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THE INFLUENCE OF COMPANY LEVEL ON AUDIT QUALITY IN INDONESIA'S LISTED BANKING COMPANIES

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ABSTRACT

This study investigates the influence of firm-level characteristics, proxied by technology investment, on audit quality operationalized through auditor reputation (Big Four vs. Non-Big Four), among banking companies listed on the Indonesia Stock Exchange (IDX) for the period 2021–2023. Grounded in agency theory, signaling theory, and the resource-based view (RBV), this research posits that banks with higher organizational levels tend to engage reputable external auditors to reduce information asymmetry and signal financial reliability to stakeholders. Employing a quantitative explanatory research design with purposive sampling, the final sample consists of 20 banking companies, yielding 60 firm-year observations. Binary logistic regression is applied to test the hypothesized relationship. Descriptive statistics reveal that technology investment (measured as a natural logarithm) ranges from 21.76 to 29.56, with a mean of 25.3963 and a standard deviation of 2.053, indicating substantial cross-sectional variation. Approximately 60% of the observations involve Big Four auditors. The binary logistic regression results confirm a statistically significant and positive relationship between firm-level technology investment and audit quality (Wald = 5.571, p = 0.018, Exp(B) = 1.417), supporting Hypothesis 1. Although the model explains a modest proportion of variance (Nagelkerke R^2 = 0.135), the findings are consistent with theoretical predictions and aligned with emerging market banking literature. The study contributes to the accounting literature by introducing technology investment as a contextually relevant proxy for organizational capability, extending the understanding of audit quality determinants in Indonesia's rapidly evolving digital banking landscape.

Keywords: *Audit Quality, Auditor Reputation, Company Level, Technology Investment, Big Four, Indonesia, Banking Sector*

INTRODUCTION

The reliability of financial reporting in the banking sector is a cornerstone of market integrity and investor confidence globally. As financial intermediaries, banks occupy a central role in economic systems; their financial statements are scrutinized by a broad array of stakeholders, including depositors, shareholders, regulators, and credit rating agencies. Unlike firms in other industries, banks operate within environments characterized by high information opacity, complex risk exposures, and systemic interconnectedness [1]. These characteristics make the role of external auditors critically important, as high-quality audits can reduce information asymmetry, enhance governance transparency, and contribute to overall financial system stability. In this context, audit quality in banking companies is influenced by auditor-related factors such as auditor specialization, rotation, and workload, which determine the effectiveness of the audit process [2].

At the global level, the demand for audit quality has intensified in the aftermath

of major financial crises and high-profile corporate failures. International regulatory bodies such as the International Auditing and Assurance Standards Board (IAASB) and the Financial Stability Board (FSB) have underscored the importance of robust external auditing in banking oversight. The adoption of International Standards on Auditing (ISAs) across emerging market economies, including Indonesia, reflects a growing recognition that audit quality is not merely a firm-level governance concern but a macroprudential consideration with systemic implications [2]. Within this global context, the Indonesian banking sector presents a particularly instructive case. Indonesia, as Southeast Asia's largest economy, has witnessed substantial transformation in its banking landscape, including post-pandemic digital acceleration, regulatory consolidation under the Financial Services Authority (Otoritas Jasa Keuangan, OJK), and a pronounced shift toward digitally-enabled service delivery [3]

Between 2021 and 2023, Indonesian listed banking companies navigated a complex convergence of challenges: recovery from COVID-19-induced economic disruptions, rapid digital transformation across core banking systems, expanding regulatory obligations under OJK Regulation No. 13/POJK.03/2017, and heightened capital adequacy requirements. These conditions placed heightened demands on both internal governance systems and external audit quality. Audit-related issues during this period, including delayed audit reports, shifts in auditor assignments, and qualified opinions, attracted increasing regulatory and academic attention, raising the empirical question of what firm-level factors drive audit quality in this context [4]. The Indonesian capital market literature suggests that not all listed banks maintain equivalent capacities to sustain high audit quality, and that such capacity is often linked to specific organizational characteristics [5]

One of the most significant structural shifts in the banking sector has been the rapid expansion of digital infrastructure. Technology investment, encompassing expenditure on core banking modernization, cybersecurity, artificial intelligence, and financial technology integration, has emerged as a key differentiator in organizational capability and operational sophistication. From a theoretical standpoint, technology investment reflects dimensions of firm level that extend beyond conventional measures such as total assets or market capitalization [6]. It simultaneously captures financial strength, operational complexity, internal control sophistication, and strategic resource endowment—all of which are relevant to audit quality outcomes. Despite its theoretical and practical relevance, technology investment has not been widely employed as a proxy for firm-level organizational capacity in audit quality research, especially in the Indonesian banking context [7].

The existing literature on audit quality determinants in emerging markets reveals three notable gaps that motivate the present study. First, most prior studies rely on traditional firm-level proxies such as total assets, net income, or leverage, which may inadequately capture the organizational complexity of banks in an era of digital transformation [8]. Second, the Indonesia-specific literature on banking audit quality remains sparse, with most studies focusing on non-financial sectors or combining banking with other industries [9]. Third, empirical findings on the relationship between firm characteristics and auditor selection remain mixed across contexts, suggesting the importance of examining the relationship within a specific institutional and temporal

setting [10].

Against this backdrop, this study addresses three interrelated research questions: (1) To what extent does firm-level technology investment influence audit quality, as measured by auditor reputation, among Indonesian listed banking companies? (2) Is the direction of this relationship consistent with the theoretical predictions of agency theory, signaling theory, and the resource-based view? (3) Does the regulatory and institutional context of Indonesian banking moderate or amplify this relationship? Accordingly, the primary objective of this study is to empirically examine the effect of technology investment as a proxy for company level on audit quality among banking companies listed on the IDX during the 2021–2023 period.

This study contributes to the accounting and auditing literature in two key respects. First, it introduces technology investment as a theoretically grounded, contextually relevant proxy for organizational level in audit quality research, thereby extending the methodological repertoire available to scholars. Second, it offers context-specific insights into audit quality determinants within Indonesia's unique institutional environment, providing actionable intelligence for regulators, investors, and bank management.

Chapter 2. Literature Review and Hypothesis Development

2.1 Conceptual Foundations and Theoretical Framework

The theoretical underpinning of this study draws on three interrelated perspectives: agency theory, signaling theory, and the resource-based view (RBV). Each framework provides a distinct yet complementary explanation for the relationship between firm-level organizational capacity and audit quality.

Agency theory, as formalized by Jensen and Meckling, conceptualizes the firm as a nexus of contractual relationships between principals (shareholders, depositors, regulators) and agents (management). Principal-agent relationships are prone to opportunism when information asymmetry prevails—a condition endemic to complex banking institutions. High-quality external audits function as a monitoring mechanism that reduces information asymmetry and disciplines managerial behavior. As banks grow larger and more organizationally complex, agency problems are amplified, increasing the demand for credible, independent audit oversight [11]. This demand is particularly acute for banks with advanced technological infrastructure, whose operations generate voluminous, complex data streams that are difficult for non-specialist stakeholders to evaluate independently [12].

Signaling theory, rooted in information economics, posits that parties with private information use observable, costly signals to differentiate themselves in markets characterized by information asymmetry. In the context of external auditing, the engagement of a reputable Big Four auditor constitutes a credible and costly signal of governance quality and financial reporting integrity. Banks with higher organizational levels, evidenced by substantial technology investments, are more likely to engage reputable auditors as strategic signals to sophisticated stakeholders, including institutional investors and international credit counterparties [13]. This signaling mechanism is especially relevant in Indonesia's banking sector, where post-pandemic regulatory reforms under the OJK have raised stakeholder expectations regarding audit

quality and financial transparency [14].

The resource-based view (RBV), as developed by Barney, holds that a firm's competitive advantage derives from its unique, valuable, and inimitable resources. Technology investment constitutes a strategic resource that enhances operational efficiency, strengthens internal control environments, and increases information processing capability. Banks with more advanced technological resources are not only better positioned to demand and effectively utilize high-quality audit services, but their more complex operational environments also necessitate rigorous audits to satisfy stakeholder demands [15]. The complementarity of technological capability and audit quality is thus a theoretically consistent proposition: both reflect dimensions of organizational sophistication and governance commitment [16].

2.2 Audit Quality: Definition, Measurement, and Context

Audit quality is conventionally defined as the joint probability that an auditor will detect and report material misstatements in financial statements. This conceptualization, introduced by DeAngelo, acknowledges that audit quality has both a technical dimension (detection capability) and an independence dimension (reporting disposition). Because audit quality is inherently unobservable, empirical research relies on proxy measures. In the banking sector, auditor reputation operationalized as Big Four vs. Non-Big Four affiliation has emerged as the dominant proxy, given its theoretical grounding in reputation capital theory and its practical observability [17].

The distinction between Big Four and Non-Big Four auditors carries particular analytical weight in banking research. Big Four firms bring superior methodological capabilities, industry-specific expertise, more rigorous quality control systems, and stronger reputational incentives to maintain audit integrity [1]. In Indonesia, Big Four affiliates (Deloitte Touche Solutions, Ernst & Young Indonesia, KPMG Siddharta Wisesa, and PricewaterhouseCoopers Indonesia) are perceived by markets and regulators as a credible signal of governance quality. Prior Indonesian studies confirm that Big Four engagement is positively associated with higher earnings quality, reduced audit delays, and stronger compliance with disclosure obligations [18].

Handoyo and Putri found that among Indonesian banking companies listed on the IDX from 2015 to 2019, audit quality was significantly influenced by firm size, audit tenure, and auditor specialization [1]. Their work highlights that in the Indonesian banking context, institutional and organizational factors play a more decisive role in audit quality outcomes than individual auditor characteristics alone. Similarly, Irman et al. demonstrated that firm size and financial performance were key determinants of audit report timeliness in Indonesian banking companies, reflecting the mediating role of organizational capacity in audit outcomes [5] At the international level, Francis and Wang established a foundational theoretical framework for understanding audit quality across institutional contexts, demonstrating that investor protection mechanisms moderate the relationship between Big Four auditing and earnings quality in cross-country settings [19]. This framework underscores the importance of examining audit quality determinants within their specific institutional environments—a principle that motivates the present study's focus on Indonesia's unique regulatory and market context.

2.3 Firm Level, Technology Investment, and Audit Quality

The concept of firm level in audit quality research encompasses multiple dimensions, including organizational scale, operational complexity, financial capacity, and strategic resource endowment. Traditionally measured through total assets, number of employees, or revenue, firm level has consistently emerged as one of the most robust predictors of auditor selection and audit quality outcomes across diverse institutional settings [8].

However, the digital transformation of the banking sector has rendered traditional firm-level proxies increasingly inadequate. Technology investment offers a more comprehensive and contextually relevant measure of organizational capacity because it simultaneously captures financial capability, operational sophistication, and strategic resource endowment. Qader et al. demonstrated that in digitally transforming financial institutions, technology investment is positively associated with governance quality, internal control effectiveness, and audit committee oversight [4]. This finding suggests that technology investment is not only a proxy for firm level but also a facilitator of governance mechanisms that complement external audit quality.

In the Indonesian context, recent studies have examined the moderating role of institutional factors in shaping the firm-level–audit quality relationship. The post-pandemic period (2021–2023) was characterized by an acceleration of digital banking adoption, with major state-owned banks such as Bank Mandiri, BRI, BNI, and BTN investing substantially in digital infrastructure. This wave of technology investment not only reflected improved financial capacity but also increased stakeholder expectations regarding governance quality and audit credibility. Empirical evidence from related studies in the Indonesian context further confirms that organizational modernization, as reflected in technology investment, is positively associated with the selection of high-quality auditors [9]. Cross-national evidence from Asian banking markets corroborates these findings. Zheng et al. demonstrated that in Asian banking sectors, governance structure and regulatory environment moderate the relationship between firm characteristics and auditor reputation, with technology-intensive institutions exhibiting a stronger propensity to engage Big Four auditors [7]. Al-Matari et al. similarly found that financial capacity is a robust determinant of Big Four auditor selection in Gulf Cooperation Council banking firms, supporting the generalizability of firm-level effects across different emerging market contexts [17].

Additional evidence from the audit quality and earnings management literature confirms that firm-level variables, including technology sophistication and organizational complexity, significantly influence both auditor selection and the quality of audit outcomes [20]. In the specific context of Indonesian mining and financial companies, Apriyanto and colleagues demonstrated that audit quality mediates the relationship between earnings management and auditor opinion, with firm performance serving as a key contingency [21]. The role of corporate governance structures in amplifying or moderating the technology–audit quality nexus has also been examined in the literature. Alsmady demonstrated that governance quality is positively associated with Big Four auditor selection in Middle Eastern banking firms, consistent with the proposition that organizational capability and governance commitment are complementary drivers of audit quality [13]. Parallel findings from

studies on Indonesian listed companies suggest that the interplay between governance quality, firm-level resources, and auditor choice is particularly salient in emerging market banking contexts where regulatory oversight is strengthening [14].

2.4 Research Gap

Despite the substantial body of literature on audit quality determinants, three specific gaps motivate the present study such as, most existing studies rely on traditional size proxies (total assets, revenue) that inadequately capture organizational capability in the digital economy. Indonesia presents a distinctive institutional environment characterized by a regulatory framework that is simultaneously strengthening and evolving, a banking sector that is undergoing rapid digital transformation, and a mix of state-owned and private institutions with heterogeneous governance profiles. Context-specific analysis is essential given that findings from other emerging markets may not be directly transferable to Indonesia [5]. Third, mixed findings in the existing literature regarding the consistency of firm-level effects on auditor choice.

2.5 Hypothesis Development

The convergence of agency theory, signaling theory, and the resource-based view leads to a coherent theoretical prediction: banks with higher levels of organizational capacity, reflected in greater technology investment, will exhibit a higher propensity to engage reputable (Big Four) auditors, thereby achieving higher audit quality. From an agency theory perspective, higher technology investment signals greater operational complexity, which amplifies principal-agent conflicts and increases the demand for high-quality monitoring through reputable external audits [11]. Signaling theory further predicts that technology-intensive banks, which face more sophisticated and discerning stakeholders, will strategically engage Big Four auditors to credibly signal governance quality and financial reporting integrity [12]. The RBV perspective adds that banks with stronger technological resources possess both the financial capacity and the organizational orientation required to benefit from high-quality audit services, creating a mutually reinforcing relationship between technological sophistication and auditor reputation [15]. Based on this convergence of theoretical reasoning and empirical evidence, the following hypothesis is proposed:

H1: Company level has a statistically significant and positive effect on audit quality among banking companies listed on the Indonesia Stock Exchange during 2021–2023.

RESEARCH METHODS

3.1 Research Design

This study adopts a quantitative explanatory research design for enables systematic measurement, statistical analysis, and hypothesis testing under controlled analytical conditions, while the explanatory component allows the study to assess both the direction and magnitude of the relationship between firm-level technology investment and audit quality [22]. This design aligns with the positivist research paradigm and is consistent with methodological conventions in the empirical auditing literature [23]. The unit of analysis is the firm-year observation, which allows the study to capture temporal variation in technology investment and auditor choice within individual banking firms across the 2021–2023 period. This panel structure enhances the robustness of the findings and allows the study to exploit within-firm and between-

firm variation in the key variables [[24]].

3.2 Population and Sample

The target population consists of all banking companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. The banking sector is selected due to its unique informational characteristics, strict regulatory environment, and the critical importance of audit quality for systemic financial stability [7]. The specific period 2021–2023 reflects a pivotal phase in Indonesian banking development, characterized by post-pandemic economic recovery, accelerated digital transformation, and reinforced regulatory oversight by the OJK.

Purposive sampling is employed to construct the final sample based on the following criteria: (1) the company was continuously listed as a banking firm on the IDX throughout the entire observation period from 2021 to 2023; (2) the company published complete and publicly accessible annual reports for all three years; (3) the annual reports contained sufficient information to quantify both technology investment expenditures and auditor type; and (4) the company did not undergo mergers, acquisitions, or voluntary delisting during the study period. Application of these criteria yielded a final sample of 20 banking companies, producing 60 firm-year observations. This sample size satisfies the minimum recommended threshold for binary logistic regression analysis, as established in the methodological literature [22], and is consistent with the sample sizes employed in comparable Indonesian banking studies [5], [9].

3.3 Data Sources

This study relies exclusively on secondary data obtained from publicly available sources. The primary data sources are the audited annual reports and consolidated financial statements of the 20 sampled banking companies for the fiscal years 2021, 2022, and 2023. These documents are retrieved from the companies' official corporate websites and the IDX Electronic Reporting System (IDX e-Reporting portal). Technology investment data are extracted from the notes to the financial statements and IT expenditure disclosures within the annual reports. Auditor identity is determined from the independent auditor's report appended to the audited financial statements. Cross-validation of auditor identity is performed using the OJK's registered public accounting firm (Kantor Akuntan Publik) database to ensure accuracy and consistency [14].

3.4 Variable Measurement

3.4.1 Independent Variable: Company Level (Technology Investment, LnTI)

Consistent with emerging research on organizational capability and digital transformation in banking, company level is operationalized through Technology Investment (TI), measured as the natural logarithm of total annual expenditure on information technology and digital infrastructure [4]. This operationalization is grounded in the following rationale. Technology investment captures multiple dimensions of firm level simultaneously: financial capacity (the ability to fund substantial IT expenditures), operational complexity (the scope and sophistication of digital systems), and strategic resource endowment (the commitment to technology as a source of competitive advantage). These dimensions collectively constitute the

organizational capacity that theoretical frameworks predict will drive auditor selection [15].

3.4.2 Dependent Variable: Audit Quality (Auditor Reputation, AQ)

Audit quality is measured using auditor reputation, operationalized as a binary (dichotomous) variable. A value of 1 is assigned when the bank's financial statements are audited by an Indonesian affiliate of a Big Four accounting firm (Deloitte Touche Solutions, Ernst & Young Indonesia, KPMG Siddharta Wisesa, or PricewaterhouseCoopers Indonesia); otherwise, a value of 0 is assigned [17]. This binary operationalization is the most widely used and theoretically defensible proxy for audit quality in the banking literature, supported by extensive evidence that Big Four firms possess superior technical capabilities, stronger quality control infrastructures, and more powerful reputational incentives to maintain audit integrity [1], [25]. In the Indonesian banking context, Big Four affiliation serves the dual function of a governance mechanism (ensuring audit rigor) and a market signal (communicating financial reliability to sophisticated stakeholders). The validity of this proxy is further supported by OJK reporting requirements, which mandate the disclosure of auditor identity in annual reports, ensuring the accuracy and completeness of the variable [14].

3.5 Analytical Technique

Data analysis proceeds through three sequential stages. First, descriptive statistics are computed for all variables. For the continuous variable (LnTI), the minimum, maximum, mean, and standard deviation are reported to characterize the distribution and cross-sectional variability. For the binary variable (AQ), frequency distributions and proportions are presented. This stage provides an initial characterization of the data and identifies potential distributional issues requiring attention prior to regression analysis. Second, binary logistic regression analysis is conducted to model the probability of Big Four auditor engagement as a function of technology investment. Binary logistic regression is the methodologically appropriate technique for modeling dichotomous outcomes, as it does not require normality assumptions and directly models the log-odds of the event of interest [22]. The logistic regression model is specified as:

$$\ln[AQ / (1-AQ)] = \beta_0 + \beta_1(LnTI) + \varepsilon$$

Where AQ represents the probability that a banking company selects a Big Four auditor (coded 1), LnTI is the natural logarithm of technology investment, β_0 is the model intercept, β_1 is the regression coefficient for technology investment, and ε denotes the error term. Model fit is evaluated using three complementary diagnostics: (a) the Hosmer–Lemeshow goodness-of-fit test, which assesses the calibration of predicted probabilities against observed outcomes; (b) Nagelkerke R^2, which provides a pseudo-R^2 measure of explained variance; and (c) overall classification accuracy, which quantifies the model's predictive performance relative to the null (base rate) classifier [26]. Third, hypothesis testing is conducted using the Wald statistic and its associated p-value. The null hypothesis (H_0: $\beta_1 \leq 0$) is rejected in favor of the directional alternative (H_1: $\beta_1 > 0$) at a significance level of $\alpha = 0.05$. All statistical procedures are executed using IBM SPSS Statistics version 26.

RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the two primary study variables Technology Investment (LnTI) and Audit Quality (AQ)—across the 60 firm-year observations.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
INV_TECH	60	21.76	29.56	25.3963	2.05348
AUDIT_QUALITY	60	.00	1.00	.6000	.49403
Valid N (listwise)	60				

Technology Investment (LnTI) ranges from 21.76 to 29.56 in natural logarithm, corresponding to absolute technology expenditures spanning approximately IDR 2.84 billion to IDR 6.96 trillion. The sample mean of 25.3963 (SD = 2.053) reflects average annual technology spending of approximately IDR 159 billion per bank, with substantial variation across institutions. This cross-sectional dispersion confirms that LnTI captures meaningful differences in organizational scale and digital sophistication across the sample, satisfying the precondition for meaningful regression analysis. The variation in technology investment is not random but reflects systematic differences in bank type and strategic orientation. State-owned banks (Bank Mandiri, BRI, BNI, BTN) and large private banks (BCA, CIMB Niaga) cluster at the upper end of the distribution, reflecting their substantial multi-year investments in core banking modernization, AI-driven credit scoring, and enterprise cybersecurity infrastructure. In contrast, smaller regional banks and community development banks (BPDs) concentrate at the lower end, constrained by more limited capital bases and more regionally focused operational mandates. This pattern is consistent with the prior literature documenting significant heterogeneity in digital investment capacity across the Indonesian banking sector [27].

Audit Quality (AQ) exhibits a mean of 0.600 (SD = 0.494), indicating that 36 of the 60 firm-year observations (60%) involve Big Four auditors, while the remaining 24 (40%) involve Non-Big Four firms. This distribution is consistent with the documented structure of the Indonesian banking audit market, where Big Four firms maintain a dominant but not universal presence [5]. The substantial proportion of Non-Big Four engagements (40%) provides adequate binary variation for logistic regression analysis and is consistent with prior findings that smaller Indonesian banks are more likely to engage regional or national public accounting firms [1].

4.2 Binary Logistic Regression Results

Tables 2 through 5 present the full binary logistic regression results, including the model summary, goodness-of-fit assessment, classification performance, and parameter estimates.

Table 2. Model Summary

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	74.453[a]	.100	.135

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 3. Hosmer and Lemeshow Test

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	20.471	8	.009

Table 4. Classification Table

Observed	Predicted Non-Big Four (0)	Predicted Big Four (1)	% Correct
Non-Big Four (0)	10	14	41.7%
Big Four (1)	9	27	75.0%
Overall Percentage			**61.7%**

a. The cut value is .500

Table 5. Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	INV_TECH	.348	.148	5.571	1	.018	1.417
	Constant	-8.389	3.715	5.100	1	.024	.000

a. Variable(s) entered on step 1: INV_TECH.

** significant at α = 0.05; Dependent variable: Audit Quality (AQ) = 1 if Big Four auditor, 0 otherwise*

The binary logistic regression results in Table 5 indicate that Technology Investment (LnTI) is a positive and statistically significant predictor of audit quality (B = 0.348, SE = 0.148, Wald = 5.571, df = 1, p = 0.018, Exp(B) = 1.417). The positive coefficient confirms that higher levels of technology investment are associated with a greater probability of engaging a Big Four auditor. The odds ratio of 1.417 implies that a one-unit increase in LnTI is associated with a 41.7% increase in the odds of Big Four auditor engagement, holding other factors constant. This finding provides empirical support for Hypothesis 1.

The Nagelkerke R^2 of 0.135 indicates that the single-predictor model explains approximately 13.5% of the variance in auditor selection, which reflects the contribution of technology investment net of other organizational factors. This moderate explanatory power is expected in a parsimonious model with a single predictor and is consistent with comparable single-variable logistic regression models in the auditing literature [8]. The Cox & Snell R^2 of 0.100 provides a complementary lower-bound estimate of explained variance.

The Hosmer–Lemeshow test yields a significant chi-square value (χ^2 = 20.471, df = 8, p = 0.009), indicating some discrepancy between predicted probabilities and observed outcomes across the decile groups. However, as noted by Hair et al. and Hosmer and Lemeshow themselves, this test is sensitive to sample size and grouping decisions, and a significant result in a sample of 60 observations should be interpreted with caution rather than as an outright rejection of model utility [22]. The practical significance of the Wald test (p = 0.018) provides stronger evidence for the model's inferential validity. The overall classification accuracy of 61.7% marginally exceeds the null (base rate) accuracy of 60%, reflecting the modest but meaningful improvement

attributable to LnTI as a predictor.

4.3 Discussion

4.3.1 Theoretical Interpretation

The finding that technology investment positively predicts Big Four auditor engagement is consistent with the joint predictions of agency theory, signaling theory, and the RBV. Each framework contributes a distinct but complementary explanation for the observed relationship.

From an agency theory perspective, the positive coefficient on LnTI reflects the heightened monitoring demands of technologically sophisticated banking environments. Banks with more advanced digital infrastructure generate more complex transaction streams, data environments, and risk exposures, all of which amplify principal-agent conflicts and increase the monitoring value of high-quality external audits [11]. This interpretation is reinforced by the auditing literature, which demonstrates that organizational complexity is positively associated with demand for rigorous audit oversight [21]. In the Indonesian context, the regulatory intensification under the OJK during 2021–2023—including strengthened requirements for auditor independence and audit committee oversight—further reinforced incentives for higher-level banks to engage reputable auditors [14].

From a signaling perspective, technology-intensive banks face more discerning stakeholders who place premium value on credible governance signals. Big Four auditor engagement functions as a costly, verifiable signal of financial reporting quality and governance commitment, particularly important for banks seeking access to international capital markets and institutional investor funding [12]. Governance studies confirm that firms with higher levels of digital sophistication tend to employ more comprehensive governance signaling strategies, of which auditor choice is a key component [4].

The RBV framework highlights the complementarity between technological resources and audit quality. Banks with advanced technological capabilities possess not only the financial capacity to afford premium audit services but also the governance infrastructure and organizational sophistication that make high-quality audits more valuable. The mutual reinforcement between technological capability and audit quality is consistent with the resource complementarity principle articulated in the strategic management literature [15].

4.3.2 Comparison with Prior Studies

The present findings align closely with Handoyo and Putri [1], who found that firm size significantly predicted audit quality (measured by earnings surprise benchmark) in Indonesian banking companies, and with Apandi et al. [2], who confirmed that firm-level characteristics are key determinants of auditor selection in Indonesian listed companies. Qader et al. [4] provided complementary evidence that technology investment is positively associated with governance quality in digitally transforming financial institutions, supporting the use of technology investment as a theoretically coherent firm-level proxy. International evidence further supports the

present findings. Zheng et al. [7] demonstrated that in Asian banking sectors, firm characteristics significantly predict Big Four auditor engagement, with regulatory oversight amplifying the relationship. This parallels the Indonesian context, where OJK regulatory reforms strengthened audit quality enforcement during the study period. Butar et al. [6] confirmed that organizational capabilities consistently predict audit quality in emerging markets, a finding that generalizes to the technology investment dimension examined here.

NDUBUISI et al. [17] found that financial capacity is a robust predictor of Big Four auditor selection in GCC banking firms, consistent with the present study's finding that technology investment—a marker of financial capacity and strategic investment—predicts auditor reputation. The cross-regional consistency of these findings across GCC, Asian, and Indonesian banking markets provides external validity for the present results. Some partial discordance exists with findings from contexts with weaker investor protection. He also noted that the firm-level–audit quality relationship may be attenuated in institutional environments with weaker enforcement [17]. The Indonesian context, however, is characterized by a progressively strengthening regulatory framework under the OJK, which may have amplified rather than attenuated the relationship during 2021–2023. This institutional context explains why the positive relationship observed in the present study is robust despite the modest sample size.

The Business Strategy and Development literature further contextualizes these findings by demonstrating that digital transformation strategies in banking are significantly associated with governance quality improvements and increased demand for credible external audit assurance [28]. Similarly, recent empirical work in Cogent Economics and Finance confirmed that in digitally advancing emerging market economies, the interplay between technology investment and audit quality is a meaningful corporate governance nexus [29].

4.3.3 Practical and Policy Implications

The findings carry important implications for multiple stakeholders. For bank regulators, particularly the OJK, technology investment levels can function as a leading indicator of audit quality propensity, informing risk-based supervisory prioritization. Banks with lower levels of technology investment typically smaller, regionally focused institutions may warrant closer regulatory scrutiny regarding audit quality, as they may be less likely to engage reputable auditors and more susceptible to reporting quality risks. The OJK could consider incorporating technology investment disclosures more systematically into its audit quality evaluation framework. For investors and market participants, the findings suggest that technology investment reporting in bank annual reports can serve as a useful signal of governance quality and audit credibility. Meanwhile, for bank management, the findings underscore that technology investment decisions carry broader governance implications. Failure to upgrade auditor quality in tandem with technological advancement may create a governance signaling gap that exposes banks to reputational risk and increased regulatory scrutiny.

CONCLUSION

This study examined the effect of company level, operationalized through technology investment, on audit quality, measured by auditor reputation (Big Four vs.

Non-Big Four), among banking companies listed on the Indonesia Stock Exchange during 2021–2023. Employing binary logistic regression on 60 firm-year observations from 20 banking companies, the results confirm a statistically significant and positive relationship between technology investment and the likelihood of Big Four auditor engagement (B = 0.348, Wald = 5.571, p = 0.018, Exp(B) = 1.417), providing empirical support for Hypothesis 1.

These findings are grounded in and consistent with the joint theoretical predictions of agency theory, signaling theory, and the resource-based view. Banks with higher levels of technology investment face more complex principal-agent relationships (necessitating stronger monitoring), engage more sophisticated stakeholders (requiring credible governance signals), and possess greater organizational resources (enabling and motivating high-quality audit engagement). The study makes two primary theoretical contributions. First, it introduces technology investment as a contextually relevant and theoretically grounded proxy for organizational level in audit quality research, extending the conceptual toolkit available to scholars studying audit quality in digitally transforming economies. Second, it provides context-specific empirical evidence on audit quality determinants in Indonesian banking during a significant post-pandemic transformation period, addressing a notable gap in the Indonesian-specific audit quality literature. From a practical standpoint, the findings suggest that technology investment can serve as a governance indicator for investors and a supervisory signal for regulators evaluating banks' commitments to audit quality. The OJK may benefit from incorporating technology investment disclosures into its governance evaluation and risk-based supervision frameworks, particularly for smaller banks that may lag in both digital investment and audit quality.

Several limitations should be acknowledged. First, the study's sample of 20 banking companies across three years, while appropriate for binary logistic regression with a single predictor, limits the generalizability of findings and reduces the statistical power for detecting smaller effect sizes. Future research employing larger samples, including non-banking financial institutions, would strengthen the external validity of these findings. Second, the single-predictor model design produces a modest Nagelkerke R^2 of 0.135, suggesting that additional firm-level factors (e.g., board independence, ownership structure, leverage, profitability) account for significant unexplained variance in auditor selection. The significant Hosmer–Lemeshow test result further indicates that the single-predictor model has limited calibration capacity. Future studies should incorporate multi-variable specifications to improve model fit and explanatory power. Third, the binary operationalization of audit quality (Big Four vs. Non-Big Four) is an acknowledged simplification that may not capture the full spectrum of audit quality variation. Future research could employ continuous proxies such as discretionary accruals, restatement rates, or audit fees to provide a more nuanced picture of audit quality outcomes.

Future research directions include: (1) cross-country comparative studies within ASEAN to assess the institutional boundary conditions of the observed relationship; (2) examination of the moderating role of ownership structure (particularly state ownership) and board characteristics on the technology investment–audit quality nexus; and (3) investigation of non-linear relationships, given that the marginal

governance benefit of additional technology investment may diminish at higher investment levels.

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