

## Audit committee characteristics and environmental disclosure practices: Insights from Malaysian listed firms

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**Abstract:** Audit committee has crucial roles in enhancing organizational practices including disclosure. This study's objective is to examine the relationship between audit committee characteristics and environmental disclosure, using agency and legitimacy theories. A sample of 380 Malaysian firms from 2020 to 2021 was analysed, with data from annual reports and market capitalization from the Orbis database. The panel regression was used to achieve the objective of this study. Results show that audit committee expertise has a significant positive relationship with environmental disclosure. Skilled members with sustainability knowledge enhance transparency, build stakeholder confidence, strengthen corporate reputation, and align practices with global sustainability goals. Expanding research in this area can further enhance understanding of how audit committees contribute to environmental practices and long-term value creation.

**Keywords:** Agency theory, Audit committee, Corporate governance, Environmental disclosure, Legitimacy theory.

### 1. Introduction

Environmental responsibility reflects the growing belief that businesses should benefit the community alongside maximizing stakeholder profits, driving firms to prioritize environmental disclosure [1]. This shift is influenced by societal and stakeholder pressures to address increasing environmental hazards caused largely by corporate operations and waste management [2]. Environmental disclosure holds firms accountable for their environmental impact while enhancing their reputation among stakeholders and the public. Firms with strong environmental disclosure practices are seen as environmentally responsible, which positively influences investor confidence and share prices. Ultimately, CSR and environmental disclosure benefit both society and corporate performance by addressing environmental concerns and improving business outcomes.

The rate of environmental disclosures in Malaysia, as a developing country, is significantly lower compared to developed nations, making the push for better disclosure practices a critical issue. This study identifies two key issues contributing to this gap. The first is the absence of statutory regulations requiring Malaysian firms to report on their environmental sustainability [3]. Malaysian firms are not subject to statutory regulations mandating the disclosure of environmental sustainability practices. While some guidelines, like FRS 101 and the Environmental Quality Act 1974, provide encouragement or basic principles, companies retain discretion over the extent and content of their environmental reporting. Second, the lack of a standardized reporting framework, leads to inconsistent environmental disclosure practices.

One of the factors that influence environmental disclosure is the audit committee. An audit committee is essential for overseeing the firm's financial reporting, the auditing process, the firm's internal decisions, and the firm's compliance with laws and regulations set by the government and the firm itself. However, the role of an audit committee does not only stop at the overseeing task. It also

serves as a reviewer of the firm's policies which also include the ethics practices of the firm [4]. This is because the audit committee holds the right to set the tone of the organization. In addition, it is also responsible for disclosure controls to make sure that the organization's reporting maintains its quality to the maximum. This study addresses the gap by emphasizing the importance of audit committee expertise in promoting consistent and quality environmental disclosure, thereby compensating for the lack of regulations and reporting standards in Malaysia. The audit committee members are chosen based on many factors that can influence the effectiveness of the committee. These factors include its independence, its expertise, and the size of the committee. It must be noted that each firm has its audit committee characteristics that comply with the firm's own needs.

When discussing environmental disclosure, the audit committee plays a significant role in the management and decision-making processes of an organization. In this context, the audit committee works to mitigate the opportunistic tendencies of managers, thereby enhancing the firm's environmental responsibility efforts. This is crucial because managers are often perceived as being primarily focused on maximizing stakeholder profits, often overlooking factors such as the environmental damage caused by the firm's operations. A reliable audit committee can curb such opportunistic behavior by ensuring that financial reports are accurate and the auditing process is conducted with integrity. Consequently, this improves the firm's reputation and builds trust among investors and stakeholders due to the quality and transparency of its financial statements. Furthermore, the audit committee also reviews and restructures the firm's goals, ensuring they include contributions to the community, which are reflected in environmental and other types of disclosures.

The novelty of this study lies in its specific focus on audit committee expertise as a driver of environmental disclosure, particularly in the context of a developing country like Malaysia, where regulations and frameworks are limited. This focus highlights how sustainability-related expertise in audit committees can enhance transparency and accountability, filling a critical gap in governance practices.

## 2. Literature Review

### 2.1. Agency Theory

Agency theory is one of the main theories that are used when discussing environmental disclosures in firms. This is because the theory is said to explain the pressure the audit committee puts on the firm management executives to employ environmental responsibility. In other words, this theory hints that the audit committee in a firm act as a tool to monitor the disclosure process in the interest of the stakeholders [5]. Not only that, but agency theory also suggests that agency costs can be minimized with an audit committee as an internal monitor of the disclosures released by the firm. However, a study by Kim and Kim [6] suggested otherwise. The conflicting study suggested that agency theory reviewed environmental responsibility as an expense that can raise agency costs unnecessarily without increasing the organization's financial performance. The study supported the statement by stating that defensive environmental responsibility exists in firms whereby managers who have misconduct tend to abide by these societal expectations. This means that a firm can either disclose environmental disclosures for the sake of the stakeholders or the managers themselves to build their image in the eyes of the public. In addition, a study in the South African setting found that managers are very much positive and encouraging about environmental disclosures to be included in annual reports. However, it is found that the level of environmental disclosure in the area is still very low [7].

### 2.2. Legitimacy Theory

Legitimacy theory is also one of the theories that are usually used on this topic. Legitimacy theory is closely related to the well-known principle of social contract. This theory deals with the relationship between an organization and society through a social contract. In this study, this theory is used to explain how organizations release environmental disclosures to be legitimate. This is supported by a study that found the fact that firms publish disclosures to show society that they are indeed complying with the social contract [8]. The study also proposed that to build the legitimacy of a firm, the firm needs to show to society that they are managing the environmental aspects of its existence by proving it

through the environmental disclosures released. Though legitimacy is normally linked to reputation and public image only, it is also considered to be one of the greatest resources an organization could have. This is said so because a corporation depends heavily on legitimacy as a resource to survive [9]. Legitimacy theory also indicates that when managers identify that the supply of the resource is essential for the survival of the organization, the managers will plan out strategies to ensure the supply of the resource. Fortunately, legitimacy is a type of resource that the firm can manipulate or alter. In this case, firms can manipulate their legitimacy through many strategies. These strategies comprise many others which include environmental disclosures.

### 2.3. Size of Audit Committee

One of the significant characteristics of an audit committee is its size. In the Malaysian context, it is recommended by the regulators that an audit committee must comprise at least 3 directors as stated in the book *The Malaysian Code on Corporate Governance* [10]. According to Biçer and Feneir [11] the bigger the size of the audit committee (more members), the it is more likely for the audit committee to get legitimate authority. This is because more directors in the audit committee lead to bigger influence and power over the firm's top management as well as reporting processes. This is because a larger audit committee with more members brings in more expertise and knowledge as well as skills and experiences for the firm to resolve arising problems. This finding is supported by research by Ashfaq and Rui [12] which concluded that audit committee size has a positive effect on internal controls disclosure that prevents fraud in firms. To support the statement too, the empirical results of a study proved that the audit committee size indeed has a significant effect on corporate voluntary disclosure [13]. The study suggested that the size of the committee is crucial in minimizing information asymmetry that is linked with agency problems. Not only that, in the GCC-listed banks setting, it is found that audit committee size indeed has a significant positive impact on sustainability disclosure [14]. It is also supported since another study also proved that the size of an audit committee takes a positive role in enhancing the quality of financial disclosure thus improving stock liquidity [15]. On the contrary, a large audit committee does not necessarily mean fully effective. This is because more members of the audit committee may result in more dispensable and irrelevant debates which may result in delays in decision-making [16]. Not only that, Feng, et al. [17] believe that larger audit committees tend to be ineffective which could lead to a higher demand for meetings to be held in a firm. This shows ineffectiveness although larger audit committees could contribute more expertise and managerial talent that could also lessen the number of meetings required. It can be concluded that previous studies around the world had different findings relating to the audit committee size and its effectiveness.

### 2.4. Audit Committee Meeting Frequency

An audit committee should have as frequent meetings as it requires to resolve crises and unexpected events that can put the firm at risk. According to the *Corporate Governance Guide* that was released by Bursa Malaysia, audit committees in Malaysia should hold a minimum of 4 meetings per year and additional meetings as needed. To support the relevance of this guideline, the big four auditing firms also come up with an acceptable number of meetings audit committees should hold. For example, Bursa Malaysia Berhad [18] has stated that audit committees should have at least 4 meetings per year and otherwise as needed. This is because the frequency of meetings shows the diligence of the committees. For the audit committee to effectively address and resolve issues, its members must be well-prepared both before and after each meeting. This is because most of the industry players assume that the diligence of the audit committee can be shown through the frequency of the meetings held and the behavior of the committee members [17]. This statement points to the behavior of the members in preparation for the meeting as well as their behavior during the meeting itself. Generally, meetings are divided into two stages which are the preparatory stage and the formal meeting stage. The preparatory stage is crucial for the formal meeting stage to reach its full potential because, during the preparatory stage, the informal meetings between attendees (For example, CFO, and CEO) and the audit committee take place. Informal meetings are important because significant governance contributions and informal exchanges usually occur during informal meetings which normally happen during the preparatory stage

[19]. To support this statement, it is found by [14] that audit committee meeting frequency had a positive impact on sustainability disclosure when they conducted the research among the GCC-listed banks.

### 2.5. Audit Committee Expertise

Expertise is defined as an expert skill or knowledge in a particular field. Financial expertise refers to expert knowledge in the finance field. Expertise is one of the essentials in forming an effective audit committee because it has been found that audit committee expertise has a significant positive effect on both financial and non-financial disclosures [20]. A study by Erkens and Bonner [21] also supported this statement when they found that audit committees with accounting financial experts lead to positive financial reporting results such as low likelihood for the firms to perform restatements. This is because audit committees with such experts can contribute more knowledge and input on the financial and non-financial statements in terms of reporting them for release. Not only that but audit committees with this expertise are also needed because more members with experts will allow room for uncovering the mistakes made on the statements and amendments to be done. This will also reduce information asymmetrical between the management level and the stakeholders. This is justified by a study conducted in the US which found that an audit committee with financial expertise is negatively significantly related to information asymmetry El Mahdy, et al. [22]. This finding is consistent with the study by Buallay and Al-Ajmi [14] which found that audit committee financial expertise is negatively associated with sustainability disclosure. This does not only benefit the firms, but it will also contribute to enhancing the condition of the investment market. This proved that more members with financial expertise in the committee will reduce information asymmetry. However, despite being on an audit committee, the expertise needed is not only limited to the expertise in the financial background. For example, an audit committee must be equipped with members with accounting expertise, financial expertise as well as supervision expertise. However, financial expertise alone can provide enough knowledge to improve reporting processes and outcomes but that alone is still not sufficient in diminishing accounting irregularities in firms.

### 2.6. Audit Committee Independence

The independence of an audit committee is closely linked to the effectiveness of the audit committee along with the quality of a firm's annual reports. The underlying belief of this is that an independent audit committee can make sound and firm judgments and criticisms when they are free from the management level. Based on agency theory, independent directors are more likely to increase disclosures as well as increase the strictness of their oversight role in the firm. Many studies have been examining the relationship between audit committee independence thus finding that audit committee independence is indeed associated positively with the quality of disclosures [13, 14, 23]. For example, it is found that adding more independent directors to an audit committee can increase the disclosure levels in addition to minimizing information asymmetry for the investors and stakeholders [23]. To support this finding, a study by Setiany, et al. [24] suggested that the independence of an audit committee has a significant positive effect on the organization's voluntary financial disclosure. This is possible because a study found that the proportion of independent directors positively influences the frequency of audit committee meetings, as having more frequent meetings allows for thorough discussions to address issues effectively and ensure proper oversight [25]. In addition, a study in the Malaysian context found that there is no significant positive relationship between the independence of an audit committee and voluntary disclosures [26].

## 3. Methodology

### 3.1. Sample Description and Data Collection

This study focuses on firms listed on Bursa Malaysia as the population. A sample of 380 Malaysian firms from various industries was selected for observation. The observation period will cover two years, specifically from 2020 to 2021. Bursa Malaysia provides the annual reports of these firms, which contain

all the necessary data for the independent and most of the control variables. The market capitalization data, however, will be obtained from the Orbis database.

### 3.2. Regression Model

A regression test is used to analyze the relationship between independent variables, such as audit characteristics, and control variables, such as firm characteristics, with environmental disclosure. Audit characteristics may include factors ie audit committee size, audit committee meeting, audit committee expertise, and audit committee independence, while firm characteristics may include market capitalization, profitability, leverage and size, profitability, and industry type. The model estimates the extent to which each independent and control variable influences the level of environmental disclosure, as measured by specific indices or metrics. By evaluating the coefficients and significance levels, the regression model provides insights into which factors are most strongly associated with environmental disclosure practices. The regression model specifications are as stated below:

$$ED_{it} = \alpha + \beta_1 ACS_{it} + \beta_2 ACM_{it} + \beta_3 ACE_{it} + \beta_4 ACI_{it} + \beta_5 MKT_{it} + \beta_6 FP_{it} + \beta_7 LEV_{it} + \beta_8 FSIZE_{it} + e_{it}$$

Where: -

ED	=	Level of environmental disclosure index
ACS	=	Audit Committee size
ACM	=	Audit Committee meetings frequency in a year
ACE	=	Audit Committee expertise
ACI	=	Audit Committee independence
MKT	=	Market Capitalization
FP	=	Firm profitability
LEV	=	Firm leverage
FSIZE	=	Firm size
i	=	firm
t	=	time

### 3.3. Measurement of Variables

#### 3.3.1. Independent Variables

The independent variables consist of the Audit Committee characteristics. This includes the size of the committee, the number of meetings held, the expertise, and the independence of the committee.

#### 3.3.2. The Size of the Committee

The Audit Committee size (ACS) is measured using the total number of members in the committee [13, 14].

#### 3.3.3. The Frequency of Meetings

The number of meetings held (ACM) is simply the total number of audit committee meetings that are being held in a year [13, 14].

#### 3.3.4. The Expertise of the Committee

The expertise of the committee (ACE) is measured using the percentage of the members from financial or accounting backgrounds [13, 23].

#### 3.3.5. The Independence of the Committee

The independence of the committee (ACI) is measured by the percentage of independent directors in the committee [13, 23].

### 3.3.6. Dependent Variables

The dependent variable in this study is identified as the environmental disclosure based on Razed [27] where it is the total number of items disclosed in Table 1.

**Table 1.**

Environmental index [27].

Number	Environmental item
1	Environmental programs and policies
2	Preventive measures/environmental protection
3	Compliance with environmental regulations
4	Reference to certification
5	Environmental investments/Capital expenditures (Past and in the current year)
6	Environmental performance/Risks and impact on the environment (Quantitative information)
7	Environmental indicators
8	Environmental management system
9	Training on the environment
10	External environmental audit
11	Future environmental investment & expenditures
12	Awards and recognition related to the environment
13	Mention of improvements made year by year
14	Mention of an environmental/Sustainability report
15	Initiative, awareness campaign, study, conferences
16	Measurement criteria related to the environment
17	Environmental Incentives
18	Environmental expenditures allocated to results (Expenses: Operating costs)
19	Environmental capitalized expenditures (Investment)
20	Environmental liabilities
21	Environmental contingent liabilities
22	Environmental provisions
23	Fees/penalties relating to environmental issues
24	Information on environmental matters
25	CO <sup>2</sup> licenses

### 3.3.7. Control Variables

In this study, the variables that are used as control variables are market capitalization, firm profitability, firm leverage, firm size, and lastly, the market-to-book ratio value.

### 3.3.8. Market Capitalization

The market capitalization (MKT) is measured using the market value which equals to firm's listed stock price multiplied by the number of shares outstanding [28].

$$\text{Market capitalization} = \text{Stock price} \times \text{Number of the outstanding share}$$

### 3.3.9. Return of Assets

The firm profitability is measured by calculating the return on assets (ROA) by dividing net income by the total assets [29].

$$\text{Firm profitability, } ROA = \frac{\text{Net income}}{\text{Total assets}}$$

### 3.3.10. Leverage

The leverage, it is calculated as total debt divided by total equity.

$$\text{Leverage} = \frac{\text{Total debt}}{\text{Total equity}}$$

### 3.3.11. Firm Size

The firm size (FSIZE) is calculated as the natural log of total assets [13, 14, 23].

## 4. Findings and Discussion

### 4.1. Descriptive Statistical Analysis

Table 2 shows a summary of descriptive statistical analysis done on the data collected for this study. It shows that the mean for environmental disclosures (ED) by firms, which is the dependent variable, is at an average of 9.459 items disclosed annually and it varies from a minimum of 5 items reported to a maximum of 18.000 items reported with a standard deviation of 3.702. This data was collected by cross-checking environmental items disclosed annually with an environmental index prepared beforehand.

**Table 2.**

Summary of descriptive statistic.

Variable	Mean	Median	Maximum	Minimum	Std. dev.
ED	9.459	9	18	5	3.702
ACE	0.526	0.5	1	0.14	0.202
ACI	0.83	0.8	1	0.6	0.155
ACM	5.131	5	11	4	1.086
ACS	3.488	3	9	3	0.796
FP	1.938	1.904	19.083	-18.843	4.999
FSIZE	9.39	10.516	29.584	-10.359	4.524
LEV	0.215	0.174	1.351	0.587	0.18
MKT	1.897	1.756	4.232	0.324	0.71

The first independent variable, which is the Audit Committee Expertise (ACE) has a mean of 0.526 which transforms to 52% with a minimum of 0.140 (14%), a maximum of 1.000 (100%), and a standard deviation of 0.202 (20.2%). This can be interpreted by firms in Malaysia have at least one member with a financial background and the 100% being the whole committee with a financial background. Secondly, the Audit Committee Independency (ACI) has a mean of 0.830 (83%) with a minimum of 0.600 (60%), a maximum of 1.000 (100%), and a standard deviation of 0.155 (15.5%). This means that firms in Malaysia have more than 50% independent members in the audit committee and some firms even have a full independent audit committee. Thirdly, the Audit Committee Meeting (ACM) has a mean of 5.131, a minimum of 4.000, a maximum of 11.000, and a standard deviation of 1.086. This means that the least meetings held in a financial year stand at 4 meetings per year while the most meetings held are at 11 meetings per year. For the last independent variable, Audit Committee Size (ACS) has a mean of 3.488, a minimum of 3.000, a maximum of 9.000, and a standard deviation of 0.796. This means that the smallest audit committee size stands at 3 members and the largest size comprises 9 members.

For the control variables, the first control variable which is the firm profitability (FP), calculated using return on assets has a mean of 1.938, a minimum -18.843, a maximum of 19.083, and a standard deviation of 4.999. Secondly, the control variable of firm size (FSIZE), which is the natural logarithm of total assets, has a mean of 9.390, a minimum of -10.359, a maximum of 29.584, and a standard deviation of 4.524. The next control variable, which is the leverage (LEV), is calculated by dividing total debt with total equity and has a mean of 0.215, a minimum of 0.587, a maximum of 1.351, and a standard deviation of 0.180. Lastly, market capitalization (MKT), it has a mean of 1.897, a minimum of 0.324, a maximum of 4.232, and a standard deviation of 0.710.

### 4.2. Pearson's Correlation Analysis

Table 3 summarizes the Pearson correlation analysis done on the data collected for this paper, for the independent variables, firstly for the audit committee expertise (ACE), is positively correlated to the dependent variable, environmental disclosures (ED) with a coefficient of 0.103 and significantly correlated at the 5% level of significance. Next, for audit committee independence (ACI), the table shows that it is also positively correlated at 0.016 but not significant to environmental disclosures (ED). In addition, the independent variable audit committee meeting (ACM) is positively correlated to environmental disclosures (ED) at 0.039 but also not significant. The last independent variable, which is



the audit committee size (ACS), is positively correlated to environmental disclosures (ED) but also not significant.

For the first control variable, which is the firm profitability (FP), it is also positively correlated at 0.045 but not significant to environmental disclosures (ED). Secondly, it is found that the firm size (FSIZE) is also positively correlated to environmental disclosures (ED) and significant at the 1% level of significance. For leverage (LEV), the Table shows that it is also positively correlated to environmental disclosures (ED) at 0.013 but not significantly correlated. Lastly, market capitalization (MKT) is found to be positively correlated at 0.068 to environmental disclosures (ED) and significant at the 10% level of significance.

All in all, it can be summarized that all independent variables and control variables are positively correlated to the dependent variable, environmental disclosures (ED). However, only 3 variables which are audit committee expertise (ACE), firm size (FSIZE), and market capitalization (MKT) are significantly correlated to environmental disclosures (ED) at 5%, 1%, and 10% level of significance respectively.

#### *4.3. Panel Regression Analysis*

From Table 4, results from the panel regression analysis are shown. The analysis above shows that audit committee expertise (ACE) has a coefficient of 2.166. This means that when all other variables are held constant, the coefficient of 2.166 indicates that a one-unit rise in ACE is correlated with a 2.166-unit increase in the dependent variable, which is the environmental disclosures (ED). This coefficient is statistically significant at the 1% level of significance, according to the t-statistic of 3.257 (p-value = 0.001). This finding is aligned with a previous study by Rifai and Siregar [20]. Audit committee expertise enhances environmental disclosures by improving transparency, accuracy, and accountability in reporting, reducing information asymmetry, and ensuring alignment with stakeholder expectations.



**Table 3.**  
Pearson's correlation.

Variable		ED	ACE	ACI	ACM	ACS	FP	FSIZE	LEV	MKT
ED	Coefficient	1.000								
	P-value	-----								
ACE	Coefficient	0.103***	1.000							
	P-value	0.004	-----							
ACI	Coefficient	0.016	-0.067*	1.000						
	P-value	0.660	0.063	-----						
ACM	Coefficient	0.039	-0.181***	0.012	1.000					
	P-value	0.276	0.000	0.740	-----					
ACS	Coefficient	0.043	-0.102***	-0.183***	0.082**	1.000				
	P-value	0.229	0.005	0.000	0.022	-----				
FP	Coefficient	0.045	-0.006	0.107***	0.098***	0.004	1.000			
	P-value	0.207	0.876	0.003	0.006	0.905	-----			
FSIZE	Coefficient	0.138***	0.022	-0.124***	-0.023	0.071**	-0.012	1.000		
	P-value	0.000	0.535	0.001	0.529	0.049	0.740	-----		
LEV	Coefficient	0.013	0.032	-0.016	-0.077**	-0.014	-0.113***	0.073**	1.000	
	P-value	0.722	0.374	0.649	0.033	0.699	0.002	0.042	-----	
MKT	Coefficient	0.068*	-0.018	0.022	-0.007	0.021	0.285***	0.294***	0.092**	1.000
	P-value	0.059	0.612	0.538	0.839	0.558	0.000	0.000	0.010	-----

**Note:** \*. Correlation is significant at the 0.10 level. \*\*. Correlation is significant at the 0.05 level. \*\*\*. Correlation is significant at the 0.01 level.

As for audit committee independence (ACI), the coefficient shown is 0.921. This also means that when all other variables are held constant, an increase in ACI of one unit is correlated with an increase in ED of 0.921 units. However, this coefficient is not statistically significant as it has a t-statistic of 1.222 (p-value = 0.222). It is not consistent results found by Akhtaruddin and Haron [23] that more independent directors in audit committees should increase disclosure levels in firms. A higher proportion of independent directors in the audit committee can enhance disclosure levels in firms by promoting transparency, objectivity, and accountability in reporting.

For the next independent variable which is the audit committee meeting (ACM), it has a coefficient of 0.192. According to the coefficient, when all other variables are held constant, an increase in ACM of one unit is correlated with an increase in ED of 0.192 units. The coefficient of ACM is also not statistically significant as its t-statistic is at 1.554 (p-value = 0.121). It is not consistent with Buallay and Al-Ajmi [14]. One of the possible reasons due that compliance with environmental reporting is often driven by regulatory requirements and firm policies rather than the number of meetings held.

Lastly, the Table 4 shows that the variable audit committee size (ACS) has a coefficient of 0.227 and it is also not statistically significant with a t-statistic of 1.344 (p-value = 0.179). According to the coefficient, when all other variables are held constant, an increase in ACS of one unit is correlated with an increase in ED of 0.227 units. This study result was not consistent with Madi, et al. [13] and Buallay and Al-Ajmi [14] found that ACS positively impacts sustainability disclosures. Larger committees can face challenges in coordination and decision-making, which may offset the potential benefits of having more members.

For the control variables, the control variable firm profitability (FP) has a coefficient of 0.013. This means that whenever an increase of one unit in FP is correlated with an increase in ED of 0.013 units when all other variables are held constant. Its coefficient is however not statistically significant with a t-statistic of 0.855 (p-value = 0.393).

Next, the firm size (FSIZE) has a coefficient of 0.044. According to the coefficient, when all other variables are held constant, an increase in FSIZE of one unit is correlated with an increase in ED of 0.044 units. Its coefficient has a t-statistic of 3.542 with a p-value of 0.000 which means it is very highly statistically significant at a 1% level of significance. It is consistent with Buallay and Al-Ajmi [14]. Larger firms tend to have more resources, public visibility, and regulatory scrutiny, motivating them to engage in greater environmental disclosure to enhance their reputation and meet stakeholder expectations.

For leverage (LEV), it has a coefficient of 0.142 and it is statistically not significant with a t-statistic at 0.191 (p-value = 0.848). The coefficient means that when all other variables are held constant, an increase in LEV of one unit is correlated with an increase in ED of 0.142 units.

The last control variable which is the market capitalization (MKT), has a coefficient of 0.100 but is not statistically significant with a t-statistic of 0.491 and a p-value of 0.624. The coefficient means that when all other variables are held constant, an increase in MKT of one unit is correlated with an increase in ED of 0.100 units

The Table 4 also offers insights into the quality and significance of a regression model. R-squared (0.038) suggests that the independent variables in the model explain only 3.8% of the variance in the dependent variable, indicating a relatively weak fit between the model and the data. The Adjusted R-squared (0.028) is slightly lower than the R-squared, accounting for the number of predictors in the model and providing a more accurate measure of model fit, especially when multiple predictors are involved. The F-statistic (3.837) tests whether at least one of the predictors significantly explains the variance in the dependent variable. A higher F-statistic indicates a better fit, but in this case, it's relatively low. Finally, the Prob (F-statistic) (0.000) shows the p-value for the F-statistic. Since the p-value is less than 0.05, it indicates that the model is statistically significant, meaning there is evidence that at least one predictor has a significant relationship with the dependent variable. However, despite the statistical significance, the overall explanatory power of the model remains weak, as indicated by the low R-squared and Adjusted R-squared values.

**Table 4.**  
Summary of panel regression analysis.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACE	2.166	0.665	3.257	0.001***
ACI	0.921	0.754	1.222	0.222
ACM	0.192	0.124	1.554	0.121
ACS	0.227	0.169	1.344	0.179
FP	0.013	0.015	0.855	0.393
FSIZE	0.044	0.012	3.542	0.000***
LEV	0.142	0.741	0.191	0.848
MKT	0.100	0.204	0.491	0.624
C	5.190	1.298	3.998	0.000***
R-squared				0.038
Adjusted R-squared				0.028
F-statistic				3.837
Prob(F-statistic)				0.000***

**Note:** \*\*\*. Correlation is significant at the 0.01 level.

## 5. Conclusion and Recommendations

The panel regression analysis reveals that audit committee expertise (ACE) has a significant positive relationship with environmental disclosure. However, other variables, such as audit committee independence (ACI), meeting frequency (ACM), and size (ACS), show positive but statistically insignificant effects on ED.

The positive relationship between audit committee experience and environmental disclosure underlines the crucial role of skilled and knowledgeable audit committee members in increasing transparency and accountability. This finding shows that corporations should prioritize recruiting audit committee members with adequate competence in sustainability concerns to ensure increased environmental reporting. Enhanced environmental disclosure can boost stakeholder confidence, attract responsible investors, and strengthen the firm's reputation in sustainability activities. Policymakers and regulators may utilize this information to underscore the incorporation of sustainability expertise as a criterion for corporate governance rules. Ultimately, cultivating expertise within the audit committee aids in aligning firm practices with global sustainability objectives and long-term value generation.

Among the control variables, firm size (FSIZE) is the sole variable exhibiting a significant positive relationship, suggesting that larger firms are inclined to provide more environmental information owing to their enhanced resources, visibility, and regulatory oversight.

## 6. Limitations and Recommendations of the Study

In this study, several limitations had to be adapted. Firstly, the sample size was relatively small, consisting of 388 listed companies on Bursa Malaysia, compared to the total number of companies listed. This limitation was further compounded by factors that restricted the study from utilizing a larger dataset, which could have enhanced the reliability and generalizability of the findings. This also contributed to the fact that the data on the firms, mostly the financial policies, are all collected from a secondary database, Orbis. The incomplete data provided by the database caused the sample size to be even smaller with some data missing. Not only that, but this study was also only conducted in the Malaysian context. This means that comparisons between countries will be difficult to conduct as this study did not even include other countries. This will make it difficult to also set a benchmark for Malaysia for future reference.

Besides, this study was also faced with a relatively shorter period. In this paper, observations were made for the years 2020 and 2021, which are two financial years. This also contributed to the small observations made for this study. The variables are also regarded as one of the limitations of this study. This is because many other financial policies can be included in the control variables to measure the companies' characteristics. These include the dividend payout ratio, market-to-book ratio, and others.

To overcome the limitations mentioned in the subsection above, a few recommendations could be taken into consideration when conducting similar future research. Firstly, future studies could use a

bigger sample size. This is to add variety and reliability to the data as a bigger data set can produce more reliable and understandable findings. In addition, research done on a wider and complete coverage of the whole Malaysian marketplace can be a reference in conducting comparisons between countries or even any comparisons in a major context. Some of the missing data should also be collected straight from the annual reports of the firms rather than relying on a secondary database altogether. This is because a database may have missed out on some data that could make the findings less significant to the study.

Next, future studies should also have a longer period of observation. This can also include the latest financial year, which makes some of the firms' latest financial reports unavailable. Including the latest financial year will make the study more relevant to be used in current discussions and learnings. Lastly, future studies should also include more variables as control variables to make this study more informative and beneficial for the users of this study.

**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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