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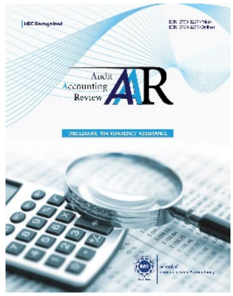

Title:	**Impact of Audit Committee Attributes and Liquidity on Sustainability Reporting**
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Impact of Audit Committee Attributes and Liquidity on Sustainability Reporting

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Abstract

This research aims to investigate the impact of audit committees, liquidity, leverage, and return on assets (ROA) on the sustainability reporting of firms. Additionally, the study conducts a comparative analysis of sustainability reporting practices between Pakistani food companies and BRICS food companies. The collected data included 360 samples of food companies for the period 2017-2022, including data from Pakistan and the top five (05) emerging market economies comprising BRICS, namely Brazil, Russia, India, China, and South Africa. Secondary data was employed in this study, utilizing information from sustainability reports and annual reports. Logistic regression analysis was used to analyze the results. The findings indicate that audit committee members and independent audit committee members significantly impact sustainability reporting, while audit committee meetings, board meetings, and liquidity do not. These findings provide valuable insights for investors seeking to understand the determinants of sustainability reporting, as well as for researchers exploring the interplay between corporate governance and financial performance in emerging markets. Furthermore, this study contributes to the literature by highlighting the relationship between audit committees, liquidity, and sustainability reporting in the context of the food sector in Pakistan and BRICS countries.

***Keywords*:** audit committee, BRICS (Brazil, Russia, China, India, South Africa), leverage, liquidity, return on assets (ROA), sustainability reporting

JEL Codes: G33, Q56, M42, M49

Introduction

In todays rapidly evolving and highly competitive global business

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environment, companies are under a great deal of pressure to deliver robust financial results, while simultaneously adhering to sustainable practices (Al-Shaer & Zaman, 2018; Meutia et al., 2023). To navigate these challenges, firms must balance financial performance with social and environmental responsibilities, making sustainability reporting a critical tool for transparency and accountability (Al-Qudah & Houcine, 2024). Many companies cannot survive due to saturated markets. Several firms underperform because they are unable to meet the increasingly complicated demands of their stakeholders (Arif et al., 2021). Companies face severe competition and increased stakeholder expectations to address sustainability challenges. It is critical for businesses to demonstrate their commitment to sustainability, both for their own long-term viability and for the well-being of the society as a whole (Hamidah & Arisukma, 2020).

Corporate sustainability reporting is considered as the main tool for companies to demonstrate their efforts to stakeholders regarding sustainability. Sustainability reports ensure transparency regarding a financial service institution's economic, financial, social, and environmental performance, helping to build shareholder interest, strengthen risk management, and improve stakeholder engagement. Companies should function successfully and efficiently. The management needs to improve decision-making capabilities to help the firm grow (Al-Shaer & Zaman, 2018; Bagu & Ahmed, 2022; Siregar et al., 2022). Organizations should not only focus on single bottom line but also on triple bottom line, that is, the balance between social, environmental, and economic activities to attain SDGs (Sustainable Development Goals). Sustainability reports are considered as crucial in helping businesses develop. Businesses that contribute to economic and technological fields have been criticized for causing social and environmental problems in recent times. Issues such as environmental pollution, water waste, social responsibility, and workers rights have gained more importance than ever.

In recent times, companies have /started to publish sustainability reports (corporate social responsibility) along with financial reports (Lucia & Panggabean, 2018; Sonia & Khafid, 2020). When companies publish sustainability reports, the information gap is closed and the ensuing transparency helps investor to make better decisions. As a result, businesses are focusing more on the environment and implementing more sustainable methods. Reporting on sustainability is now regarded as a matter of utmost importance for both developed and underdeveloped economies (Alsayegh et al., 2023). Social and environmental concerns are crucial since a companys success is assessed not only in terms of the ownership of tangible assets but also in terms of the ownership of intangible assets. In order to satisfy all stakeholders, investors are concerned with a companys long -term profitability. Sustainability reports are used by investors as a source of useful information when making investment decisions. Decisions regarding a companys sustainable development can be made by internal and external stakeholders using the information given in the sustainability report (Tjahjadi et al., 2021).

Non-financial reporting is beneficial both for companies and their external stakeholders. For companies, it can improve decision-making and management information, assess risk, and provide access to financial capital. For external stakeholders, it can create unity, build trust, and increase transparency and engagement. All of this can help create long-term value for stakeholders (Sebrina et al., 2023). Organizations must now broaden their focus from concentrating on financial performance solely to encompassing the three pillars of sustainability, namely people, planet, and profit (Hidayah et al., 2019; Sonia & Khafid, 2020).

Ahmed et al. (2024) and Aprianti et al. (2021) inferred that audit committee and sustainability reporting act as key factors in the successs of a business. The absence of these two factors contributes to the failure of an organization. Sustainability report is vital to business success and it can be enhanced by audit committee (Van der Zahn & Cong, 2019). The purpose of audit committee is to manage internal financial performance and system. All the parties in a firm should not favor one over another. The audit committee is expected to act independently since it serves as a link between the company and the external auditor, as well as a link between the independent commissioners supervisory role and the internal auditor. The audit committee is useful to cut agency expenses and raise the standards of transparency. The committee is regarded as most essential because of managing risk, internal financial controls, and the appointment of external auditors. Firms with strong corporate governance are well-valued, since firm performance is based on good corporate governance (Salleh et al., 2022).

The five (05) components of good corporate governance are fairness, accountability, independence, responsibility, and transparency. To keep things balanced fairly between agents and stakeholders, the company should concentrate on these 5 factors. This would reduce the lack of transparency and remove the barrier between the stakeholders. The companys Board of Directors (BOD) also plays a crucial role in upholding strong corporate governance, as highlighted by Al-Shaer and Zaman (2018) and supported by Meutia et al. (2023).

An enhanced understanding of corporate sustainability reporting would benefit the firm and its stakeholders. Additionally, doing so would increase the stakeholders trust. The amount of money a firm has to fulfil its debts to creditors is measured as liquidity, which demonstrates its creditworthiness. Higher liquidity indicates a stronger financial health and efficient management of its current assets. A companys strong liquidity indicates that it pays its debts on time, has a strong reputation, and presents a positive picture. Increased liquidity might benefit the company since investors feel more confident while investing their money. Managers provide investors with more information when the business is doing better. Financial and non-financial reports, such as the Corporate Sustainability Report (CSR) which helps in the development of a sustainable business, are easier to disclose when a company has more funding (Ruhana & Hidayah, 2020).

BRICS nations are among the world's major emerging economies. Their stratgies for integrating sustainability into corporate practices vary. This variation offers valuable insights for both developed and developing countries. This study focuses on investigating the impact of audit committee characteristics and financial metrics on sustainability reporting. Moreover, a comparative analysis of sustainability pratices between food companies operating in Pakistan and in BRICS countries in general is also carried out.

The following research questions guide this study.

- Does audit committee impact sustainability reporting?
- Does the liquidity of a company impact sustainability reporting?
- Does audit committee meetings have an impact on sustainability reporting?
- How does audit committee structure impact sustainability reporting?
- Does board meeting impact the sustainability reporting?

The rest of the paper is organized as follows. The literature review provides an overview of previous research on audit committees, liquidity, leverage, Return on Assests (ROA), and sustainability reporting. The methodology section describes the data collection and analysis methods used in this study. The results section presents the findings of the logistic regression analysis. This is followed by discussion, which interprets the results in the context of the existing literature. Finally, the conclusion summarizes the key findings, discusses the implications for investors, researchers, and policymakers, and suggests areas for future research.

Literature Review

Audit Committee Attributes

The audit committee is a BOD subcommittee made up of knowledgeable and independent people. It helps to ensure that the company complies to all relevant accounting and auditing standards and laws. The audit committee oversees a variety of activities including financial statements, internal controls, external audit, risk management, and other related matters. It examines the companys financial statements and provides financial performance feedback to the BOD. They are responsible for overseeing the external auditor and ensuring that the financial statements and sustainability reports are accurate and useful to the stakeholders. An audit committee with a high level of transparency would help to ensure that the company follows the laws and rules and regulations, as well as protects shareholders investments. Ultimately, a larger audit committee provide s a wider range of skills that can help to enhance a companys financial performance, allowing investors to gain a more comprehensive overview of its performance (Ahmed et al., 2024; Salleh et al., 2022).

Internal audit quality, board meetings, and board size all play important roles in ensuring the accuracy of a companys sustainability and its financial reports. Internal audit quality ensures that the processes and procedures for monitoring the organizations financial performance are in place, while board meetings and board size ensure that reviews and decisions are made by a suitable number of independent professionals. These measures help to reduce risks to the organization and warrant the reliability of its financial and sustainability reports by regularly monitoring and assessing its financial performance (Pozzoli et al., 2022). Baroroh et al. (2021) research has discovered, Indonesian LQ45 companies. According to the findings, Indonesian LQ45 companies should produce sustainability reports in addition to financial reports. This is advantageous for stakeholders because the audit committee can examine both types of reports. Since the size of a company can influence the amount of attention received to sustainability reporting, large corporations should expand the size of their audit committee to ensure that sustainability reports are properly monitored. In other words, sustainability reports are important and must be reviewed in order to provide stakeholders with information about a companys environmental and social performance.

Hamidah and Arisukma (2020) gathered 106 samples from 35 companies which publish sustainability reports. The study showed the relationship between board size, board meetings, and CEO duality, keeping the audit committee as a moderator while examining sustainability reports. According to the findings, an audit committee acts as a moderator, strengthening the link between board size and sustainability report, while weakening the link between board independence and sustainability report. Hence, when the audit committee is present, larger boards produce more comprehensive sustainability reports, while fewer independent boards produce less comprehensive sustainability reports. This implies that audit committee is essential to ensure that companies produce comprehensive sustainability reports.

Tumwebaze et al. (2022) indicated the relationship between audit committee, internal audit function, and sustainablity report. A well-functioning internal audit function and an effective audit committee can lead to improved corporate reporting practices, including sustainability reporting. The study encourages financial institution boards to highlight the importance of having an audit committee with finance and sustainability expertise to review both financial and non-financial aspects of corporate performance. Indeed, the board should include members who are knowledgeable about both banking and sustainability issues in order to properly review and monitor the performance of the internal audit function. This would result in higher levels of sustainability reporting, which would benefit both businesses and the environment.

Hidayah et al. (2019) analyzed the sustainability reports of companies registered for Indonesian sustainability awards. Large companies are responsible to disclose economic, social, and sustainable reports. Both high risk and low risk companies should publish their sustainability reports. In the context of Indonesia sustainability reporting award, corporate governance was found to have no real impact on sustainable development. Companies only have to deal with the policy of commissioner and director and are not required to publish sustainable development.

The evaluation of companies listed at Tehran Stock Exchange asserted the importance of audit committee, audit members, audit size, and meetings in promoting corporate sustainability reporting. When a company has an active audit committee and holds its committee members accountable, it creates an environment of accountability, trust, and transparency. This can have a significant impact on the companys social responsibility commitments, which are critical in developing a positive reputation with both customers and stakeholders. Furthermore, by paying more attention to their corporate social responsibility, businesses are more likely to be transparent and straightforward about their actions and decision-making processes. Promoting corporate sustainability reporting is critical for businesses that want to strengthen their relationship with their customers and stakeholders (Zamani et al., 2020). A study conducted for companies listed on Indonesian Stock Exchange evaluated the relationship between audit committee characteristics and sustainability reporting. This study gathered information from the energy sector corporations by examining four (04) audit committee attributes, namely members, independent members, ACMEET, and expertise members. According to the findings, three characteristics namely members, ACMEET, and expertise members influenced sustainability reporting, while independent member had a negative impact (Aprianti et al., 2021).

Ellba et al. (2022) examined companies listed at the Indonesian Stock Exchange. Their study targeted specifically the manufacturing industry. The authors explored the effect of audit committee, company size, and profitability on a companys sustainability reporting. They conclu ded that profitability and audit committee characteristics can influence sustainability reporting,simultaneously. The research was founded in Europe and conducted for the STOXX 600 index of Europeon listed companies. The purpose was to investigate the effect of audit committee characteristics, such as meeting frequency, members, financial expertise, and independent audit committee members on corporate sustainability reporting assurance. According to the findings, more frequent meetings, expertise, and audit committee independent members have a positive link with a companys corporate sustainability assurance. These characteristics positively influence the adoption of sustainability reporting (Dwekat et al., 2022).

Kumar et al. (2022) focused on companies listed on Indias NSE. They examined the link between corporate governace and sustainability reporting. NSE selected 53 companies responsibile for the environment from the NIFTY100 Index. The study resulted in brining improvement in Indias sustainability initiatives. The aim was to observe if the corporate governance structure has an impact on sustainability reporting. The study concluded that corporate governance could have an impact on sustainability reporting.

Another study was conducted to assess the performance of European listed companies. It was found that ACSIZE and independent members have a positive impact, whereas audit committee tenure has no link with a companys sustainability reputation (Pozzoli et al., 2022). A similar study was conducted to explore the impact of audit committee attributes and independence on sustainability reporting in the Australian energy sector. The paper focused on how audit committee characteristics, such as independent members and meeting frequency, influence ESG disclosures. The findings suggested that audit committee characteristics have a positive impact on a companys sustainability reporting (Arif et al., 2021). Another study targeted top 100 Australian companies. The regression analysis concluded that audit committee size does not positively influence sustainability reporting, whereas characteristics such as audit committee independence and meetings have an influence on sustainability reporting assurance (Zaman et al., 2021). Wahyudi (2021) collected data from 2016 to 2018 from companies listed at Indonesian Stock Exchange. The study found that independent board members and profitability improve sustainability reporting, while audit committee has no significant effect on it.

Buallay and Al-Ajmi (2020) determined the effect of audit committee attributes on Gulf Cooperation Council (GCC) sustainability reporting. They collected data from 59 banks for the period 2013-2017. The findings suggested that financial expertise is negatively associated with sustainability reporting, whereas independent members and meeting frequency are positively associated with a companys sustainability reporting.

Another study evaluated Malaysian and Indonesian companies and concluded that the audit committees and board directors have no impact on sustainability reporting in Indonesian companies. They also considered other factors and concluded that the concept of liquidity does not have an impact on sustainability reporting, particularly in the manufacturing sector (Lucia & Panggabean, 2018). The research also examined the effects of ROA, LEV, and company size on a companys disclosure of sustainability reporting. For this purpose, data was gathered from 105 manufacturing firmslisted at the Indonesian Stock Exchange. The findings indicated that ROA and company size can affect a companys sustainability reporting.

Following are the hypotheses developed for audit committee members and meetings and independent audit committee members and meetings:

H_{01}: There is no significant effect of audit committee members on sustainability reporting.

H_1: There is a significant effect of audit committee members on sustainability reporting.

H_{02}: There is no significant effect of independent audit committee members on sustainability reporting.

H_2: There is a significant effect of independent audit committee members on sustainability reporting.

H_{03}: There is no significant effect of audit committee meetings on sustainability reporting.

H_3: There is a significant effect of audit committee meetings on sustainability reporting.

H_{04}: There is no significant effect of board meetings on sustainability reporting.

H_4: There is a significant effect of board meetings on sustainability reporting.

Liquidity

Dewi et al. (2023) conducted a study to determine the role of liquidity and financial performance in the reporting of sustainability reports. This research was focused on publicly traded companies listed on the Indonesian Stock Exchange. According to the findings, liquidity has no effect on sustainability reporting, although other elements, such as the audit committee, have a beneficial impact on a companys sustainability reporting. Companies have started focusing and work on social, environmental, and governance performance with financial performance (Bakti & Nengzih, 2023). Another study was conducted in Indonesia on 71 consumer goods companies. The study found that company size and liquidity have no effect on sustainability reporting (Permatasari & Yanto, 2022). The study evaluated the relationship between liquidity, financial performance, and sustainability reporting based on the data collected from 2014 to 2019 and analyzed through linear regression. The analysis concluded that liquidity has a positive impact on sustainability reporting (Masud et al., 2022). Laksmi and Hanin (2022) evaluated the mining companies in Indonesia using secondary data collected from 2016 to 2020. The results suggested that green accounting has an impact on sustainability reporting, along with a negative impact of leverage and liquidity on sustainability reporting.

Islamiati and Suryandari (2021) investigated the relationship between liquidity, profitability, and leverage on sustainability reporting. They collected data from 56 companies. The study concluded that both profitability and liquidity do not affect sustainability reporting. Another study analyzed the data from 2013 to 2017 and checked the relationship of liquidity, leverage on firm value with the moderating effect of SR, and resulted that leverage and liquidity increase firm value while sustainability reporting being the moderator does not affect the value of firm with the liquidity and leverage (Fadillah & Noormansyah, 2023).

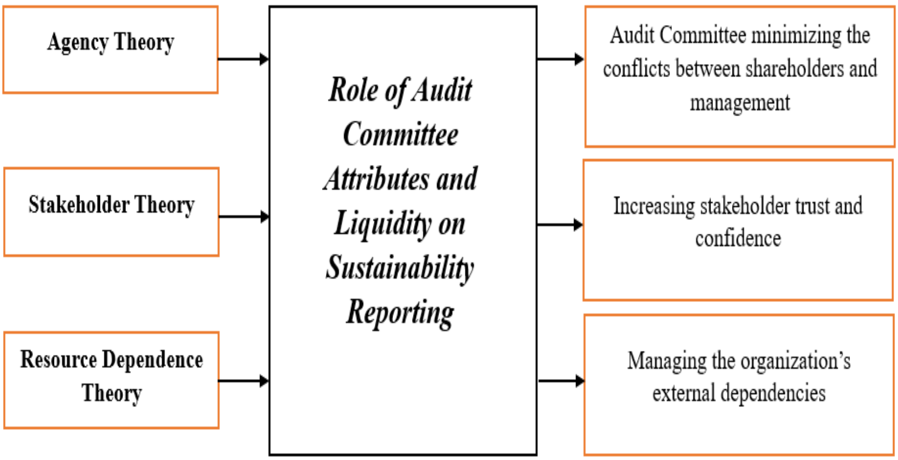
Companies are now focusing on environment and social factors in order to generate more profit. A study in Indonesia investigated the relationship between profitability, liquidity, leverage, company size, and sustainability reporting. According to the findings, liquidity and leverage have a negative effect on sustainability reporting, whereas audit committee and profitability are positively associated with sustainability reporting. The study also examined the mediating role of profitability, which demonstrates that liquidity has an effect on sustainability reporting, leading to the conclusion that leverage, audit committee, and profitability all play an important role in sustainability reports (Sonia & Khafid, 2020).

Ruhana and Hidayah (2020) conducted a research on how liquidity and audit committee can impact sustainability reporting. They concluded that both factors positively impacted sustainability reporting, while the BOD had no specific impact on it. Hidayah et al. (2019) calculated liquidity using the current ratio and concluded that this factor is positively related to sustainability reporting, while they claimed that audit committees are also positively related to the reporting of sustainability. Erin et al. (2021) analyzed 120 companies from Nigeria Stock Exchange. According to the findings, corporate governance, governance meetings, governance size, governance independence, AC, ACSIZE, audit members, ACMET, and expertise are all positively related to a companys sustainability reporting. Below is the research hypothesis developed to determine the impact of liquidity on sustainability reporting:

H_{05}: There is no significant effect of liquidity on sustainability reporting.

H_5: There is a significant effect of liquidity on sustainability reporting.

Figure 1
Theoretical Framework



Despite the growing importance of sustainability reporting and the availability of prior literature, there are significant gaps in research regarding how specific corporate governance attributes such as audit committee characteristics and financial metrics such as liquidity influence these reports. This study aims to fill these gaps by providing empirical evidence from food companies in Pakistan and BRICS countries.

Methodology

Sample

This research analyzes whether the audit committee attributes and liquidity have an impact on the sustainability reporting of a company. It employs a secondary data approach, collecting information from the companies' annual reports and sustainability reports. The dependent variable, that is, sustainability reporting, is represented by a dummy variable (1 = *the company has published a sustainability report,* 0 = *the company has not).* The independent variables include audit committee size, audit committee independence, audit committee meetings, board meetings, liquidity, leverage, and return on assets (ROA), each selected for its relevance in assessing corporate governance and financial performance in the context of sustainability. Data was collected for a time period of 6 years, covering the years 2017-2022. Panel logistic regression with Stata software was used to conduct the statistical analysis. The findings are useful for companies and stakeholders interested in sustainability reporting and how it relates to audit committee attributes and liquidity. Data was obtained from six (06) countries, namely BRICS and Pakistan. Data from non-financial companies was used to examine the relationship between audit committee attributes and liquidity on sustainability reporting. The total sample size comprised 60 non-financial firms with 358 observations for the results.

Comparing BRICS and Pakistan

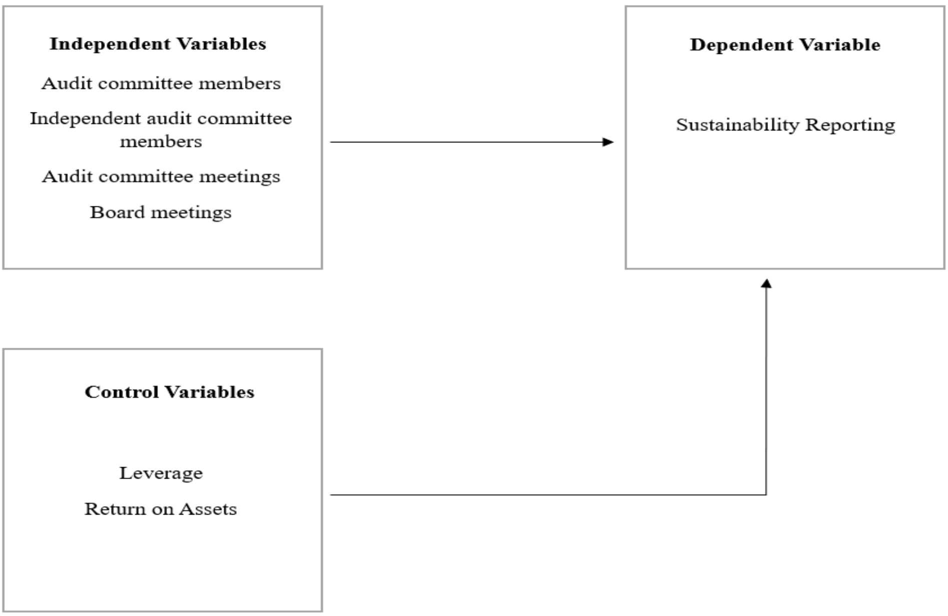
It is important to compare BRICS and Pakistan because both represent significant segments of the global economy and provide a diverse range of emerging market conditions. BRICS countries (Brazil, Russia, India, China, and South Africa) are recognized as major emerging economies with substantial influence on regional and global economic affairs. They offer a mix of rapid economic growth, large populations, and significant industrial bases, which can provide valuable insights into the dynamics of sustainability reporting in rapidly developing contexts.

Pakistan, while not a part of BRICS, shares many characteristics of an emerging economy but faces unique challenges and opportunities as compared to BRICS countries. By including Pakistan, this study aims to broaden the understanding of sustainability reporting practices across different emerging markets, highlighting both their commonalities and differences. This comparison would help to identify specific factors that influence sustainability reporting in diverse economic and regulatory environments, thus providing a more comprehensive analysis.

Table 1
Sample Selection Procedure

Sample Selection Procedure	No. of Companies	No. of Years	No. of Observations
Initial sample for 2017-2022	60	6	360
Less: firms with insufficient or missing data	3	1	3
Final sample	60	6	357

Figure 2
Conceptual Framework



Econometric Model

$$SR = \alpha + \beta_1 ACSIZE_{it} + \beta_2 ACIND_{it} + \beta_3 ACMEET_{it} + \beta_4 BODMEET_{it} + \beta_5 LIQ_{it} + \beta_6 LEV_{it} + \beta_7 ROA_{it} + \varepsilon_{it}$$

Table 2
Description of Variables

Proxies	Measurements	References
Sustainability Reporting (SR)	If sustainability report exists =1, 0 Otherwise	(Al-Shaer & Zaman, 2018)
Audit Committee Members (ACSIZE)	Number of audit committee members	(Al-Shaer & Zaman, 2018)
Independent Audit Committee Members (ACIND)	Proportion of audit committee members who are independent	(Al-Shaer & Zaman, 2018)
Audit Committee Meetings (ACMEET)	Number of audit committee meetings held during the year	(Al-Shaer & Zaman, 2018)
Board Meetings (BODMEET)	Number of board meeting during the Year	(Al-Shaer & Zaman, 2018)
Liquidity (LIQ)	Total current assets/ Total current liabilities	(Sonia & Khafid, 2020)
Return on Assets (ROA)	Net Income/ Total assets	(Al-Shaer & Zaman, 2018)
Leverage (LEV)	Total Debt/ Total Assets	(Al-Shaer & Zaman, 2018)

Results

Descriptive Statistics

The interpretation and results were completed by implementing an appropriate approach based on the data requirements in order to examine the impact of AC attributes and liquidity on sustainability reporting. Table 3 shows the descriptive statistics for the variables used in this research.

Table 3
Descriptive Statistics

Variables	Obs	Mean	Std.Dev.	Min	Max
LIQ	357	3.84459	10.1291	-11.835	135.58
ROA	357	1.24448	8.43429	-122.87	39.7676
LEV	357	2.95017	9.29335	-16.211	73.199

Variables	Obs	Mean	Std.Dev.	Min	Max
ACSIZE	357	1.31584	0.29021	0	1.79176
ACIND	357	0.47304	0.28348	0	0.30102
ACMEET	357	1.42742	0.13338	0.69315	0.77815
BODMEET	357	1.58505	0.33788	0.69315	2.63906
SR	357	0.48304	0.50037	0	1

There are a total of 357 observations for each variable. Liquidity has a mean value of 3.84 and SD of 10.12. The minimum value lies at -11.83 and the maximum value is 135.58. On the other hand, other variables such as ROA (return on assets) and LEV (leverage) also show a great deviation in their minimum and maximum values. The mean value for ROA is 1.24 and the SD value is 8.43, while the minimum value for ROA for all the companies is -122.87 and the maximum value is 39.76. The other control variable ‘leverage’ shows a mean value of 2.95 and SD value of 9.29, with a -16.211 minimum value and a 73.19 maximum value.

The mean value of the dependent variable ‘audit committee member’ (ACSIZE) is 1.315 and the SD value is 0.290. The mean value for an ‘audit committee independent member’ (ACIND) is 0.473 and the SD value is 0.28. Moreover, the ‘audit committee meeting’ (ACMEET) has a mean value of 1.42 and SD value of 0.13. The other dependent variable, that is, ‘board meetings’ (BODMEET), has a mean value of 1.58 and SD value of 0.33, whereas the minimum and maximum values range from 0.69 to 2.63. The mean value for ‘sustainability reporting’ (SR) is 0.48 with SD value of 0.50. The maximum and minimum values of sustainability reporting are 0 and 1, its a dummy variable and data is collected as 0 and 1.

Correlation Matrix

The correlation matrix for all variables is shown in Table 4. In a Pearson correlation, the coefficient ® indicates how far data points are from the fitted line. Hence, a negative linear connection can have a value ranging from -1 to +1. In this model, SR is negatively connected with LEV and LIQ and positively associated with all the other variables. Henec, ACSIZE, ACIND, ACMEET, and BODMEET are all positively associated with SR.

Table 4
Correlation Matrix

Variables	SR	LIQ	ROA	LEV	ACSIZE	ACIND	ACMEET	BODMEET
SR	1.0000							
LIQ	-0.052	1.0000						
ROA	0.0441	-0.030	1.0000					
LEV	-0.037	-0.027	0.1917	1.0000				
ACSIZE	0.2004	0.093	-0.141	-0.0075	1.0000			
ACIND	0.3663	0.019	-0.018	-0.121	0.4236	1.0000		
ACMEET	0.0317	-0.005	-0.024	-0.107	0.0867	0.0357	1.0000	
BODMEET	0.1033	-0.023	-0.003	0.045	0.0594	0.1112	-0.0394	1.0000

Regression Analysis

The panel logistic regression test, also known as logit, was used to conclude the effects of independent variables, audit committee characteristics, and liquidity on the dependent variable, that is, sustainability reporting (treated as dummy variable). All the regression results are shown in Table 5.

Audit Committee Members (ACSIZE) and Sustainability Reporting (SR)

ACSIZE focuses on the size of audit committee, leverage, and ROA. The results indicate a significant negative relationship between the size of the audit committee and the dependent variable (coefficient = -1.491, $p < 0.01$), suggesting that larger audit committees might detract from effective governance, possibly due to coordination difficulties or the dilution of responsibility. Leverage is also negatively associated with the dependent variable, although the relationship is only marginally significant (coefficient = -0.078, $p < 0.1$), implying that higher financial leverage might pose a risk towards achieving the desired outcome. On the contrary, a marginally significant positive effect of ROA (coefficient = 0.04, $p < 0.1$) hints at a slightly benefitial higher profitability. The Wald chi-square value of 8.95 suggests that these variables collectively provide a moderate explanatory power for the model.

Audit Committee Independent Members (ACIND) and Sustainability Reporting (SR)

ACIND examines the independence of audit committee members alongside the same financial variables. A strong positive coefficient for audit committee independence (coefficient = 1.892, $p < 0.05$) indicates that greater independence significantly contributes to the likelihood of achieving the desired outcomes, reflecting the critical role of independence in effective governance. Leverage shows a significant positive effect (coefficient = 0.415, $p < 0.01$), contrary to the negative effect observed in the first model, which may highlight context-specific influences where leverage could act as a facilitating factor, rather than a hindrance. However, ROA does not significantly impact the model outcome (coefficient = -0.076, $p > 0.1$). The Wald chi-square value of 11.23 underscores a relatively robust relationship among the variables in this configuration.

Audit Committee Meetings (ACMEET) and Sustainability Reporting (SR)

ACMEET assesses the impact of the frequency of audit committee meetings on the dependent variable, incorporating leverage and ROA as control variables. The model reveals that the frequency of audit committee meetings (coefficient = 1.085, $p > 0.5$) does not significantly influence the likelihood of achieving the desired outcomes, suggesting that simply increasing meeting frequency does not inherently enhance effective governance. This implies that the quality and substance of discussions during these meetings may be more crucial than their number. Leverage has a significant negative effect on the dependent variable (coefficient = -0.077, p < 0.01), indicating that higher leverage may pose a risk to effective governance, potentially through increased financial strain or reduced flexibility. In contrast, ROA does not show a significant impact (coefficient = 0.055, $p > 0.3$), suggesting that short-term financial performance, as measured by ROA, might not be a strong predictor of the effectiveness of audit committee governance. The Wald chi-square value of 6.20 for this model highlights the limited overall explanatory power of the variables, pointing towards the need for considering additional factors or more nuanced governance metrics in future analyses.

Board Meetings (BODMEET) and Sustainability Reporting (SR)

BODMEET reflects the influence of board meeting frequency on sustainability reporting. A negative coefficient for board meetings (coefficient = -0.291, $p < 0.68$) indicates that their increased frequency does not significantly enhance governance outcomes, emphasizing the importance of meeting quality over quantity. Leverage shows a non-significant negative impact (coefficient = -0.792, $p < 0.33$), suggesting variability in the influence of financial leverage based on other board characteristics and governance practices. Whereas, ROA exhibits a significant positive effect (coefficient = 0.053, $p < 0.01$), suggesting that effective financial performance may enhance board governance by providing resources for strategic decision-making. The Wald chi-square value of 6.51 reflects modest relationship strength among the variables, indicating a need for further investigation into factors influencing board governance.

Liquidity (LIQ) and Sustainability Reporting (SR)

LIQ focuses on the role of liquidity in sustainability reporting. The coefficient for liquidity (coefficient = -0.018, $p < 0.54$) indicates that it does not significantly affect sustainability outcomes, suggesting that the immediate availability of liquid assets may not be crucial for effective governance. Leverage exhibits a consistent negative impact across models (coefficient = -0.076, $p < 0.01$), highlighting it as a potential risk factor. On the contrary, ROA shows no significant impact on sustainability reporting (coefficient = 0.055, $p > 0.32$), underscoring that profitability alone may not translate into better governance outcomes. The Wald chi-square of 6.8 indicates moderate explanatory power, pointing to the presence of other influential factors not captured in this model.

The overall model statistics present a comprehensive statistical summary of the logistic regression models, indicating a moderate level of model efficacy. With 357 observations, the models utilized a robust dataset to ensure statistical reliability. The Likelihood Ratio (LR) chi-square value of 9.96, based on 7 degrees of freedom depicts the overall significance of the model predictors. A chi-square value of this magnitude typically evaluates whether the included predictors significantly enhance the model beyond an intercept-only model. However, the *p*-value associated with this statistic (0.1906) suggests that the predictors do not collectively provide a statistically significant improvement in explaining the variability in the dependent variable, leading to a failure to reject the null hypothesis stating that the model with only an intercept would suffice. Furthermore, the pseudo R^2 value of 0.0599 indicates that only about 5.99% of the variance in the dependent variable is explained by the model, reinforcing the interpretation that while some insights are gleaned from the predictors, the majority of the variance remains unaccounted for. This necessitates the positing of additional variables or alternative modeling approaches to better capture the dynamics influencing the outcomes of interest, such as sustainability reporting in the context of corporate governance.

Table 5
Logistic Regression Results with Random Effects

Sr. No	Models	Variables	Co-efficient	*p*>|z|	Wald Chi2
1	ACSIZE	Audit Committee Members	-1.491	0.01***	8.95
		Leverage	-0.078	0.07*	
		ROA	0.04	0.09*	
2	ACIND	Audit Committee Independent	1.892	0.02**	11.23
		Leverage	0.415	0.01***	
		ROA	-0.076	0.16	
3	ACMEET	Audit Committee Meetings	1.085	0.53	6.20
		Leverage	-0.077	0.01***	
		ROA	0.055	0.32	
4	BODMEET	Board Meetings	-0.291	0.68	6.51
		Leverage	-0.792	0.33	
		ROA	0.053	0.01***	
5	LIQ	Liquidity	-0.018	0.54	6.8
		Leverage	-0.076	0.01***	
		ROA	0.055	0.32	
Overall Model Statistics					
Number of observations=357			Prob>chi2=0.1906		
LR chi2(7)=9.96			Pseudo R^2=0.0599		

Note. ****p*<0.01, ***p*<0.05, **p*<0.1

Discussion

Sustainability reporting is a method to ensure friendly social and environmental practices by a company. Although it is not a mandatory report, it has grown in importance in recent years as it attracts new consumers, society, and stakeholders. It also increases a companys reputation in terms of how it combines its environmental, social, and governance successes with financial performance. Hence, it raises the firms market worth and provides investors with the right information regarding wether to invest in it or not. However, not all companies report on sustainability, although it is a good way to improve a companys reputation (Imperiale et al., 2023; Zimon et al., 2022).

The main variable in this research namely ‘audit committee’ was found to have a significance value of 0.01 with ‘audit committee members’ (ACSIZE) and .02 with audit committee independent members’ (ACIND). Hence, both ACSIZE and ACIND play a crucial role in enhancing a company’s sustainability reporting. The results suggested that the presence of audit committee members and independent members both have a positive impact. These findings are in line with the findings of (Buallay & Al-Dhaen, 2018; Pozzoli et al., 2022). Indeed, the number and efficiency of audit committee members enhance the sustainability reporting of a firm, resulting in its improved performance.

The variable ‘audit committee meeting’ (ACMEET) shows an insignificant relationship with sustainability reporting, with a significance value of 0.53. Its negative impact on sustainability reporting practices in this study is also supported by prior studies. Khasanah (2022) suggested that the frequency of ACMEET is insignificant to sustainability reporting.

Board meetings (BODMEET) showed an insignificant relationship with sustainability reporting with a significance value of 0.6. The findings of (Lagasio & Cucari, 2019) supported the current results, that is, the number of board meetings does not enhance environmental and social reporting. This illustrates that board meetings mostly affect financial performance and decision-making processes.

Liquidity (LIQ) is insignificant to sustainability reporting, rejecting the alternative hypothesis (Islamiati & Suryandari, 2021). Hence, it was concluded that liquidity has no effect on sustainability reporting, in line with previous studies (Dewi et al., 2023; Sonia & Khafid, 2020).

Conclusion

Corporate sustainability reporting is considered as the main tool for companies to demonstrate their efforts to stakeholders regarding sustainability. When companies publish sustainability reports, the information gap is closed and this transparency helps investors to make more informed and better decisions. As a result, businesses are now focusing on the environment and implementing more sustainable methods.

Our results indicates that audit committee members show a positively significant impact on sustainability reporting, while audit committee independent members also have a significant impact on sustainability reporting. On the other hand, audit committee meetings and board meeting show insignificant relationship with sustainability reporting. This suggests that while the composition of the audit committee is crucial, the frequency of their meetings does not necessarily enhance sustainability reporting.

The current research supports the resource dependence, agency, and stakeholder theories. Companies practicing sustainability reporting rely more on resources, emphasizing the importance of audit committees for external stakeholders to maintain a firms sustainability. The agency theory clarifies the conflict between agents and managers, suggesting that the audit committee should work to resolve transparency gaps and provide reliable information about a company's environmental performance. Stakeholder theory highlights the need to consider the interests of stakeholders including employees, customers, and the society, alongside shareholders.

Our findings suggest that the audit committee members and the independent members can enhance a company and its performance in sustainability perspectives while audit committee meetings and board meetings show no impact. The effectiveness of the audit committee leads to efficient sustainability reporting. When a company produces effective sustainability reports with the help of its audit committee, it can build trust with stakeholders, customers, and the society, ultimately contributing to its success.

The findings of this study offer significant practical implications for various stakeholders. Investors stand to benefit by gaining insights into the impact of audit committee characteristics and financial metrics on sustainability reporting, enabling them to make more informed investment decisions. This understanding can reduce the transparency gap and improve the analysis of company performance, as depicted through sustainability practices. Corporate managers can enhance sustainability practices by focusing on the roles of audit committee members and independent members, fostering more accurate sustainable development practices. Policymakers, armed with these insights, can develop regulations that promote transparency and accountability in sustainability reporting, thereby supporting sustainable practices across companies. These implications underscore the importance of efficient audit committee members and the need for mandatory sustainable reporting policies.

This study is limited to six (06) countries only which do not represent the entire world and hence the findings may not be applicable to other regions. The availability of material was restricted as sustainability reporting is not mandatory everywhere. Consequently, many companies do not disclose their sustainability reports. Likewise, certain countries and industries may not have to publicly disclose their data and sustainability practices. Moreover, the current study only focused on the food sector, so the outcomes may differ for other sectors.

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

The data associated with this study will be provided by the corresponding author upon request.

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