ISSN: 2054-7404
Archives of Business Research; Vol. 14 No. 01 (2026) (101-117)
https://doi.org/10.14738/abr.1401.19857

Earnings Management, Executive Digital Literacy, Investor Sentiment, and ESG Performance: Evidence from LQ-45 Firms in Indonesia

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Abstract: This study investigates earnings management in firms included in the LQ-45 index of the Indonesian capital market. The analysis focuses on executive digital literacy, investor sentiment, and Environmental, Social, and Governance (ESG) performance, alongside several firm-level financial controls. Panel data consisting of 84 firm-year observations are analyzed using a Fixed Effects Model (FEM) to account for unobserved, time-invariant firm-specific characteristics. The estimation results indicate that the regression model is jointly significant and explains a moderate proportion of the variation in earnings management. However, executive digital literacy, investor sentiment, and ESG performance do not show statistically significant associations with earnings management. By contrast, operating cash flow and leverage are negatively and significantly related to earnings management, suggesting that firms with stronger internal cash generation and greater debt-related monitoring tend to exhibit lower levels of opportunistic reporting. Profitability, firm size, and sales growth are not found to be significant determinants. Taken together, after controlling for firm-specific heterogeneity, variations in earnings management appear to be more closely associated with firms' financial conditions than with non-financial characteristics within the sampled firms.

Keywords: Earnings management, Executive digital literacy, ESG performance, Investor sentiment, LQ-45 firms.

INTRODUCTION

Publicly listed companies in Indonesia operate in an environment characterized by increasing reliance on digital systems in financial reporting and corporate decision-making. Within this context, the quality of financial reporting has become closely linked to the ability of top executives to understand, interpret, and govern digitally generated financial information. The Indonesia Stock Exchange has encouraged the use of digital technologies to support more transparent, timely, and reliable disclosure practices. Despite these developments, empirical evidence on whether executives' digital capabilities influence financial reporting quality particularly earnings management remains limited in the

Indonesian accounting literature, especially for large and highly liquid firms included in the LQ-45 index.

Prior evidence from global and emerging-market settings indicates that the diffusion of advanced financial technologies in developing economies, including Indonesia, has progressed unevenly relative to developed markets [45]. In the Indonesian context, [24] document that the adoption of artificial intelligence (AI) in traditional firms is constrained by data security concerns, high implementation costs, and shortages of digitally skilled personnel. Similar constraints are reported by [13], who find that AI utilization among micro and ultra-micro enterprises remains limited due to low levels of digital literacy, inadequate infrastructure, and weak human capital foundations. These findings suggest that technological development has not always been accompanied by commensurate investments in human capital, including at the executive level, where strategic decisions related to financial reporting are ultimately made. At the same time, the ongoing digitalization of business processes has gradually reshaped managerial roles and responsibilities.

Digital literacy is no longer viewed solely as an operational or technical skill but has increasingly been recognized as a strategic managerial competence [15, 39]. Executives with stronger digital capabilities are expected to more effectively integrate technology-driven information into organizational decision-making processes. From a financial reporting perspective, such capabilities may support faster, more transparent, and data-driven reporting decisions. Existing studies also suggest that digitally oriented leadership can enhance organizational performance by facilitating digital transformation, improving employee effectiveness, and strengthening organizational commitment [33]. Nevertheless, the expansion of digital technologies may also introduce new opportunities for opportunistic behavior in financial reporting. Earnings management defined as managerial discretion exercised to influence reported earnings for specific objectives can be implemented through increasingly sophisticated and less easily detectable techniques in digitally enabled environments [21, 11].

Financial reporting outcomes are not determined solely by internal managerial capabilities but are also shaped by external market conditions, particularly investor sentiment. Investor sentiment reflects the collective optimism or pessimism of market participants regarding firm prospects or overall market conditions. Periods of heightened investor optimism may increase pressure on firms to report stronger financial performance in order to align with elevated market expectations, whereas periods of pessimism are often associated with more conservative reporting behavior [8, 27]. Empirical evidence indicates, for example, that firms are more likely to rely on discretionary accruals to meet earnings benchmarks during periods of unfavorable market sentiment [42, 1]. These dynamics suggest that investor sentiment constitutes an important contextual factor in understanding earnings management behavior.

Alongside digitalization and market sentiment, corporate sustainability and governance considerations have gained prominence in both academic research and capital markets. Environmental, Social, and Governance (ESG) performance is widely used to capture firms' commitments to non-financial objectives and long-term value creation. A substantial body of literature reports that firms with stronger ESG performance tend to exhibit higher levels of transparency and accountability in financial reporting [5, 26]. However, other studies provide contrasting evidence, indicating that ESG disclosures may

be strategically employed as legitimacy mechanisms that obscure opportunistic reporting behavior rather than constrain it [46, 18, 20]. These mixed findings imply that strong ESG performance does not necessarily translate into higher financial reporting integrity.

Although executive digital literacy, investor sentiment, and ESG performance have each been examined in prior studies, existing research has largely addressed these factors in isolation. Evidence on how these non-financial attributes jointly relate to earnings management remains limited, particularly in emerging-market settings. Prior studies on digital literacy in accounting and finance have primarily focused on information system efficiency, with less attention given to its behavioral implications for earnings management [38, 9]. Similarly, while the relationship between investor sentiment and financial reporting behavior has been widely investigated, reported findings remain inconsistent across institutional and market contexts [12]. The role of ESG performance in constraining earnings management also continues to be debated, especially regarding whether ESG engagement disciplines managerial behavior or provides alternative channels for earnings manipulation [17].

Building on these considerations, this study examines the associations between executive digital literacy, investor sentiment, and ESG performance and earnings management in firms listed in the LQ-45 index. The LQ-45 index represents companies with relatively high liquidity and substantial market capitalization, making it a central segment of the Indonesian capital market. By jointly considering digital capability, market sentiment, and sustainability-related attributes within a single empirical framework, this study seeks to provide further evidence on the determinants of earnings management in the Indonesian context.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretical Foundations

Positive Accounting Theory

Positive Accounting Theory (PAT) [43] seeks to explain and predict accounting choices by focusing on economic incentives and contractual relationships within firms. The theory is grounded in three central hypotheses. First, the Bonus Plan Hypothesis posits that managers are inclined to adopt accounting methods that increase reported earnings when their compensation is tied to accounting-based performance measures. Second, the Debt Covenant Hypothesis suggests that firms manage accounting numbers to avoid violations of debt agreements by maintaining required financial ratios. Third, the Political Cost Hypothesis argues that larger firms are more likely to reduce reported earnings to mitigate political scrutiny, regulatory intervention, or public pressure.

Within this framework, executive digital literacy has become increasingly salient in shaping accounting-related strategic decisions. Executives with advanced digital capabilities are better positioned to exploit digital accounting systems and data-driven tools to monitor performance, manage financial reporting processes, and strategically respond to contractual and political constraints [31, 37]. Proficiency in digital accounting technologies enables managers not only to optimize reported earnings to meet compensation incentives, but also to manage financial ratios strategically in order to reduce the likelihood of covenant violations through more sophisticated accounting practices [4].

Investor sentiment constitutes a behavioral dimension reflecting the market's collective assessment of a firm's prospects. When investor sentiment deteriorates, managers may resort to earnings management as a defensive mechanism to stabilize market expectations and prevent declines in share prices that could adversely affect managerial reputation or compensation [8, 47]. From the perspective of Positive Accounting Theory, such behavior is closely aligned with both the bonus plan and political cost hypotheses, as managers attempt to protect private benefits under conditions of heightened external pressure.

Although ESG (Environmental, Social, and Governance) performance is frequently associated with ethical conduct and long-term sustainability, PAT interprets ESG engagement primarily as a strategic response to external economic and political incentives. Firms may deploy ESG initiatives to reduce political costs, strengthen legitimacy, and cultivate a favorable image among regulators, investors, and other stakeholders [10, 28]. Strategically managed ESG performance can therefore attract sustainability-oriented investors while simultaneously improving creditors' perceptions of corporate stability and risk management.

Signaling Theory

Signaling Theory [36] explains how informed parties convey credible signals to mitigate information asymmetry in markets characterized by unequal access to information. In capital markets, publicly listed firms actively transmit signals to investors to influence perceptions of firm value, risk, and future performance.

In recent years, ESG performance has emerged as one of the most salient non-financial signals. ESG disclosures are widely interpreted as indicators of a firm's commitment to long-term sustainability, responsible risk management, and sound governance practices [14, 6, 10]. When ESG signals are consistent, credible, and verifiable, they can reduce information asymmetry, enhance corporate reputation, and strengthen investor confidence.

Investor sentiment is partially shaped by market participants' psychological responses to such signals. Strong and credible ESG signals tend to foster positive investor perceptions, thereby reinforcing favorable sentiment toward the firm [3, 6, 28]. However, the effectiveness of ESG as a signaling mechanism is contingent upon its perceived authenticity. If investors interpret ESG disclosures as symbolic rather than substantive, firms face the risk of reputational damage associated with greenwashing, which may ultimately erode trust and market valuation.

Legitimacy Theory

Legitimacy Theory posits that organizations continuously seek to align their activities and outcomes with prevailing societal norms, values, and expectations in order to secure ongoing support from key stakeholders [30, 34]. When discrepancies arise between societal expectations and corporate behavior, firms may adopt legitimacy strategies to restore or maintain their social acceptance.

Executive digital literacy plays a pivotal role in the formulation and execution of legitimacy strategies. Digitally competent executives can leverage advanced information technologies to enhance transparency, accountability, and the credibility of both financial and sustainability disclosures [37]. Through digital platforms and data-driven communication channels, firms can construct coherent legitimacy narratives that resonate with social and environmental expectations.

Investor sentiment, as a market-based manifestation of public opinion, often acts as a catalyst for adjustments in legitimacy strategies. Periods of negative sentiment triggered by environmental, social, or governance concerns typically prompt firms to intensify ESG initiatives in order to safeguard legitimacy in both capital markets and the broader public sphere. In this context, ESG performance functions as a central mechanism for legitimacy maintenance. Comprehensive and systematic sustainability reporting enables firms to demonstrate alignment with societal expectations while reinforcing stakeholder trust and confidence.

Review of Prior Empirical Studies

Executive Digital Literacy

Executive digital literacy has become a critical capability in the management of increasingly complex financial information environments. Beyond technical proficiency, digital literacy encompasses executives' cognitive ability to access, evaluate, and strategically use digital information in decision-making processes, particularly in environments characterized by information overload and asymmetry [35]. In the context of earnings management, digital literacy enables executives to deploy advanced technologies such as Enterprise Resource Planning (ERP) systems, big data analytics, and artificial intelligence based accounting applications to enhance reporting efficiency and precision [16]. While these technologies facilitate transparency and operational control, they may also expand managerial discretion and create opportunities for earnings manipulation in the absence of robust governance and ethical oversight.

Empirical evidence suggests that high levels of executive digital literacy are associated with stronger governance quality and more effective data-driven decision-making. [23] document a positive association between the adoption of digital information systems by top management and financial reporting quality. In contrast, [25] cautions that advanced technologies can be strategically exploited to smooth or manage earnings, particularly under conditions of performance pressure or elevated investor expectations.

Common proxies for executive digital literacy include educational background, involvement in digital transformation initiatives, and professional certifications in information systems and digital technologies. Executives holding certifications such as the Certified Information Systems Auditor (CISA) or equivalent digital credentials typically possess deeper insights into organizational information systems, which may enhance their ability to influence financial reporting processes [29].

Moreover, experience with digital transformation projects shapes how executives apply digital capabilities in earnings management contexts. Executives with advanced digital literacy are better equipped to identify system-level flexibilities and informational blind spots, allowing them to exercise greater discretion over accrual-based reporting

choices [35]. Consequently, senior executives with extensive knowledge of financial reporting systems and technological vulnerabilities are more likely to employ accrual-based strategies to adjust reported earnings in response to market pressures or performance targets [47, 22]. Accordingly, executive digital literacy represents a double-edged sword: it can improve reporting efficiency and transparency while simultaneously increasing the risk of opportunistic earnings management. Based on this reasoning, the following hypothesis is formulated:

- **H_1:** Executive digital literacy is positively and significantly associated with earnings management.

Investor Sentiment

Investor sentiment captures the aggregate beliefs and expectations of market participants regarding firm performance and broader market conditions, and has been shown to exert a substantial influence on managerial behavior [1]. [17] demonstrate that periods of elevated investor sentiment intensify market pressure, prompting managers to adjust financial strategies and policies in response to heightened expectations. In this context, [7] provide empirical evidence that optimistic investor sentiment increases managers' incentives to engage in earnings management as a means of meeting market expectations and sustaining firm valuation. Earnings management frequently emerges as one such response, aimed at sustaining favorable performance perceptions among investors.

This evidence is corroborated by [12], who examine publicly listed firms in Brazil and report a significant negative association between firm-specific investor sentiment and accrual-based earnings management. Their findings suggest that when investor sentiment weakens, managers become more inclined to manipulate accounting numbers to preserve a positive financial image. Using a linear regression framework applied to 175 firms over the 2010–2018 period, the study underscores the role of market pressure in shaping reporting behavior and financial reporting quality.

Trading volume is commonly employed as a proxy for investor sentiment, as unusually high trading activity is often interpreted as a signal of investor optimism [44]. [2] argue that surges in trading volume are typically associated with positive sentiment, which in turn generates implicit pressure on management to meet market expectations. Under such conditions, managers may engage in earnings management by accelerating revenue recognition, deferring expenses, or altering accounting policies to present more favorable performance outcomes [46].

Furthermore, executives' awareness of sentiment-driven trading activity can trigger strategic responses in earnings management. Financial managers may proactively adjust investment and expenditure decisions to enhance reported earnings in both the short and long term. These dynamics indicate that investor sentiment not only shapes external market perceptions but also permeates internal corporate decision-making processes.

Accordingly, the following hypothesis is proposed:

- **H_2:** Investor sentiment is positively and significantly associated with earnings management.

ESG Performance

Environmental, Social, and Governance (ESG) performance reflects a firm's commitment to sustainable development, social responsibility, and effective governance structures. ESG metrics have become integral to investment decision-making, as investors increasingly rely on them to assess long-term risk exposure and sustainable growth potential. A substantial body of empirical literature documents a negative relationship between ESG performance and earnings management, indicating that firms with superior ESG performance are less likely to engage in opportunistic financial reporting.

For instance, [44, 32] find that firms with stronger ESG profiles exhibit significantly lower levels of earnings management, largely due to heightened stakeholder scrutiny and more robust internal governance mechanisms. These findings support the argument that ESG engagement enhances transparency and accountability in financial reporting. Consistent evidence is provided by [40], who report that higher ESG scores are associated with a marked decline in earnings management, driven by increased external monitoring and improved reporting integrity.

ESG scores serve as comprehensive indicators of a firm's sustainability orientation, capturing the extent to which environmental stewardship, social responsibility, and governance quality are embedded in corporate practices. [41] argues that firms with high ESG scores tend to maintain stronger internal control systems and higher levels of disclosure quality, thereby reducing both the incentives and opportunities for aggressive earnings management.

Despite growing commitments to sustainability, firms continue to face pressure to meet short-term earnings targets. In this context, ESG performance may signal a firm's capacity to balance financial objectives with ethical reporting practices. Moreover, ESG engagement contributes to public trust and mitigates information asymmetry between management and stakeholders. Further evidence from [40] indicates that proactive ESG disclosure constrains managerial opportunism by increasing public visibility and scrutiny. By enhancing transparency around sustainability performance, firms reinforce incentives to produce accurate and ethically grounded financial reports. Consequently, ESG performance functions as an effective governance mechanism that disciplines earnings management behavior.

Based on the foregoing discussion, the following hypothesis is formulated:

- **H_3:** ESG performance is negatively and significantly associated with earnings management.

DATA AND METHODOLOGY

Our initial sample consists of companies listed on the Indonesia Stock Exchange (IDX) that were included in the LQ-45 index during the period 2021–2023. Observations that were not consistently included in the LQ-45 index throughout the observation period, as well as firms with incomplete or insufficient data, were excluded from the sample. The final sample comprises 28 firms that consistently remained in the LQ-45 index, resulting in a total of 84 firm-year observations. All data were obtained from the Indonesia Stock Exchange database.

Data Collection and Analysis

This study adopts a quantitative research approach using secondary data obtained from the official website of the Indonesia Stock Exchange, Refinitiv, and disclosures published by the respective firms. The data include financial statements, stock trading volumes, information on executives' digital certifications, and ESG scores for each firm. The Indonesia Stock Exchange database is widely recognized as a valid and reliable data source and is commonly used in academic and professional research in Indonesia.

Dependent Variable

Earnings management is employed as the dependent variable and is proxied by discretionary accruals measured using the Modified Jones Model, originally proposed by [11]. Discretionary accruals are calculated through the following stages:

a. Calculating Total Accruals (TAC):

$$\mathbf{TAC = NIit - CFOit}$$

Total accruals (TAC) are then estimated using Ordinary Least Squares (OLS) regression as follows:

$$\frac{TA_{it}}{A_{it-1}} = \beta_1\left(\frac{1}{A_{it-1}}\right) + \beta_2\left(\frac{\Delta Rev_{it}}{A_{it-1}}\right) + \beta_3\left(\frac{\Delta PPE_{it}}{A_{it-1}}\right) + \varepsilon$$

b. Calculating Non-Discretionary Accruals (NDA):

$$NDA_{it} = \beta_1\left(\frac{1}{A_{it-1}}\right) + \beta_2\left(\frac{\Delta Rev_{it}}{A_{it-1}} - \frac{\Delta Rec_{it}}{A_{it-1}}\right) + \beta_3\left(\frac{\Delta PPE_{it}}{A_{it-1}}\right)$$

c. Calculating Discretionary Accruals (DA):

$$DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it}$$

Where:

DA_{it} = Discretionary accruals of firm *i* in year *t*

NDA_{it} = Non-discretionary accruals of firm *i* in year *t*

TAC_{it} = Total accruals of firm *i* in year *t*

NI_{it} = Net income of firm *i* in year *t*

CFO_{it} = Cash flow from operating activities of firm *i* in year *t*

A_{it-1} = Total assets of firm *i* in year *t–1*

ΔREV_{it} = Change in revenue from year *t–1* to year *t*

PPE_{it} = Property, plant, and equipment of firm *i* in year *t*

ΔREC_{it} = Change in accounts receivable from year *t–1* to year *t*

ε = error

Independent Variables

Three independent variables are employed to examine their effects on earnings management. The first variable is executive digital literacy (EDL), which is measured by calculating the percentage of executives holding digital literacy certifications relative to the total number of executives within a firm. This measurement provides a more comprehensive representation of the overall digital capability of the top management team, rather than focusing on a single individual. Using a proportional measure allows the study to capture the firm's level of digital readiness more accurately. Moreover, this approach is practical, as information on digital certifications can be obtained from secondary sources such as annual reports, board profiles, or corporate disclosures related to executive digital competency development programs.

The second independent variable is investor sentiment (IS), which is measured using annual stock trading volume divided by the number of outstanding shares, reflecting the intensity of trading activity in the capital market. The third independent variable is ESG performance, measured using ESG scores assigned to LQ-45 firms. ESG scores provide a standardized quantitative assessment of the extent to which firms implement environmental, social, and governance practices. Table 1 below presents the ESG score ranges.

Table 1: ESG Score Ranges

Score Range	Quartile	Description
0–25	1	Relatively poor, inadequate transparency
>25–50	2	Relatively satisfactory, moderate transparency
>50–75	3	Relatively good, above-average transparency
>75–100	4	Very good, high level of transparency

Source: Refinitiv (2024)

The control variables included in this study are operating cash flow (OCF), net profit margin (NPM), debt-to-asset ratio (DAR), firm age (FA), and sales growth (SG). Table 2 summarizes the measurement of all variables.

Table 2: Variable Measurement

Variable Type	Variable	Acronym	Measurement
Dependent	Earnings management	EM	Discretionary accruals
Independent	Executive digital literacy	EDL	Digitally certified executives / total executives
	Investor sentiment	IS	Annual trading volume / outstanding shares
	ESG performance	ESG	ESG score

Control	Operating cash flow	OCF	Cash flow from operating activities
	Net profit margin	NPM	Net income / sales
	Debt ratio	DAR	Total liabilities / total assets
	Firm age	FA	Observation year minus establishment year
	Sales growth	SG	Percentage change in sales

The empirical model employed in this study is specified as follows:

$$EM=\beta_0+\beta_1 EDL+\beta_2 IS+\beta_3 ESG+\beta_4 OCF+ \beta_5 NPM+\beta_6 DAR+\beta_7 FA+\beta_8 SG+\varepsilon$$

FINDINGS AND DISCUSSION

The descriptive statistics reported in Table 3 provide an initial empirical overview of the characteristics and distribution of the data used to examine the relationships among the study variables. The observed variation across variables indicates sufficient cross-firm heterogeneity, which supports the econometric feasibility of the regression model and reduces concerns related to limited variability.

Table 3: Descriptive Statistics

Variable	Mean	Median	Min	Max	Std.Dev
EM_Y	-0.033941	-0.031395	-0.287235	0.535484	0.087758
EDL_X1	14.13286	5.410000	0.000000	94.74000	24.04989
IS_X2	0.457536	0.354515	0.040912	2.638181	0.388457
ESG_X3	28.55000	28.00000	16.30000	42.70000	7.724683
C1_OCF	27.17496	29.44199	17.86179	32.49773	4.769921
C2_NPM	18.63889	14.52235	-6.265183	64.76622	14.15811
C3_DAR	53.63019	46.83681	11.41169	88.12091	22.43602
C4_FA	26.89286	26.50000	10.00000	59.00000	10.49041
C5_SG	0.159027	0.106089	-0.772550	1.283407	0.269635

Source: processed data

The descriptive results show that the level of earnings management, proxied by discretionary accruals, varies across the sampled firms. This variation suggests that earnings reporting practices are not homogeneous and may reflect differences in internal policies and managerial characteristics that shape earnings management behavior. Executive digital literacy exhibits a relatively high degree of dispersion, indicating substantial inequality in digital capabilities at the top management level. This dispersion reflects differences in firms' capacity to integrate digital tools into managerial decision-making and financial reporting processes.

Investor sentiment also displays considerable variation across firms. This condition implies that market pressure faced by management is not uniform, thereby generating differences in the intensity of incentives to respond to investor expectations through earnings reporting policies. In contrast, ESG scores exhibit more moderate dispersion with a tendency toward concentration. This pattern suggests that ESG performance among the sampled firms is relatively clustered, indicating convergence in ESG adoption within the Indonesian capital market.

The variation observed in the control variables representing firms' financial and operational conditions, including operating cash flows, profitability, leverage, firm size, and sales growth—highlights empirically relevant fundamental differences across firms. Accordingly, the inclusion of financial control variables is necessary to isolate the effects of the main explanatory variables on earnings management and to limit potential estimation bias.

Correlation Matrix

The data were subsequently evaluated to ensure compliance with the assumptions underlying multiple regression analysis, thereby minimizing the risk of biased or misleading inferences. A series of diagnostic tests was performed to assess the presence of outliers, as well as the assumptions of normality, linearity, multicollinearity, heteroskedasticity, and autocorrelation. Table 4 reports the correlation matrix among the study variables, which is used to identify potential multicollinearity concerns. The highest statistically significant correlation observed is approximately |r| = 0.545 between ESG_X3 and C3_DAR. Consistent with the guideline proposed by Hair et al. (2010), correlation coefficients below 0.80 indicate that multicollinearity is not a serious concern in the model.

Table 4 Correlation Matrix

Variabel	EM_Y	LDE_X1	IS_X2	ESG _X3	C1_OCF	C2_NPM	C3_DAR	C4_FA	C5_SG
EM_Y	1.000000								
EDL_X1	0.027567	1.000000							
IS_X2	-0.147827	-0.106468	1.000000						
ESG_X3	0.129080	0.076766	0.223200	1.000000					
C1_OCF	-0.020638	0.348888	-0.247409	-0.040376	1.000000				
C2_NPM	0.041390	0.120427	-0.064989	-0.238440	0.249358	1.000000			
C3_DAR	-0.217440	0.074920	-0.046663	**-0.544879**	0.359706	0.400299	1.000000		
C4_FA	0.324841	0.095146	-0.185061	0.159926	0.197274	-0.194040	-0.245977	1.000000	
C5_SG	-0.234205	-0.095248	0.256515	0.140855	-0.171483	-0.022375	-0.114517	-0.190302	1.000000

Source: processed data

Model Selection Tests

Following the presentation of descriptive statistics and the correlation matrix, the empirical analysis proceeds to panel data estimation using the Fixed Effects Model. This model choice

is supported by the results of the model specification tests, particularly the Hausman test. The regression results provide empirical evidence on the direction and statistical significance of the relationships between the independent variables executive digital literacy, investor sentiment, and ESG performance and earnings management, while controlling for firm-specific characteristics.

Estimation Results of the Selected Model (Fixed Effects Model)

Based on the outcomes of the model selection tests, the Fixed Effects Model is employed as the appropriate regression specification. Table 5 reports the estimation results of the Fixed Effects Model.

Table 5: Fixed Effect Model Analysis

Variable	VIF	Coefisien	t-statistik	Prob	Explanation
C		55.85731	1.293899	0.2020	insignificant
EDL_X1	1.23	0.000709	1.223912	0.2271	insignificant
IS_X2	1.13	0.031382	0.855696	0.3965	insignificant
ESG_X3	1.53	0.068627	1.469502	0.1484	insignificant
C1_OCF	1.33	-0.068766	-4.476086	0.0000	significant
C2_NPM	1.20	0.002381	1.256344	0.2152	insignificant
C3_DAR	1.60	-0.002589	-3.079237	0.0035	significant
C4_FA	1.13	-2.073298	-1.264992	0.2121	insignificant
C5_SG	1.19	-0.021030	-0.642431	0.5237	insignificant
Observation					84
Adj R-squared					0.539994
F-statistic					3.750240
Prob(F-statistic)					0.000016

Source: processed data

The Fixed Effects estimation yields a statistically significant model ($F = 3.750$; $p < 0.01$) with an adjusted R^2 of 0.540, indicating moderate explanatory power. Although executive digital literacy, investor sentiment, and ESG performance exhibit positive coefficients, none of these variables are statistically significant at conventional levels. In contrast, operating cash flow and leverage display negative and statistically significant effects on earnings management. Meanwhile, profitability, firm size, and sales growth do not show statistically significant influences in the estimated model.

CONCLUSION

This study aims to examine the effects of executive digital literacy, investor sentiment, and ESG performance on earnings management, while controlling for firm-specific financial

characteristics. The estimation results based on the Fixed Effects Model indicate that the research model is jointly significant and exhibits an adequate level of explanatory power. However, at the individual level, executive digital literacy, investor sentiment, and ESG performance are not found to have statistically significant effects on earnings management. These findings suggest that such non-financial factors have not yet played a direct role in either constraining or encouraging opportunistic financial reporting behavior once firm-level heterogeneity is properly controlled for.

In contrast, fundamental financial variables particularly operating cash flow and leverage are shown to exert negative and statistically significant effects on earnings management. This result is consistent with the view that stronger operating cash flows and higher leverage impose financial discipline that constrains earnings management. Meanwhile, profitability, firm size, and sales growth do not exhibit statistically significant effects in the estimated model. Taken together, the results suggest that earnings management in LQ-45 firms is more closely associated with fundamental financial conditions and financing structures than with non-financial attributes. This study therefore contributes to the literature by providing empirical evidence on the limited effectiveness of non-financial mechanisms in improving earnings quality among publicly listed firms.

The findings also carry important policy implications for capital market authorities and financial reporting standard setters. The insignificant effects of executive digital literacy, investor sentiment, and ESG performance on earnings management highlight the need for a policy shift from a primary focus on disclosure compliance toward strengthening the substance and quality of implementation. Regulators are encouraged to develop ESG guidelines that are more standardized, verifiable, and performance-based, so that sustainability practices function not merely as reputational signals but also as effective disciplinary mechanisms for earnings quality. In addition, initiatives aimed at enhancing executives' digital competencies should be integrated with corporate governance frameworks and internal control systems to prevent the opportunistic use of digital capabilities in financial reporting. Given the demonstrated role of operating cash flow and leverage in constraining earnings management, strengthening regulations related to cash flow transparency and creditor oversight also represents a strategic policy instrument for improving the integrity of financial reporting among public companies.

ACKNOWLEDGEMENT

The author(s) would like to thank all individuals and institutions who contributed to the completion of this study. Special appreciation is extended to colleagues and anonymous reviewers for their valuable comments and constructive suggestions, which significantly improved the quality and clarity of the manuscript. Any remaining errors are solely the responsibility of the author(s). Artificial intelligence tools were used exclusively for language editing and clarity enhancement; however, the author(s) retain full responsibility for the content of the manuscript.

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