



The Impact of Digital Transformation and Corporate Governance on Telecommunications Firm Performance in Indonesia (2021–2024)

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ABSTRACT

Digital transformation has become a critical driver of organizational outcomes in technology-intensive industries; however, prior studies have largely emphasized its direct impact on performance without clearly distinguishing between financial performance and firm value as conceptually different constructs. Moreover, limited attention has been given to the role of corporate governance in shaping these relationships, particularly in emerging market contexts. This study aims to examine (1) the effect of digital transformation on financial performance, (2) the effect of corporate governance on the relationship between digital transformation and firm value. This research employs a quantitative explanatory design using panel data regression analysis. The sample comprises three major telecommunications companies listed on the Indonesia Stock Exchange, selected based on data availability and industry relevance, with quarterly observations from 2021 to 2024, resulting in 48 firm-quarter observations. Digital transformation is proxied by IT capital expenditure intensity, corporate governance is measured using a governance disclosure index, financial performance is captured by Return on Assets (ROA), and firm value is measured using Tobin's Q. Moderation analysis is conducted using an interaction term between digital transformation and corporate governance. The results show that digital transformation significantly improves financial performance, while corporate governance has a positive effect on financial performance. In addition, corporate governance strengthens the positive relationship between digital transformation and firm value, indicating its role as an effective moderating mechanism. These findings confirm that financial performance and firm value represent distinct outcomes of digital transformation, and that governance plays a crucial role in bridging technological investment and market valuation. This study contributes to the literature by clarifying the dual outcomes of digital transformation and highlighting the contingent role of governance in enhancing firm value within the telecommunications sector.

1. Introduction

Digital transformation has emerged as a central strategic priority in the modern business environment, driven by rapid advances in technologies such as cloud computing, big data analytics, artificial intelligence, and high-speed digital networks.

These developments have fundamentally reshaped how firms create value, enhance operational efficiency, and compete in global markets. Empirical studies suggest that digital transformation can improve corporate efficiency, innovation capacity, and firm growth ([Wei & Li, 2024](#)), as well as enhance

resource allocation and strategic upgrading ([Jiang et al., 2025](#)).

However, the relationship between digital transformation and firm outcomes remains inconclusive. While some studies report positive impacts, others highlight short-term performance declines due to high investment costs and increased operational complexity. [Guo et al. \(2023\)](#) describe this as the digital transformation paradox, where substantial digital investments do not immediately translate into improved financial outcomes. This inconsistency reflects ongoing debates in the literature, particularly regarding issues of causality and endogeneity, as firms with better prior performance or stronger resources may be more likely to adopt digital technologies, leading to potential reverse causality.

In this context, corporate governance has been increasingly recognized as a critical factor in explaining the heterogeneous outcomes of digital transformation. From an agency theory perspective, large-scale digital investments may intensify agency conflicts, as managers may pursue ambitious projects that do not necessarily maximize shareholder value. Effective governance mechanisms can mitigate these risks by enhancing transparency, accountability, and monitoring, thereby improving the efficiency of strategic decision-making. Recent studies further indicate that governance quality, ownership structure, and board oversight play a significant role in determining the success of digital transformation initiatives ([Nahum et al., 2026](#)).

The telecommunications industry provides a particularly relevant setting for examining these relationships. As providers of digital infrastructure, telecommunications firms operate in highly capital-intensive environments and must continuously invest in advanced technologies such as fiber-optic networks, 5G infrastructure, data centers, and digital platforms. These investments are essential to support digital connectivity and economic development but also involve substantial financial risks and delayed returns.

Indonesia represents one of the fastest-growing digital economies in Southeast Asia, characterized by rapid growth in internet penetration, mobile data usage, and digital services. Major telecommunications companies—including PT Telkom Indonesia Tbk, PT Indosat Ooredoo Hutchison Tbk, and PT XL Axiata Tbk—have significantly increased their digital investments to remain competitive and support the expansion of the digital economy. Despite these developments, empirical evidence on whether digital transformation improves financial performance and enhances firm value in this context remains limited, particularly when considering the role of governance mechanisms in emerging markets.

Although prior research has examined the relationship between digital transformation and firm performance, several gaps remain. First, many studies focus on direct effects without incorporating governance mechanisms that may influence the effectiveness of digital investment strategies. Second, most empirical evidence is derived from developed economies, while emerging markets—characterized by different institutional environments and governance structures—remain underexplored. Third, the telecommunications sector has received relatively limited attention despite its strategic importance and capital-intensive nature.

To address these gaps, this study investigates the relationship between digital transformation, corporate governance, financial performance, and firm value in the Indonesian telecommunications sector. Specifically, this study aims to examine (1) the effect of digital transformation on financial performance, (2) the effect of corporate governance on financial performance, and (3) the moderating role of corporate governance in strengthening the relationship between digital transformation and firm value. By distinguishing between financial performance and firm value as two conceptually different outcomes, this study provides a more nuanced understanding of the impact of digital

transformation.

This study contributes to the literature in three ways. First, it clarifies the dual outcomes of digital transformation by distinguishing between accounting-based financial performance and market-based firm value. Second, it responds to ongoing debates on causality and endogeneity by positioning corporate governance as a conditioning factor that may improve the effectiveness of digital investment decisions. Third, it provides empirical evidence from the Indonesian telecommunications sector, thereby expanding the scope of digital transformation research in emerging market contexts.

2. Literature Review

2.1 Conceptual and Theoretical Foundations

2.1.1 Agency Theory

Agency theory explains the relationship between principals (shareholders) and agents (managers) within organizations. According to [Jensen and Meckling \(1976\)](#) agency problems arise when managers pursue objectives that diverge from shareholder interests. This divergence creates agency costs arising from monitoring expenses, bonding costs, and residual losses within organizations.

In capital-intensive and technology-driven industries such as telecommunications, agency conflicts become more complex due to technological uncertainty and information asymmetry ([Ross et al., 2025](#)). Managers often possess superior knowledge regarding technological investments, digital innovation strategies, and operational capabilities, making it difficult for shareholders to objectively evaluate managerial decisions. Without effective monitoring mechanisms, managers may engage in opportunistic behavior by investing in projects that maximize managerial benefits rather than shareholder value. Therefore, governance structures are necessary to reduce agency conflicts and ensure managerial accountability.

Corporate governance mechanisms such as independent boards, audit committees, and

ownership concentration help mitigate agency conflicts by monitoring managerial behavior and improving transparency in decision-making processes ([Shleifer & Vishny, 1997](#); [Zattoni & Pugliese, 2021](#)). In digitalized sectors, agency conflicts may also arise due to high uncertainty in digital investments and the increasing importance of intangible assets, which complicate performance evaluation and strategic decision-making ([Li, 2022](#)).

2.1.2. Resource-Based View (RBV)

The Resource-Based View (RBV) suggests that firms achieve sustainable competitive advantage by possessing valuable, rare, inimitable, and organized resources ([Barney, 1991](#)). According to this perspective, firm performance depends on the organization's ability to leverage internal resources that competitors cannot easily replicate.

In the context of digital transformation, digital capabilities such as big data analytics, cloud infrastructure, digital platforms, and technological expertise represent strategic resources that enable firms to improve operational efficiency and innovation performance. These digital resources allow organizations to optimize processes, enhance service offerings, and create new revenue streams.

Empirical studies confirm that digital capabilities significantly influence firm performance and innovation outcomes. Firms that effectively integrate digital technologies into their resource base tend to develop stronger competitive advantages in rapidly evolving industries such as telecommunications ([Fosso Wamba et al., 2024](#); [Huang et al., 2025](#); [Verhoef et al., 2021](#)).

2.1.3 Dynamic Capabilities Theory

While RBV emphasizes the strategic importance of firm resources, Dynamic Capabilities Theory focuses on the firm's ability to continuously adapt those resources in response to environmental changes. Dynamic capabilities refer to the organization's ability to

integrate, build, and reconfigure internal and external resources to address rapidly changing technological environments (Teece, 2023).

In digital ecosystems characterized by rapid technological disruption, firms must continuously adapt their technological capabilities and organizational structures. Telecommunications companies, for example, must develop capabilities to sense emerging technological opportunities, seize digital innovations, and reconfigure organizational resources to maintain competitiveness (Huang et al., 2025).

Recent studies highlight that dynamic capabilities play a crucial role in enabling firms to leverage digital transformation effectively. Organizations that successfully develop dynamic capabilities are better positioned to respond to technological disruptions, exploit digital innovation opportunities, and enhance long-term value creation (Huang et al., 2025; Mikalef et al., 2020).

2.1.4 Digital Transformation and Strategic Value Creation

Digital transformation refers to the integration of digital technologies into organizational processes, strategies, and business models in order to create value and sustain competitive advantage. It represents a fundamental shift in how organizations operate and interact with stakeholders. Rather than simply adopting new technologies, digital transformation involves comprehensive organizational change encompassing strategy, culture, processes, and capabilities.

In technology-driven industries such as telecommunications, digital transformation involves the adoption of advanced technologies including artificial intelligence, big data analytics, cloud computing, and the Internet of Things (IoT). These technologies enable companies to improve operational efficiency, optimize service delivery, and develop new digital services that enhance customer value. (Tran et al., 2024). For instance, digital transformation initiatives in telecommunications commonly include 5G

infrastructure deployment, cloud integration, and advanced data analytics capabilities.

Recent literature emphasizes that digital transformation contributes to firm performance through several mechanisms. First, digital technologies enable firms to automate operational processes, thereby reducing costs and improving efficiency. Second, digital platforms facilitate data-driven decision-making by allowing managers to analyze large datasets and generate strategic insights. Third, digital innovation enables firms to develop new products, services, and business models that enhance competitiveness (Nambisan et al., 2020; Verhoef et al., 2021).

Empirical studies provide strong evidence supporting the positive relationship between digital transformation and firm performance. Firms that successfully implement digital transformation strategies often experience improvements in productivity, innovation capacity, and market competitiveness. Digital transformation has also been shown to enhance corporate growth performance by alleviating financing constraints and improving access to capital (Wei & Li, 2024).

However, the relationship between digital transformation and firm performance is not always linear. Some studies indicate that digital transformation may initially reduce profitability due to high investment costs, technological uncertainty, and organizational restructuring (Guo et al., 2023). Consequently, the effectiveness of digital transformation depends on the firm's ability to develop appropriate technological capabilities, governance structures, and strategic alignment to manage digital complexity (Jiang et al., 2025).

2.1.5 Corporate Governance in the Digital Economy

Corporate governance refers to the system through which companies are directed and controlled. It determines how corporate decisions are made, how resources are allocated, and how managerial actions are

monitored. According to the [OECD \(2023\)](#) good corporate governance is built upon principles of transparency, accountability, responsibility, independence, and fairness in corporate decision-making.

Effective governance mechanisms improve organizational accountability and enhance strategic oversight within firms. Governance structures such as independent boards, audit committees, and ownership concentration play an important role in monitoring managerial behavior and ensuring that corporate decisions align with shareholder interests ([Shleifer & Vishny, 1997](#); [Zattoni & Pugliese, 2021](#)). In the digital economy, governance plays an increasingly critical role in guiding technological investment decisions. Digital transformation projects often involve significant financial investments, strategic uncertainty, and technological risks. Consequently, governance oversight becomes essential to ensure that digital investments are aligned with long-term organizational objectives.

Recent studies highlight that governance quality significantly affects the success of digital transformation initiatives. Strategic boards that prioritize long-term value creation tend to accelerate digital transformation adoption, whereas overly conservative monitoring mechanisms may slow down digital innovation due to risk aversion ([Nahum et al., 2026](#)). In addition, strong governance frameworks can enhance the value creation potential of digital transformation by strengthening internal controls, improving information transparency, and increasing investor confidence.

In technology-intensive industries, governance mechanisms also help firms manage the complexity associated with intangible assets and digital investments, which often create challenges in performance measurement and accountability ([Li, 2022](#)).

2.2 Review of Empirical Studies

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2.3 Identification of the Research Gap

Although previous studies have widely examined digital transformation and corporate governance, several important research gaps remain. First, existing research largely investigates the direct relationship between digital transformation and firm performance, while relatively few studies examine how governance mechanisms influence the effectiveness of digital transformation strategies (Guo et al., 2023; Wei & Li, 2024).

Second, prior empirical studies often focus on developed economies and manufacturing or technology sectors, leaving limited empirical evidence from telecommunications industries in emerging markets. Telecommunications companies face unique challenges related to infrastructure investment, rapid technological evolution, and high capital intensity, which may influence the relationship between digital transformation and firm performance.

Third, although corporate governance has been widely studied in the context of firm performance, limited research has explored its moderating role in strengthening the relationship between digital transformation and firm value. Governance structures may play a crucial role in ensuring that digital investments are effectively managed and aligned with long-term strategic objectives.

Therefore, this study addresses these gaps by examining how digital transformation influences financial performance and how corporate governance moderates the relationship between digital transformation and firm value within the telecommunications industry.

2.4 Development of the Conceptual Framework

This study develops a conceptual framework that integrates perspectives from agency theory, resource-based view, and dynamic capabilities theory to explain how digital transformation influences firm performance and value creation.

Digital transformation is expected to enhance financial performance by improving operational efficiency, facilitating innovation, and enabling firms to develop new digital business models. From the RBV perspective, digital technologies represent strategic resources that contribute to competitive advantage. Meanwhile, dynamic capabilities theory emphasizes the firm's ability to reconfigure technological resources to respond to rapidly changing digital environments.

Corporate governance plays a crucial role in ensuring that digital investments are aligned with organizational objectives. Effective governance mechanisms improve managerial accountability, enhance transparency, and strengthen strategic oversight in decision-making processes. Consequently, governance quality may strengthen the effectiveness of digital transformation initiatives and improve firm value creation.

Based on these theoretical arguments, this study proposes a conceptual framework in which digital transformation influences financial performance, while corporate governance both directly affects financial performance and moderates the relationship between digital transformation and firm value.

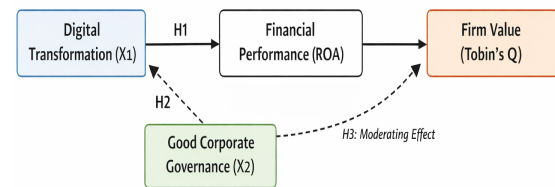


Fig. 1. Conceptual Framework of the Study

2.5 Hypotheses Development

2.5.6 Digital Transformation and Financial Performance

Digital transformation enables firms to improve operational efficiency, enhance innovation capabilities, and develop new digital services that contribute to improved financial outcomes (Nambisan et al., 2020; Verhoef et al., 2021). Firms that successfully integrate digital technologies into their business processes are more likely to experience productivity gains and improved financial performance.

Therefore, the first hypothesis is formulated as follows:

H1: Digital Transformation positively affects Financial Performance.

2.5.7 Corporate Governance and Financial Performance

Corporate governance mechanisms improve organizational accountability and ensure that managerial decisions align with shareholder interests. Strong governance structures enhance monitoring effectiveness and reduce agency conflicts, thereby improving firm performance (Shleifer & Vishny, 1997; Zattoni & Pugliese, 2021).

Thus, the second hypothesis is proposed:

H2: Good Corporate Governance positively affects Financial Performance.

2.5.8 Moderating Role of Corporate Governance

Corporate governance may also strengthen the relationship between digital transformation and firm value by ensuring that technological investments are efficiently managed and aligned with long-term strategic objectives. Effective governance mechanisms

enhance transparency, reduce agency conflicts, and improve investor confidence in digital investment decisions.

Accordingly, the third hypothesis is formulated as follows:

H3: Good Corporate Governance strengthens the relationship between Digital Transformation and Firm Value.

3. Research Methods

This section outlines the research design, data collection, variable measurement, and analytical techniques used to examine the relationships between digital transformation, corporate governance, financial performance, and firm value in the telecommunications sector. The methodology is structured to ensure transparency, consistency in variable operationalization, and robustness in addressing potential econometric issues.

3.1 Research Design

This study employs a quantitative explanatory research design to examine causal relationships among variables. The design focuses on testing the effect of digital transformation and corporate governance on financial performance (accounting-based outcome) and evaluating the moderating role of corporate governance on firm value (market-based outcome). Unlike earlier formulations, this study explicitly distinguishes between financial performance and firm value as separate constructs, thereby aligning the research objectives, model specification, and empirical testing.

3.2 Research Context and Setting

The study is conducted within the telecommunications infrastructure sector in Indonesia, specifically focusing on companies listed on the Indonesia Stock Exchange (IDX). The Indonesian telecommunications industry represents a strategic sector characterized by rapid digital transformation, technological investment, and strong competition among a limited number of dominant operators. The industry structure is generally described as a

tight oligopoly, where the majority of market share is controlled by three major companies. This industry context provides a relevant empirical setting to examine how digital investment strategies and governance practices influence financial outcomes and market valuation.

3.3 Population and Sample / Research Participants

The population includes all telecommunications companies listed on the Indonesia Stock Exchange (IDX). Due to the limited number of firms in this sector, a saturated sampling technique is applied, where all population members are included in the sample.

The final sample consists of:

- PT Telkom Indonesia (Persero) Tbk
- PT Indosat Tbk
- PT XL Axiata Tbk

These firms account for more than 90% of the national market share, ensuring strong industry representation.

The study uses quarterly panel data from 2021 to 2024, resulting in: 4 years × 4 quarters × 3 firms = 48 firm-quarter observations

Although the sample size is relatively small, it is justified for several reasons. First, the study captures the entire population of the industry, eliminating sampling bias. Second, the use of panel data increases the number of observations and degrees of freedom compared to pure cross-sectional analysis. Third, prior studies in industry-specific contexts commonly rely on small but comprehensive samples when the population is inherently limited. Therefore, the dataset is considered adequate for panel regression analysis, although the results should be interpreted within the sectoral context.

3.4 Data Sources and Data Collection

This study utilizes secondary data obtained from publicly available corporate reports and financial disclosures. The primary data sources include:

- Annual Reports
- Financial Statements
- Sustainability Reports
- Corporate Governance Reports
- Indonesia Stock Exchange (IDX) database

To enhance the robustness of the dataset, annual financial data are converted into quarterly time-series observations. The observation period covers four years from 2021 to 2024.

Given that each year consists of four quarters and the study involves three companies, the total dataset includes:

$$4 \text{ years} \times 4 \text{ quarters} \times 3 \text{ companies} = 48$$

Table 1. Operational Definition of Research Variables

Variable Type	Variable Code	Variable Name	Measurement Indicator / Proxy	Formula / Measurement	Scale	References
Independent	X1	Digital Transformation	IT Capital Expenditure Intensity and Digital Revenue Growth represent the firm's investment in digital infrastructure and services	IT CapEx to Revenue Ratio = (Total IT Capital Expenditure / Total Revenue) × 100%	Ratio	Verhoef et al. (2021)
Independent	X2	Good Corporate Governance	Corporate governance score based on the implementation of transparency, accountability, responsibility, independence, and fairness principles disclosed in annual reports	Composite CG Score based on governance disclosure index (Likert Scale 1–5)	Ordinal	OECD (2023) ; Zattoni & Pugliese (2021)
Dependent	Y1	Financial Performance	Profitability measured through the firm's ability to generate earnings from its assets	Return on Assets (ROA) = Net Income / Total Assets	Ratio	Ross et al. (2022)
Dependent	Y2	Firm Value	Market valuation reflecting investor expectations of future firm performance	Tobin's Q = (Market Value of Equity + Total Debt) / Total Assets	Ratio	(Primacintya et al., 2026; Sofian Suriawinata & Almurni, 2023)

observations

This approach ensures that the sample size exceeds the minimum asymptotic requirement ($N > 30$) for statistical inference and allows for more precise estimation of panel regression models.

3.5 Measurement of Variables and Research Instruments

To ensure consistency and avoid ambiguity, each variable is operationalized using a single primary proxy that directly corresponds to the empirical model.

Although digital transformation may conceptually include multiple indicators (e.g., digital revenue), this study uses IT capital expenditure intensity as the primary proxy to ensure consistency between conceptual definition and empirical measurement.

3.6 Data Analysis Techniques

The study employs panel data regression techniques, including:

1. **Fixed Effect Model (FEM)** to control for unobserved firm-specific heterogeneity
2. **Moderated Regression Analysis (MRA)** using an interaction term between digital transformation and corporate governance

To address potential econometric concerns, additional procedures are implemented:

- **Endogeneity and Reverse Causality**
The study mitigates reverse causality by using lagged independent variables (t-1) in robustness testing, assuming that digital investment decisions precede performance outcomes.
- **Omitted Variable Bias**
The fixed effects model controls for time-invariant unobserved heterogeneity across firms. In addition, time dummies are included to capture macroeconomic shocks affecting all firms simultaneously.
- **Model Specification**
Hausman tests are conducted to justify the use of FEM over random effects.
- **Robustness Checks**
Alternative model specifications and lag structures are tested to ensure consistency of results.

3.7 Validity, Reliability, and Trustworthiness

Several procedures are applied to ensure the validity and reliability of the empirical results. First, the study uses well-established measurement proxies that have been widely adopted in prior financial and governance studies, thereby supporting construct validity. Second, the use of secondary data from audited financial statements and official corporate

disclosures enhances data reliability. Third, panel regression models are evaluated through diagnostic tests, including tests for multicollinearity, heteroscedasticity, and model specification, to ensure robustness of the statistical estimations

3.8 Ethical Considerations

This study adheres to ethical research standards by utilizing publicly available secondary data, ensuring that no confidential or sensitive information is disclosed. All data used in the analysis are obtained from official corporate reports and publicly accessible databases. The research maintains academic integrity by properly citing all sources and ensuring transparency in the data analysis procedures.

3.9 Research Procedure

The research procedure follows a systematic sequence of stages, including:

1. Identification of the research problem and formulation of research objectives
2. Development of theoretical framework and research hypotheses
3. Determination of research population and sample
4. Collection of secondary financial and governance data
5. Operationalization and measurement of research variables
6. Statistical analysis using panel data regression techniques
7. Interpretation of empirical results
8. Drawing conclusions and providing research implications

This structured procedure ensures methodological transparency and facilitates the potential replication of the study by future researchers.

3.10 Methodological Limitations

Despite its rigorous design, this study has several limitations. First, the research focuses only on three major telecommunications companies, which may limit the generalizability of the findings to

other sectors. Second, the use of secondary financial data restricts the ability to capture qualitative aspects of digital transformation strategies within the firms.

Future research may expand the sample to include telecommunications companies from other countries or incorporate mixed-method approaches, such as interviews or case studies, to obtain deeper insights into digital transformation strategies and governance practices.

4. Results and Discussion

This section reports and discusses the empirical findings of the study in a structured

4.1 Research Results

4.1.1 Sample Description and Descriptive Statistics

This study analyzes telecommunications companies that

and transparent manner. The Results subsection focuses on presenting the outcomes of data analysis objectively, using tables to clearly communicate the statistical findings. Meanwhile, the Discussion subsection interprets the results by linking them to theoretical perspectives and empirical literature. Together, these subsections explain how the empirical evidence answers the research questions and contributes to the existing body of knowledge regarding digital transformation, corporate governance, and financial performance.

implement digital transformation strategies and corporate governance mechanisms. Descriptive statistics are presented to provide an overview of the characteristics of the research variables.

Table 2. Descriptive Statistics

Variable	Mean	Std Dev	Min	Max
Digital Transformation	22.64	4.82	15.20	35.10
GCG Score	4.76	0.12	4.55	4.95
ROA	5.12	1.94	1.85	7.45
Tobin's Q	1.82	0.44	1.12	2.62

Source: Data processed, 2026

The descriptive statistics indicate that digital transformation has an average value of 22.64, suggesting that telecommunications firms in the sample have moderately implemented digital technologies in their operational activities. The Good Corporate Governance (GCG) score shows a relatively high average value of 4.76, indicating strong governance practices among the sampled firms. Meanwhile, the mean Return on Assets (ROA) is 5.12, reflecting moderate profitability levels across the firms. The average Tobin's Q value of 1.82 indicates that market valuation

tends to exceed the book value of firms, suggesting positive market expectations.

4.1.2 Main Analytical Results

To examine the relationship between digital transformation, corporate governance, and firm performance, regression analysis was conducted using two models. Model 1 evaluates the direct effect of digital transformation and corporate governance on financial performance, while Model 2 incorporates the moderating effect of corporate governance.

Table 3. Regression Results Model 1

Variable	Coefficient	t-stat	p-value
Digital Transformation	0.412	3.75	0.001
GCG	0.285	2.94	0.005

Source: Data processed, 2026

The results of Model 1 show that digital transformation has a positive and statistically significant effect on financial performance ($\beta = 0.412$, $p = 0.001$). Similarly, Good Corporate Governance also demonstrates a significant positive effect on firm performance ($\beta = 0.285$, $p = 0.005$).

Table 4. Regression Results Model 2

Variable	Coefficient	t-stat	p-value
Digital Transformation	0.338	3.12	0.002
GCG	0.241	2.55	0.013
DT \times GCG	0.158	2.98	0.004

Source: Data processed, 2026

The interaction term between digital transformation and corporate governance (DT \times GCG) is statistically significant ($\beta = 0.158$, $p = 0.004$). This indicates that corporate governance moderates the relationship between digital transformation and firm value.

4.2 Research Discussion

4.2.1 Interpretation of Key Findings

The empirical findings demonstrate that digital transformation significantly improves financial performance in telecommunications firms. The positive coefficient obtained from the regression analysis indicates that firms with higher levels of digital investment tend to achieve stronger profitability outcomes. This result supports the argument that digital technologies enhance organizational efficiency by enabling firms to automate operational processes, optimize resource allocation, and improve service delivery.

From the perspective of the Resource-Based View (RBV), digital technologies represent strategic organizational resources that enable firms to create sustainable competitive advantages. Firms that develop strong digital capabilities—such as advanced data analytics, digital platforms, and network infrastructure—are able to enhance productivity, innovation capacity, and operational performance. These digital resources allow companies to differentiate

5 Hypothesis Testing Results / Key Findings

Model 2 examines the moderating role of corporate governance in strengthening the relationship between digital transformation and firm value.

their services and respond more effectively to dynamic market demands ([Fosso Wamba et al., 2024](#)).

The results also align with Dynamic Capabilities Theory, which emphasizes the firm's ability to sense technological opportunities, seize innovation potential, and reconfigure organizational resources to adapt to rapidly changing environments. In the telecommunications sector, companies that successfully develop dynamic capabilities are better able to integrate digital technologies into their business models and operational processes. Consequently, these firms are more capable of generating long-term financial value from digital transformation initiatives ([Huang et al., 2025](#); [Teece, 2023](#)).

Furthermore, the findings reveal that Good Corporate Governance (GCG) significantly improves financial performance. This result indicates that effective governance structures contribute to improved managerial accountability and decision-making efficiency. Corporate governance mechanisms—such as board oversight, transparency policies, and monitoring systems—help reduce agency conflicts between managers and shareholders, thereby ensuring that corporate resources are utilized efficiently.

The moderating effect analysis further demonstrates that corporate governance strengthens the positive relationship between digital transformation and firm value. This

finding suggests that governance mechanisms play a critical role in ensuring that digital investment strategies are implemented effectively. Firms with stronger governance structures are more likely to generate greater economic value from digital transformation initiatives because governance mechanisms improve strategic oversight and reduce managerial opportunism.

4.2.2 *Comparison with Previous Studies*

The findings of this study are consistent with a growing body of literature emphasizing the positive impact of digital transformation on firm performance. For instance [Nadkarni et al. \(2020\)](#) and [Verhoef et al. \(2021\)](#) highlight that digital transformation improves organizational agility, operational efficiency, and customer engagement, which ultimately enhances firm performance.

Similarly, [Fosso Wamba et al. \(2024\)](#) demonstrate that digital technologies significantly improve firm productivity by enabling organizations to leverage big data analytics and artificial intelligence for decision-making processes. In the telecommunications sector, digital transformation initiatives such as 5G infrastructure deployment, cloud integration, and digital platforms have been shown to enhance operational efficiency and service quality ([Li, 2022](#)).

The positive relationship between corporate governance and financial performance is also supported by prior empirical studies. [Aibar-Guzmán et al. \(2023\)](#) finds that effective governance mechanisms significantly improve firm performance by strengthening transparency and reducing information asymmetry between managers and investors. Similarly [Aibar-Guzmán et al. \(2023\)](#) demonstrate that governance structures enhance firm value by improving strategic decision-making and monitoring managerial behavior.

More importantly, the moderating role of corporate governance identified in this study is consistent with recent literature examining governance mechanisms in digital

transformation strategies. [Koo and Easley \(2021\)](#) argue that digital transformation initiatives require strong governance oversight to ensure that technological investments are aligned with long-term strategic objectives. Without effective governance mechanisms, firms may face increased risks associated with technological uncertainty and resource misallocation.

Recent empirical evidence further suggests that governance quality significantly influences the success of digital transformation initiatives. [Li \(2022\)](#) find that firms with stronger board monitoring structures are more likely to achieve higher returns from digital investment strategies. Similarly, [Chen and Srinivasan \(2023\)](#) demonstrate that governance mechanisms enhance investor confidence in digital innovation projects, thereby increasing firm valuation.

4.2.3 *Theoretical Contributions*

This study contributes to the literature by integrating agency theory, resource-based view, and dynamic capabilities theory to explain how digital transformation influences firm performance. First, the findings provide empirical support for agency theory, which suggests that governance mechanisms reduce conflicts between managers and shareholders. In the context of digital transformation, large technological investments may increase managerial discretion and information asymmetry.

Effective governance mechanisms therefore play a crucial role in ensuring that digital investments are aligned with shareholder interests and long-term value creation. Second, the study extends the Resource-Based View by demonstrating that digital technologies represent strategic organizational resources capable of generating competitive advantages. Telecommunications firms that develop strong digital capabilities—such as digital infrastructure, data analytics systems, and digital platforms—are able to improve their operational efficiency and financial performance.

Third, the findings support the relevance of Dynamic Capabilities Theory in explaining digital transformation success. Firms that possess strong capabilities to sense technological opportunities, seize innovation potential, and reconfigure resources are more capable of leveraging digital technologies to enhance firm value. By integrating these theoretical perspectives, the study provides a more comprehensive explanation of how digital transformation influences firm performance in technology-intensive industries.

4.2.4 *Practical and Policy Implications*

The findings provide important practical implications for corporate managers, investors, and policymakers. Telecommunications companies should prioritize investments in digital infrastructure and technological innovation in order to enhance operational efficiency and competitiveness in the digital economy. However, digital transformation strategies must be supported by strong corporate governance frameworks. Firms should strengthen board oversight, transparency mechanisms, and risk management practices to ensure that digital investment decisions are aligned with long-term strategic objectives. For policymakers, the results suggest that strengthening governance regulations and disclosure requirements may enhance investor confidence in digital investment initiatives. Regulatory frameworks that promote transparency and accountability in digital transformation projects can help ensure that technological investments contribute to sustainable economic growth.

4.2.5 *Integration with the Research Gap*

This study addresses several important research gaps identified in the literature. While previous studies have primarily examined the direct relationship between digital transformation and firm performance, this research demonstrates that governance mechanisms play a critical role in enhancing

the effectiveness of digital transformation strategies. Additionally, the study provides empirical evidence from an emerging market context, which has been relatively underexplored in prior digital transformation research. Most existing studies focus on developed economies such as the United States and European countries. By examining telecommunications firms in Indonesia, this study expands the geographical scope of digital transformation research and provides insights into how governance structures influence digital investment outcomes in emerging markets. Furthermore, the research contributes to the limited literature examining the telecommunications sector, which plays a strategic role in enabling digital economic development.

4.2.6 *Acknowledgement of Study Limitations*

Despite its contributions, this study has several limitations. First, the research focuses on a limited number of telecommunications firms listed on the Indonesia Stock Exchange, which may restrict the generalizability of the findings to other industries or countries. Second, the measurement of digital transformation relies on financial indicators such as IT capital expenditure intensity, which may not fully capture the complexity of digital transformation strategies. Future research may incorporate additional measures of digital transformation, such as digital innovation outputs, platform adoption, or digital capability indices, to provide a more comprehensive understanding of digital transformation processes.

5. Conclusion

This study examines the relationship between digital transformation, corporate governance, financial performance, and firm value within the Indonesian telecommunications sector. The research aims to analyze whether digital transformation improves financial performance and whether corporate governance strengthens the effectiveness of digital transformation

strategies in creating firm value. The empirical findings provide important insights into how technological investment and governance mechanisms interact to influence organizational outcomes in technology-intensive industries. Overall, the results demonstrate that digital transformation plays a significant role in improving corporate performance and that governance mechanisms enhance the effectiveness of digital investment strategies. By integrating perspectives from agency theory, the resource-based view, and dynamic capabilities theory, this study provides a comprehensive explanation of how technological capabilities and governance structures jointly contribute to value creation in the digital economy.

5.1 Summary of Key Findings

The findings of this study reveal several important insights regarding the relationship between digital transformation, corporate governance, and firm performance in the telecommunications industry. First, digital transformation is found to have a positive and significant effect on financial performance. Firms that invest in digital infrastructure and technologies are able to improve operational efficiency, optimize service delivery, and enhance their capacity for innovation. These improvements ultimately contribute to stronger financial performance and improved organizational competitiveness. Second, corporate governance also demonstrates a positive influence on financial performance. Strong governance mechanisms improve transparency, strengthen managerial accountability, and enhance monitoring processes within organizations.

As a result, firms with higher governance quality tend to achieve better financial outcomes. Third, the results indicate that corporate governance strengthens the relationship between digital transformation and firm value. Governance mechanisms play a critical role in ensuring that digital investment strategies are implemented effectively and aligned with long-term organizational

objectives. Firms with stronger governance structures are therefore more capable of generating greater value from digital transformation initiatives.

5.2 Theoretical Contributions

This study contributes to the academic literature by integrating multiple theoretical perspectives to explain the relationship between digital transformation, governance mechanisms, and firm performance. First, the findings extend agency theory by demonstrating that governance mechanisms play a critical role in monitoring managerial decisions related to digital investments. Large-scale technological investments may increase information asymmetry between managers and shareholders, and effective governance structures help mitigate these agency conflicts by ensuring that digital strategies align with shareholder interests. Second, the study contributes to the Resource-Based View (RBV) by providing empirical evidence that digital technologies represent strategic organizational resources that can enhance firm performance.

Telecommunications firms that develop strong digital capabilities are better positioned to achieve sustainable competitive advantages. Third, the research supports dynamic capabilities theory by highlighting the importance of organizational capabilities in adapting to rapidly changing technological environments. Firms that are able to integrate, reconfigure, and leverage digital resources effectively are more capable of generating long-term value through digital transformation initiatives. By combining these theoretical perspectives, the study provides a more comprehensive understanding of how digital transformation and governance mechanisms jointly influence firm performance in technology-intensive industries.

5.3 Practical and Policy Implications

The findings of this study provide important implications for corporate managers, investors, and policymakers. For corporate managers, the results highlight the

importance of developing comprehensive digital transformation strategies that are aligned with organizational objectives. Firms should invest in digital infrastructure, technological innovation, and digital capabilities in order to enhance operational efficiency and maintain competitiveness in the digital economy. At the same time, companies must strengthen corporate governance mechanisms to ensure that digital investments are implemented effectively.

Strong governance frameworks—including transparent decision-making processes, effective board oversight, and robust internal controls—can improve the strategic management of digital transformation initiatives. For policymakers and regulators, the findings emphasize the need to promote governance frameworks that encourage transparency and accountability in corporate decision-making. Strengthening governance regulations and disclosure requirements may help enhance investor confidence and ensure that digital investments contribute to sustainable economic development.

5.4 Limitations of the Study

Despite its contributions, this study has several limitations that should be acknowledged when interpreting the findings. First, the research focuses exclusively on telecommunications companies listed on the Indonesia Stock Exchange. Although these firms represent the majority of the national telecommunications market, the findings may not be fully generalizable to other industries with different technological characteristics and competitive structures. Second, the measurement of digital transformation relies primarily on financial indicators such as IT capital expenditure intensity and digital revenue growth. While these indicators capture the level of digital investment, they may not fully reflect the complexity of digital transformation processes, including organizational culture change, innovation capability, and digital strategy implementation.

Third, the study is conducted within the context of an emerging market environment, which may differ from institutional environments in developed economies. Consequently, the results should be interpreted with caution when applied to other geographical contexts.

5.5 Directions for Future Research

Future research can build upon this study in several ways to further expand the understanding of digital transformation and governance mechanisms. First, future studies may examine other industries that are experiencing rapid digital transformation, such as financial technology, e-commerce, or manufacturing sectors. Comparative analyses across industries may provide deeper insights into how technological characteristics influence the relationship between digital transformation and firm performance. Second, future research may incorporate additional variables that capture broader dimensions of digital transformation, such as digital innovation capability, platform ecosystem development, artificial intelligence adoption, or organizational digital maturity.

Third, researchers may apply alternative methodological approaches, such as mixed-method research designs or qualitative case studies, to gain deeper insights into how firms implement digital transformation strategies and governance practices in real-world organizational settings. Finally, future studies may expand the geographical scope of the analysis by examining telecommunications firms across multiple countries. Cross-country comparative studies may help identify how institutional environments, regulatory frameworks, and governance structures influence the effectiveness of digital transformation strategies.

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