International Journal of Computer Information Systems and Industrial Management Applications
ISSN 2150-7988 Volume 18(2) 2026 pp. 1713-1727
https://doi.org/10.70917/ijcisim-2026-4764
Article

THE EFFECT OF CORPORATE GOVERNANCE MECHANISMS ON EARNINGS QUALITY, WITH COMPANY CHARACTERISTICS AND AUDIT QUALITY AS MEDIATING VARIABLES

Muhammad Rais[1], Muhammad Ali[2], Maat Pono[3]

[1] Hasanuddin University, Indonesia.
Email: raismuhamad000@gmail.com
ORCID: 0000-0001-9587-6942
[2] Hasanuddin University, Indonesia.
Email: muhd.alilakatu@gmail.com
[3] Hasanuddin University, Indonesia.
Email: maatpono@fe.unhas.ac.id
ORCID: 0000-0002-8906-8743
Corresponding Author: Muhammad Rais

Abstract: This study examines the direct and indirect effects of corporate governance mechanisms on earnings quality, as well as the mediating roles of firm characteristics and audit quality in this relationship. Drawing on three complementary theoretical frameworks Agency Theory, Contingency Theory, and Signalling Theory the analysis focuses on 25 mining firms listed on the Indonesia Stock Exchange over the period 2020–2024, yielding 125 firm-year observations. Earnings quality is measured comprehensively across four dimensions: persistence, predictability, variability, and smoothness. The results show that corporate governance has a significant negative direct effect on earnings quality, indicating that formal compliance with governance regulations often remains symbolic rather than substantive in addressing industry-specific reporting discretion. However, corporate governance positively and significantly influences both firm characteristics and audit quality; these are the strongest pathways in the model. Firm characteristics further mediate the link between governance and earnings quality, as stronger governance improves reporting reliability indirectly by enhancing operational scale, funding stability, and resource capacity. In contrast, audit quality does not significantly mediate the relationship, nor does it exert a direct effect on earnings quality, suggesting that engaging high-reputation auditors alone cannot resolve inherent limitations in verifying technical estimates such as mineral reserves and exploration costs. These findings provide new context-specific insights for emerging-market extractive industries, highlighting that governance effectiveness depends on aligning formal structures with substantive oversight capacity and industry-specific accounting challenges.
Keywords: Corporate governance; Earnings quality; Firm characteristics; Audit quality; Mining industry

1. Introduction

Profit is a key indicator of a company's financial performance and serves as a central source of information for economic decision-making by investors, creditors, regulators, and other stakeholders (Menicucci, 2020). High-quality profit provides a reliable and relevant picture of a company's fundamental performance and reflects the business's intrinsic value, thereby serving as a trusted basis for assessing future prospects (Dechow, Ge, & Schrand, 2010).

However, the profit figures listed in financial statements do not always represent actual conditions, as they are susceptible to manipulation through earnings management practices driven by management's opportunistic interests, which ultimately undermine the quality and reliability of reported information (Ball, Kothari, & Robin, 2000).

Kualitas laba bersifat konsep multidimensi yang belum memiliki definisi dan standar pengukuran tunggal yang disepakati secara universal (Menicucci, 2020). Secara umum, kualitas laba dinilai melalui karakteristik persistensi, prediktabilitas, variabilitas, dan kemulusan laba yang diukur berdasarkan data akuntansi perusahaan (Francis et al., 2005; Menicucci, 2020). Berbagai studi empiris menunjukkan inkonsistensi temuan mengenai faktor-faktor penentu kualitas laba; penelitian yang ada masih didominasi konteks negara maju dan sektor keuangan atau manufaktur, serta jarang menguji jalur pengaruh tidak langsung yang menjelaskan bagaimana faktor eksternal dan internal perusahaan bekerja membentuk kualitas pelaporan keuangan (Leuz & Wysocki, 2016; Munjal, Singh, & Jearth, 2021).

Earnings quality is a multidimensional concept that does not yet have a single, universally agreed-upon definition or measurement standard (Menicucci, 2020). Generally, earnings quality is assessed through the characteristics of persistence, predictability, variability, and smoothness of earnings, which are measured based on a company's accounting data (Francis et al., 2005; Menicucci, 2020). Various empirical studies reveal inconsistent findings regarding the determinants of earnings quality; existing research remains dominated by the contexts of developed countries and the financial or manufacturing sectors, and rarely examines indirect channels that explain how external and internal firm factors interact to shape the quality of financial reporting (Leuz & Wysocki, 2016; Munjal, Singh, & Jearth, 2021).

The limited consistency of these findings suggests that the relationship between CG and earnings quality is not direct but is mediated by firm-specific characteristics and audit quality. Effective CG mechanisms can strengthen firm characteristics such as business scale, capital structure, and operational stability, which in turn influence a firm's ability to present reliable earnings reports (Xiao, O'Neill, & Mattila, 2012). Furthermore, effective CG also encourages the selection of high-quality auditors, who are expected to verify the accuracy of financial reporting information (Carcello & Nagy, 2002; Myers, Myers, & Omer, 2003). Nevertheless, the mediating role of these two variables has not been extensively tested simultaneously, particularly in sectors with complex accounting characteristics and high operational risk.

In the Indonesian context, the mining sector is a highly relevant and crucial subject of research. This sector is one of the backbones of the national economy, making a significant contribution to government revenue and exports, yet it possesses unique characteristics: it is highly dependent on fluctuations in global commodity prices, requires substantial long-term investment, and involves broad accounting discretion regarding the valuation of mineral reserves and exploration costs (Sutanto et al., 2021). These conditions increase management's incentive to engage in earnings management and demand more effective governance oversight and stricter audits compared to other sectors. To date, studies examining the effect of CG on earnings quality incorporating firm characteristics and audit quality as mediating variables among mining companies listed on the Indonesia Stock Exchange remain very limited.

Based on these theoretical and empirical gaps, this study aims to analyze the effect of corporate governance mechanisms on earnings quality and to examine the role of firm characteristics and audit quality as mediating variables in mining companies listed on the Indonesia Stock Exchange. This study contributes to the literature by expanding the sectoral and developing-country contexts, as well as by elucidating the pathways through which corporate governance mechanisms improve the quality of financial reporting in the complex extractive industry.

2. LITERATURE REVIEW

This study is grounded in three complementary theoretical frameworks: Contingency Theory, Agency Theory, and Signalling Theory. Contingency Theory posits that no single governance model is universally effective; instead, the impact of corporate governance depends on how well it aligns with internal and external conditions such as business environment, strategic orientation, and firm characteristics, with governance mechanisms acting either as substitutes or complements to one another across different contexts (Aguilera et al., 2007). Agency Theory, first formalized by Jensen and Meckling (1976), explains that conflicts between principals (shareholders) and agents (managers) arise from information asymmetry and divergent interests, creating opportunities for managers to manipulate earnings for personal gain; in this view, corporate governance and external audit serve as key safeguards to reduce opportunistic behaviour and align managerial actions with shareholder interests (Shleifer & Vishny, 1997). Meanwhile, Signalling Theory clarifies that firms use credible signals including strong governance structures, reputable auditors, and consistent earnings to communicate underlying performance quality to outside investors, thereby reducing uncertainty and supporting fair valuation (Spence, 1973).

Earnings quality is widely understood as a multidimensional concept reflecting how accurately reported earnings capture true economic performance and how useful they are for decision-making, with four standard measures commonly applied: persistence, which tracks how well current earnings sustain into future periods; predictability, referring to the reliability of forecasting future earnings from current results; variability, or the stability of earnings over time; and smoothness, which compares earnings volatility relative to operating cash flow volatility (Dechow et al., 2010; Menicucci, 2020). Most existing research on earnings quality focuses on developed economies and non-extractive sectors, leaving limited evidence for industries such as mining, where accounting for exploration costs and reserve estimates introduces unique risks to reporting reliability (Sutanto et al., 2021).

Corporate governance encompasses the full set of legal, institutional, and cultural arrangements that direct and control firms, with five key mechanisms examined in this study. Research on board size remains inconclusive: larger boards offer broader expertise and resources, while smaller boards tend to facilitate faster decision-making and better coordination (Jensen, 1993). Higher proportions of independent commissioners generally strengthen oversight and limit managerial opportunism, though some emerging-market studies find no significant link to reporting outcomes (Fama & Jensen, 1983). Audit committees with financial or accounting expertise consistently reduce financial restatements and constrain aggressive reporting practices (Klein, 2002). Wider public ownership is associated with greater transparency and higher earnings quality compared to concentrated family or state control, while managerial ownership typically aligns interests at low levels but may lead to entrenchment once it exceeds certain thresholds (Morck et al., 1988).

Firm characteristics including size, profitability, leverage, and operational complexity also shape both reporting incentives and the effectiveness of governance measures. Larger and more profitable firms usually maintain stronger internal controls and face less pressure to distort earnings (Hasanuddin et al., 2021), while highly leveraged firms may be more likely to manage results to meet debt covenant requirements (Watts & Zimmerman, 2005); these attributes often operate as intermediate factors through which governance influences reporting quality, a pathway rarely explored in prior mining-sector studies. Audit quality, defined as the combined probability that an auditor detects and reports material misstatements, further supports earnings reliability (DeAngelo, 1981): firms audited by Big 4 audit firms consistently report lower discretionary accruals and more trustworthy earnings, driven by greater resources, stricter quality control, and stronger incentives to protect professional reputation (Boshnak, 2023).

Despite extensive research confirming separate links between governance, firm traits, audit quality, and earnings quality, critical gaps remain. Most studies examine only direct relationships rather than the mediating pathways that explain how governance translates into better reporting (Ahmed & Ibrahim, 2024), and evidence is particularly scarce for emerging markets and the mining industry, which faces distinct operational and accounting challenges (Sutanto et al., 2021). Furthermore, few models have simultaneously tested both firm characteristics and audit quality as dual mediating factors. This study addresses these gaps by analysing data from listed Indonesian mining firms, providing new context-specific insights that enrich international accounting and governance research.

3. RESEARCH OBJECTIVES AND HYPOTHESES DEVELOPMENT

Consistent with the theoretical foundations and empirical evidence outlined in the literature review, the primary objective of this study is to investigate the direct and indirect effects of corporate governance mechanisms, firm characteristics, and audit quality on earnings quality. Specifically, it examines whether firm characteristics and audit quality mediate the relationship between corporate governance and earnings quality. This overarching objective is operationalized into five specific research objectives: To assess the direct impact of corporate governance mechanisms on earnings quality. To evaluate the direct impact of corporate governance mechanisms on firm characteristics (proxied by profitability/ROA). To examine the direct impact of corporate governance mechanisms on audit quality. To analyse the direct effects of firm characteristics and audit quality on earnings quality. To investigate the mediating roles of firm characteristics and audit quality in the link between corporate governance mechanisms and earnings quality.

Hypotheses Development

This study draws on Contingency Theory, Agency Theory, and Signalling Theory to explain the proposed relationships. Contingency Theory suggests that effective governance aligns with firm context to improve performance and reporting reliability. Agency Theory posits that strong governance mitigates information asymmetry and managerial opportunism, supporting more faithful earnings reporting. Signalling Theory further indicates that robust governance, high profitability, and reputable audits serve as credible signals of earnings quality to external stakeholders. Based on these theoretical underpinnings and prior empirical findings, the hypotheses are formulated as follows:

H1: Corporate governance mechanisms have a significant positive effect on earnings quality.

H2: Corporate governance mechanisms have a significant positive effect on firm characteristics (profitability/ROA).

H3: Corporate governance mechanisms have a significant positive association with audit quality (measured by engagement of Big 4 audit firms).

H4: Firm characteristics (profitability/ROA) have a significant positive effect on earnings quality.

H5: Audit quality (Big 4 auditor) has a significant positive effect on earnings quality.

H6: Firm characteristics significantly mediate the relationship between corporate governance mechanisms and earnings quality.

H7: Audit quality significantly mediates the relationship between corporate governance mechanisms and earnings quality.

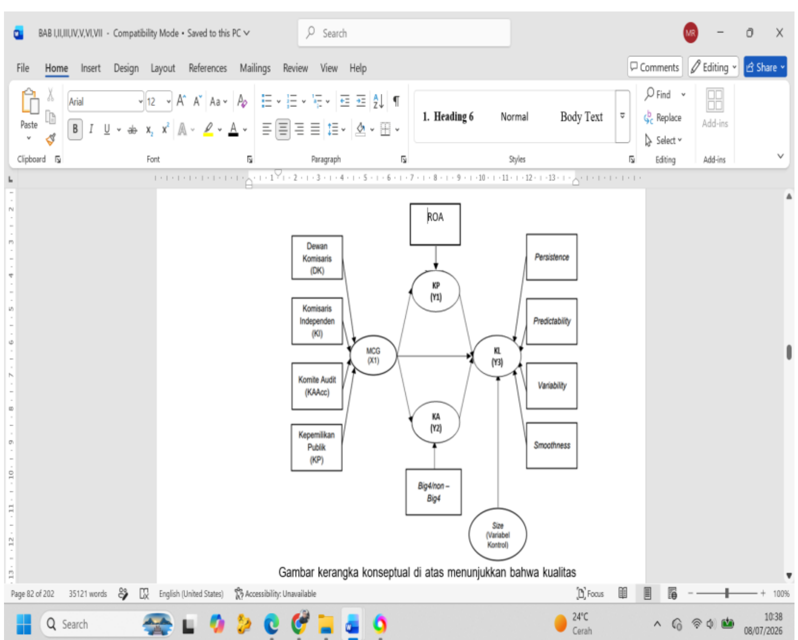

Figure 1. Research model to test hypotheses

4. RESEARCH METHODS

Research Model

This study uses an explanatory research design to investigate direct and indirect relationships between corporate governance mechanisms, firm characteristics, audit quality, and earnings quality. Specifically, it examines whether firm characteristics and audit quality mediate the association between corporate governance and earnings quality. The proposed conceptual model is presented in Figure 1.

The analysis focuses on mining firms listed on the Indonesia Stock Exchange (IDX) over the period 2020–2024. This observation window is selected to align with the Financial Services Authority (OJK)'s regulatory roadmap for corporate governance implementation in Indonesian public companies, ensuring consistent reporting and compliance standards across the sample.

Population and Sampling

The target population consists of all 75 mining companies listed on the IDX between 2020 and 2024. Purposive sampling is applied, with firms included based on these criteria: Consecutively published complete annual reports and financial statements for 2020–2024; Provided full data for all corporate governance, financial, and audit-related variables.

This process yields a final sample of 25 firms, forming a balanced panel dataset of 125 firm-year observations.

Data Sources

All data are secondary, collected from official disclosures including audited financial statements, annual reports, and corporate governance reports available on the IDX website (www.idx.co.id) and official company portals. Content analysis is used to extract governance and audit-related information not directly presented in financial line items.

Variable Measurement

Dependent Variable: Earnings Quality

Earnings quality reflects the extent to which reported earnings accurately reflect underlying economic performance (Dechow et al., 2010). Four proxies are adopted from Menicucci (2020):

1. Persistence: Slope coefficient from the autoregressive model:

   $X_{j,t}=\emptyset_{0,j}+\emptyset_{1,j}X_{j,t-1}+\varepsilon_{j,t}$

   Values closer to 1 indicate more sustainable earnings.

2. Predictability: Square root of residual variance from the persistence model:

   $PD_{j,t}=\sigma\varepsilon_{j,t}2$

   Lower values indicate higher predictability.

3. Variability: Standard deviation of earnings over the study period:

   $VAR_i=\sigma(X_{i,t})$

   Lower volatility indicates higher earnings quality.

4. Smoothness: Ratio of earnings standard deviation to operating cash flow standard deviation:

   $ESM_{i,t}=\sigma(CFO_{i,t})\sigma(Earnings_{i,t})$

   Values closer to 1 indicate fewer discretionary adjustments.

Independent Variable: Corporate Governance Mechanisms

Consistent with Ghofar and Islam (2015), four formative indicators are used:

1. Board Size: Total number of commissioners;
2. Independent Commissioner Ratio: Proportion of independent commissioners on the board;
3. Audit Committee Financial Expertise: Proportion of audit committee members with accounting or finance backgrounds;
4. Public Ownership: Percentage of shares held by the public.

Mediating Variables

1. Firm Characteristics: Proxied by Return on Assets (ROA), calculated as net income divided by total assets.
2. Audit Quality: Dummy variable coded 1 if the firm is audited by a Big 4 firm (PwC, Deloitte, EY, KPMG) or its affiliates, and 0 otherwise (DeAngelo, 1981).

Control Variable

Firm Size: Natural logarithm of total assets, included to control for differences in operational complexity and reporting incentives (Klapper & Love, 2004).

Data Analysis

This study applies Partial Least Squares Structural Equation Modelling (PLS-SEM) via WarpPLS 7.0. PLS-SEM is suitable for this study as it does not require multivariate normality, accommodates formative measurement models, and reliably tests mediation effects (Hair et al., 2017; Sholihin & Ratmono, 2020).

The estimated models are:

1. CG → Earnings Quality:

$EQit=\alpha0+\alpha1CGit+\alpha2Sizeit+\varepsilon it$

2. CG → Firm Characteristics:

$ROAit=\beta0+\beta1CGit+\beta2Sizeit+\varepsilon it$

3. CG → Audit Quality:

$AQit=\gamma0+\gamma1CGit+\gamma2Sizeit+\varepsilon it$

4. Firm Characteristics → Earnings Quality:

$EQit=\delta0+\delta1ROAit+\delta2Sizeit+\varepsilon it$

5. Audit Quality → Earnings Quality:

$EQit=\zeta0+\zeta1AQit+\zeta2Sizeit+\varepsilon it$

6. Mediation by Firm Characteristics:

$EQit=\eta0+\eta1CGit+\eta2ROAit+\eta3Sizeit+\varepsilon it$

7. Mediation by Audit Quality:

$EQit=\theta0+\theta1CGit+\theta2AQit+\theta3Sizeit+\varepsilon it$

Mediation is assessed using Baron and Kenny (1986) criteria alongside bootstrapped indirect effect estimates.

5. RESULTS

Data Description

This study examines the direct and indirect relationships between corporate governance mechanisms, firm characteristics, audit quality, and earnings quality, using firm characteristics and audit quality as mediating variables. The analysis focuses on mining companies listed on the Indonesia Stock Exchange (IDX) over the period 2020–2024. Data are obtained from secondary sources including audited annual reports, financial statements, and corporate governance disclosures published on the official IDX website (www.idx.co.id) and individual company portals. Content analysis is applied to extract governance-related information not explicitly presented in financial line items.

The target population comprises 75 listed mining firms. Following purposive sampling criteria requiring complete consecutive annual reports for 2020–2024, the final sample includes 25 firms, yielding a balanced panel dataset of 125 firm-year observations.

Descriptive Statistics

Table 1. Descriptive Statistics for Corporate Governance Mechanisms

Statistic	Board Size	Independent Commissioners	Audit Committee Financial Experts	Public Ownership (%)
Mean	3.82	1.62	2.59	30.00
Median	3	1	3	28.88
Maximum	10	4	4	71.54
Minimum	2	1	1	2.27
Standard Deviation	1.69	0.77	0.82	16.43
Skewness	1.99	0.89	-1.31	0.46
Kurtosis	5.01	0.36	0.07	0.09
N	125	125	125	125

Source: Authors' calculations, 2026

On average, sample firms have approximately 4 commissioners, with most having 3 members. Independent commissioners average 1.62 per firm, while audit committee members with accounting or finance backgrounds average 2.59. Public ownership accounts for 30.00% of total shares on average, with substantial variation across firms.

Table 2. Descriptive Statistics for Earnings Quality Proxies

Statistic	Persistence	Predictability	Variability	Smoothness
Mean	1.50	1.18	0.83	1.13
Median	0.70	0.95	0.84	0.38
Maximum	48.08	6.93	1.06	27.38
Minimum	-15.55	0.10	0.62	-3.49
Standard Deviation	6.11	0.98	0.08	3.93
Skewness	5.26	3.32	-0.04	4.89
Kurtosis	36.33	14.61	0.90	26.37
N	125	125	125	125

Source: Authors' calculations, 2026

Based on Menicucci (2020), higher earnings quality is indicated by higher persistence, lower predictability, lower variability, and higher smoothness. Overall, three of the four proxies suggest relatively high earnings quality in the sample.

Table 3. Descriptive Statistics for Mediating and Control Variables

Statistic	ROA (%)	Big 4 Auditor Dummy	Firm Size (Ln Total Assets)
Mean	-15.62	0.16	8.26
Median	2.30	0	8.17
Maximum	39.43	1	12.41
Minimum	-52.00	0	6.10
Standard Deviation	220.85	0.37	1.26
Skewness	11.13	1.88	1.10
Kurtosis	124.34	1.55	2.69
N	125	125	125

Source: Authors' calculations, 2026

Mean ROA is negative (-15.62%) with substantial dispersion, indicating large profitability differences across firms. Only 16% of sample firms are audited by Big 4 audit firms. Firm size is relatively evenly distributed.

Measurement Model Assessment

All constructs are modelled as formative indicators. Assessment focuses on indicator weights, significance, and collinearity (Hair et al., 2017; Sholihin & Ratmono, 2020).

Table 4. Outer Weights, Loadings, and Collinearity Statistics

Construct	Indicator	Outer Weight	p-value	Outer Loading	p-value	VIF
Corporate Governance	Board Size	0.419	<0.001	0.857	<0.001	2.39
	Independent Commissioners Ratio	0.423	<0.001	0.865	<0.001	2.42
	Audit Committee Financial Expertise	0.258	0.001	0.527	<0.001	1.15
	Public Ownership	0.261	0.001	0.534	<0.001	1.17
Earnings Quality	Persistence	0.510	<0.001	0.902	<0.001	2.11
	Predictability	0.521	<0.001	0.921	<0.001	2.16
	Variability	0.176	0.021	0.310	<0.001	1.05
	Smoothness	-0.058	0.256	-0.104	0.119	1.01

Firm Characteristics	ROA	1.000	<0.001	1.000	<0.001	-
Audit Quality	Big 4 Auditor	1.000	<0.001	1.000	<0.001	-
Firm Size	Natural Log of Total Assets	1.000	<0.001	1.000	<0.001	-

Source: Authors' calculations, 2026

All indicators except Smoothness have significant weights ($p < 0.05$). Variance Inflation Factor (VIF) values are all below 3.3, indicating no multicollinearity issues.

Structural Model Assessment (Inner Model)

The analysis was conducted using two structural models. Model I was used to test the direct effect of corporate governance mechanisms (MCG) on earnings quality. Furthermore, Model II was developed to test the mediating role of firm characteristics and audit quality in the relationship between corporate governance mechanisms (MCG) and earnings quality.

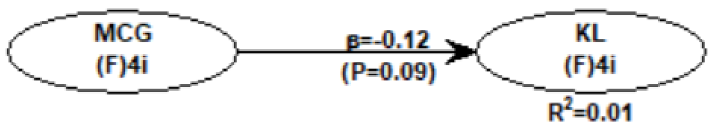

Figure 2. Model I: The Direct Effect of the Corporate Governance Mechanism (MCG) on Earnings Quality

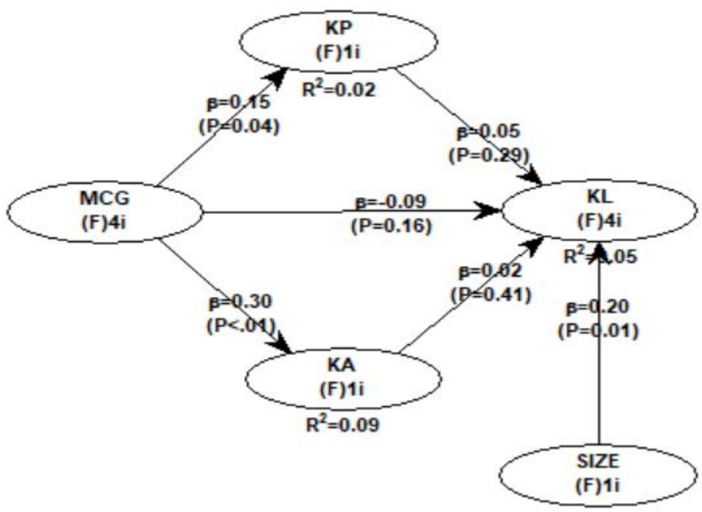

Figure 3 Model of the Mediating Role of Firm Characteristics and Audit Quality in the Relationship Between Corporate Governance Mechanisms (MCG) and Earnings Quality

Model Fit

Table 5. Goodness-of-Fit Indices

Fit Index	Threshold	Direct Effects Model	Mediation Model

APC	$p < 0.05$	0.117 ($p = 0.045$)	0.134 ($p = 0.031$)
AFVIF	≤ 3.3	1.002	1.075
Tenenhaus GoF	≥ 0.1 (small)	0.081	0.208
SPR	≥ 0.7	1.000	0.833
RSCR	≥ 0.9	1.000	0.997

Source: Authors' calculations, 2026

Most fit criteria are satisfied, supporting the suitability of both models.

Explanatory Power and Predictive Relevance

Table 6. R^2 and Q^2 Values

Model / Variable	R^2	Q^2
Direct Effects Model		
Earnings Quality	0.214	0.016
Mediation Model		
Earnings Quality	0.251	0.058
Firm Characteristics (ROA)	0.223	0.028
Audit Quality	0.290	0.106

Source: Authors' calculations, 2026

All Q^2 values exceed zero, confirming adequate predictive relevance. R^2 values indicate weak to moderate explanatory power.

Hypothesis Testing

Direct Effects

Table 7. Direct Path Results

Hypothesis	Path	Coefficient	p-value	Outcome
H1	Corporate Governance → Earnings Quality	-0.147	0.048	Supported
H2	Corporate Governance → ROA	0.151	0.041	Supported
H3	Corporate Governance → Big 4 Auditor	0.299	<0.001	Supported
H4	ROA → Earnings Quality	0.148	0.044	Supported
H5	Big 4 Auditor → Earnings Quality	0.021	0.406	Not Supported

Source: Authors' calculations, 2026

Mediation Effects

Table 8. Mediation Path Results

Hypothesis	Path	Coefficient	p-value	Outcome
H6	CG → ROA → Earnings Quality	0.158	0.043	Supported
H7	CG → Big 4 Auditor → Earnings Quality	0.008	0.452	Not Supported

Source: Authors' calculations, 2026

Summary of Findings

First, corporate governance mechanisms have a significant negative direct effect on earnings quality, suggesting that stricter governance oversight may constrain discretionary reporting in the mining sector. Second, stronger governance is positively associated with higher profitability and engagement of Big 4 auditors. Third, higher profitability is linked to better earnings quality, while Big 4 auditor choice shows no significant direct effect. Finally, profitability significantly mediates the governance–earnings quality link, whereas audit quality does not. These results indicate that governance primarily improves earnings quality by enhancing financial performance rather than through external audit oversight in this sample.

6. Discussion

This study examines the direct and indirect relationships between corporate governance mechanisms, firm characteristics, audit quality, and earnings quality using a sample of 25 mining firms listed on the Indonesia Stock Exchange (IDX) over the period 2020–2024, yielding 125 firm-year observations. Earnings quality is measured comprehensively across four dimensions: persistence, predictability, variability, and smoothness, following Menicucci (2020). The findings provide nuanced insights that challenge normative assumptions in agency theory, while aligning with contingency perspectives on governance effectiveness in emerging-market extractive industries.

Direct Effects of Corporate Governance

Governance and Earnings Quality

The results show a significant negative direct effect of corporate governance on earnings quality ($\beta = -0.147$, $p = 0.048$), contradicting the core prediction of agency theory that formal oversight structures reduce managerial opportunism and improve reporting reliability (Jensen & Meckling, 1976). This counterintuitive finding is consistent with emerging evidence that compliance with governance rules often remains symbolic rather than substantive in institutional contexts with weak enforcement and high industry complexity.

Similar results are documented by Shahroor and Ismail (2022) in UAE banking, Musa et al. (2023) in Nigerian listed firms, and Mensah and Boachie (2023), who note that formal board independence and audit committee mandates do not automatically translate into effective monitoring. In the Indonesian mining sector, this negative association may be explained by structural constraints: independent commissioners and audit committee members often lack specialized technical expertise in mineral valuation, reserve estimation, and exploration accounting. Combined with high price volatility in commodity markets, these limitations create substantial discretion for management, even when firms meet formal governance requirements. As Mian et al. (2023) emphasize, institutional investors and formal oversight bodies often lack the industry-specific knowledge needed to constrain reporting choices effectively.

Governance and Firm Characteristics

Corporate governance exhibits a significant positive effect on firm characteristics (β = 0.151, p = 0.041), confirming that stronger governance correlates with larger asset bases, more stable funding structures, and better operational scale. This aligns with Abedin et al. (2022), de Carvalho Pereira et al. (2023), and Nguyen and Nguyen (2024), who find that credible governance signals improve access to capital markets and support strategic expansion. For mining firms, this relationship is particularly relevant: projects require large upfront investment, and firms with more robust governance structures are better positioned to secure external financing for exploration and development, leading to larger, more complex organizational profiles.

Governance and Audit Quality

The strongest direct path in the model is the positive and highly significant effect of governance on audit quality (β = 0.299, p < 0.001), consistent with agency theory's view that independent boards use Big 4 auditor appointment as a visible commitment to monitoring. This finding mirrors Boshnak (2023), de Carvalho Pereira et al. (2023), and Mattar et al. (2024), who report that firms with stronger governance are far more likely to select high-reputation auditors. In the mining context, this choice appears to function first as a regulatory and market signal an easier compliance step than overhauling internal reporting processes given the industry's uniquely complex accounting standards for extractive activities.

Intermediate and Mediating Relationships

Firm Characteristics and Earnings Quality

Firm characteristics have a significant positive effect on earnings quality (β = 0.148, p = 0.044), indicating that larger, better-resourced firms produce more reliable earnings reports. This supports Hasanuddin et al. (2021), who find that size, liquidity, and investment capacity are key determinants of earnings reliability in Indonesian firms. Larger mining companies typically maintain more robust internal controls, employ specialized accounting staff, and invest in valuation systems capable of handling reserve estimates and reclamation costs—capacities rarely available to smaller operators.

Audit Quality and Earnings Quality

Contrary to expectations, audit quality shows no significant association with earnings quality (β = 0.021, p = 0.406). This result reinforces growing skepticism about the universal value of Big 4 reputation in contexts with high technical uncertainty. Duong Thi (2023) finds no difference in earnings management restraint between Big 4 and non-Big 4 auditors for Vietnamese new listings, while Abu Afifa et al. (2023) and Ahmed and Ibrahim (2024) note that audit quality impacts performance only indirectly, with limited effect on reported earnings attributes.

A key explanation specific to mining is the information asymmetry advantage held by management: even the most reputable auditors lack the geological expertise and site access required to independently verify reserve volumes, exploration feasibility, or impairment triggers. Standard audit procedures cannot fully substitute for industry-specific technical judgment, meaning auditor reputation alone does not resolve the discretion inherent in extractive-sector accounting.

Mediation Effects

This study identifies competitive mediation via firm characteristics: corporate governance reduces earnings quality directly, but improves it indirectly through stronger firm profile (indirect β = 0.158, p = 0.043). This pattern confirms that governance operates most effectively through resource accumulation and operational stability rather than direct reporting control (Abedin et al., 2022; Nguyen & Nguyen, 2024). In contrast, audit quality does not mediate the governance–earnings quality link (indirect β = 0.008, p = 0.452), showing that appointing a Big 4 auditor is insufficient to translate governance commitments into more reliable earnings reporting.

Theoretical Integration

The findings strongly support contingency theory: governance effectiveness is not universal but depends on industry conditions, firm resources, and monitoring capacity (Aguilera et al., 2007). Formal structures board independence, audit committees, Big 4 auditors function primarily as compliance signals in mining, while substantive outcomes require alignment with operational and technical realities. The results also extend signalling theory: while firms successfully signal quality via governance and auditor choice, these signals lack credibility unless accompanied by transparency around critical accounting estimates. Finally, they refine agency theory by showing that formal monitoring reduces agency costs only when oversight bodies possess the technical capacity to evaluate the specific judgments driving reported earnings.

Methodological Contribution

Unlike most prior studies that rely on single accrual-based measures, this research adopts four complementary earnings quality proxies (persistence, predictability, variability, smoothness) following Menicucci (2020). This multi-dimensional approach reduces measurement bias and captures distinct aspects of reporting reliability that single indicators may overlook. The results confirm that earnings quality is a multifaceted construct, and reliance on one measure alone can produce misleading conclusions.

7. Conclusion

Using a sample of 25 mining firms listed on the Indonesia Stock Exchange over 2020–2024, yielding 125 firm-year observations, the findings indicate that: (1) Corporate governance has a significant negative direct effect on earnings quality, indicating that formal compliance alone does not deliver substantive oversight, and may even widen managerial discretion. (2) Corporate governance has a significant positive effect on firm characteristics, supporting stronger operational scale, more stable funding, and better market access. (3) Corporate governance has a highly significant positive effect on audit quality, making this the strongest path in the model better-governed firms are far more likely to appoint high-reputation Big 4 auditors. (4) Firm characteristics have a significant positive effect on earnings quality, as larger, better-resourced firms maintain more robust internal controls for complex accounting estimates. (5) Audit quality has no significant direct effect on earnings quality; engaging a reputable auditor alone cannot resolve limitations in verifying technical mining-related judgments. (6) Firm characteristics significantly mediate the governance–earnings quality link: governance harms earnings quality directly but improves it indirectly by strengthening firm profile. (7) Audit quality does not significantly mediate the governance–earnings quality link, as improved auditor selection does not translate into more reliable reporting in this context.

This paper makes three key contributions: (1) First, it demonstrates that corporate governance influences earnings quality through competing channels, challenging the universal assumption that stronger formal governance uniformly improves reporting reliability. (2) Second, it identifies firm characteristics as a critical bridge between governance and earnings quality, while showing that high audit reputation alone is insufficient to mitigate industry-specific reporting discretion. (3) Third, it provides empirical evidence on how governance, audit quality, and reporting outcomes interact in emerging-market extractive industries, extending contingency perspectives on context-dependent governance effectiveness.

REFERENCES

1. Abedin, S. H., Haque, H., Shahjahan, T., & Kabir, M. N. 2022. Institutional ownership and firm performance: Evidence from an emerging economy. *Journal of Risk and Financial Management*, 15(12), 567. https://doi.org/10.3390/jrfm15120567
2. Abu Afifa, M. M., Saleh, I. H., & Haniah, F. F. 2023. Does earnings management mediate the relationship between audit quality and company performance? Evidence from Jordan. *Journal of Financial Reporting and Accounting*, 21(3), 517–534. https://doi.org/10.1108/JFRA-08-2021-0245
3. Aguilera, R. V., Filatotchev, I., & Jackson, G. 2007. "An Organizational Approach to Comparative Corporate Governance: Costs, Contingencies, and Complementarities", *SSRN Electronic Journal*.
4. Ahmed, M., & Ibrahim, M. Y. 2024. Board independence, audit quality and earnings management among listed non-financial companies in Nigeria. *Malete Journal of Accounting and Finance*, 4(2).

5. Ball, R., Kothari, S. P. and Robin, A. 2000. "The effect of international institutional factors on properties of accounting earnings", *Journal of Accounting and Economics*, 29(1), pp. 1–51.
6. Baron, RM., and Kenny, D. 1986. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations", *Journal of Personality and Social Psychology* 1986, Vol. 51, No. 6, 1173-1182.
7. Boshnak, H. A. 2023. The impact of audit committee characteristics on financial reporting quality: Evidence from Saudi Arabia. *International Journal of Professional*
8. Carcello, J. V and Nagy, A. 2002. "Auditor industry specialization and fraudulent financial reporting", Deloitte & Touche/University of Kansas Symposium on Auditing Problems: Fraud and the Audit Process, pp. 94–118.
9. DeAngelo, L. E. 1981. "Auditor size and audit fees", Journal of Accounting and Economics, 3(May), pp. 183–199.
10. Dechow, M. 1994. "Accounting & Economics The role of accounting accruals", Journal of Accounting and Economics, 18, pp. 3–42.
11. Dechow, P., Ge, W. and Schrand, C. 2010. "Understanding earnings quality: A review of the proxies, their determinants and their consequences", Journal of Accounting and Economics, 50(2–3), pp. 344–401.
12. Dechow, P. M. and Dichev, I. D. 2002. "The quality of accruals and earnings: The role of accrual estimation errors", *Accounting Review*, 77 (SUPPL.), pp. 35– 59.
13. Dechow, P. M. and Skinner, D. J. 2000. "Earnings management: Reconciling the views of accounting academics, practitioners, and regulators", *Accounting Horizons*, 14(2), pp. 235–250.
14. De Carvalho Pereira, V., Pereira, A. G., & de Oliveira, J. S. C. 2023. Influence of ownership structure on the choice of Big Four independent auditors. *International Journal of Disclosure and Governance*, 20, 316–326. https://doi.org/10.1057/s41310-023-00175-7
15. Duong Thi, C. 2023. Audit quality, institutional environments, and earnings management: An empirical analysis of new listings. *SAGE Open*, 13(3). https://doi.org/10.1177/21582440231180672
16. Francis, J., LaFond, R., Olsson, P., Schipper, K., 2005. "The Market Pricing of Accrual Quality", *Journal of Accounting and Economic*, 39, 295-327.
17. Ghofar, A. and Islam, S. M. N. 2015. "*Corporate Governance and Contingency Theory*".
18. Hair, J. F., C. M. Ringle, dan M. Sarstedt. 2017. "Partial least squares structural equation modelling: Rigorous applications, better result and higher acceptance". 228 Hall, M., Macintyre, S. and higher acceptance".
19. Hasanuddin, R., Darman, D., Taufan, M. Y., Salim, A., Muslim, M., Halim, A., & Kusuma, P. 2021. The effect of firm size, debt, current ratio, and investment opportunity set on earnings quality: An empirical study in Indonesia. *Journal of Asian Finance, Economics and Business*, 8(6), 179–188. https://doi.org/10.13106/jafeb.2021.vol8.no6.0179
20. Jensen, M. C. 2010. "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems", *Journal of Applied Corporate Finance*, 22(1), pp. 43–58.
21. Jensen, M. C., and Meckling, W. H. 1976. " Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*. 3 (4), 305–360.
22. Jiang, W., Lee, P. and Anandarajan, A. 2008. "The association between corporate governance and earnings quality: Further evidence using the GOV-Score", *Advances in Accounting*. Elsevier B.V., 24(2), pp. 191–201.
23. Klapper, L. F. and Love, I. 2004. "Corporate governance, investor protection, and performance in emerging markets", *Journal of Corporate Finance*, 10(5), pp. 703–728.
24. Klein, A. 2002. "Audit committee, board of director characteristics, and earnings management", Journal of Accounting and Economics, 33(3), pp. 375–400.
25. Larcker, D. F., Richardson, S. A. and Tuna, A. I. 2007. "Corporate Governance, Accounting Outcomes, and Organizational Performance", *Accounting Review*, 82(4), pp. 963–1008.
26. Leuz, C. and Wysocki, P. D. 2016. "The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research", *Journal of Accounting Research*, 54(2), pp. 525–622.
27. Mattar, D., El Khoury, R., & Chaanine, M. 2024. Factors affecting auditor change decisions: The case of United Kingdom. *SAGE Open*, 14(2). https://doi.org/10.1177/21582440241259844
28. Menicucci, E. 2020. *"Earnings Quality"*, a Book of Palgrave Macmillan, Switzerland.
29. Mensah, E., & Boachie, C. 2023. Corporate governance mechanisms and earnings management: The moderating role of female directors. *Cogent Business & Management*, 10(1), 2167290. https://doi.org/10.1080/23311975.2023.2167290
30. Mian, R. U., Irfan, S., & Mian, A. 2023. Foreign institutional investment horizon and earnings management: Evidence from around the world. *International Review of Financial Analysis*, 86, 102509. https://doi.org/10.1016/j.irfa.2023.102509
31. Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315. https://doi.org/10.1016/0304-405X(88)90048-7
32. Musa, A., Abdul Latif, R., & Abdul Majid, J. 2023. CEO attributes, board independence, and real earnings management: Evidence from Nigeria. *Cogent Business & Management*, 10(1), 2194464. https://doi.org/10.1080/23311975.2023.2194464
33. Myers, J. N., Myers, L. A. and Omer, T. C. 2003. "Exploring the term of the auditorclient relationship and the quality of earn ...", *The Accounting Review*, 78(3), pp. 779–799.
34. Nguyen, Q. M., & Nguyen, C. V. 2024. Corporate governance, audit quality and firm performance–an empiricalevidence. *Cogent Economics & Finance*, 12(1). https://doi.org/10.1080/23322039.2024.2334128

35. Shahroor, H. G., & Ismail, A. I. 2022. Corporate governance mechanisms and earnings management activities: Evidence from the UAE banking sector. *FIIB Business Review*, 14(5), 619–630. https://doi.org/10.1177/23197145221099099
36. Shikhil Munjal, Gurcharan Singh, Palvi Jearth. 2021. “Assessing the Consistency among Accounting Measures of Earnings Quality: A Study of Stocks Listed on National Stock Exchange 500”, *International Journal of Economics and Financial Issues*, 11(4), pp. 19-26.
37. Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737–783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x
38. Sholihin, M., dan D. Ratmono. 2020. “*Analisis SEM-PLS dengan WarpPLS 3.0 untuk Hubungan Nonlinier dalam Penelitian Sosial dan Bisnis*”, Yogyakarta: Penerbit Andi.
39. Spence, M. 1973. Job market signaling. *Quarterly Journal of Economics*, 87(3), 355–374. https://doi.org/10.2307/1882010
40. Sutanto, B., Wijaya, O., Sari, R., & Firmansyah, A. 2021. *Extractive industry accounting and the mining sector's contribution to the Indonesian economy*. Universitas Indonesia Press.
41. Watts, R. L. 2005. "Conservatism in Accounting - Part II: Evidence and Research Opportunities", *SSRN Electronic Journal*.
42. Xiao, qu, O’Neill, J. W. and Mattila, A. S. 2012. "The role of hotel owners: The influence of corporate strategies on hotel performance", *International Journal of Contemporary.*