

# BOARD ATTRIBUTES AND SUSTAINABILITY REPORTING QUALITY IN FAMILY FIRMS: EMPIRICAL EVIDENCE FROM MALAYSIA

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**Abstract:** *This study aims to examine the effect of board attributes on sustainability reporting quality in family firms. This study was conducted on a sample of 233 family firms listed on Bursa Malaysia from 2017 to 2018 using OLS regression. Results suggested that board independence and female directors are positively linked with the sustainability reporting quality (SRQ). This implies that these board attributes have positive influence to enhance the quality of sustainability reporting of Malaysian family firms. However, this study demonstrated that board education level and board education background have no significant impact on SRQ. The results indicated that boards with diverse education background and level are not influential to improve the sustainability reporting decisions of firms in the presence of concentrated family ownership. The current study fills the literature void by providing additional evidence on the impact of board attributes, focusing on board characteristics and board diversity on SRQ in Malaysian perspective. The findings assist regulators and policy makers to better understand the impact of corporate governance practices on SRQ, primarily on family firms as family firms dominate about 70 percent of listed firms in Bursa Malaysia. The findings also benefit practitioners and corporate management by providing guidelines and valuable input to better manage their sustainability reporting quality as recommended by MCGG guidelines.*

**Keywords:** Board Characteristics, Sustainability Reporting, Family Firms, Malaysia, CSR

## Introduction

Family firms are a leading organizational form across the world (Gavana et al., 2023). In Malaysia, about 70 percent of listed companies are family-owned firms (Wan Mohammad, 2015). Batu Kawan Berhad, Berjaya Corporation Group, Sunway Berhad, IOI Group, Genting Group, and YTL Group are some of the most prominent Malaysian family businesses. In other words, family ownership is becoming increasingly important in accelerating Malaysian economic growth. Past studies show that in most countries, family ownership is central, and it is the most common type of business organisation in the world (La Porta, 1999; Silanes & Shleifer, 1999). Thus, family business is a common business scenario in both developed and developing countries (Anderson & Reeb, 2003). It has been reported that family businesses contribute about 70% – 90% of global GDP (Prencipe et al., 2014). Furthermore, Eng and Mak (2003) find that the financial reporting quality is affected by ownership structure. The structure governs the level of monitoring and, as a result, the level of disclosure. Miller and Le Breton-Miller (2022) highlighted that family firms with more independent boards are better equipped to incorporate diverse stakeholder perspectives, leading to more robust CSR practices. However, this can be complicated by the family's desire to maintain control and influence.

Previous studies identify family firms with higher disclosures and earning quality in Malaysia (Hashim, 2009; Nahar, 2010; Wan-Hussin, 2009) and with lower disclosures (Haniffa & Cooke, 2002). According to Barontini and Caprio (2006), family firms perform better than non-family firms because families have more particular knowledge of the firm (James, 1999; Sirmon & Hitt, 2003). Study by Wang (2006) also discovered that well-established family firms avoid managerial opportunism in order to safeguard their family's names and reputations and sustain higher performance. In addition, family businesses are often passed by the current generation to the next one and thus have a long-term orientation. Thus, a close relationship exists between the family businesses and the controlling families, good reputation and image become more important (Zeng, 2021).

Additionally, several studies have examined the relationship between ownership structure and voluntary disclosures in Malaysia, (for examples, Akhtaruddin et al., 2009; Haniffa & Cooke, 2002; Mohd Ghazali & Weetman, 2006; Mohd Ghazali, 2007). Evidence from other countries, for example; study by El Ghoul et al. (2016) found that family-controlled firms have lower CSR performance than non-family-controlled firms, which supports the expropriation hypothesis of family control. Cabeza-García et al. (2017) also found that family ownership has a negative effect on firms' commitment to CSR reporting. However, all the prior studies only examined the direct relationship between ownership structure and voluntary disclosures. These studies also look at the disclosure quantity instead of the disclosure quality impact. However, their findings are inconclusive. The current study specifically focusses sustainability reporting quality on family firms in Malaysia.

Besides, another issue drawn from previous studies that affect the CSR is the influence of family-owned firms in corporate decision-making. This issue is important due to its implication with corporate governance and issue in agency theory. In other words, the ownership structure is an important variable in corporate governance studies as it influences who will have the ultimate decision-making power in a corporation (Zattoni, 2011). It is also considered an important factor to influence CSR disclosure (Habbash, 2016; Mohd Ghazali, 2007). However, study by Rees and Rodionova (2015) argued that the family-owned firms are guided by personal benefits and less motivated to take environmental, social, and governance issues into consideration. When the family ownership is high in the company, the monitoring role of corporate boards decreases

(Jensen & Meckling, 1976), thus reduce the monitoring effectiveness of independence directors (Saleem & Alzoubi, 2016). Besides, the controlling families are more likely to appoint independent directors to seek expertise and advise on strategic director rather than give them the responsibility of monitoring and controlling managerial activities (Anderson & Reeb, 2004). This in turn suggests that the domination of family members on corporate boards has a negative influence on the management's decisions to provide CSR disclosure (Abdullah, 2011). According to Ibrahim and Abdul Samad (2011), family members are more risk-averse and focus on family interests, which reduces value of the firm in family firms.

The current study investigates the relationship between board attributes and sustainability reporting quality of Malaysian family firms using agency theory. It is widely believed that family members may actively involve in the companies' management, which might strongly affect the board's decisions (Lokman et al., 2014) such as disclosure decisions. Therefore, the potential effect of family ownership on the effectiveness of the board in enhancing the disclosure reporting quality is still questionable. Despite recognizing its crucial role in the Malaysian corporate landscape, to date, to the best of the researcher's knowledge, there are no research investigating the relationship between board attributes and sustainability reporting quality, primary on family firms. The scarcity of previous studies that linked between family ownership, corporate governance practices, and reporting disclosures, together with mixed findings on the relationship between these variables, motivate this study to investigate these variables further. The findings suggested that board independence and female directors are positively influences the sustainability reporting quality. However, this study failed to demonstrate a relationship between board education level and background and sustainability reporting quality of Malaysian family firms.

The current study is expected to add to the existing body of knowledge by focusing on family firms that has not been previously considered in the Malaysian context through agency theory. Besides, most of the prior studies have only looked at the direct relationship between these variables based on findings from listed companies on Bursa Malaysia in general. Additionally, this study is expected to aid policymakers and corporate leaders in developing strategies to make the company more socially responsible, which may have an impact on company performance in family businesses. Managing CSR activities strategically may result in favorable outcomes. Accordingly, by implementing effective corporate governance practices, family businesses may be motivated to disclose high reporting quality to reduce uncertainty, thus increases investors' confidence towards businesses. Finally, the finding also provides useful information to the investors in evaluating the impact of effective corporate governance on sustainability reporting quality, especially in the family-owned firm. As for family-owned firms to remain competitive in the market, these firms need to comply with good corporate governance practices according to MCG guidelines.

## Literature Review

According to many studies in ownership structure, a family business is thought to be the most widely known type of ownership around the world (La Porta et al., 1999). Families and business groups also dominate corporate control in emerging markets (Silva & Majluf, 2008). Malaysia is also clearly different from the western countries in terms of family ownership structures as Malaysia's majority of companies are family-owned and highly concentrated (Hashim & Ibrahim, 2013). The importance of family ownership has been proven in research by Mohamad Anwar (2016) and Wan Mohammad (2015) from the Malaysian perspective. This is further supported by other studies that discovered the influence of family ownership as strong in Asian

countries including Malaysia (Fan & Wong, 2002). However, the previous findings were discovered to be mixed results (Akhtaruddin et al., 2009; Haniffa & Cooke, 2002; Mohd Ghazali & Wetman, 2006; Mohd Ghazali, 2007).

Akhtaruddin et al. (2009) investigated the relationship between family control and voluntary disclosure of listed firms in Malaysia. Their results suggested a negative association between variables. Their findings are also consistent with Ho and Wong (2001) and Mohd Ghazali (2007), implying that companies with higher ownership concentration disclose significantly less CSR information in their annual reports. Nevertheless, Said et al. (2009) examined the relationship between ownership concentration and CSR disclosure. A positive relationship was observed between these variables. This is further supported by Chau and Gray (2010), who found a positive relationship between family ownership and voluntary disclosure in Hong Kong samples. In addition, Mohd Ghazali and Weetman (2006) claimed that highly concentrated firms might be forced to provide additional disclosures due to conflict of interest between the controlling and minority groups. However, they found an insignificant relationship between the two variables in the Malaysian perspective.

A study by Rees and Rodionova (2015) argued that family members have private wealth invested in the firm and have long-term commitment to this investment, they will be guided by personal benefits and will have less motivation to take environmental and social issues into consideration. Family businesses may publish CSR information to preserve their reputation rather than defend minority interests, thus reporting quality is likely to be worse in family businesses than in non-family businesses. In other instances, the dominant family may expropriate the rights of minority shareholders, lowering the effectiveness of corporate governance that influences corporate decisions and the level of disclosure quality (Anderson & Reeb, 2004). Their results are in line with Barnea and Rubin's (2010) findings, which indicate that CSR-related actions are adversely linked to insider ownership concentration. This is backed up by Aoi et al. (2015), who discovered that Japanese non-family businesses outperform family firms in terms of total corporate social performance. Additionally, earlier research presented that family businesses are more socially responsible than non-family businesses (Cuadrado-Bullesteros et al., 2014; Reinking et al., 2011; Dyer & Whetten, 2006). Zhang et al. (2024) compared family firms in Europe and Asia, revealing significant differences in CSR reporting practices linked to cultural attitudes towards family influence and board governance.

Although family ownership is the most prevalent form of corporate control globally, and particularly dominant in Malaysia, where firms are often highly concentrated and family-owned, prior research on its influence on corporate social responsibility (CSR) disclosure has produced mixed and inconclusive findings. From the lens of agency theory, family ownership can have dual implications: on one hand, it may reduce agency costs due to aligned interests between owners and managers; on the other, it may give rise to Type II agency problems, where controlling family members expropriate the rights of minority shareholders, potentially leading to lower CSR disclosure and reduced transparency. While some studies report a negative relationship between family ownership and CSR disclosure, suggesting entrenchment and opacity, others find positive or insignificant associations, implying reputational concerns or regulatory pressures may counterbalance self-interest. Additionally, cross-cultural evidence points to variations in CSR practices between family and non-family firms, but these insights remain underexplored in the Malaysian context. This inconsistency highlights a research gap in understanding how agency conflicts within family firms influence CSR behavior, particularly



in emerging markets. Therefore, further investigation is needed to clarify whether family control in Malaysia mitigates or exacerbates agency problems in the context of CSR disclosure.

## Hypotheses Development

### Board Independence and Sustainability Reporting Quality

From an agency theory perspective, boards serve a monitoring function to ensure the alignment of managerial actions with shareholder interests (Fama & Jensen, 1983), reducing agency costs that may arise when managers pursue their own interests at the expense of shareholders. For example, independent directors are fully independent of the management and do not enjoy personal interests in the company (Bansal et al., 2018). Studies by (Barako and Brown, 2008; Khan, 2010) showed that a greater proportion of independent directors in a firm increases the focus on CSR disclosure. Khan et al. (2013) also found similar results in developing and emerging economies, whereas CSR-Governance dimension is positively associated with the presence of independent directors (Beji et al., 2021). Additionally, Zhou et al. (2021) explored the impact of board independence on CSR reporting quality in China. Their study found that higher board independence was associated with increased CSR disclosures, particularly in firms with strong environmental and social impacts.

Besides, Smith and Talley (2022) conducted a study across multiple industries in the United States and found that firms with a higher percentage of independent directors produced more comprehensive and transparent CSR reports. This is further supported by Liu et al. (2023) examined the influence of board independence on CSR reporting quality in European companies. Their findings indicated that independent boards contribute to improved CSR reporting practices, particularly when combined with other governance mechanisms such as CSR committees. Chen et al. (2024) found that family firms with high levels of board independence are more likely to engage in transparent and extensive CSR reporting.

Conversely, Huang and Wang (2023) suggested that family firms with less independent boards may engage in CSR reporting as a means to enhance their image and legitimacy without substantial changes in actual CSR practices. Hashim and Ibrahim (2013) indicated that the roles of independent directors are weaker in family-controlled firms, implying that independent directors are less effective in Malaysian family-controlled firms. Bansal et al., (2018) showed that board independence is negatively associated with CSR disclosure practices using an international sample from 29 countries.

Nevertheless, some studies reported no relationship between independent directors and CSR disclosure among US and European firms (Michelon and Parbonetti, 2012). Prado-Lorenzo and Garcia-Sanchez (2010) report similar findings in the case of disclosure of information related to greenhouse gas emission. Said et al. (2009) also demonstrated insignificant relationship between independent directors and CSR disclosure practices among Malaysian firm. Moreover, Haniffa and Cooke (2005) show that independent directors discourage CSR disclosure in the firm. For instance, Kaczmarek et al. (2023) found that while greater board independence tends to improve transparency and governance, family firms might still face unique challenges in balancing family interests with broader stakeholder expectations. Therefore, we state the following hypothesis:

H1: There is a positive relationship between board independence and sustainability reporting quality in family firms.

### Female Directors and Sustainability Reporting Quality

In general, women are deemed to be more concerned with social issues (Elm et al., 2001) and differ from men with regard to moral and ethics (Jafee & Hyde, 2000). Studies by (Huang & Kisgen, 2013; Jeong & Harrison, 2017) claimed that women have different ways of thinking, have superior communication skills, are less prone to suffer from overconfidence, and provide unique resource portfolios, including distinct risk-taking attitudes which are likely to predispose them toward a positive attitude toward CSR. Research by Adams and Funk (2023) found that female directors often bring different perspectives and approaches to governance, which can positively impact strategic decisions, including those related to CSR. Besides, a study by Beji et al. (2021) found that board gender diversity is positively associated with human rights and corporate governance dimensions of CSR performance.

Additionally, there are several recent research has increasingly focused on the role of female directors in shaping CSR practices within family firms. Most of the findings suggest that female directors can positively influence CSR reporting quality, although the impact may vary depending on the degree of family involvement and other contextual factors. For example, García-Sánchez et al. (2024) examined the role of female directors in family firms and their impact on CSR reporting quality. They found that female directors tend to improve CSR reporting by promoting greater transparency and accountability. However, the effect is more pronounced in family firms where there is less family control over decision-making processes. Zhang et al. (2023) highlighted that the presence of female directors in family firms leads to higher CSR reporting quality, as women are more likely to champion sustainability initiatives and advocate for comprehensive reporting. The study noted that this impact is moderated by the extent of family influence on board decisions.

García-Meca et al. (2023) argued that in family firms, female directors may face unique challenges due to the strong influence of family members in decision-making roles. However, they also have the potential to drive more inclusive and responsible business practices, benefiting from their diverse perspectives. For example, Pérez-Batres and Ramirez (2024) demonstrated that family firms with female directors are more likely to engage in transparent and detailed CSR reporting. Female directors often champion issues related to social responsibility and environmental sustainability, which can lead to more comprehensive CSR disclosures. Furthermore, Nielsen and Huse (2023) found that family firms with female directors tend to prioritize long-term social and environmental goals over short-term financial gains. This orientation contributes to more robust and meaningful CSR reporting.

Fletcher and Kambhampati (2024) found that family firms with female directors often show improved CSR performance, including better environmental practices and social initiatives. This improvement is attributed to the diverse perspectives and increased emphasis on ethical behavior brought by female directors. Wu et al. (2023) highlight that while female directors can enhance CSR reporting, they may encounter resistance in family firms where traditional gender roles and family control are prevalent. Despite these challenges, female directors can drive positive change by advocating for more comprehensive and transparent CSR practices. Thus, the second hypothesis is as follows:

H2: There is a positive relationship between female directors and sustainability reporting quality in family firms.

### **Board Education Level and Sustainability Reporting Quality**

The relationship between the educational level of board members and CSR reporting in family firms is a relatively new but growing area of research. The educational background of board members can significantly affect their decision-making and governance practices. Zhang and Zhang (2023) discovered that board members with higher educational qualifications tend to bring more diverse knowledge and expertise, which can enhance the board's ability to address complex issues, including CSR. Their study highlights that education often correlates with better strategic thinking and a greater understanding of stakeholder expectations. Moreover, boards with members holding advanced degrees or diverse educational backgrounds are generally more adept at integrating CSR into their strategic frameworks. Miller and Rajan (2024) demonstrated that educationally diverse boards are better equipped to understand and address the multifaceted nature of CSR, leading to more effective CSR strategies and reporting.

Research also suggests that board members with higher educational levels contribute to more detailed and transparent CSR reporting. Miller et al. (2024) found that family firms with board members holding advanced educational degrees are more likely to produce detailed and accurate CSR reports. This is attributed to their ability to better understand the complexities of CSR and the importance of transparent communication with stakeholders. Regarding the director's educational level, post-graduated directors are positively and significantly associated with overall CSR score and all CSR sub-scores, except the corporate governance one (Beji et al., 2021). Smith and Lewis (2024) examined how the educational qualifications of board members impact the alignment of CSR with firm strategy. Their study found that boards with higher educational levels are more likely to integrate CSR into the firm's strategic objectives, resulting in more strategic and coherent CSR reporting. Therefore, boards with higher educational levels tend to advocate for more rigorous and transparent CSR reporting. The third hypothesis is as follows:

H3: There is a positive relationship between board education level and sustainability reporting quality in family firms.

### **Board Education Background and Sustainability Reporting Quality**

The educational background of board members can influence governance quality and decision-making processes. Zhuang et al. (2018) highlight that boards with members who have diverse educational backgrounds are better equipped to handle complex issues, including CSR. Jansen et al. (2023) found that boards with members who have strong educational backgrounds are more likely to prioritize CSR and ensure that the reporting reflects comprehensive and accurate information. Their education often equips them with the skills to understand and implement best practices in CSR reporting. Smith and Lewis (2024) demonstrated that such boards often ensure that CSR is aligned with the firm's long-term goals, resulting in CSR reporting that reflects both strategic intent and operational practices.

Recent studies have explored the broader impact of educational diversity on CSR performance, not just reporting. Widodo et al. (2023) found that boards with members from diverse educational backgrounds often show better CSR performance. The variety of perspectives and expertise helps in identifying and addressing CSR issues more effectively, which is reflected in enhanced reporting. López-Fernández et al. (2023) found that in family firms, the educational background of board members can influence the integration of CSR practices into the firm's culture. Study by López and Gómez (2023) reported that board members with advanced degrees or professional qualifications are more likely to have a better grasp of CSR concepts and best

practices, which translates into more effective oversight and reporting on CSR activities, thus, increase CSR reporting.

Khan and Roberts (2024) found that boards with a mix of educational backgrounds are more effective in addressing CSR issues due to the variety of perspectives and expertise. This diversity helps in crafting more robust CSR strategies and improving the quality of CSR reporting. However, in family firms, the impact of educational background on CSR reporting can be different due to the unique governance structures and family dynamics. García-Meca et al. (2023) observed that while highly educated board members in family firms contribute to better CSR reporting, the influence is sometimes moderated by the family's control and traditional practices. Nevertheless, these board members can still drive significant improvements in CSR practices. Therefore, this study hypothesizes:

H4: There is a positive relationship between board education background and sustainability reporting quality in family firms.

## Methods

### Data Collection and Sample

This study is based on secondary data obtained from the Econ DataStream database, which provides extensive financial and corporate information. The analysis is conducted using STATA, a statistical software widely used for quantitative and econometric research to ensure the accuracy and reliability of the findings. The sample comprises 233 Malaysian family firms observed over a two-year period from 2017 to 2018. This specific timeframe was selected to assess the impact of the revised Malaysian Code of Corporate Governance (MCCG 2017) on CSR reporting. The post-implementation period allows for the evaluation of changes in disclosure practices following the regulatory update and is aligned with the approach adopted by Salisi et al. (2024), who also focused on short-term effects of corporate governance reforms.

This study identifies a firm as a family firm if the firm's largest shareholder is a family, an individual, or an unlisted firm. Besides, this study defines family control in the firm by referring to the firm's percentage of shareholding. Consistent with Faccio and Lang (2002) and Munir (2009), this study measures family ownership based on the percentage of direct and indirect family share ownership in the company. Some firms owned indirect ownership through complex ownership structures (Wan Mohammad, 2015). Thus, this study assigns 1 if the family owns more than 20% and 0 otherwise.

## Measurement of Variables

### Sustainability Reporting Quality

This study measured the level of sustainability reporting quality based on the sustainability disclosure index, which has been adopted by Katmon et al. (2017). According to Katmon et al. (2017), the sustainability disclosure scoring process is classified as follows: (1) Quantitative specific disclosure - assigned a value of "3", the disclosure contains financial information. (2) Qualitative specific disclosure - assigned a value of "2", this is a non-quantitative disclosure with specific CSR information. (3) Qualitative specific disclosure – assigned a value of "1" if the CSR-related description is generic. (4) Companies that failed to disclose CSR information for the respective items in the disclosure index will be given a score of "0". The disclosure covers four important categories comprising 20 items, namely: (A) Employee relations with six



items, (B) Community involvement with six items, (C) Product with four items, and (D) Environment with four items. The maximum score that a company can achieve is 60 (20 items x 3).

### **Board Independence**

The presence of independent directors on the board is regarded as an important corporate governance mechanism (Khan et al., 2013). The 2017 MCGG focused on the composition of the board of directors, with independent directors making up at least half of the board. Furthermore, the agency theory suggests that if the board is dominated by an independent board, it will be more effective in its monitoring function (Jensen & Meckling, 1976). Because of the separation of ownership and control, managers often pursue personal interest at the expense of shareholders. As a result, the presence of board independence has a positive impact on disciplining corporate executives because they perform oversight and monitoring in curbing management excesses. Therefore, this study measures board independence as 1 if the number of independent directors has at least half of the board and 0 otherwise.

### **Female Director**

Gender is the most contentious element of board diversity in today's corporate environment (Fauzi & Locke, 2012; Khan et al., 2019). In general, gender diversity is regarded as a corporate governance tool has been debated among researcher (Al-Jaifi, 2020; Khan & Rehman, 2020). Gender diversity refers to the presence of women on boards or the representation of women on boards (Dutta & Bose, 2006; Julizaerma & Sori, 2012). Female directors are more likely to have other talents and perspectives than male directors (Fauzi & Locke, 2012). The appointment of female directors, according to Fan et al. (2019), Larcker and Tayan (2016), Triki Damak (2018), and Zalata et al. (2018), enhances the board's independence, functioning, efficiency, and monitoring actions. Adams and Ferreira (2009) backed up the claim that having more women on the board improves the board's monitoring efforts, especially in terms of attendance at meetings. Thus, this study measures board gender by combining male and female directors in the boards. It is assigned as 1 if the board comprises of male and female directors and 0 otherwise. This measurement is consistent with (Abdullah, 2014; Orazalin, 2019; Katmon et al., 2017).

### **Board Education Background**

Educational background variety increases board members' capacity to develop and share fresh ideas (Barroso-Castro et al., 2017) and improves the strategic decision-making process (Clark & Maggitti, 2012). According to Vo and Phan (2013), board members from several professions improves board effectiveness. More varied boards in terms of educational backgrounds, according to Bear et al. (2010), may favour social decision-making. According to Harjoto et al. (2019), directors with degrees in social and human sciences are more likely to interact with stakeholders' demands. As a result, they will take a more proactive to manage CSR problems. This study measures board education background diversity into four categories: Financial, Management, Legal, and others. It is assigned as 1 if the board comprises of at least two different education backgrounds, and 0 otherwise (Katmon et al., 2017; Harjoto et al., 2015; Chang et al., 2017).

### **Board Education Level**

One of the most important resources for a company's strategic success is educational level diversity (Barney, 1991). Board members with a mix of high and low education are an important resource for the companies' success (Hsu et al., 2013). According to Hambrick et al.

(2001), in strategic decision making, a lower educational level with practical experience may occasionally outperform a higher educational level with technical understanding, and vice versa. Young et al. (2001) also discovered that highly educated persons had a better capacity to handle and absorb complicated information, which may be needed to keep strategic changes going. Diverse educational levels are anticipated to help the business by bringing different views, experiences, and ideas. Thus, this study measured the board educational level into five categories: PhD, Master, Degree, Diploma, and others, as proposed by Tarus and Aime (2014), Hoang et al. (2018) and Khan et al. (2019). It is assigned as 1 if board comprises of at least two different education levels, and 0 otherwise.

### Control Variables

This study incorporates five control variables that have been proven in past studies to influence sustainability reporting quality. They are firms' size, leverage, growth, risk and profitability. Firm size is measured by the natural logarithm of total assets. This study measures the firm leverage as total debts divided by total assets. A growth prospect of the firms is measured by Tobin's Q ratio. The Q ratio is calculated by dividing the firm market value of equity by the book value of equity. Meanwhile, the risk is measured by companies' systematic risk (Beta). The beta coefficient is calculated by dividing the covariance of the stock return versus the market return by the variance of the market. The *ROA* is calculated by dividing net income by average total assets.

## Results and Discussion

### Descriptive Analysis

Table 1 provides a detailed look at various governance structures and sustainability efforts within the firms studied, encompassing aspects such as sustainability reporting quality, board independence, gender diversity, and educational backgrounds of board members. The table also introduces key operational and financial metrics which paint a comprehensive picture of the corporate landscape.

**Table 1: Descriptive Information**

Variables	Mean	S. D	Min	Max
Sustainability Reporting Quality	22.150	9.023	0	40
Board Independence	0.540	0.499	0	1
Female Director	0.678	0.468	0	1
Board Education Level	0.914	0.281	0	1
Board Education Background	0.967	0.171	0	1
Firm Size (RM)	2225875	8118187	16510	7.47e+07
Leverage	37.642	22.442	2.52	153.34
Growth	1.067	0.851	-0.87	5.61
Risk	1.037	0.707	-0.67	2.84
Profitability	2.090	7.996	-54.77	18.74

The average sustainability reporting quality score stands at 22.15 out of 40, suggesting a moderate engagement with environmental and social governance among the firms. This moderate level indicates a diverse approach to sustainability, likely influenced by industry-specific standards and regulatory pressures. The considerable variability in these scores, ranging from zero to perfect, highlights the disparity in commitment to sustainability practices

across different firms. Moreover, the data reveals that board structures exhibit a reasonable balance with an average of 54% of board members being independent. This suggests that while there is a significant presence of independent oversight, there is room for enhancing these numbers to bolster unbiased decision-making in corporate governance. Alongside this, the presence of female directors, averaging at 67.8%, points to a positive trend towards gender diversity, although the variance indicates that some firms are still lagging behind in this area. Increasing gender diversity is recognized as enhancing boardroom discussions with a range of perspectives, crucial for comprehensive governance.

The educational credentials of board members are notably high, with the majority possessing robust academic qualifications, indicative of a strong emphasis on educational attainment in board selection criteria. This is likely a factor in fostering informed governance and strategic oversight within these firms. Control variables such as firm size, leverage, growth, risk, and profitability provide further depth to our understanding of the operational and financial contexts of these firms. The vast range in firm sizes and financial strategies—from conservative to highly leveraged—underscores the diversity in how firms operate and manage their resources. This diversity is also evident in the growth rates and profitability figures, suggesting that firms are navigating a complex array of market conditions and strategic directions.

In conclusion, the descriptive statistics presented provide valuable insights into the current state of corporate governance and sustainability efforts. The data highlights significant progress in some areas while also pointing out opportunities for improvement, particularly in increasing board independence and gender diversity. These insights are crucial for stakeholders who need to understand the nuances of governance and sustainability to make informed decisions that align with best practices and regulatory expectations.

**Table 2: Table of Frequency**

<b>Independent Variables</b>	<b>Score</b>	<b>Frequency</b>	<b>Percent</b>
Board Independence	0	107	45.92
	1	126	54.08
	<b>Total</b>	<b>233</b>	<b>100</b>
Female Director	0	75	32.19
	1	158	67.81
	<b>Total</b>	<b>233</b>	<b>100</b>
Board Education Level	0	20	8.58
	1	213	91.42
	<b>Total</b>	<b>233</b>	<b>100</b>
Bord Education Background	0	7	3
	1	226	97
	<b>Total</b>	<b>233</b>	<b>100</b>

Table 2 provides data on corporate board composition, specifically looking at board independence, female representation, and educational credentials. The data shows that 54.08% of companies have boards where the majority are independent directors, suggesting a trend towards more unbiased governance. However, almost half of the boards remain predominantly insider-led, which could potentially affect their ability to objectively oversee management actions. Regarding gender diversity, about 67.81% of boards include female directors, indicating progress towards inclusivity. Still, a considerable 32.19% of boards lack female

representation, pointing to ongoing gaps in achieving gender-balanced boardrooms. Educationally, most board members are highly qualified, with 91.42% having achieved a high level of education, and 97% coming from diverse educational backgrounds. This high level of education among board members is promising, as it supports informed decision-making and strategic oversight. Overall, the findings from Table 2 show both strides towards and challenges in enhancing corporate board diversity and independence. These metrics not only reflect current governance standards but also underline the importance of diversity in fostering robust governance frameworks.

### Regression Analysis

This section provides the statistical findings for specified H1 to H4. The results of regression analysis using OLS regression is presented in Table 3.

**Table 3: Result of Regression Analysis**

	SRQ
Constant	10.375*** (2.61)
BOD_IND	1.980* (1.77)
FEM_D	2.458** (2.02)
BOD_LVL	2.675 (1.32)
BOD_BCGD	2.397 (0.73)
SIZE	2.960*** (4.17)
LEV	0.020 (0.74)
MTB	0.764 (1.09)
ROA	0.113 (1.49)
RISK	1.737** (2.15)
R <sub>2</sub>	0.185
Adjusted R <sub>2</sub>	0.152
F-statistics	5.63
Prob>F	0.000

Where; \*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.10$

SRQ = Sustainability Reporting Quality is measured using disclosure index, BOD\_IND= It assigned as 1 if the number of independent directors has at least half of the board and 0 otherwise, FEM\_D= It assigned as 1 if the board comprises of male and female directors and 0 otherwise, BOD\_LVL= It is assigned as 1 if board comprises of at least two different education levels, and 0 otherwise, BOD\_BCGD= It is assigned as 1 if the board comprises of at least two different education backgrounds, and 0 otherwise, SIZE= Firm size is measured by natural logarithm of total assets, LEV= Debt ratio is calculated as total debts divided by total assets, MTB= Tobin's Q ratio is calculated by dividing the firm market value of equity by book value of equity, RISK= Beta coefficient is calculated by dividing the covariance of the stock return versus the market return by the variance of the market, ROA= ROA ratio is calculated by dividing net income by average total assets.



This section presents the statistical results of the OLS regression analysis examining the relationship between board attributes and sustainability reporting quality (SRQ) in Malaysian family firms. Table 3 summarizes the regression coefficients and significance levels.

H1 predicted a positive relationship between board independence and sustainability reporting quality. The analysis shows a positive and marginally significant effect ( $\beta = 1.980, p < 0.10$ ), providing partial support for H1. This finding aligns with previous studies (e.g., Barako & Brown, 2008; Khan et al., 2013), which suggest that independent directors can improve oversight and accountability, thereby enhancing CSR disclosures. However, the modest significance reflects the challenges found in family-controlled firms, where board independence may be undermined by concentrated ownership (Hashim & Ibrahim, 2013; Kaczmarek et al., 2023).

H2 proposed a positive association between female directors and SRQ. The regression result reveals a significant positive coefficient ( $\beta = 2.458, p < 0.05$ ), thus supporting H2. This corroborates previous literature indicating that female directors contribute to better CSR reporting through ethical leadership, inclusivity, and stakeholder sensitivity (Jeong & Harrison, 2017; García-Sánchez et al., 2024; Pérez-Batres & Ramirez, 2024). Particularly in family firms, gender-diverse boards may help introduce more transparent and socially conscious decision-making, even in the face of traditional governance structures (Wu et al., 2023).

H3, which hypothesized a positive effect of board education level, produced a positive but statistically insignificant coefficient ( $\beta = 2.675, p > 0.10$ ). Similarly, H4, focusing on board educational background diversity, also showed a positive but insignificant relationship ( $\beta = 2.397, p > 0.10$ ). These results imply that, while educational diversity may conceptually enhance board deliberation and strategy (Zhang & Zhang, 2023; Beji et al., 2021), it does not significantly influence sustainability reporting quality in this sample. This outcome might reflect the dominance of family control, where education alone may not translate into strategic influence (García-Meca et al., 2023).

Among the control variables, firm size (SIZE) is strongly significant and positively associated with SRQ ( $\beta = 2.960, p < 0.01$ ), consistent with findings that larger firms are more visible and subject to stakeholder pressures (Michelon & Parbonetti, 2012). Additionally, firm risk (RISK) is also positively significant ( $\beta = 1.737, p < 0.05$ ), suggesting that firms with higher market exposure may engage more in sustainability reporting as a risk management tool. Other control variables—leverage (LEV), market-to-book ratio (MTB), and return on assets (ROA)—were not statistically significant.

Overall, the model accounts for 18.5% of the variation in SRQ ( $R^2 = 0.185$ ; Adjusted  $R^2 = 0.152$ ), and the F-statistic (5.63;  $p < 0.001$ ) indicates a statistically significant model fit.

## Conclusion

This study examined the influence of specific board attributes; namely board independence, gender diversity, educational level, and educational background on the quality of sustainability reporting (SRQ) in Malaysian family firms. The results revealed that board independence and the presence of female directors are positively associated with improved sustainability reporting, supporting Hypotheses 1 and 2. These findings align with agency theory and gender diversity literature, emphasizing the importance of independent oversight and inclusive governance in enhancing transparency and ethical reporting. In contrast, educational level and background, though positively related to SRQ, did not demonstrate statistically significant impacts, suggesting that other factors, such as board dynamics or family dominance, may moderate the influence of education-related diversity in family firm contexts.

Overall, the findings highlight that board composition plays a meaningful but selective role in shaping sustainability reporting practices within family-controlled firms. The study contributes to the corporate governance and CSR literature by providing empirical evidence from an emerging economy context. Practically, the results underscore the need for policy-makers and regulators to promote board independence and gender diversity as mechanisms for improving non-financial disclosure quality. For family firms, especially in Malaysia, embracing such governance enhancements could improve stakeholder trust and long-term value creation. Future research could further explore how internal family dynamics, generational leadership, or cultural factors interact with board attributes to influence CSR outcomes.

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