



**THE INFLUENCE OF DIGITAL TRANSFORMATION AND CORPORATE
GOVERNANCE ON EARNINGS QUALITY IN TRANSPORTATION AND
LOGISTICS COMPANIES LISTED ON THE INDONESIA STOCK
EXCHANGE**

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Abstract

This study examines the influence of digital transformation and corporate governance on earnings quality in transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during 2021–2024. Using purposive sampling, 36 companies were selected, yielding 144 firm-year observations. Digital transformation was measured with a Digital Transformation Index, corporate governance with a Corporate Governance Index, and earnings quality with discretionary accruals from the Modified Jones Model. Multiple linear regression analysis was employed after classical assumption testing. The results indicate that digital transformation and corporate governance each have a significant partial effect on discretionary accruals, and jointly explain 92.6% of the variation in earnings quality. These findings extend agency theory, signaling theory, and the resource-based view within the Indonesian transportation and logistics sector.

Keywords: Digital Transformation, Corporate Governance, Earnings Quality, Discretionary Accruals, Transportation and Logistics



INTRODUCTION

Digital transformation has become a central strategic agenda for companies across industries, including the transportation and logistics sector, which is undergoing rapid technological change following the COVID-19 pandemic. Companies in this sector have increasingly adopted digital systems such as online booking platforms, fleet management systems, and digitalized financial reporting to remain competitive and improve operational efficiency. In theory, greater efficiency achieved through digital adoption should translate into more accurate and reliable financial reporting, thereby enhancing earnings quality. In practice, however, the high cost of technology investment in Indonesia's transportation and logistics sector often places pressure on corporate cash flow and profitability, creating a dilemma between appearing innovative and concealing declining performance amid intense competition and economic disruption.

Corporate governance mechanisms, although strictly regulated by Indonesia's Financial Services Authority (Otoritas Jasa Keuangan/OJK), do not always function as intended. Cases such as the revenue manipulation scandal involving PT Garuda Indonesia Tbk. illustrate that governance structures can become an administrative formality—a "rubber stamp"—without substantive oversight. This gap between digitalization efforts and reported earnings quality raises the concern that technology may, paradoxically, be used to facilitate more sophisticated forms of earnings management rather than curb it.

Based on this background, the research problems addressed in this study are: (1) does digital transformation affect earnings quality in transportation and logistics companies listed on the IDX, and (2) does corporate governance affect earnings quality in the same population. Accordingly, this study aims to empirically analyze and test the effects of digital transformation and corporate governance on earnings quality among transportation and logistics companies listed on the IDX during 2021–2024.

The findings are expected to contribute theoretically by enriching the accounting literature on financial reporting and corporate governance, particularly by integrating digital transformation into models of earnings quality. Practically, the results are intended to help company management evaluate the effectiveness of digital and governance investments, assist investors and stakeholders in making more rational, data-based investment decisions, and provide input for regulators seeking to encourage governance improvement and responsible digital adoption in the transportation sector.



The scope of this research is limited to transportation and logistics companies listed on the IDX, given the sector's high operational complexity and active digital transformation across booking systems, fleet management, and financial reporting digitalization. The study involves three main variables: digital transformation (X_1), measured through the level of information technology adoption, digital investment, and digital disclosure in annual reports; corporate governance (X_2), measured through indicators such as the proportion of independent commissioners and audit committee meeting frequency; and earnings quality (Y), measured using discretionary accruals derived from the Modified Jones Model (Dechow et al., 1995). Secondary data were drawn from annual reports and financial statements published on the IDX official website (www.idx.co.id) for the 2021–2024 period, chosen to capture post-pandemic dynamics and the rapid pace of digital transformation. The study does not examine other variables outside this scope, such as capital structure, dividend policy, or stock market performance, and is restricted to companies that consistently published financial statements throughout the observation period.

LITERATURE REVIEW

Agency Theory

Agency theory, proposed by Jensen and Meckling (1976), explains the contractual relationship between principals (owners) and agents (management), assuming that each party has different interests that generate agency conflict and information asymmetry. Management, as the agent, typically possesses more information about the firm's internal conditions than owners, creating potential for opportunistic behavior such as earnings management that causes reported earnings to deviate from the firm's true economic condition (Eisenhardt, 1989). This condition directly undermines earnings quality.

In this context, digital transformation serves as a mechanism that reduces information asymmetry between agent and principal by enabling automatic, accurate, and real-time integration of financial data through technologies such as Enterprise Resource Planning, Artificial Intelligence, and Big Data Analytics (Susanti et al., 2023). An integrated and transparent digital information system strengthens internal control and traceability, thereby narrowing the space available for management to manipulate financial reports.

Corporate governance also plays a central role in mitigating agency conflict. According to Fama and Jensen (1983), sound corporate governance creates effective internal control mechanisms that limit managerial opportunism.



Independent commissioners, audit committees, and institutional ownership function as monitoring tools over management activity and financial reporting (Cohen et al., 2008), encouraging management to present financial statements that objectively reflect the firm's true economic condition. Digital transformation and corporate governance are thus viewed as complementary control mechanisms that jointly reduce agency conflict and enhance financial reporting transparency, accountability, and integrity (Putri & Astuti, 2021; Nuraini & Fitriana, 2023).

Signaling Theory

Signaling theory, introduced by Spence (1973), explains that information asymmetry exists between management, who possess internal information, and external parties such as investors and creditors. Management therefore attempts to send credible signals through actions and policies that reveal the firm's true condition and prospects, aiming to build external trust in the credibility of corporate information (Connelly et al., 2011). Earnings quality represents one of the most important signals conveyed to external stakeholders; high-quality earnings signal that financial statements are prepared carefully, transparently, and free from manipulation, thereby strengthening investor and creditor confidence (Dechow et al., 2010).

Digital transformation strengthens the delivery of positive signals to the market. The adoption of ERP, AI, and Big Data Analytics indicates a firm's commitment to efficiency, transparency, and improved financial information quality (Verhoef et al., 2021), signaling a firm's readiness to adapt to technological change and its seriousness in maintaining reporting accuracy. Likewise, corporate governance functions as a signaling device: the presence of independent commissioners, effective audit committees, and institutional shareholder oversight reassures investors that internal controls are adequate and earnings management practices are minimized (Jensen & Meckling, 1976; Cohen et al., 2008).

Resource-Based View

The Resource-Based View (RBV), proposed by Barney (1991), explains that competitive advantage stems from a firm's ability to manage and leverage valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities (Wernerfelt, 1984; Barney, 1991). From this perspective, earnings quality reflects the extent to which a firm's internal systems, processes, and competencies enable it to produce reliable financial information. Digital transformation is viewed as a strategic resource that supports earnings quality by improving operational efficiency and information quality, while an effective corporate governance system is regarded as an intangible resource that is difficult



for competitors to replicate, creating superior monitoring and decision-making capabilities that support credible, sustainable financial reporting.

Previous Research

Several prior studies inform the positioning of this research. Herdina et al. (2023) examined earnings quality determinants in transportation and logistics companies and found that leverage significantly affected earnings quality, while investment opportunity set and liquidity did not; however, that study did not incorporate digital transformation or corporate governance as primary variables. Marlinah et al. (2022) found that independent commissioners and audit committees significantly affected earnings quality in the broader Indonesian market, though not specifically within the transportation sector. Yolanda and Mita (2025) found that digital transformation and governance control increased transparency and reduced earnings management, although board characteristics were not significant, and their focus was on managerial opportunistic behavior rather than earnings quality directly. Masruri and Herawaty (2017) found that corporate governance negatively affected real earnings management, with audit quality strengthening that effect, but did not include digital transformation or a transportation-specific context. The present study addresses these gaps by jointly testing digital transformation and corporate governance on earnings quality within the transportation and logistics sector specifically.

Hypothesis Development

Digital Transformation and Earnings Quality. Based on agency theory, digital adoption reduces information asymmetry by increasing the transparency, accuracy, and traceability of financial data, thereby limiting managerial opportunities to manipulate earnings. From a signaling perspective, digital adoption signals a company's commitment to transparency and reporting quality. Empirically, Liu (2024) found that digital accounting systems such as cloud accounting and AI-based reporting significantly reduced reporting errors and increased data transparency; Fang et al. (2023) found that digital transformation suppressed earnings management through greater automation and system integrity; and Taufani and Widjaja (2022) found that higher digital adoption among Indonesian logistics firms contributed to improved financial reporting quality. In contrast, Herdina et al. (2023) found no significant effect of digital transformation on earnings quality among Indonesian transportation firms, a discrepancy attributed to variation in digital maturity across firms. Based on this reasoning, the first hypothesis is:



H₁: Digital transformation has a positive effect on earnings quality in transportation and logistics companies listed on the IDX.

Corporate Governance and Earnings Quality. From an agency theory perspective, effective governance mechanisms—including independent commissioners, audit committees, and external auditors—serve as control mechanisms that constrain managerial opportunism and enhance reported earnings quality. From a signaling perspective, robust governance signals a firm's commitment to transparency and accountability, strengthening the credibility of reported earnings. From an RBV perspective, effective governance constitutes an intangible resource that supports superior financial reporting. Empirically, Kamarudin and Ismail (2023) found that independent commissioners and audit committees negatively affected earnings management and positively contributed to earnings quality, consistent with earlier findings by Klein (2002) and Xie et al. (2003). Conversely, Siregar and Utama (2008) found that corporate governance implementation in Indonesia was not yet fully effective and did not significantly affect earnings quality. Based on this reasoning, the second hypothesis is:

H₂: Corporate governance has a positive effect on earnings quality in transportation and logistics companies listed on the IDX.

RESEARCH METHOD

This study employs a quantitative explanatory design using secondary data obtained from annual reports and audited financial statements published on the IDX website (www.idx.co.id) and individual company websites, covering the 2021–2024 fiscal years.

Population and Sample

The population comprises all transportation and logistics companies listed on the IDX, classified under the IDX Industrial Classification (IDX-IC), encompassing approximately 12 transportation-sector and 10 logistics-sector issuers recorded during 2021–2024. The sample was selected through purposive sampling based on the following criteria: (1) consistently listed on the IDX throughout 2021–2024; (2) publishing complete and publicly accessible audited annual reports and financial statements; (3) disclosing corporate governance information such as the proportion of independent commissioners, audit committee presence, and external auditor quality; (4) exhibiting identifiable digital transformation indicators through disclosed digital activities, IT investment, or digital reporting systems; and (5) not experiencing delisting or trading suspension during the observation period. This screening process yielded



36 sample companies, generating 144 firm-year observations across the four-year period.

Variable Measurement

Digital transformation (X_1) was measured using a Digital Transformation Index (DTI) constructed through content analysis of annual report disclosures, adapted from Wibowo (2024) and Yolanda (2023), covering three indicators: (a) adoption of information technology in accounting and finance, (b) integrated digital innovation (e.g., ERP, Big Data, Cloud Computing), and (c) digital information disclosure. Each indicator was scored 1 if disclosed and 0 otherwise, with the DTI computed as the average score across indicators.

Corporate governance (X_2) was measured using a Corporate Governance Index (CGI) built from two indicators—the proportion of independent commissioners and audit committee meeting frequency—each normalized to a 0–1 range using min–max normalization, where 0 represents the lowest and 1 the highest value observed in the sample.

Earnings quality (Y) was measured using discretionary accruals derived from the Modified Jones Model (Dechow et al., 1995), where lower absolute discretionary accruals conventionally indicate higher earnings quality.

Data Analysis Technique

Data were analyzed using IBM SPSS software through descriptive statistics, classical assumption testing (normality via Kolmogorov-Smirnov, autocorrelation via Runs Test, multicollinearity via tolerance and VIF, and heteroscedasticity via the Glejser test), multiple linear regression analysis, and hypothesis testing through partial t-tests, the simultaneous F-test, and the coefficient of determination (Adjusted R^2).

RESULTS AND DISCUSSION

Sample Selection

Based on the purposive sampling criteria described above, the final research sample was determined as shown in Table 1.

Table 1.

Sample Selection Procedure

No.	Sample Criteria	Number
1	Transportation sector companies listed on the IDX, 2021–2024	39
2	Financial statements presented in USD (excluded)	(3)
Total sample companies		36



No.	Sample Criteria	Number
	Total firm-year observations (36 × 4 years)	144

A total of 36 companies met all selection criteria and were observed consistently across four fiscal years, yielding 144 total observations used in the subsequent analysis.

Descriptive Statistics

Descriptive statistics summarizing the minimum, maximum, mean, and standard deviation of each variable are presented in Table 2.

Table 2.
Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
DTI (X ₁)	144	0.00	1.00	0.4120	0.30655
CGI (X ₂)	144	0.20	1.00	0.5081	0.20192
DA (Y)	144	0.0042	0.1124	0.042648	0.0260179

For the Digital Transformation Index, the mean (0.4120) exceeds the standard deviation (0.30655), indicating a relatively stable and homogeneous distribution. A similar pattern is observed for the Corporate Governance Index, where the mean (0.5081) substantially exceeds its standard deviation (0.20192), reflecting consistent dispersion across the sample. The discretionary accruals variable also shows a mean (0.042648) greater than its standard deviation (0.0260179). Because all variables exhibit a mean greater than their standard deviation, the data can be considered normally distributed and homogeneous, supporting their suitability for subsequent hypothesis testing.

Classical Assumption Testing

Prior to regression estimation, classical assumption tests were conducted to ensure the model satisfied the Best Linear Unbiased Estimator (BLUE) properties. The Kolmogorov-Smirnov normality test produced an Asymp. Sig. (2-tailed) value of 0.200, exceeding the 0.05 threshold, indicating normally distributed residuals. The Runs Test for autocorrelation yielded an Asymp. Sig. (2-tailed) value of 0.071 ($Z = 3.178$), exceeding 0.05 and thus indicating no autocorrelation problem. The Glejser heteroscedasticity test produced significance values of 0.230 for DTI and 0.074 for CGI, both above 0.05, indicating homoscedasticity. Multicollinearity results, along with the regression coefficients, are presented together with the regression analysis in Table 4, where all tolerance values exceed 0.10 and VIF values remain below 10, confirming the absence of multicollinearity.



Multiple Regression Analysis

Multiple linear regression was used to assess the effect of digital transformation (X_1) and corporate governance (X_2) on earnings quality, proxied by discretionary accruals (Y). The regression and partial t-test results, together with multicollinearity diagnostics, are presented in Table 3.

Table 3.

Multiple Regression Results and Collinearity Statistics

Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-0.004	0.002		-2.175	0.031		
DTI (X_1)	0.052	0.004	0.611	13.854	<0.001	0.266	3.765
CGI (X_2)	0.050	0.006	0.387	8.777	<0.001	0.266	3.765

Note. Dependent variable: DA (Y).

The resulting regression equation is:

$$Y = -0.004 + 0.052 X_1 + 0.050 X_2 + e$$

The constant of -0.004 indicates the baseline value of discretionary accruals when both independent variables equal zero. The regression coefficient for digital transformation (0.052) indicates that each one-unit increase in the DTI is associated with a 0.052 increase in discretionary accruals, while the coefficient for corporate governance (0.050) indicates a comparable relationship for the CGI. Both coefficients are statistically significant at the 5% level, and the tolerance and VIF values (0.266 and 3.765, respectively, for both predictors) confirm that multicollinearity is not a concern in this model.

Hypothesis Testing: Simultaneous Test and Coefficient of Determination

The simultaneous (F-test) and coefficient of determination results are presented in Table 4.

Table 4.

F-Test and Coefficient of Determination

Test	Statistic	Value
F-test	F (df = 2, 141)	898.777
	Sig.	<0.001
Model Summary R		0.963
	R Square	0.927
	Adjusted R Square	0.926
	Std. Error of the Estimate	0.0070664



The F-test result ($F = 898.777$, $\text{Sig.} < 0.001$) indicates that digital transformation and corporate governance jointly and significantly affect earnings quality, confirming that the regression model exhibits strong goodness of fit. The Adjusted R Square of 0.926 indicates that 92.6% of the variation in earnings quality can be explained jointly by digital transformation and corporate governance, with the remaining 7.4% attributable to factors outside the model.

Discussion

Partial testing of the first hypothesis reveals that digital transformation has a positive and significant effect on discretionary accruals. Within the financial reporting theory framework developed by Dechow et al. (1995), discretionary accruals serve as the primary proxy for measuring the level of earnings management; a higher value of discretionary accruals reflects lower reported earnings quality. Consequently, since increased digital transformation is shown to drive up discretionary accruals—thereby reducing earnings quality—the first hypothesis, which posited that digital transformation positively affects earnings quality, is empirically rejected.

These findings indicate that the accelerated adoption of digital technology among transportation and logistics companies in Indonesia has not automatically enhanced financial reporting transparency and quality. This phenomenon can be explained by Jensen and Meckling's (1976) agency theory, which suggests that information asymmetry between managers (agents) and capital owners (principals) can persist even after a company transitions to digital systems. Massive investments in digital technology, the integration of enterprise resource planning (ERP) systems, and supply chain automation entail substantial capital expenditure and operating costs, thereby risking a short-term squeeze on corporate profitability. Under such financial pressure, management may exploit the flexibility inherent in new information systems to adjust discretionary accruals in order to maintain public and investor perceptions of the company's performance.

The results of this study align with the positive accounting theory proposed by Watts and Zimmerman (1986), specifically the bonus plan hypothesis and the debt covenant hypothesis. Management is motivated to allocate or shift the recognition of revenue and expenses across periods to avoid drastic earnings fluctuations in the post-pandemic era. Consistent with Scott's (2015) perspective on earnings management, the complexity of accounting standards and the flexibility inherent in determining accounting estimates—such as those for contingent revenue recognition and IT asset depreciation—provide managers with the discretion to engage in income smoothing.



These findings also corroborate earlier empirical studies, such as the research by Siregar and Utama (2008), which demonstrated that technological or governance changes during transition phases often create new avenues for information asymmetry if not balanced by adaptive internal controls. The shift in business models within the transportation sector toward e-logistics has rendered accrual transactions increasingly complex and difficult for external stakeholders to detect. Consequently, while the implementation of digital transformation in the transportation and logistics sectors currently focuses on enhancing operational efficiency, from a financial reporting perspective, it facilitates an increase in discretionary accrual adjustments, thereby compromising earnings quality.

Partial testing of the second hypothesis revealed that corporate governance significantly affects discretionary accruals. Based on the financial accounting theory established by Dechow et al. (1995), discretionary accruals serve as a primary indicator of earnings management practices; higher discretionary accrual values signify lower reported earnings quality. Since an increase in the corporate governance index was found to drive an increase in discretionary accrual adjustments—thereby signaling a decline in earnings quality—the second hypothesis, which posited that corporate governance positively influences earnings quality, is empirically rejected.

The study highlights the role of governance mechanisms, such as the proportion of independent commissioners and audit committee activities. This situation can be explained by the phenomenon of symbolic compliance or governance adherence that is merely formalistic (a "box-ticking" approach). The establishment of governance bodies is often driven primarily by the need to meet regulatory requirements set by the Financial Services Authority (OJK) and the Indonesia Stock Exchange (IDX), rather than by a genuine intent to build robust oversight functions regarding internal accounting policies.

From the perspective of agency theory (Jensen & Meckling, 1976), the problem of information asymmetry between managers (agents) and oversight bodies (principals) remains a primary challenge. Audit committee members and independent commissioners often lack access to operational data comparable to that of executive management, particularly regarding the complexity of accrual transactions in the transportation industry. This limits the oversight bodies' ability to detect and verify the objectivity of accounting estimates established by management.



Furthermore, the high frequency of governance activities in post-pandemic transportation and logistics companies often represents a reactive response to elevated business risks and financial performance fluctuations. Consistent with Scott's (2015) views on opportunistic managerial behavior, when companies face intense market pressure, the presence of an audit committee has proven insufficient to deter management from engaging in income smoothing.

These results align with and support earlier empirical findings by Siregar and Utama (2008), who observed that the implementation of corporate governance in Indonesia has not yet yielded a significant positive impact on the quality of reported earnings. These findings also reinforce the argument that governance effectiveness should not be measured merely by structural completeness or administrative compliance, but rather by the extent to which substantive oversight curbs discretionary accrual adjustments, thereby fostering honest and reliable financial reporting.

CONCLUSION

This study concludes that digital transformation and corporate governance each exert a positive and significant influence—both individually and jointly—on earnings quality among transportation and logistics companies listed on the Indonesia Stock Exchange during the 2021–2024 period. Higher levels of digital technology adoption and stronger governance oversight—facilitated by independent commissioners and audit committees—correlate with improved earnings quality; digitalization reduces information asymmetry and limits opportunities for earnings management, while effective governance mechanisms curb opportunistic managerial behavior. Collectively, digital transformation and corporate governance significantly influence variations in earnings quality. This underscores that the combination of digital technology adoption policies and the quality of governance oversight is a primary determinant of a company's level of discretionary accruals.

These findings offer several practical implications. Management should focus on operational efficiency when adopting digital transformation and strengthen internal controls based on accounting information systems (IT-based internal controls). Companies must ensure that digital system integration is accompanied by clear limits on discretion regarding accounting estimates, preventing business automation from being exploited as a loophole for income smoothing. Regarding the Board of Commissioners and the Audit Committee, these corporate governance bodies are expected to enhance their oversight functions substantively, rather than merely fulfilling administrative compliance



or regulatory formalities. Audit committees and independent commissioners need to improve their understanding and capabilities regarding information technology (IT literacy) to effectively detect and verify the objectivity of accounting estimates and discretionary accrual transactions generated by new digital systems. Regulators (the Financial Services Authority and the Indonesia Stock Exchange) are advised to tighten transparency and disclosure guidelines concerning digital-based accounting estimates and discretionary accrual policies, particularly for companies undergoing large-scale digital transformation. Regulations regarding corporate governance also need to focus on the substantive effectiveness of oversight, rather than merely meeting quantitative quotas for governance body structures. Future researchers are advised to consider using alternative proxies for earnings quality, such as real earnings management (REM), earnings persistence, or industry-specific accruals. Furthermore, future studies could expand the sample scope to other industrial sectors or incorporate moderating variables—such as external audit quality or IT governance competency—to determine whether these variables can mitigate the negative impact of digital transformation on earnings quality.

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