEVERAGE}_{it} + \varepsilon_{it} \quad (4)$$

In which:

ε=error term; i= company; t=period

The panel data were analyzed using the fixed-effect model, while correcting for heteroscedasticity across companies. The fixed effect model was chosen because both of the null hypotheses were rejected in the redundancy test and the Hausman test of no misspecification of the random effect.

Table 2 Industry sectors and number of firm-year observations

Industry	No. of companies	No. of firm-year observations
Energy	8	70
Materials	4	27
Industrials	17	170
Consumer Discretionary	9	88
Consumer Staples	14	125
Health Care	4	43
Financials	11	109
Information Technology	3	28
Communication Services	8	82
Utilities	5	59
Real Estate	8	53
Total	**91**	**854**

Classification of industries is based on the Global Industry Classifications Standard

Empirical analysis

Malaysian companies' ESG disclosure

Between 2006 to 2020, only 91 companies (11.6%) of a total of 785 companies listed on the KLSE reported their ESG practices as indicated by their ESG disclosure scores. These companies constituted a total of 854-firm year observations of ESG disclosure in the Malaysian context. Of the 91 companies, 22 (24%) provided maximum ESG disclosure between 13 to 14 years, 25 (52%) disclosed between 10 to 12-years, while 15 disclosed less than 5 years; the median disclosure was 11 years. Table 2 lists the companies by industry. ESG disclosures were highest in the industrial, consumer staples, and financial industry sectors. The industrial sector includes companies that belong largely to a sensitive industry and are subject to public scrutiny because of their potential threat to the environment and social conditions (Tamimi & Sebastianelli, 2017). The industrial sector consisted of six companies in the transportation and logistics sector, four in industrial products, six in construction and engineering, and one in office services and supplies. The consumer staples sector (14 companies) consisted predominantly of provision of food, beverages, and tobacco. Six companies are involved with agricultural products, four are manufacturers of packaged foods and meats, two are brewers, and one each is a tobacco and soft drinks manufacturer, respectively.

Descriptive statistics

Table 3 illustrates the descriptive statistics for the dependent, independent, and control variables. The mean ESG score is 26.70, with a minimum of 8.68 and maximum score of 62.40. While the ESG score is still relatively low, there appears to be some improvement in the level of sustainability reporting among Malaysian companies (Wan Mohammad & Wasiuzzaman, 2021). Earlier studies by Ju Ahmad et al. (2017) found that the level of CSR reporting was 21.7% between 2008 to 2013 among the Malaysian companies investigated.

Figure 1 shows an increasing trend in the individual and composite ESG scores between 2006 to 2019. In 2020, the ESG disclosure scores appear to be declining because of some companies' incomplete reporting period. Environmental has the lowest scores, followed by social and governance. Notably, governance disclosure is considerably high, as this is one of the requirements in reporting information on the firm's corporate governance (Bursa Malaysia, 2018). Figure 2 provides the mean number of board meetings for Malaysian listed companies, which generally averages 7 to 8 meetings annually. The percentage of

Table 3 Summary statistics of ESG score and explanatory variables

Variables	Mean	SD	Maximum	Minimum	No. of observations
ESG Disclosure	26.70	12.15	62.40	8.68	851
Environmental Disclosure Score	18.70	12.29	60.47	1.55	653
Governance Disclosure Score	53.87	6.15	73.21	25.00	851
Social Disclosure Score	33.08	15.64	70.00	3.33	700
% of INDEP_DIR	49.93	12.32	100.00	0.00	853
% of WOB	15.07	12.38	57.14	0.00	853
# of BOARD_MEET	7.74	4.03	27.00	1.00	852
ROA	6.88	10.38	73.07	-34.85	849
LOG Firm Size	9.22	1.73	13.63	4.47	853
Debt to Equity	77.76	91.13	780.29	0.00	852

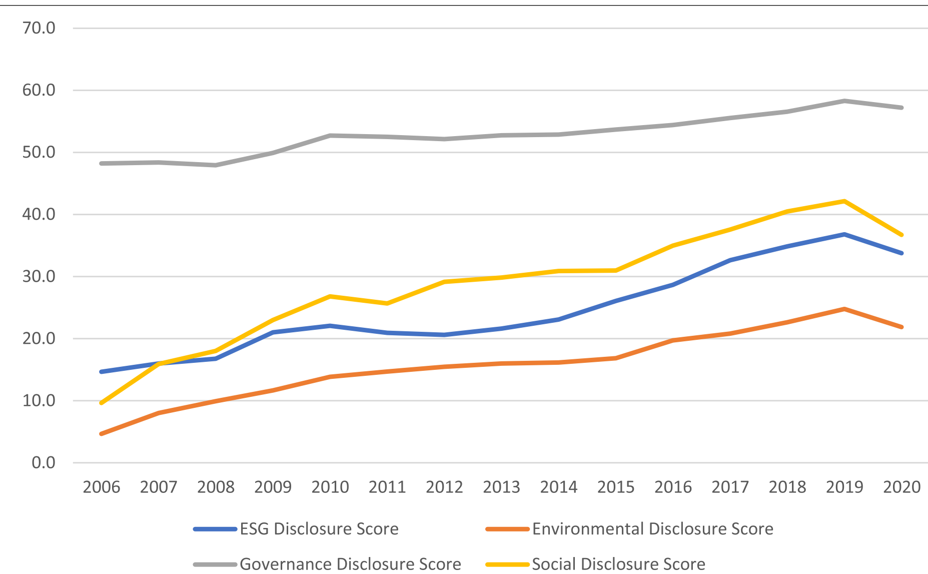

Fig. 1 Mean of environmental, social and governance disclosure scores, and ESG disclosure score yearly from 2006 to 2020

independent directors on Malaysian boards stabilizes at 50% per year (Fig. 3). Women's participation on the board shows an increasing trend at an average of 15% per year. The highest percentage of women directors is 57.14% in the financial services industry. Evidently, 221-firm years (26% of the sample) reported that no women were represented on the board, 316 firm-years (37% of the sample) indicate between 10 to 20% percent of women on the board, while 270 firm-years (32% of the sample) reported greater than 20% percent of women on the board.

Correlation matrix

Table 4 presents the correlation matrix for the dependent, independent, and control variables. All corporate governance characteristics (independent variables) correlate positively and significantly with the ESG score, indicating that firms with good corporate governance practices engage in greater ESG disclosure. The correlations are quite low (highest 0.49 between log of firm size and number of meetings), suggesting minimal levels of multicollinearity between the independent,

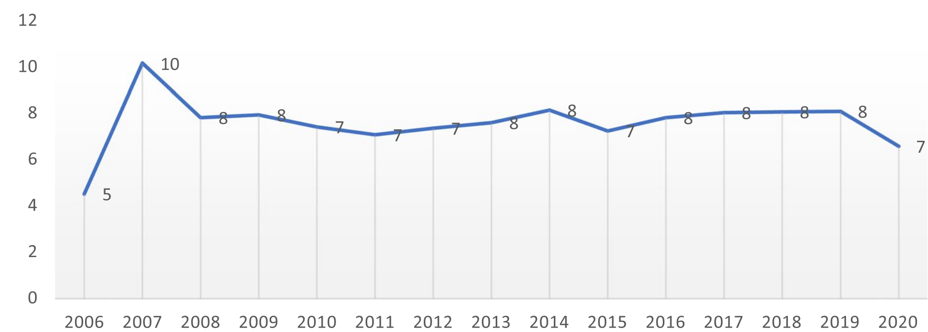

Fig. 2 Mean number of board meetings yearly from 2006 to 2020

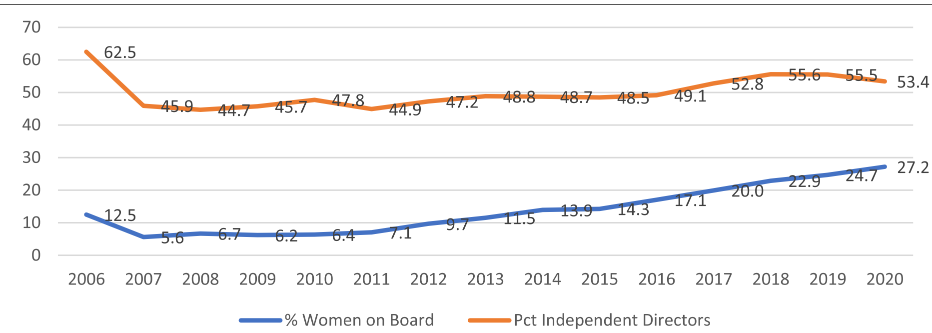

Fig. 3 Mean percentage of women and independent directors on board from 2006 to 2020

Table 4 Correlation matrix of dependent, independent, and control variables

Correlation	ESG Disclosure	% of Independent Directors	% of women on board	# of board meetings	LOG Firm Size	Debt to Equity	ROA
ESG Disclosure	1.000						
% of Independent Directors	0.3265**	1.000					
% of women on board	0.3469**	0.1216**	1.000				
# of board meetings	0.1968**	0.2268**	0.1943**	1.000			
LOG Firm Size	0.1538**	0.1711**	0.1103**	0.4904**	1.000		
Debt to Equity	0.1054**	-0.0987**	0.1015**	0.1144**	0.2680**	1.000	
ROA	0.0867**	-0.1007**	-0.0502	-0.2750**	-0.3897**	-0.0360	1.000

*** $p < 0.01$, ** $p < 0.05$

dependent, and control variables. All coefficients were significant at $p < 0.05$.

Regression results

Our study examines the effects of board independence, diversity, and diligence on the ESG disclosure of Malaysian listed firms between 2006 to 2020. Our model is statistically significant at $p < 0.000$ and the adjusted R^2 are 15.23% (Model 1), 10.69% (Model 2), 11.74% (Model 3), and 12.83% (Model 4), which appears to be consistent with other studies of a relatively similar nature and models (e.g., seeSaid et al., 2009; Esa & Ghazali, 2012). Table 5 provides the regression results of board characteristics with composite ESG disclosure and individual scores, respectively.

In all four models, both board independence and board diversity, as represented by the percentage of independent directors and women on board, respectively, have a positive and significant effect on the dependent variables, which suggests that the two variables influence the composite ESG disclosure score and individual scores, respectively. However, board diligence, as measured by the number of board meetings, has a significant negative influence on the composite ESG disclosure score, and no significant relations to the individual ESG scores. Further, firm size also positively influences the ESG practice and disclosure score among Malaysian firms.

Board independence and ESG disclosure

Our results suggest that independent boards provide monitoring and exert pressure on management to incorporate strategies and decisions related to ESG matters that enhance firms' ESG disclosure and reporting. Our results are consistent with earlier studies that have investigated similar relations between board independence and sustainability reporting practices, such as Barako and Brown (2008), Rao et al. (2012), and Kiliç et al. (2015). In the Malaysian context, our findings are consistent with Iatridis (2013) to a certain extent, although his study addressed only the relation between board independence and the level of environmental performance and disclosure. Interestingly, our results conflict with Haniffa and Cooke (2005) and Esa and Ghazali's (2012) findings, as they posited that board independence leads to less disclosure, not more. Haniffa and Cooke (2005) concluded that Malaysian independent directors lack experience and knowledge and may be indifferent to societal concerns, while Esa and Ghazali (2012) argued that independent directors' focus is simply financial rather than social.

Board diversity and ESG disclosure

With respect to board diversity, the results suggest that women on boards are more receptive to environmental and social causes because of their nurturing nature and personality (Bear et al., 2010a, 2010b). Therefore, in performing their oversight roles, women directors are more sensitive to sustainability issues and initiatives than are their male counterparts, which results in better ESG engagement and reporting (Bear et al., 2010a, 2010b). While our findings corroborate earlier studies on the positive relations between board gender diversity and ESG disclosure and reporting (Arayssi et al., 2016; Bear et al., 2010a, 2010b), they diverge somewhat from those reported for the Malaysian context. Our results do not support Alazzani et al.' (2019) argument, who suggested that women directors are unable to influence companies' decisions, particularly those pertaining to ESG matters, because of their low representation on the board. While this may have been true in 2009 during the period of their study, our findings provide evidence that Malaysian corporate boards have advanced significantly, particularly with respect to including women. Our analysis indicates that women's participation on boards increased greatly from 8% in 2009 (Alazzani et al., 2019) to 23% in 2018. This resonates well with the listing regulators and Malaysian government's calls to increase women directors' participation on boards to at least 30%. At present, Malaysian businesses may not be far from achieving this target-listing requirement.

Table 5 Relations among board independence, board diversity, and board diligence, and the environmental, social, and governance disclosure index

	% of INDEP DIR	% of WOB	# BOARD_MEET	ROA	Log Firm Size	Leverage	Constant
Model 1: ESG_	0.2873**	0.3865**	-0.2528**	0.0189	3.2987**	-0.0001	-21.7020**
Model 2: Environ_	0.2663**	0.3391**	-0.1785	0.0786	1.5780**	0.0002	-15.1766**
Model 3: Govern_	0.1383**	0.1589**	-0.0701	0.0128	0.7972**	0.0	37.8261**
Model 4: Social	0.3369**	0.4354**	-0.0890	0.0459	1.5607**	-0.0005	-5.4752

Model 1 refers to the relations among board independence, diversity, and diligence, and the composite ESG disclosure score, whilst models 2—4 examine the effect on the environmental, social, and governance disclosure score individually. ****$p < 0.000$; ***$p < 0.01$; **$p < 0.05$

Board diligence and ESG disclosure

While earlier studies failed to establish any relations between board diligence and ESG disclosure (Birindelli et al., 2018; Dienes & Velte, 2016; Ju Ahmad et al., 2017) our results indicate a significant negative relation between board diligence and the composite ESG score, suggesting that frequent board meetings have a detrimental effect, rather than a positive effect, on ESG practices and disclosure. Thus, to some extent, our findings confirm further the suspicion that "more is not necessarily better" (Menon & Williams, 1994). More meetings signal only a potential departure from matters pertaining to strategic values and concerns, indicating that boards are ineffective rather than effective in their monitoring and oversight roles (Vafeas, 1999). Nonetheless, we do not find any significant relations between board diligence and its individual ESG elements. In the Malaysian context, Ju Ahmad et al. (2017) also echoed a similar outcome, and postulated that board meetings are not associated positively with sustainability reporting. They argued that frequent board meetings become less beneficial when they discuss only matters related to the normal course of business rather than strategic matters that potentially enhance the company's performance.

With respect to the control variables, return on assets (ROA) and leverage (debt to equity) have no significant effects on Malaysian firms' ESG disclosure and practices. Consistent with previous studies (Birindelli et al., 2018; Dienes & Velte, 2016; Haniffa & Cooke, 2005), firm size affects all four models significantly, suggesting that larger companies engage in better ESG and sustainability practices (Birindelli et al., 2018; Dienes & Velte, 2016) because of their visibility and accountability (Haniffa & Cooke, 2005).

Robustness tests

To validate our results, we conducted two robustness tests on our dataset. We examined the effects of board independence, diversity, and diligence on environmental, social and governance disclosure by sector and year of disclosure. We divided our sample into three main sectors: (1) energy, materials, and utilities; (2) industrials, consumer discretionary, and consumer staples, and (3) others—healthcare, financials, information technology, communication services, and real estate, drawing these categories from Tamimi and Sebastianelli's (2017) industries and sectors breakdown. Category 1 is referred to generally as 'polluters' and involves companies that provide energy, materials, and utilities, and Category 2 reflects the 'sinful industries', which includes alcohol, tobacco, casinos and gaming, which are part of consumer staples and discretionary (Tamimi & Sebastianelli, 2017). Category 3 represents the service sectors.

The empirical results in Table 6 reaffirm our earlier analysis. Board independence and diversity are related positively with the composite ESG score and individual environmental, social, and governance disclosure scores across all three sectors. However, board diligence has significant negative relations between the composite ESG score and environmental disclosure score for sector 1 only.

The second test analyses the relations among board independence, diversity, and diligence, and the composite and individual ESG disclosure scores by their year of disclosure (2006 – 2020). Table 7 shows that there is a

Table 6 Sectorial Analysis

Dependent variable	Sector	% of Independent Directors	% of Women on board	# of board meetings	ROA	Log Firm Size	Debt to Equity	Constant
ESG_score	1	0.3389**	0.3476**	-0.6355**	-0.0562	1.6443	0.0	-3.1468
	2	0.3440**	0.3835**	-0.0935	0.0762	5.3596**	0.0239*	-45.3354**
	3	0.2464**	0.3934**	-0.0584	0.0552	2.9216**	-0.0092	-18.3524**
Environ_	1	0.3888**	0.3481**	-0.5731**	0.0526	0.9291	0.0003	-9.4190
	2	0.3226**	0.3240**	0.1826	0.1071	3.1227**	0.0140	-34.3968**
	3	0.1914**	0.3630**	-0.1088	0.1374	1.3611*	-0.0086	-11.6150
Govern	1	0.1150**	0.1086**	-0.1514	-0.1313**	0.5114	0.0	43.3470**
	2	0.1772**	0.1702**	0.0328	0.0447	1.3176**	0.0087	29.5037**
	3	0.1148**	0.1680**	-0.0768	0.0908*	0.8229**	0.0027	38.3027**
Social	1	0.3799**	0.4986**	-0.3630	0.0925	-1.8567	-0.0002	26.6937*
	2	0.3699**	0.2961**	-0.0089	0.0606	4.0077**	0.0071	-27.8935**
	3	0.3115**	0.4994**	0.070	-0.0360	0.8348	-0.0049	0.1687

Sector 1: Energy, Materials, and Utilities, Sector 2: Industrials and Consumers, and Sector 3: Others–Service Sectors. ****$p < 0.000$; ***$p < 0.01$; **$p < 0.05$, *$p < 0.10$

Table 7 Year-by-year analysis of the relations among board independence, diversity, and diligence and environmental, social and governance disclosure score

Variables		Year-by-year level of disclosure analysis													
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ESG_score	% of INDEP_DIR	0.102	-0.049	0.117	0.009	0.267	0.084	0.189	0.344**	0.292**	0.301**	0.175*	0.141*	0.183**	0.304*
Environ		0.022	0.203	-0.103	-0.040	0.209	0.013	0.230	0.354**	0.268**	0.340**	0.215*	0.120	0.221**	0.424**
Social		0.393	0.053	0.290	0.212	0.255	0.208	0.431**	0.330**	0.196*	0.271**	0.235*	0.2610**	0.165	0.244
Governance		0.132	0.082	0.027	-0.029	0.161	0.023	0.102	0.160**	0.117*	0.147**	0.087	0.037	0.084*	0.071
ESG_score	% of WOB	-0.086	-0.089	-0.160	0.019	0.172	0.020	0.062	0.117	0.132	0.229**	0.036	0.128	0.088	0.021
Environ		0.058	-0.005	0.055	0.103	0.339	0.352	0.336	0.550**	0.183	0.207	-0.066	0.160	0.121	0.178
Social		-0.399	-0.711	-0.424*	-0.027	0.042	0.426	0.393**	0.564**	0.203	0.416**	-0.026	0.128	0.064	-0.209
Governance		-0.016	0.015	-0.081	-0.010	0.120	-0.018	-0.036	0.006	0.044	0.103*	0.045	0.052	0.042	-0.114
ESG_score	# of BOARD_MEET	0.048	0.454	0.377	0.908*	0.352	0.425	0.803**	0.402	0.032	0.042	0.270	0.351	0.142	-0.245
Environ		0.448	0.372	0.299	0.632	-0.130	0.015	-0.048	-0.152	-0.093	0.205	0.471	0.164	-0.223	-0.434
Social		1.506	2.464	0.678	1.648**	1.292	0.795	1.453**	0.019	0.888	0.761	0.742	0.722	0.968**	-0.263
Governance		0.067	0.108	0.168	0.348	0.348	0.291	0.501**	0.253*	0.197	0.168	0.216	0.385**	0.158	0.032
ESG_score	ROA	0.051	0.265	0.169	0.425*	0.267	0.37**	0.442**	0.409**	0.432**	0.361**	0.153	0.298**	0.142	0.532*
Environ		-0.045	0.016	0.279	0.366	0.524*	0.242	0.416**	0.367**	0.493**	0.427**	0.310**	0.342*	0.204	0.566
Social		-0.053	0.130	-0.017	0.334	0.408	0.427*	0.341**	0.290**	0.441**	0.235	0.163	0.272	-0.036	0.759**
Governance		-0.027	0.057	-0.095	0.136	0.093	0.106	0.159**	0.157**	0.167**	0.140*	0.013	0.217**	0.193	0.274
ESG_score	Log Firm Size	-0.353	0.783	-1.643	0.245	0.563	0.683	1.301	1.279	1.795**	1.213	-0.128	0.406	0.600	0.667
Environ		-4.191**	-5.038*	-1.888	-1.903	-0.683	-2.175	-0.579	-0.440	0.672	-0.666	-0.273	0.636	1.115	0.130
Social		-2.933	-5.107	-5.302**	-4.488*	-3.321	-2.554	-2.816*	-0.199	0.321	-0.691	-0.093	0.028	-0.489	1.577
Governance		-0.197	0.532	-0.889	0.267	-0.533	-0.111	-0.009	0.166	0.373	-0.145	-0.609*	-0.111	0.207	0.704
ESG_score	Leverage	0.011	-0.007	0.034**	0.002**	0.001**	0.043**	0.009	0.017	-0.015	-0.004	0.012	0.007	0.011	0.022*
Environ		0.028*	0.046**	0.020	0.001**	0.001**	0.067**	-0.002	0.002	-0.026**	-0.012	0.013	0.013	0.014	0.034**
Social		0.018	0.024	0.058**	0.003**	0.000**	0.032	0.005	-0.017	-0.043**	-0.027**	-0.001	-0.003	0.010	0.018
Governance		-0.007	-0.008	0.010	0.000	0.000**	0.019**	0.003	0.010	0.001	0.006	0.012*	0.002	0.005	-0.004
ESG_score	Constant	13.479	7.188	24.963**	8.512	-2.521	0.753	-10.725	-14.741	-8.403	-3.251	19.984**	15.612**	16.077**	8.787
Environ		41.695**	42.490*	26.932**	24.366	5.001	24.809*	3.187	-6.166	-6.062	2.736	7.028	2.556	-1.317	-8.843
Social		14.780	46.800	51.483**	42.398**	31.700	26.649	15.398	8.389	9.490	16.093	19.866*	15.900	27.554**	12.623
Governance		44.773**	38.416**	56.157**	47.935**	46.288**	47.855**	42.927**	39.463**	41.358**	44.233**	53.010**	50.080**	48.091**	49.345**

Table 7 shows year-by-year analysis of board characteristics and composite ESG and individual disclosure scores. Significant results are concentrated from 2014 onward. ****$p < 0.000$; ***$p < 0.01$; **$p < 0.05$, *$p < 0.10$

significant positive relation between board independence and ESG reporting from 2014 onward, while board diversity and diligence are related positively to ESG reporting only in 2016 and 2013, respectively. Examining the individual scores, board independence is related positively and significantly to environmental disclosure from 2014 onward (except in 2018), and to social disclosure from 2013 to 2018 and environmental disclosure between 2014 to 2016 and 2019. On several occasions (years), social and governance disclosures appear to be related significantly to board diversity and board diligence, in which social disclosure has more significant relations than governance disclosures.

To summarise, Table 7 appears to indicate that board independence has a significant effect on the ESG overall and individual environmental, social, and governance disclosures from 2014 onward. The empirical evidence supports the efforts by the Malaysian Stock Exchange and the regulatory bodies (largely Bursa Malaysia and Securities Commission Malaysia) to achieve sustainability practices and reporting. As stated in the literature, Bursa Malaysia amended its listing requirements in 2015 to integrate sustainability-related matters, including disclosure of material economic, environmental, and social risk, as well as opportunities. Bursa Malaysia (2018) has also issued a Sustainability Reporting Guide as a guideline for its listed issuers in their efforts to embed sustainability practices and reports in them.

Discussion and research implications

Our findings contribute significantly to our understanding of the transformation in corporate governance in Malaysia. When Haniffa and Cooke (2005) failed to establish positive relations between board independence and ESG disclosure, the authors questioned the maturity of the Malaysian boards at the time. They argued that independent directors were inexperienced, lacked knowledge, and demonstrated an indifferent attitude toward societal concerns. This provides an undesirable view about the Malaysian boards, which appeared to be novices with a short-term orientation. However, our findings offer new insights into Malaysian corporate boards. There has been a certain degree of transformation in the outlook and attitude toward environmental and social concerns. Our study finds that the presence of independent directors enhances ESG reporting and disclosure. Now, they influence companies' strategic agendas positively in such a way that they have extended reporting beyond their financial performance alone. Further, their oversight, advice, and counsel tend to affect ESG practices and reporting positively. Similarly, our findings highlight the significant role women directors play in monitoring and overseeing ESG activities that were not evident previously. An earlier study by Alazzani et al. (2019) suggested that the number of women directors on Malaysian boards was too small to influence a company's decision. We argue that women's representation has increased and their presence and participation affect the level of ESG disclosure positively today. While evidence of board diligence appears significant only at the composite ESG level, it still implies that frequent board meetings may not necessarily be effective to ensure ESG engagement and practices. This suggests that less frequent board meetings can influence ESG disclosure and practice effectively when companies make concerted efforts to engage in ESG.

Despite the increasing prospects of ESG practices and reporting amongst Malaysian companies, the actual participation rate is still very low. The remaining 88 percent of Malaysian corporations listed on the Main Market remain silent about their ESG practices. We propose that, through its specific Ministry, the government uses the range of tools at its disposal to encourage listed corporations to engage in meaningful sustainability practices. Some of these include regulations, information programmes, innovation policies, government grants, and tax incentives. For example, the government can provide grants to help asset-intense corporations install pollutant and emission tracking devices and systems to monitor their environmental performance. Similarly, governments can also levy penalties on corporations and corporate boards that fail to observe their environmental obligations.

Listed corporations should be encouraged and rewarded if they qualify, and listed within the local and international sustainability indices that track environmental and social performance specifically, such as Dow Jones Sustainability Indices, S&P ESG Indices, and the FTSE4Good Bursa Malaysia Index. Further, the boards of these corporations should be recognized and applauded for their leadership in promoting ESG practices. Perhaps benchmarking and ranking corporate boards according to their initiatives and success in promoting ESG practices will also encourage continuous board monitoring and oversight of sustainability practices.

Evidently, the listing and market regulators' policies that were in place helped increase the country's ESG level overall. Thus, in the future, additional listing and regulatory policies that enhance organisational commitments to environmental and social practices can also enhance ESG practices. Listing regulators should devise policies and incentives for smaller and emerging corporations listed on the KLSE (from ACE and LEAP markets) to encourage early participation and engagement in ESG practices.

In many circumstances, sustainability reporting may have fulfilled regulatory requirements, but still lack meaning, context, and influence (KPMG, 2017). Organisational responses to ESG reporting vary across corporations, which suggests different levels of conformity, including one that is merely symbolic in fulfilling market participants' expectations (Clementino & Perkins, 2021). As a result, corporations still commit environmental negligence and social malpractices widely (*Malay Mail*, 13 July, 2019) despite their stated commitment to ESG, suggesting a significant decoupling between disclosure and practices (Clementino & Perkins, 2021). To eliminate this gap, we argue that boards of directors play a critical role as an internal governance mechanism in aligning and monitoring managerial behavior that supports meaningful and effective ESG disclosure and practices. With convincing evidence to suggest that Malaysian boards have to some extent matured and transformed to respond to environmental and social concerns, it is timely for listing regulators to assign direct accountability to corporate boards to promote ESG practices.

Conclusion

Based upon previous literature that has supported the roles of board monitoring and oversight in leading a firm's strategic value-creating activities through its ESG initiatives, we examine the relations among three board characteristics, independence, diversity, and diligence, and ESG reporting from 2006 to 2020 in ninety-one companies listed in Bursa Malaysia. Our principal findings reveal that board independence and diversity have a positive influence on the sample companies' ESG disclosure practices overall, as well as their disclosures for the environmental, social, and governance sub-categories. Further tests also reveal that the positive effects of board independence and board diversity are prevalent in all sectors, primarily from 2014 onward. This study contributes to the existing literature in several important ways. First, it includes a much more recent sample than those in previous empirical studies. As a result, it provides new evidence on the significant roles that board independence and diversity play in ESG initiatives in the Malaysian context. It demonstrates that board independence and diversity enhance ESG disclosure, which earlier studies in the Malaysian context failed to establish. Second, it provides insights for listing regulators and policymakers to encourage firms' continuous practice of good governance, which enhances their non-financial performance and value-creating activities inherently through their sustainability initiatives. Further, the study provides evidence of corporate governance reform on the part of Malaysian firms. It shows Malaysian businesses and directors' level of maturity and awareness of the importance of environmental, social, and governance issues. Inherently, focusing on ESG initiatives helps companies "do better by doing good."

Future studies should extend this research to include the relations among more corporate governance characteristics, such as the executives' compensation, board size, audit committee effectiveness, existence of block or/and foreign ownership, and ESG disclosure. Perhaps future work can supplement the ESG score with other ESG performance ratings, such as KLD ratings, FTSE-4Good, and sustainability ratings, to check our findings' robustness and consistency. Further, research should also be extended to other emerging markets in the Asian context to gain further understanding of ESG practices and reporting and the subsequent success of corporate governance reforms that enhance investors' confidence through greater transparency and disclosure.

Abbreviations

ACE market: Access, Certainty, Efficiency market on Bursa Malaysia is a sponsor-driven market designed for companies with growth prospects; CSR: Corporate Social Responsibility; ESG: Environmental, social and governance; FTSE4Good: Financial Times Stock Exchange- Russell Group socially responsible index series; GLS panel regression: Generalized Least Square panel regression; H: Hypothesis; KLD rating: Kinder, Lydenberg, Domini Research & Analytics (KLD) rating; KLSE: Kuala Lumpur Stock Exchange or Bursa Malaysia; LEAP Market: Leading Entrepreneur Accelerator Platform Market on Bursa Malaysia; NEDs: Non-executive Directors; R&D: Research and Development; ROA: Return on Assets; S&P ESG Index: Standard & Poor's Environmental Social and Governance index.

Authors' contributions

KK designed, collected, and interpreted the data and write the manuscript, II analyzed and interpreted the data and contributed to writing the manuscript, SS and OF interpreted the data and contributed to writing the manuscript. All authors read and approved the final manuscript.

Funding

None.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Competing interests

The authors declare that they have no competing interests.

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Received: 1 February 2022 Accepted: 12 June 2022
Published online: 27 September 2022

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