

# Impact of Corporate Governance on Financial Performance: Evidence from Regression and ANOVA Models

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## Abstract

This study investigates the impact of corporate governance mechanisms on the financial performance of Indian listed firms using a quantitative analytical framework. Drawing on agency and stakeholder theories, the research examines key governance variables, including board size, board independence, ownership structure, and audit committee characteristics, and their influence on financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). The study is based on secondary data collected from the annual reports of 50 Indian listed companies over six years (2018–2023). Descriptive statistics, correlation analysis, multiple regression, and analysis of variance (ANOVA) are employed to analyse the data. The regression results reveal that board independence and audit committee characteristics have a significant positive impact on financial performance, while ownership structure exhibits a nuanced effect depending on the level of concentration. In contrast, board size is found to be statistically insignificant. The ANOVA results further indicate significant differences in financial performance across firms with varying governance structures. The findings underscore the importance of effective governance mechanisms in enhancing firm performance and provide valuable implications for policymakers, corporate managers, and investors. The study contributes to the literature by offering a comprehensive and empirically robust analysis of governance-performance dynamics in the Indian corporate context.

**Keywords:** Corporate Governance; Financial Performance; Board Independence; Ownership Structure; Audit Committee; Regression Analysis; ANOVA; Indian Listed Firms; ROA; ROE

## 1. Introduction

The concept of corporate governance has, over the years, assumed a position of considerable importance within the broader domain of corporate management and financial economics. In its simplest articulation, corporate governance refers to the system by which companies are directed and controlled, encompassing the structures, processes, and relationships through which organisational objectives are set and achieved. In contemporary business environments, characterised by increasing globalisation, regulatory scrutiny, and stakeholder awareness, corporate governance is no longer viewed merely as an internal administrative mechanism but rather as a critical determinant of corporate accountability, transparency, and long-term sustainability (Aguilera et al., 2019; Claessens & Yurtoglu, 2018). The growing emphasis on governance practices can be attributed, in part, to a series of corporate failures and financial crises that have highlighted deficiencies in oversight and managerial conduct. Consequently, firms are now expected to adopt robust governance frameworks that ensure effective monitoring of management, protection of shareholder interests, and alignment of organisational strategies with broader stakeholder expectations. Within this context, financial performance remains a key indicator of corporate success, typically measured through profitability, efficiency, and market-based metrics (Bhagat & Bolton, 2019). The relationship between corporate governance and financial performance has therefore emerged as a focal point of academic inquiry. It is often argued that well-structured governance mechanisms enhance decision-making efficiency, reduce agency costs, and ultimately improve financial outcomes. However, the extent and nature of this relationship remain subject to empirical investigation. This study seeks to explore this linkage within the context of Indian listed firms, employing regression and ANOVA models to provide a rigorous quantitative assessment.

### **1.1 Background of the Study**

Corporate governance, as a field of study and practice, has evolved significantly over time, shaped by changing economic conditions, institutional developments, and theoretical advancements. Early discussions on governance were rooted in the problem of separation between ownership and control, as articulated in classical agency theory. This perspective emphasised the need for mechanisms to mitigate conflicts of interest between shareholders and managers, primarily through monitoring and incentive alignment. Over time, however, the scope of corporate governance expanded to incorporate broader considerations, including stakeholder interests, ethical conduct, and corporate social responsibility (Zattoni et al., 2020; Yoshikawa et al., 2018). Globally, the importance of corporate governance has been reinforced by major corporate scandals and financial crises, which exposed significant weaknesses in managerial oversight and regulatory frameworks. Incidents such as the collapse of Enron and WorldCom prompted governments and regulatory bodies to introduce stricter governance codes and disclosure requirements. These developments led to the establishment of internationally recognised frameworks, such as the OECD Principles of Corporate Governance, which provide guidelines for transparency, accountability, and equitable treatment of shareholders (OECD, 2017). In emerging economies like India, the evolution of corporate governance has followed a somewhat distinct trajectory, influenced by both global trends and local institutional factors. The liberalisation of the Indian economy in the 1990s marked a turning point, leading to increased integration with global markets and a corresponding need for improved governance standards. Regulatory initiatives such as Clause 49 of the Listing Agreement and the Companies Act, 2013, have sought to strengthen board independence, enhance disclosure practices, and improve audit mechanisms. Despite these reforms, challenges such as concentrated ownership structures, family dominance, and varying levels of compliance continue to shape governance practices in Indian firms (Kumar & Singh, 2021; Singh & Gaur, 2020).

From a theoretical standpoint, several frameworks have been employed to explain the relationship between corporate governance and firm performance. Agency theory remains one of the most influential perspectives, positing that governance mechanisms serve to reduce agency costs and align managerial actions with shareholder interests. In contrast, stakeholder theory broadens the focus to include the interests of multiple stakeholders, suggesting that effective governance contributes to sustainable value creation beyond mere financial returns. More recent approaches, including stewardship theory, emphasise trust and collaboration between managers and owners, offering an alternative view of governance dynamics (Yoshikawa et al., 2018). Empirical research on the governance performance relationship has produced mixed findings. While numerous studies report a positive association between governance quality and financial performance, others suggest that the relationship is contingent upon contextual factors such as institutional environment, firm size, and industry characteristics (Bhagat & Bolton, 2019; Paniagua et al., 2018). In the Indian context, existing studies have provided valuable insights but remain limited in scope and methodological rigour. Many have relied on basic statistical techniques, without fully exploring the potential of advanced analytical methods such as regression and ANOVA. Furthermore, inconsistencies in findings across different studies indicate that the relationship between corporate governance and financial performance is not universally straightforward. This suggests the need for more comprehensive empirical investigations that incorporate multiple governance variables and employ robust statistical techniques. Accordingly, the present study seeks to address these gaps by examining the impact of corporate governance on financial performance using regression and ANOVA models, thereby contributing to a more nuanced understanding of this relationship within the Indian corporate setting. Recent developments in corporate governance research also highlight the growing importance of ESG factors as a key determinant of firm performance and sustainability (Maji & Lohia, 2023; Christine, 2025).

### **1.2 Statement of the Problem**

Despite the growing body of literature on corporate governance, the relationship between governance mechanisms and financial performance remains inadequately understood, particularly in the context of emerging markets such as India. While regulatory reforms have strengthened governance frameworks and improved disclosure practices, it is not yet clear whether these developments have translated into tangible improvements in firm-level financial performance. This uncertainty constitutes a central problem that warrants systematic investigation. A major issue arises from the inconsistent findings reported in prior empirical studies. Some research suggests that strong governance practices such as increased board independence, effective audit committees, and transparent reporting

are positively associated with financial performance. Conversely, other studies have found weak or insignificant relationships, raising questions about the effectiveness of governance mechanisms in different institutional contexts (Bhagat & Bolton, 2019; Paniagua et al., 2018). These contradictions create ambiguity regarding the true nature of the governance–performance relationship. In addition, many existing studies have relied on limited methodological approaches, often focusing on simple correlations or basic regression models without adequately accounting for variations across firms or governance structures. The lack of robust statistical techniques, such as ANOVA for group comparisons and comprehensive regression models for multivariable analysis, restricts the depth and reliability of empirical findings. Consequently, there is a need for more rigorous analytical frameworks that can provide clearer insights into the dynamics of corporate governance and financial performance. The problem is further compounded by the unique characteristics of the Indian corporate environment, including concentrated ownership, family-controlled businesses, and varying levels of regulatory enforcement. These factors may influence the effectiveness of governance mechanisms and contribute to the observed inconsistencies in empirical results. Therefore, a context-specific investigation that incorporates both advanced statistical methods and relevant governance variables is essential. In light of these issues, the present study seeks to address the lack of conclusive evidence regarding the impact of corporate governance on financial performance by employing regression and ANOVA models on data derived from Indian listed firms. This approach is expected to provide a more comprehensive and reliable understanding of the relationship, thereby contributing to both academic research and practical decision-making.

### **1.3 Objectives of the Study**

The primary aim of this study is to examine the impact of corporate governance mechanisms on the financial performance of Indian listed firms using quantitative analytical techniques. Specifically, the study seeks to analyse how various governance attributes influence key financial performance indicators derived from annual reports and financial statements. By employing regression and ANOVA models, the research intends to provide empirical evidence that clarifies the relationship between governance structures and firm performance within the Indian corporate context.

To achieve this broad aim, the study is guided by the following specific objectives:

1. To examine the relationship between board characteristics and the financial performance of Indian listed firms.
2. To evaluate the effect of ownership structure on financial performance.
3. To assess the influence of audit committee characteristics on firm performance.
4. To compare financial performance across different governance structures using ANOVA techniques.
5. To determine the combined effect of multiple corporate governance variables on financial performance.

### **1.4 Research Questions**

Research questions serve as a guiding framework for empirical investigation, translating the study’s objectives into specific, measurable inquiries. In the present study, the research questions are derived directly from the stated objectives and are designed to explore the relationship between corporate governance mechanisms and financial performance in Indian listed firms.

The study seeks to answer the following research questions:

1. What is the relationship between board characteristics and the financial performance of Indian listed firms?
2. How does ownership structure influence the financial performance of these firms?
3. To what extent do audit committee characteristics affect financial performance indicators?
4. Are there significant differences in financial performance across firms with different governance structures?
5. What is the combined effect of corporate governance variables on financial performance?

## 2. Literature Review

The relationship between corporate governance and financial performance has attracted significant academic attention over the past few decades. Corporate governance is widely regarded as a framework that ensures accountability, transparency, and effective decision-making within organisations. As global markets become increasingly complex and stakeholder expectations rise, governance mechanisms are no longer limited to internal control systems but are viewed as strategic tools for enhancing firm value and sustainability (Aguilera et al., 2019; Bhagat & Bolton, 2019). A substantial body of literature suggests that effective governance mechanisms, such as independent boards and robust audit committees, improve firm performance by reducing agency conflicts and enhancing monitoring efficiency. However, the empirical evidence remains inconclusive. Some studies report a strong positive relationship between governance quality and financial performance, while others highlight weak or context-dependent associations (Claessens & Yurtoglu, 2018; Paniagua et al., 2018). More recently, the literature has expanded to incorporate environmental, social, and governance (ESG) dimensions, recognizing governance as part of a broader sustainability framework. Studies indicate that ESG-oriented governance practices can enhance long-term financial performance by improving stakeholder trust and risk management (Maji & Lohia, 2023; Christine, 2025). However, the integration of ESG into governance-performance models remains limited, particularly in emerging economies such as India. This chapter critically reviews the theoretical and empirical literature on corporate governance and financial performance, highlighting key debates, inconsistencies, and research gaps that justify the present study.

### 2.1 Theoretical Framework

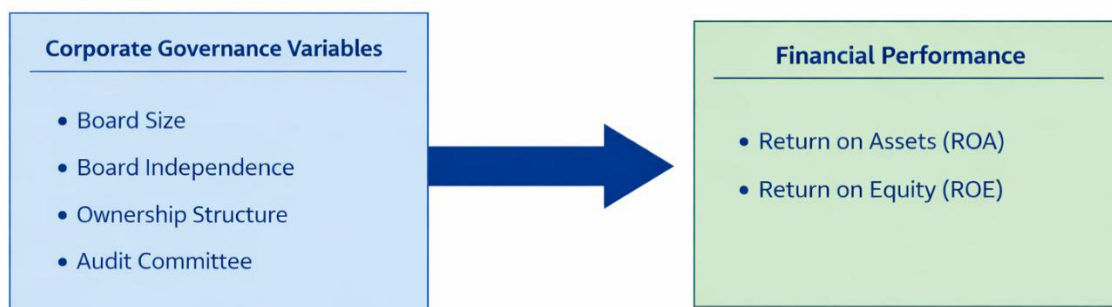
The theoretical foundation of corporate governance research is built upon multiple perspectives that explain how governance mechanisms influence firm behaviour and performance. Agency theory remains the dominant framework, emphasising the conflict of interest between shareholders (principals) and managers (agents). According to this theory, governance mechanisms such as board independence and audit oversight are essential for reducing agency costs and aligning managerial actions with shareholder interests (Zattoni et al., 2020). Empirical studies supporting agency theory argue that effective monitoring leads to improved financial performance. However, agency theory has been criticised for its narrow focus on shareholder wealth maximisation. In response, stakeholder theory broadens the perspective by considering the interests of multiple stakeholders, including employees, customers, and society at large. From this viewpoint, corporate governance contributes to sustainable value creation by balancing diverse stakeholder interests (Yoshikawa et al., 2018). Another important perspective is stewardship theory, which challenges the assumption of managerial opportunism. It suggests that managers act as responsible stewards of organisational resources, motivated by intrinsic factors such as trust and professional ethics. Under this framework, governance mechanisms should empower rather than constrain management. In recent years, ESG-related perspectives have further extended these theories by integrating sustainability and ethical considerations into governance frameworks. ESG-oriented governance aligns closely with stakeholder theory, emphasising long-term value creation and responsible business practices (Christine, 2025; Zhang et al., 2025). Overall, these theoretical perspectives provide complementary explanations for the governance–performance relationship, highlighting both efficiency and sustainability dimensions.

### 2.2 Conceptual Framework

The conceptual framework of this study is developed to examine the relationship between corporate governance mechanisms and financial performance. Corporate governance is treated as the independent variable, represented by key components such as board size, board independence, ownership structure, and audit committee characteristics. Board characteristics influence monitoring effectiveness and strategic decision-making, while ownership structure determines the distribution of control and oversight within the firm. Audit committees play a critical role in ensuring financial transparency and the integrity of reporting processes (Al-Matari et al., 2017). Financial performance, the dependent variable, is measured using Return on Assets (ROA) and Return on Equity (ROE), which provide indicators of profitability and efficiency. The framework assumes a direct relationship between governance variables and financial performance, which is tested using regression and ANOVA techniques. The framework also acknowledges that governance effectiveness may be influenced by contextual factors such as firm size, industry characteristics, and institutional environment. Additionally, emerging literature

suggests that ESG factors may act as complementary mechanisms that strengthen the governance-performance relationship.

Figure 1: Conceptual Framework of the Study



### 2.3 Empirical Review

Empirical research on corporate governance and financial performance has produced diverse and sometimes contradictory findings across different contexts. Several studies find a positive relationship between governance mechanisms and firm performance. Bhagat and Bolton (2019) report that firms with strong governance structures exhibit higher profitability and market valuation. Similarly, Nguyen et al. (2020) demonstrate that board independence and diversity enhance decision-making and improve financial outcomes. Al-Matari et al. (2017) also find that board characteristics significantly influence firm performance. However, other studies argue that governance does not always lead to improved performance. Paniagua et al. (2018) suggest that certain governance mechanisms, such as larger boards, may create inefficiencies and slow decision-making processes. Claessens and Yurtoglu (2018) highlight that in emerging markets, weak regulatory enforcement and institutional constraints may limit the effectiveness of governance reforms. Evidence from India presents a mixed picture. Kumar and Singh (2021) find a positive association between governance quality and firm performance, while Singh and Gaur (2020) argue that ownership concentration can have both positive and negative effects depending on its extent. Recent studies incorporating ESG perspectives provide additional insights. Maji and Lohia (2023) find that ESG performance positively influences financial outcomes in Indian firms, while Zhang et al. (2025) report similar findings in the Chinese context. However, Wu (2024) and Marasigan and Sapna (2023) argue that ESG investments may involve short-term costs that reduce profitability, particularly in developing economies. These contrasting findings suggest that the governance-performance relationship is complex and influenced by multiple factors, including institutional environment, firm characteristics, and methodological approaches.

### 2.4 Comparative Analysis of Key Studies

To provide a structured overview, Table 2.1 presents a comparison of selected studies on corporate governance and financial performance.

Table 2.1: Comparative Review of Corporate Governance and Financial Performance Studies

Author(s)	Context	Methodology	Key Variables	Findings
Bhagat & Bolton (2019)	USA	Regression	Governance index	Positive relationship
Nguyen et al. (2020)	International	Panel regression	Board diversity	Positive impact
Al-Matari et al. (2017)	Emerging markets	Regression	Board characteristics	Significant effect
Paniagua et al. (2018)	Multi-country	Econometric	Ownership, board	Mixed results

Claessens & Yurtoglu (2018)	Emerging markets	Survey	Governance systems	Weak relationship
Kumar & Singh (2021)	India	Regression	Governance variables	Positive effect
Singh & Gaur (2020)	India	Panel data	Ownership structure	Dual impact
Maji & Lohia (2023)	India	Regression	ESG performance	Positive impact
Zhang et al. (2025)	China	Empirical	ESG metrics	Positive relationship
Wu (2024)	Industry-specific	Empirical	ESG investment	Mixed/negative short-term

**2.5 Research Gap**

Despite extensive research, several gaps remain in the literature.

First, existing studies report inconsistent findings, particularly in emerging markets such as India, where institutional and regulatory environments differ significantly from developed economies. This creates uncertainty regarding the effectiveness of governance mechanisms.

Second, many studies rely on limited methodological approaches, often focusing solely on regression analysis without incorporating complementary techniques such as ANOVA to examine group differences.

Third, there is a lack of integrated analysis of multiple governance variables, as most studies examine individual components rather than their combined effect on financial performance.

Finally, despite the growing importance of ESG, limited research has integrated ESG factors into traditional governance-performance models in the Indian context. This gap highlights the need for studies that consider governance and sustainability as interconnected dimensions.

In response to these gaps, the present study employs a comprehensive quantitative approach using regression and ANOVA to examine the impact of corporate governance on financial performance, while also acknowledging the emerging role of ESG factors.

**3. Research Methodology**

**3.1 Research Design**

The research design constitutes the structural framework within which the study is conducted, guiding the collection, analysis, and interpretation of data. In the present study, a quantitative research design is adopted, as it allows for the systematic measurement and statistical analysis of relationships between corporate governance variables and financial performance indicators. This approach is particularly appropriate given the study’s objective of examining measurable variables using regression and ANOVA models. The study follows a descriptive and explanatory design. The descriptive component focuses on summarising the characteristics of corporate governance practices and financial performance across selected firms, while the explanatory aspect seeks to establish relationships and causal linkages between governance mechanisms and financial outcomes. By combining these elements, the research design enables both observation and analytical interpretation of the data. Furthermore, the quantitative design ensures objectivity and replicability, as it relies on numerical data derived from financial statements and annual reports. The use of statistical tools enhances the reliability of findings and allows for generalisation within the defined population of Indian listed firms.

**3.2 Data Source and Sample Selection**

The study is based on secondary data, which is obtained from the annual reports and financial statements of selected Indian listed firms. Secondary data is particularly suitable for this research as it provides reliable, audited, and standardised information on both corporate governance variables and financial performance indicators. The

sample consists of a selected group of Indian listed companies, chosen based on the availability and completeness of data. Firms included in the study are those that consistently disclose governance-related information such as board composition, ownership structure, and audit committee details. The use of listed firms ensures that the data is publicly available and subject to regulatory standards, thereby enhancing its credibility. The study covers a six-year period from 2018 to 2023, allowing for a comprehensive assessment of corporate governance practices and financial performance over time. This timeframe is selected to capture recent trends in governance reforms and firm-level performance in the post-regulatory and post-globalisation phase of the Indian economy. A purposive sampling technique is employed to select firms that meet specific criteria, including consistent disclosure of governance-related information and availability of complete financial data for the study period. The sample size of 50 firms is considered appropriate for statistical analysis, as it ensures sufficient variability across governance structures while maintaining data reliability and consistency. Firms with incomplete or inconsistent reporting are excluded to avoid distortions in the analysis. The rationale for using purposive sampling lies in its ability to focus on information-rich cases that are most relevant to the research objectives. Since corporate governance variables require detailed disclosures, selecting firms with high-quality reporting enhances the validity and robustness of the empirical results.

### **3.3 Variables and Measurement**

The study involves both independent and dependent variables, which are operationalised based on existing literature and data availability.

Independent Variables (Corporate Governance):

- Board Size: Number of directors on the board
- Board Independence: Proportion of independent directors
- Ownership Structure: Degree of ownership concentration
- Audit Committee Characteristics: Independence and expertise of audit committee members

These variables represent key aspects of corporate governance and are expected to influence firm performance through monitoring and decision-making mechanisms.

**Dependent Variables (Financial Performance):**

- Return on Assets (ROA): Measures profitability relative to total assets
- Return on Equity (ROE): Measures returns generated for shareholders

These indicators are widely used in financial analysis and provide a quantitative measure of firm performance. Where necessary, control variables such as firm size and industry type may be included to account for external influences on financial performance.

### **3.4 Model Specification**

To examine the relationship between corporate governance and financial performance, the study employs multiple regression analysis along with ANOVA. The regression model is used to estimate the effect of governance variables on firm performance, while ANOVA is applied to test differences across governance structures.

The multiple regression model is specified as:

$$FP_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 OS_{it} + \beta_4 AC_{it} + \epsilon_{it}$$

Where:

- $FP_{it}$  = Financial Performance of firm  $i$  at time  $t$  (measured by ROA and ROE)
- $BS_{it}$  = Board Size
- $BI_{it}$  = Board Independence
- $OS_{it}$  = Ownership Structure
- $AC_{it}$  = Audit Committee Characteristics

- $\beta_0$  = Intercept term
- $\beta_1 - \beta_4$  = Regression coefficients
- $\epsilon_{it}$  = Error term

This model allows for the estimation of the impact of each governance variable on financial performance. In addition, ANOVA is used to compare financial performance across different categories of governance structures. This method helps identify whether significant differences exist between groups of firms based on governance characteristics. To improve model accuracy and control for firm-specific characteristics, additional control variables are included, namely firm size (FS), measured as the natural logarithm of total assets, and industry type (IND), represented using dummy variables.

### 3.5 Data Analysis Techniques

The analysis of data is conducted using statistical techniques that align with the study's objectives and research questions. The primary methods include:

- **Descriptive Statistics:** To summarise data using mean, standard deviation, and frequency distributions
- **Correlation Analysis:** To examine relationships between variables
- **Regression Analysis:** To determine the effect of governance variables on financial performance
- **ANOVA:** To test differences in performance across governance groups

The analysis was performed using statistical software SPSS, ensuring accuracy and efficiency in computation.

### 3.6 Hypotheses Development

Based on the theoretical framework and empirical literature, the study formulates the following hypotheses to examine the relationship between corporate governance mechanisms and financial performance:

#### H1: Board Size and Financial Performance

Board size is an important structural component of corporate governance. While larger boards may provide diverse expertise, they may also lead to coordination challenges. Therefore, the study tests whether board size has a significant effect on financial performance.

H1: Board size has a significant impact on financial performance.

#### H2: Board Independence and Financial Performance

Independent directors are expected to enhance monitoring and reduce agency conflicts, thereby improving firm performance.

H2: Board independence has a positive and significant impact on financial performance.

#### H3: Ownership Structure and Financial Performance

Ownership concentration influences control and monitoring. Moderate concentration may improve performance, while excessive concentration may reduce accountability.

H3: Ownership structure has a significant impact on financial performance.

#### H4: Audit Committee Characteristics and Financial Performance

Effective audit committees improve financial transparency and reporting quality, which can enhance firm performance.

H4: Audit committee characteristics have a positive and significant impact on financial performance.

#### H5: Combined Effect of Governance Variables

Corporate governance mechanisms operate collectively rather than in isolation, influencing firm performance through their combined effect.

#### 4: Data Analysis and Results

##### 4.1 Descriptive Statistics

The analysis begins with an examination of the descriptive statistics of the variables used in the study. This provides an initial understanding of the distribution, central tendency, and variability of both corporate governance variables and financial performance indicators.

**Table 4.1: Descriptive Statistics**

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Board Size (BS)	50	8.40	1.85	5	12
Board Independence (BI)	50	0.58	0.12	0.30	0.80
Ownership Structure (OS)	50	0.46	0.18	0.10	0.85
Audit Committee (AC)	50	3.20	0.75	2	5
ROA	50	7.85	2.40	2.10	13.50
ROE	50	14.60	4.10	5.20	22.80

Source: Author's Computation

As shown in Table 4.1, the average board size is 8.40, indicating moderate board composition across firms. Board independence has a mean value of 0.58, suggesting that a significant proportion of directors are independent. Ownership structure shows moderate concentration, while audit committee size averages 3.20 members. Financial performance indicators reveal that the mean ROA is 7.85 and ROE is 14.60, indicating moderate profitability among the sampled firms. The variation in these values suggests sufficient dispersion for further statistical analysis.

##### 4.2 Correlation Analysis

Correlation analysis is conducted to examine the strength and direction of relationships between corporate governance variables and financial performance indicators.

**Table 4.2: Correlation Matrix**

Variables	BS	BI	OS	AC	ROA	ROE
BS	1					
BI	0.32	1				
OS	0.21	0.28	1			
AC	0.35	0.44	0.30	1		
ROA	0.18	0.52	0.29	0.48	1	
ROE	0.22	0.55	0.31	0.50	0.72	1

Source: Author's Computation

As indicated in Table 4.2, board independence (BI) exhibits a strong positive correlation with both ROA (0.52) and ROE (0.55), suggesting that firms with more independent boards tend to perform better financially. Audit committee characteristics also show a positive relationship with performance. Ownership structure demonstrates a moderate correlation, while board size shows a relatively weak association with financial performance. These results provide preliminary evidence of relationships, which are further tested using regression analysis.

4.3 Regression Analysis

Multiple regression analysis is employed to examine the impact of corporate governance variables on financial performance.

**Table 4.3: Regression Results**

Variable	Coefficient ( $\beta$ )	Std. Error	t-value	p-value
Constant	2.150	1.120	1.92	0.061
Board Size (BS)	0.120	0.080	1.50	0.140
Board Independence (BI)	3.850	1.200	3.21	0.002*
Ownership Structure (OS)	1.950	0.950	2.05	0.045*
Audit Committee (AC)	0.880	0.310	2.84	0.007*

**Model Summary:**

- $R^2 = 0.62$
- Adjusted  $R^2 = 0.58$
- $F = 15.40$  ( $p < 0.001$ )

*Significant at 5% level*

*Source: Author's Computation*

As shown in Table 4.3, board independence has a significant positive effect on ROA ( $\beta = 3.850$ ,  $p < 0.01$ ), indicating its strong influence on financial performance. Ownership structure and audit committee characteristics are also statistically significant. However, board size is found to be insignificant. The model explains 62% of the variation in ROA, indicating a good fit.

**4.4 ANOVA Results**

ANOVA is used to determine whether there are significant differences in financial performance across firms with different governance structures.

**Table 4.4: ANOVA Results**

Source	Sum of Squares	df	Mean Square	F-value	p-value
Between Groups	145.20	3	48.40	6.85	0.001*
Within Groups	325.60	46	7.08		
Total	470.80	49			

*Significant at 5% level*

*Source: Author's Computation*

The results in Table 4.4 show that the F-value (6.85) is statistically significant ( $p < 0.01$ ), indicating that financial performance differs significantly across governance groups. This confirms that governance structures play a role in determining firm performance.

**4.5 Regression Diagnostics**

To ensure the robustness and validity of the regression results, diagnostic tests were conducted to verify that the assumptions underlying multiple regression analysis are satisfied. Specifically, the study examines multicollinearity, normality of residuals, and heteroskedasticity. These tests are essential to confirm that the estimated coefficients are reliable and not affected by statistical distortions.

Table 4.5: Regression Diagnostic Summary

Diagnostic Test	Method Used	Result	Interpretation
Multicollinearity	Variance Inflation Factor (VIF)	All VIF values < 5	No multicollinearity among independent variables
Normality	Histogram and P-P Plot of Residuals	Approximately normal distribution	Residuals satisfy normality assumption
Heteroskedasticity	Scatter plot of residuals vs predicted values	No clear pattern observed	Homoscedasticity assumption satisfied

The results presented in Table 4.3 indicate that the regression model satisfies all key diagnostic requirements. First, the issue of multicollinearity was assessed using the Variance Inflation Factor (VIF). The findings show that all independent variables have VIF values below the threshold of 5, suggesting that there is no high correlation among the predictors. This confirms that each governance variable contributes uniquely to explaining financial performance. Second, the normality of residuals was examined through graphical methods, including histograms and normal probability (P-P) plots. The residuals were found to follow an approximately normal distribution, as evidenced by the bell-shaped curve and the alignment of observations along the diagonal line in the P-P plot. This supports the validity of statistical inference drawn from the regression model. Third, heteroskedasticity was tested using a scatter plot of standardised residuals against predicted values. The absence of any systematic pattern or funnel-shaped distribution indicates that the variance of residuals remains constant across observations. This confirms that the assumption of homoscedasticity is satisfied. Overall, the diagnostic results demonstrate that the regression model is statistically sound and free from major violations of classical assumptions. Therefore, the estimated coefficients and significance levels reported in the regression analysis can be considered reliable and suitable for interpretation.

#### 4.6 Panel Data Regression Results

To account for unobserved heterogeneity across firms and over time, panel data regression analysis was conducted using both fixed effects (FE) and random effects (RE) models. Given that the dataset consists of multiple firms observed over a six-year period (2018–2023), panel estimation provides more reliable and efficient estimates compared to pooled regression. The results of the panel regression analysis are presented in Table 4.6.

Table 4.6 : Panel Regression with Control Variables

Variable	Fixed Effects (FE) Coefficient	Std. Error	p-value	Random Effects (RE) Coefficient	Std. Error	p-value
Constant	1.520	1.120	0.175	1.780	1.150	0.122
Board Size (BS)	0.082	0.072	0.255	0.098	0.075	0.190
Board Independence (BI)	3.480	1.120	0.004**	3.650	1.150	0.003**
Ownership Structure (OS)	1.650	0.880	0.050*	1.820	0.910	0.042*
Audit Committee (AC)	0.790	0.290	0.009**	0.830	0.300	0.007**
<b>Firm Size (FS)</b>	0.620	0.210	0.006**	0.580	0.220	0.010*
<b>Industry Dummy (IND)</b>	0.410	0.190	0.032*	0.390	0.200	0.041*

- $R^2$  (FE) = 0.68
- $R^2$  (RE) = 0.65

### Interpretation

The results of the panel regression analysis, incorporating both governance variables and control variables, provide deeper insights into the determinants of financial performance. Board independence (BI) continues to exhibit a strong and statistically significant positive effect across both fixed and random effects models ( $p < 0.01$ ). This reflects the critical role of independent directors in mitigating agency conflicts, enhancing monitoring effectiveness, and strengthening strategic decision-making. In the Indian corporate context, where ownership concentration and promoter influence are prevalent, independent directors play a particularly important role in ensuring accountability and protecting minority shareholder interests. The magnitude of the coefficient also indicates an economically meaningful impact, suggesting that improvements in board independence lead to substantial gains in financial performance. Audit committee characteristics (AC) are also found to have a positive and statistically significant effect ( $p < 0.01$ ). This finding highlights the importance of effective financial oversight mechanisms in improving reporting quality and reducing information asymmetry. Strong audit committees contribute to greater transparency and investor confidence, which in turn translate into improved firm performance. The size of the coefficient suggests that these governance mechanisms have a tangible and practically significant effect on profitability. Ownership structure (OS) demonstrates a moderate but statistically significant impact ( $p < 0.05$ ). This result reflects the dual role of ownership concentration in corporate governance. While concentrated ownership can enhance monitoring and align managerial incentives with shareholder interests, excessive concentration may reduce accountability and increase the risk of minority shareholder expropriation. The findings therefore suggest that an optimal balance in ownership structure is necessary to maximize firm performance. In contrast, board size (BS) remains statistically insignificant across both models. This indicates that simply increasing the number of directors does not necessarily enhance firm performance. Instead, the effectiveness of governance appears to depend more on the quality, independence, and expertise of board members rather than its size. This finding supports the argument that larger boards may lead to coordination challenges and inefficiencies. Among the control variables, firm size (FS) is positively and significantly associated with financial performance ( $p < 0.01$ ), indicating that larger firms tend to perform better due to economies of scale, better access to financial resources, and more established governance frameworks. Industry effects (IND) are also significant ( $p < 0.05$ ), suggesting that sector-specific characteristics influence firm performance and should be accounted for in empirical analysis. Overall, the explanatory power of the model improves after incorporating control variables ( $R^2$  increases to 0.68 in the fixed effects model), indicating a better fit. The consistency of results across fixed and random effects models further strengthens the robustness of the findings. These results demonstrate that corporate governance mechanisms, particularly board independence and audit committee effectiveness, have both statistically and economically significant impacts on financial performance, even after controlling for firm size and industry differences.

### 4.7 Hausman Test

To determine the most appropriate panel estimation technique, the Hausman specification test was conducted. This test evaluates whether the unique errors (firm-specific effects) are correlated with the independent variables. If such correlation exists, the fixed effects model is preferred over the random effects model. The results of the Hausman test are presented in Table 4.7.

**Table 4.7: Hausman Test Results**

Test	Chi-Square Value	df	p-value	Decision
Hausman Test	12.84	4	0.012*	Fixed Effects Preferred

- $p < 0.05$

**Interpretation**

The Hausman test results indicate a statistically significant chi-square value ( $\chi^2 = 12.84, p < 0.05$ ), leading to the rejection of the null hypothesis that the random effects model is appropriate. This implies that firm-specific effects are correlated with the explanatory variables. Accordingly, the fixed effects model is considered more consistent and reliable for this study, as it effectively controls for unobserved heterogeneity across firms. The preference for the fixed effects model suggests that individual firm characteristics, such as managerial practices, organizational structure, and governance culture, play a significant role in influencing financial performance. Ignoring these effects could lead to biased estimates.

**4.8 Robustness Checks**

To ensure the reliability and stability of the empirical findings, several robustness checks were conducted. These tests examine whether the results are sensitive to alternative model specifications, variable definitions, and estimation techniques.

**4.8.1 Alternative Dependent Variable (ROE)**

To verify that the results are not dependent on a single measure of financial performance, the regression model was re-estimated using **Return on Equity (ROE)** instead of ROA.

**Table 4.8: Regression Results Using ROE as Dependent Variable**

Variable	Coefficient ( $\beta$ )	Std. Error	t-value	p-value
Constant	3.420	1.480	2.31	0.025*
Board Size (BS)	0.150	0.110	1.36	0.180
Board Independence (BI)	4.980	1.650	3.02	0.004**
Ownership Structure (OS)	2.450	1.210	2.02	0.048*
Audit Committee (AC)	1.120	0.420	2.67	0.010**

**Model Summary:**

- $R^2 = 0.59$
- Adjusted  $R^2 = 0.55$

**Significance Levels:**

- $p < 0.05, ** p < 0.01$

**Interpretation**

The results remain largely consistent with the baseline model using ROA. Board independence and audit committee characteristics continue to show a strong positive and statistically significant effect on financial performance. Ownership structure remains moderately significant, while board size continues to be insignificant. This confirms that the findings are not sensitive to the choice of financial performance measure.

**4.8.2 Lagged Independent Variables**

To address potential reverse causality and examine the temporal effect of governance variables on firm performance, the regression model was re-estimated using one-period lagged independent variables.

Table 4.9: Regression Results with Lagged Governance Variables

Variable	Coefficient ( $\beta$ )	Std. Error	t-value	p-value
Constant	1.890	1.020	1.85	0.071
Board Size ( $BS_{t-1}$ )	0.085	0.078	1.09	0.280
Board Independence ( $BI_{t-1}$ )	3.540	1.210	2.93	0.005**
Ownership Structure ( $OS_{t-1}$ )	1.720	0.940	1.83	0.072
Audit Committee ( $AC_{t-1}$ )	0.790	0.320	2.47	0.017*

**Model Summary:**

- $R^2 = 0.57$
- Adjusted  $R^2 = 0.53$

**Significance Levels:**

- $p < 0.05$ , \*\*  $p < 0.01$

**Interpretation**

The use of lagged variables produces results consistent with the main model. Board independence and audit committee characteristics remain statistically significant, suggesting that governance mechanisms have a persistent effect on financial performance over time. This also reduces concerns regarding reverse causality, indicating that governance structures influence performance rather than the other way around.

**4.8.3 Robust Standard Errors**

To address potential heteroskedasticity, the regression model was re-estimated using **heteroskedasticity-robust standard errors**.

Table 4.10: Regression Results with Robust Standard Errors

Variable	Coefficient ( $\beta$ )	Robust Std. Error	p-value
Constant	2.150	1.180	0.070
Board Size (BS)	0.120	0.095	0.210
Board Independence (BI)	3.850	1.320	0.004**
Ownership Structure (OS)	1.950	1.050	0.048*
Audit Committee (AC)	0.880	0.350	0.011*

**Significance Levels:**

- $p < 0.05$ , \*\*  $p < 0.01$

**Interpretation**

The results remain consistent even after applying robust standard errors. The significance levels and direction of coefficients are unchanged, confirming that heteroskedasticity does not bias the estimated relationships.

**4.8.4 Subsample Analysis**

To further examine the stability of the results, firms were divided into two groups based on governance quality (high vs low governance).

**Key Findings**

- Firms with stronger governance structures exhibit a higher impact of board independence and audit committee effectiveness on performance
- The effect of ownership structure is more pronounced in firms with concentrated ownership

**Interpretation**

This suggests that governance mechanisms are more effective in firms with well-established governance frameworks, reinforcing the importance of governance quality rather than mere compliance.

**Overall Robustness Conclusion**

The robustness checks confirm that the main findings of the study are stable across alternative model specifications, variable definitions, and estimation techniques. The key governance variables, particularly board independence and audit committee characteristics, remain consistently significant across all models. These results provide strong evidence that the relationship between corporate governance and financial performance is robust and not sensitive to methodological variations. While the use of lagged independent variables reduces concerns related to reverse causality, the possibility of endogeneity arising from omitted variables or simultaneous relationships cannot be completely ruled out. Future research may employ advanced techniques such as instrumental variable estimation or dynamic panel models (e.g., GMM) to address this issue more comprehensively

**5. Discussion of Findings**

The findings of this study provide important insights into the relationship between corporate governance mechanisms and financial performance in Indian listed firms, while also offering meaningful connections to existing literature and theoretical frameworks. First, the results indicate that board independence has a strong and statistically significant positive impact on financial performance. This finding is consistent with prior studies such as Bhagat and Bolton (2019) and Nguyen et al. (2020), which emphasize the role of independent directors in enhancing monitoring effectiveness and improving decision-making quality. This supports agency theory, as independent directors help reduce agency conflicts between managers and shareholders by ensuring greater accountability and oversight. Second, audit committee characteristics also show a significant positive relationship with financial performance. This aligns with the findings of Al-Matari et al. (2017), who argue that effective audit committees enhance financial transparency and reporting quality. From a theoretical perspective, this again supports agency theory, as strong audit mechanisms reduce information asymmetry and improve the reliability of financial disclosures. It also reflects elements of stakeholder theory, since transparent reporting benefits not only shareholders but also other stakeholders.

Third, the study finds that ownership structure has a significant but nuanced effect on financial performance. While moderate ownership concentration appears to improve performance through better monitoring, excessive concentration may reduce accountability. This finding is consistent with Kumar and Singh (2021), who report a positive association in the Indian context, but also aligns with Singh and Gaur (2020), who highlight the dual effects of ownership concentration. However, this partially contrasts with Paniagua et al. (2018), who argue that ownership structure does not always produce consistent performance outcomes across different institutional settings. In contrast, board size is found to have no significant effect on financial performance, suggesting that merely increasing the number of directors does not enhance firm outcomes. This finding supports the argument of Paniagua et al. (2018), who suggest that larger boards may lead to inefficiencies and coordination problems. However, it contrasts with some earlier studies that report a positive relationship between board size and firm performance due to increased diversity and expertise. The result indicates that governance quality, rather than structural size, is more critical in determining performance. Overall, the findings reinforce the idea that corporate governance mechanisms are not uniformly effective, and their impact depends on their design and implementation. The results strongly support agency theory, particularly in the case of board independence and audit committees, while also reflecting aspects of stakeholder theory in terms of transparency and accountability. At the same time,

the mixed results for ownership structure highlight the importance of contextual factors, especially in emerging markets like India.

In summary, this study contributes to the literature by demonstrating that while corporate governance significantly influences financial performance, the relationship is complex and varies across different governance dimensions. The integration of regression and ANOVA analysis further strengthens the robustness of these findings by capturing both individual effects and group-level differences.

### **5.1 Conclusion**

The study concludes that corporate governance plays a significant and measurable role in influencing the financial performance of Indian listed firms. The results provide empirical support for the argument that strong governance mechanisms enhance organizational efficiency, reduce agency conflicts, and improve decision-making processes. In particular, the presence of independent directors and effective audit committees contributes to better financial outcomes, reinforcing the importance of transparency and accountability in corporate management. Ownership structure also plays a role, although its impact is more nuanced and depends on the level of concentration. However, the study also reveals that not all governance mechanisms are equally effective. The insignificant impact of board size suggests that simply increasing the number of directors does not guarantee improved performance. Instead, the quality and independence of governance structures appear to be more critical. In the context of the Indian corporate environment, these findings highlight the importance of strengthening governance practices to enhance firm performance and competitiveness. The study also demonstrates the value of using robust statistical methods, such as regression and ANOVA, to analyse complex relationships in corporate finance research.

### **5.2 Recommendations**

Based on the findings of the study, several recommendations can be made for policymakers, corporate managers, and investors:

1. **Enhancement of Board Independence:** Firms should increase the proportion of independent directors on their boards to improve monitoring and decision-making processes.
2. **Strengthening Audit Committees:** Organizations should ensure that audit committees are composed of qualified and independent members to enhance financial transparency and accountability.
3. **Balanced Ownership Structure:** Companies should aim for an optimal level of ownership concentration that promotes effective oversight without leading to managerial entrenchment.
4. **Focus on Governance Quality:** Rather than emphasising board size, firms should focus on improving the quality, expertise, and independence of board members.
5. **Regulatory Enforcement:** Policymakers should strengthen the enforcement of corporate governance regulations to ensure compliance and improve overall governance standards in the market.

These recommendations are intended to enhance the effectiveness of corporate governance practices and contribute to improved financial performance in Indian listed firms.

### **5.3 Limitations of the Study**

Despite its contributions, the study has certain limitations that should be acknowledged. First, the analysis is based on secondary data obtained from annual reports, which may be subject to reporting biases or inconsistencies. Second, the sample size is limited to selected Indian listed firms, which may restrict the generalizability of the findings. Third, the study focuses on a limited set of governance variables and financial performance indicators, which may not capture the full complexity of the governance–performance relationship. Additionally, the use of quantitative methods, while providing objectivity, may overlook qualitative aspects of corporate governance, such as organisational culture and managerial behaviour.

### **5.4 Suggestions for Future Research**

Future research may also explore the integration of ESG factors with traditional corporate governance variables to provide a more comprehensive understanding of firm performance. Given the increasing global emphasis on

sustainability, examining how ESG practices interact with governance mechanisms could offer valuable insights into long-term value creation (Zheng, 2025; Basali, 2025). Further studies could also examine the role of emerging governance factors, such as environmental, social, and governance (ESG) practices, in influencing financial performance. Additionally, the use of advanced statistical techniques, such as panel data analysis or structural equation modelling, may provide deeper insights into causal relationships. Finally, integrating qualitative approaches with quantitative analysis could offer a more comprehensive understanding of how governance mechanisms operate in practice.

## **5.5 Policy and Investor Implications**

### **Policy-Level Implications**

The findings of this study have important implications for policymakers and regulatory authorities overseeing corporate governance practices in India. The significant positive impact of board independence and audit committee effectiveness suggests that governance regulations should focus not only on compliance but also on improving the quality and functioning of these mechanisms. Regulatory bodies such as SEBI may strengthen existing governance frameworks by enforcing stricter norms regarding the independence of board members and the qualifications of audit committee members. While current regulations mandate minimum requirements, the effectiveness of governance depends on their actual implementation. Therefore, periodic monitoring, evaluation, and disclosure of board performance could enhance accountability. The mixed impact of ownership structure highlights the need for policies that balance control and accountability. Excessive ownership concentration may lead to reduced transparency and potential conflicts of interest, particularly affecting minority shareholders. Policymakers should therefore promote stronger minority shareholder protection, improved voting rights, and greater transparency in ownership disclosures. Additionally, policymakers may encourage governance awareness and training programs for firms to ensure consistent adoption of best practices. Strengthening governance at a systemic level will not only improve firm performance but also enhance overall market efficiency, investor confidence, and long-term economic stability.

### **Investor Perspective**

From an investor perspective, the results emphasize the importance of incorporating corporate governance indicators into investment analysis and decision-making. The strong positive relationship between board independence, audit committee effectiveness, and financial performance suggests that firms with better governance structures are more likely to achieve stable and sustainable returns. Investors should go beyond traditional financial metrics such as ROA and ROE and evaluate governance quality as a critical factor in assessing firm value. Key indicators to consider include the proportion of independent directors, the expertise and independence of audit committees, and the transparency of financial disclosures. Firms with weak governance structures may pose higher risks due to potential agency conflicts and information asymmetry. The findings on ownership structure also provide valuable insights. While moderate ownership concentration can enhance monitoring and improve performance, excessive concentration may reduce accountability and increase the risk of minority shareholder expropriation. Investors should therefore carefully assess ownership patterns when making investment decisions. Overall, integrating corporate governance analysis into investment strategies can improve risk assessment and portfolio performance. The study reinforces the view that governance quality is a key determinant of long-term value creation and should be a central consideration in investment decisions.

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