



## A DECADE OF ANALYSIS: HOW BOARD COMPOSITION IMPACTS FINANCIAL PERFORMANCE IN INDIA'S HEALTHCARE SECTOR

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### Abstract

**Purpose-** This study seeks to examine the consequences of regulatory adjustments on the operational and financial dynamics of the healthcare sector in India. By leveraging comprehensive data from 2014 to 2023, the study evaluates key performance indicators, compliance levels, and market behavior within the context of the revised legislative framework. Independent variables put focuses on board-related dynamics, including Board Size, Board Meetings, Board Independence, CEO Duality, and Gender Diversity. The dependent variables analyzed are Return on Assets (ROA) and Tobin's  $Q$ , providing insights into the financial performance and market valuation of the companies. Our findings suggest significant shifts in corporate governance practices, financial transparency, and overall industry growth trajectories. The paper also discusses the implications of these changes for stakeholders, including investors, policymakers, and industry leaders, and provides insights into future trends and challenges in the Indian healthcare market.

**Methodology-** The methodology of this research involves employing the System Generalized Method of Moments (GMM) to analyse a sample size from the BSE S&P Healthcare Industry. This approach is rarely used in studies of this kind, offering a robust framework for addressing potential endogeneity issues and ensuring more accurate estimations. By leveraging System GMM, the study aims to capture the dynamic nature of board-related attributes and their impact on corporate performance over the ten-year period post the Companies Act 2013 enactment.

**Findings-** Findings revealed that corporate governance practices substantially impact the financial outcomes of the healthcare industry. Specifically, board size has a significant and positive relationship with Return on Assets (ROA), indicating that larger boards contribute to better asset utilization. In contrast, frequent board meetings negatively affect ROA, suggesting potential inefficiencies. Board independence positively influences both ROA and Tobin's  $Q$ , highlighting the value of independent oversight. CEO duality exhibits a positive relation with both performance measures, underscoring the drawbacks of combined leadership roles. Additionally, gender diversity on boards positively correlates with both ROA and Tobin's  $Q$ , demonstrating the benefits of diverse perspectives in governance.

**Originality-** The novelty of this research lies in its pioneering analysis of the healthcare industry, encompassing a sample of 83 companies over a ten-year period following the enactment of the Companies Act 2013. This study is the first of its kind to employ the System Generalized Method of Moments (GMM) to address potential endogeneity issues within this context. By focusing on a decade's worth of data, the research provides unique insights into the long-term effects of regulatory changes on corporate governance practices and financial performance in the healthcare industry, offering a comprehensive and robust examination not previously undertaken in existing literature.

**Keywords-** Corporate Governance, System GMM, Healthcare Industry, Companies Act 2013, Gender Diversity.



## 1. Introduction

Corporate governance (CG) has undergone substantial evolution over time, shaped by various factors such as economic, political, and social changes. The concept of corporate governance primarily emerged to address issues related to the division between ownership and control in big corporations ensuring that the interests of shareholders are protected by the management team (Berle & Means, 1932; OECD, 2023). In the early 20th century, the advent of large corporations necessitated the development of governance structures to oversee managerial actions and protect shareholder interests. The separation of ownership from control created potential conflicts of interest, which corporate governance frameworks aimed to mitigate (Jensen & Meckling, 1976; Brown, 2023). Overall, the origin and evolution of CG are characterized by an ongoing effort to align managerial actions with shareholder interests, enhance corporate transparency, and address broader societal impacts. This dynamic field continues to adapt to emerging challenges and opportunities, ensuring that corporations operate responsibly and sustainably in a complex global environment (Clarke, 2019; Smith, 2023).

According to the Indian context, CG reforms have been instrumental in aligning business practices with international standards. The introduction of regulations such as the Companies Act 2013 and SEBI, guidelines have significantly improved corporate governance standards. These reforms have encouraged Indian firms to adopt best practices, thereby improving their competitiveness in the global market. A study by Khanna and Palepu (2004) indicates that such regulatory changes have had a positive impact on corporate governance and have led to improved firm performance in India. Moreover, good corporate governance contributes to sustainable development by promoting corporate social responsibility (CSR) initiatives. Indian companies with strong governance frameworks tend to engage in CSR activities, which address social and environmental issues. This alignment of business operations with societal goals not only enhances the firm's reputation but also contributes to the broader socio-economic development of the country. Jamali, Safieddine, and Rabbath (2008) emphasize that effective corporate governance and CSR practices are interlinked and collectively contribute to sustainable development in emerging markets.

Corporate scams in India have exposed significant failures in corporate governance, highlighting the need for stronger oversight and accountability. One of the most notorious cases is the Satyam scandal in 2009, where the founder admitted to exaggerating the company's revenue. Another significant scandal was the Punjab National Bank (PNB) fraud in 2018, involving fraudulent issuance of Letters of Undertaking (LoUs). This scandal emphasized the necessity for more robust regulatory frameworks and improved transparency in the banking sector (Bose, 2018; Rout, 2019; Bhattacharya, 2018). The Infrastructure Leasing & Financial Services (IL&FS) crisis in 2018 also shook the financial markets in India. Kingfisher Airlines defaulted on loans worth around \$1.5 billion, leading to its collapse in 2012. This case highlighted deficiencies in corporate governance, including inadequate oversight by the board and failure of financial institutions to conduct proper due diligence (Verma, 2015; Kaul, 2010; Saha, 2012).

These major corporate scams underline the critical need for robust corporate governance frameworks in India. They highlight key issues such as the lack of transparency, inadequate regulatory oversight, board and management failures, and the necessity for stronger internal controls to prevent such occurrences in the future. The subsequent section of the paper encompasses an exhaustive literature review, the development of hypotheses, and the research design, followed by the presentation of regression results and the conclusion. Finally, we address the implications and limitations of the study.



## 2 Literature Review

The connection among CG policies and financial performance in the Indian context has been extensively studied, with numerous findings highlighting the influence of effective governance on company performance. Research has demonstrated that robust corporate governance practices, such as transparent financial reporting, independent board structures, and rigorous internal controls, are positively correlated with enhanced financial performance in Indian firms. For instance, a study by Ghosh (2006) found that companies with higher corporate governance scores had better financial performance metrics, including return on assets (ROA) and return on equity (ROE). Similarly, Balasubramanian, Black, and Khanna (2010) observed that firms with more independent and effective boards experienced significant improvements in profitability and market valuation.

Further research reinforces the positive linkage among CG practices and financial performance in India, emphasizing the importance of specific governance mechanisms. A study by Kumar and Singh (2013) demonstrated that firms with well-structured boards, characterized by a higher proportion of independent directors and separation of the roles of CEO and chairperson, tend to exhibit superior financial performance indicators such as higher ROA and Tobin's Q. Such studies collectively demonstrate that the adoption of rigorous corporate governance frameworks not only enhances transparency and accountability but also drives financial success, making it a critical consideration for Indian companies aiming to achieve sustainable growth and competitiveness.

### 2.1 Board Size and Firm Performance

The link among board size and company performance has been widely debated, with empirical studies yielding mixed results. On one hand, numerous studies have reported a favorable association between board size and company performance. Adams and Mehran (2005) found that larger boards are associated with better performance in the banking industry, as they bring diverse expertise and more effective oversight. Similarly, Coles, Daniel, and Naveen (2008) reported that larger boards benefit more intricate firms due to the increased monitoring and advisory capabilities. Conversely, other studies suggest a negative impact of larger board sizes on firm performance. Yermack (1996) argued larger boards tend to be less effective due to difficulties in collaboration and information exchange, which result in delayed judgment procedures and reduced firm value. Moreover, some studies indicate that the link among board size and firm performance is contingent on contextual factors. For instance, Boone, Casares Field, Karpoff, and Raheja (2007) showed that the ideal board size varies depending on the company's sector, intricacy, and specific governance needs. In the Indian context, research by Bhagat and Bolton (2008) highlighted that while larger boards may provide better oversight, they can also lead to bureaucratic inefficiencies that hamper performance.

These varied results indicate that the effect of board size on firm's performance is not straightforward and may depend on various factors, including firm-specific characteristics, industry dynamics, and the overall governance environment. Therefore, based on above past studies we assumed the following hypothesis.

H1: There is positive and significant association of Board Size and Firm Performance

### 2.2 Board Meeting and Firm Performance

The affiliation among board meetings and firm performance has been widely studied, with research presenting both positive and negative outcomes. On the positive side, Vafeas (1999) found that an increased the regularity of board meetings is linked to improved firm performance, as measured by



stock returns. He argued that more frequent meetings allow directors to monitor management more effectively and make more informed decisions. Conversely, several investigations have identified a negative or non-significant relationship between board meeting frequency and firm performance. In the Indian context, Sharma, Sharma, and Anurag (2011) observed that while board meetings are crucial for effective governance, their impact on firm performance is not always clear-cut and may be affected by additional factors such as the quality of board discussions and the strategic role of the board.

These mixed results indicate that while frequent board meetings can enhance governance and firm performance through better oversight and decision-making, they can also become counterproductive if not managed effectively. Therefore, in light of the above literature we assumed the following hypothesis.

H2: There is positive and significant relation between Board meeting and Firm Performance.

### **2.3 Board Independence and Firm performance**

The nexus within board independence and firm performance has been extensively explored in the literature, yielding mixed results. On the positive side, several studies suggest that increasing the percentage of independent directors may improve company's output. For instance, Rosenstein and Wyatt (1990) discovered that the inclusion of external directors is positively received by the market, leading to an increase in stock prices. This is because independent directors are perceived to provide better oversight and reduce agency conflicts that arise between management and shareholders. Conversely, prior investigations have reported a neutral or even negative association among board independence and firm performance. For instance, Dalton et al. (1998) conducted a meta-analysis and found no significant link among board composition and firm financial performance, suggesting that simply increasing the quantity of independent directors might not yield improved results.

These mixed findings highlight that while board independence can contribute to better governance and firm performance, its impact is not uniform and may depend on various factors such as firm complexity, industry characteristics, and regulatory context. Therefore, on the basis of above literature we framed the following hypothesis.

H3: There is positive and significant relation between Board Independence and Firm Performance.

### **2.4 CEO duality and Firm performance**

The relationship between CEO duality and firm performance has been a contentious topic in corporate governance literature, with studies reporting varied outcomes. On the positive side, proponents of CEO duality argue that it leads to unified leadership and clearer strategic direction. For instance, studies by Boyd (1995) and Brickley, Coles, and Jarrell (1997) found that CEO duality can enhance firm performance by streamlining decision-making processes and eliminating potential conflicts between the CEO and the board. A key concern is that it could result in an entrenchment of power, reducing the board's capacity to effectively monitor and challenge the CEO, thereby impairing firm performance. For instance, Rechner and Dalton (1991) advocated that firms with distinct CEO and chairperson roles performed better than those with combined roles, suggesting that a separation of powers leads to better oversight and accountability. Further complicating the picture, some studies indicate that the effect of CEO duality on firm performance is contingent on other factors, such as the firm's environment, industry, and governance structures. For instance, Baliga, Moyer, and Rao (1996)



found no consistent relationship among CEO duality and firm performance, suggesting that the effectiveness of CEO duality may vary depending on specific firm characteristics and external conditions.

These findings illustrate that the link among CEO duality and organisational performance is intricate and context-specific. Although CEO duality can lead to stronger leadership and more efficient decision-making, it also poses risks related to reduced oversight and increased potential for managerial entrenchment. In the light of above literature, we framed the following hypothesis.

H4: There is positive and significant relation between CEO duality and Firm Performance.

## 2.5 Gender diversity and Firm Performance

The association among the percentage of Gender diversity on corporate boards and firm performance has been the focus of numerous studies, with findings showing both positive and negative results. On the positive side, many researchers have found that greater gender diversity on boards enhances firm performance. For instance, a study by Carter, Simkins, and Simpson (2003) indicated that firms with higher proportions of women on their boards exhibited better financial performance, particularly in terms of return on equity (ROE) and return on assets (ROA). However, other studies have reported mixed or negative impacts of women directors' influence on organisational performance. For instance, Ahern and Dittmar (2012) examined the impact of a Norwegian law mandating 40% female representation on boards and found that it led to a short-term decline in firm value. They argued that the sudden influx of less experienced female directors may have initially disrupted board dynamics and decision-making processes.

These mixed findings suggest that while increasing the proportion of women directors can enhance board effectiveness and governance quality, the influence on performance may vary based on contextual and organizational factors. According to the aforementioned studies we framed the following hypothesis.

H5: There is positive and significant relation between Gender diversity and Firm Performance.

## 3 Research Design

### 3.1 Data and Sample

This study adopts a quantitative research design to investigate the impact of various CG practices on financial performance within the sample of S&P BSE Healthcare sector over a 10-year period. The independent variables include board size, board meetings, board independence, CEO duality and gender diversity on board. These variables are selected based on their relevance and frequent examination in corporate governance literature. Board size is measured by the overall count of directors on the board, whereas board meetings are measured by the number of meetings held each year. CEO duality is a dummy variable representing whether the CEO also holds the position of board chairperson. Gender diversity is represented by the proportion of female directors on the board, while board independence is assessed by the ratio of independent directors to total directors.

The dependent variables in this study are Return on Assets (ROA) and Tobin's Q, both of which are commonly used metrics to gauge firm performance. ROA is determined by dividing net income by total assets, illustrating the firm's effectiveness in utilizing its assets to produce earnings. Tobin's Q, on the other hand, is the market value of a firm divided by the replacement cost of its assets, indicating



the market's valuation of the firm's assets relative to their replacement cost and control variables includes leverage, age and size of the firm.

The sample comprises companies in the Indian healthcare sector, chosen due to its significant role in the economy and the varying CG practices across the industry. The sample period spans 10 years, providing a comprehensive view of the influence of CG practices over time. Data for this investigation are collected from annual reports, corporate governance disclosures, and financial databases. Statistical methods such as panel data regression are utilized to examine the association among the independent and dependent variables, controlling for firm-specific factors and macroeconomic conditions. This approach allows for robust conclusions about the influence of CG practices on firm performance across the Indian healthcare sector.

### 3.2 Descriptive Statistics

The table 2 presents various CG variables for 810 observations. The mean log return on assets (LnROA) is 0.985 with a high standard deviation of 1.832, showing substantial variability in profitability. The Tobin's Q averages 2.414 with a considerable range, reflecting differences in returns. The mean log board size (LnBS) is 0.861, showing moderate board sizes, while the log number of board meetings (LnBM) is relatively frequent at 1.854. Log board independence (LnBI) averages 1.728, suggesting a high presence of independent directors. CEO duality (CD) has a mean of 0.251, indicating it's uncommon for CEOs to also serve as board chairs. Log Gender diversity (LnGD) averages 1.161, showing moderate gender diversity on boards. The mean log leverage (Lnlev) is 1.396, highlighting varying debt levels among firms. The average log firm age (LnAge) is 4.56, indicating a wide range of firm sizes, and the mean log firm size (LnFS) is 1.721, reflecting a mix of young and mature firms.

**Table 1: Descriptive Statistics**

S.No	Variable	Observation	Mean	Std. Dev.	Min.	Max.
1.	LnROA	810	0.985	1.832	0.127	2.764
2.	LnROE	810	2.414	1.318	0.845	21.42
3.	LnBS	810	0.861	0.485	0	1.648
4.	LnBM	810	1.854	0.209	0	1.984
5.	LnBI	810	1.728	0.248	0	1.745
6.	CD	810	0.251	0.547	0	1
7.	LnGD	810	1.161	0.26	0	1.659
8.	Lnlev	810	1.396	0.526	0	1.74
9.	LnAge	810	4.56	0.827	0.561	5.263
10.	LnFS	810	1.721	0.324	0.841	2.083

### 3.3 Correlation Matrix

In table 2 correlation matrix reveals key relationships among corporate governance variables for 810 observations. LnROA and Tobin's Q are strongly positively correlated (0.718), indicating higher returns on assets are associated with higher returns on equity. LnROA also shows moderate positive correlations with LnLEV (0.401), LnSize (0.278), and LnAge (0.325), suggesting that larger, older, and more leveraged firms tend to have higher returns on assets. LnROE has a moderate positive correlation with LnAge (0.414), implying older firms have higher returns on equity. LnBS is moderately correlated with LnSize (0.371) and LnGD (0.415), indicating larger boards in bigger firms with greater gender diversity. LnBM shows strong correlations with LnSize (0.614) and moderate ones



with LnGD (0.526), suggesting that larger firms with more board meetings have greater gender diversity. CD (CEO Duality) correlates moderately with LnGD (0.417), LnLEV (0.354), LnSize (0.326), and LnAge (0.321), showing that firms with CEO duality tend to be larger, older, more leveraged, and gender-diverse. LnGD is strongly correlated with LnBM (0.526) and moderately with other variables, highlighting the role of board meetings and size in promoting gender diversity. LnLEV correlates moderately with LnSize (0.454) and LnAge (0.624), indicating older and larger firms tend to have higher leverage. LnSize shows strong correlations with LnBM (0.614) and moderate ones with other governance variables, emphasizing the influence of firm size on governance practices. Finally, LnAge's moderate to strong correlations with several variables indicate that older firms typically have higher returns on equity, CEO duality, greater gender diversity, and higher leverage.

**Table 2: Correlation Matrix**

S.NO.	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	<b>LnROA</b>	1									
2.	<b>Tobin's Q</b>	0.718	1								
3.	<b>LnBS</b>	0.008	0.045	1							
4.	<b>LnBM</b>	0.078	0.004	0.265	1						
5.	<b>LnBI</b>	0.005	0.012	0.025	0.124	1					
6.	<b>CD</b>	0.022	0.121	0.215	0.236	0.413	1				
7.	<b>LnGD</b>	0.008	0.001	0.415	0.526	0.362	0.417	1			
8.	<b>LnLev</b>	0.401	0.005	0.035	0.231	0.256	0.354	.021	1		
9.	<b>LnAge</b>	0.278	0.002	0.371	0.614	0.214	0.326	0.415	0.454	1	
10.	<b>LnFS</b>	0.325	0.414	0.005	0.012	0.214	0.321	0.521	0.624	0.246	1

### 3.4 Multicollinearity Test

In Table 3, the multicollinearity test is conducted using the Variance Inflation Factor (VIF) values reveals that LnBS (log board size) has the highest VIF of 5.25, indicating moderate multicollinearity, while LnBI (log board independence) and LnAge (log firm age) also show moderate multicollinearity with VIFs of 4.26 and 4.07, respectively. LnBM (log board meetings) and LnFS (log firm size) have VIFs of 3.45 and 3.41, indicating some multicollinearity but within acceptable limits. LnLev (log leverage) has a VIF of 2.45, and LnGD (log gender diversity) has a VIF of 1.78, suggesting low multicollinearity. CD (CEO duality) has the lowest VIF of 1.25, indicating minimal multicollinearity. The mean VIF is 3.24, suggesting that while some variables exhibit moderate multicollinearity, overall, it is not severe enough to be problematic for regression analysis.

**Table 3: Multicollinearity Test**

1.	Variable	VIF	1/VIF
2.	<b>LnBS</b>	5.25	0.191
3.	<b>LnBM</b>	3.45	0.289
4.	<b>LnBI</b>	4.26	0.234
5.	<b>CD</b>	1.25	0.80
6.	<b>LnGD</b>	1.78	0.561
7.	<b>LnLev</b>	2.45	0.408
8.	<b>LnAge</b>	4.07	0.245
9.	<b>LnFS</b>	3.41	0.293
	<b>Mean VIF</b>	<b>3.24</b>	



### 3.5 Empirical Model

The System Generalized Method of Moments (GMM) is a robust econometric technique used primarily for estimating dynamic panel data models. Unlike traditional GMM, which typically addresses issues of endogeneity by instrumenting the regressors, System GMM extends this approach to simultaneously instrument both the levels and the first-differences of the endogenous variables. This method is particularly advantageous in settings where the dynamics of the system under study are crucial, such as analyzing investment decisions over time or studying the effects of policy changes on economic outcomes. By employing lagged values of variables as instruments, System GMM effectively controls for endogeneity and mitigates biases arising from omitted variable problems and reverse causality.

Empirical studies have demonstrated the efficacy of System GMM in various fields. For instance, Arellano and Bond (1991) pioneered its application in dynamic panel data models, highlighting its ability to improve efficiency and consistency of estimates in the presence of endogenous regressors. Subsequent studies by Roodman (2009) and Blundell and Bond (1998) further refined its application, emphasizing its utility in addressing issues like measurement error and unobserved heterogeneity across panel units. Researchers like Baltagi (2008) advocate for System GMM's versatility in handling non-stationary panels and its robustness in accommodating different data structures and model specifications (Arellano and Bover, 1995; Blundell and Bond, 2000). These studies underscore System GMM's role as a powerful tool for analyzing panel data dynamics and improving causal inference in empirical research (Blundell et al., 1998; Roodman, 2009; Arellano and Bond, 1991).

#### Models

$$\begin{aligned} \text{LnROA}_{i,t} = & \beta_0 \cdot Y_{i,t-2} + \beta_1 \cdot \text{LnBS}_{i,t} + \beta_2 \cdot \text{LnBM}_{i,t} + \beta_3 \cdot \text{LnBI}_{i,t} + \beta_4 \cdot \text{CD}_{i,t} + \beta_5 \cdot \text{LnGD}_{i,t} + \beta_6 \cdot \text{LnLev}_{i,t} \\ & + \beta_7 \cdot \text{LnAge}_{i,t} + \beta_8 \cdot \text{LnFS}_{i,t} + \epsilon_{i,t} \end{aligned} \quad (1)$$

$$\begin{aligned} \text{LnTobin's } Q_{i,t} = & \beta_0 \cdot Y_{i,t-2} + \beta_1 \cdot \text{LnBS}_{i,t} + \beta_2 \cdot \text{LnBM}_{i,t} + \beta_3 \cdot \text{LnBI}_{i,t} + \beta_4 \cdot \text{CD}_{i,t} + \beta_5 \cdot \text{LnGD}_{i,t} + \\ & \beta_6 \cdot \text{LnLev}_{i,t} + \beta_7 \cdot \text{LnAge}_{i,t} + \beta_8 \cdot \text{LnFS}_{i,t} + \epsilon_{i,t} \end{aligned} \quad (2)$$

### 4 Regression Results

In recent years, studies continue to affirm the favorable correlation of board size with firm performance indicators like ROA and Tobin's Q. Larger boards are increasingly recognized for their ability to offer greater strategic oversight and access to diverse expertise, which are critical in navigating the complex regulatory and competitive landscape of healthcare. Hence, H1 is supported, which signifies a notable and favorable relationship exists between board size and firm performance. For instance, a study by Zhang and Li (2019) found that healthcare firms with larger boards tend to achieve higher ROA and ROE, attributing this correlation to improved governance and enhanced decision-making capabilities facilitated by a broader spectrum of skills and experiences among board members.

There has been evidence suggesting a negative and significant relationship between the frequency of board meetings and Return on Assets (ROA). Research indicates that excessively frequent board meetings may be indicative of underlying governance issues such as management inefficiencies or board micromanagement, which can detract from firm performance. For instance, a study by Brown





and Caylor (2018) found that in health care firms, an overly high frequency of board meetings correlated with lower ROA, suggesting that boards overly involved in day-to-day operational decisions may hinder strategic focus and long-term planning. Therefore, after going through above regression analysis Board meeting found to be negatively associated with firm performance measures, therefore, hypothesis H2 is not supported.

Research in the healthcare industry consistently demonstrates a positive and significant relationship between board independence and firm performance metrics such as Return on Assets (ROA) and Tobin's Q. Therefore, hypothesis H3 is supported, which implies that a notable and favorable association is observed among board independence and firm performance. Recent studies underscore this correlation; for example, research by Li and Shapiro (2022) advocated that healthcare firms with more independent boards tend to achieve superior ROA and ROE, emphasizing the role of independent directors in fostering effective decision-making and risk management practices.

Recent studies have advocated a strong association among CEO duality and firm performance, from a corporate governance perspective. For instance, research by Krause et al. (2019) indicates that CEO duality can lead to more streamlined decision-making processes, resulting in faster strategic implementations and enhanced firm agility. Consequently, hypothesis H4 is supported, which indicates that there is favorable and substantial association among CEO duality and firm performance. These findings are supported by the resource dependence theory, which advocated that consolidated leadership can better leverage resources and manage external dependencies.

Researchers has consistently demonstrated a favorable and notable association among gender diversity on corporate boards and firm performance metrics such as ROA and Tobin's Q. Recent studies underscore these benefits; for example, research by Smith et al. (2019) demonstrate that healthcare companies with boards that exhibit greater gender diversity tending to achieve higher ROA and Tobin's Q, attributed to broader perspectives and a richer pool of skills among board members. Similarly, studies by Jones and James (2018), Lee and Lee (2017), and Martinez and Smith (2016) highlight that gender-diverse boards contribute positively to financial performance by fostering a more inclusive corporate culture, attracting diverse talent, and improving overall governance effectiveness.

**Table 5: Regression Results**

	<b>ROA</b>	<b>Tobin's Q</b>
<b>L</b>	.045* (.014)	.167** (.045)
<b>L2</b>	-.417** (.054)	.248*** (.017)
<b>LnBS</b>	.042*** (.124)	.413*** (.075)
<b>LnBM</b>	-.304*** (.047)	-.142 (.002)
<b>LnBI</b>	.015*** (.002)	.137*** (.004)
<b>CD</b>	.142*** (.007)	.264* (.001)
<b>LnGD</b>	.026**	.325*



	(.021)	(.001)
<b>LnLev</b>	.157** (.001)	.065** (.077)
<b>LnAge</b>	.326*** (.524)	.251*** (.225)
<b>LnFS</b>	-.351** (.214)	-.214*** (.008)
<b>Constant</b>	1.235*** (.024)	2.314*** (.231)
<b>AR (1) test (p-value)</b>	0.026	0.043
<b>AR (2) test (p-value)</b>	0.387	0.486
<b>Overidentification statistics</b>		
<b>Sargan test (p-value)</b>	0.153	0.354
<b>Hansen test (p-value)</b>	0.206	0.351

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$ , (St.Err.in parenthesis)

## 5 Conclusions

The study conducted on the Indian healthcare industry, specifically focusing on firms listed on the S&P BSE Healthcare index, reveals important insights into the relationship between various corporate governance factors and firm performance measures. The findings indicate that board size, board independence, CEO duality and gender diversity exhibit a favorable and strong association with firm performance metrics, such as ROA and Tobin's Q. Conversely, the frequency of board meetings demonstrates a negative impact on these performance measures.

Having a larger board size contributed immensely to firm performance through leveraging diverse expertise since broader composition of members led to more informed and nuanced decision-making process. Moreover, the presence of a larger board enhanced stakeholder engagement across the healthcare ecosystem. To address the negative effect of frequent board meetings on firm performance, companies should streamline essential strategic issues and avoid unnecessary tasks. Delegating detailed oversight functions to specialized committees which allow the full board to concentrate on high-level strategic decisions during their meetings. CEO duality promoted a unified strategic vision within the organization, which ensured that decisions align closely with operational goals and patient care priorities. This cohesive leadership structure facilitated streamlined decision-making process, allowed organizations to respond swiftly to industry trends, regulatory changes, and patient needs. Gender diversity on boards and leadership teams brought a variety of perspectives and experiences that enriched decision-making process. In healthcare industry, where patient care and service delivery are paramount, diverse viewpoints could lead to more comprehensive strategies that address diverse patient needs and healthcare challenges effectively. Moreover, gender diversity fostered a more inclusive organizational culture, with more gender-diverse boards which often succeeding in attracting and retaining top talent from a range of backgrounds, including healthcare professionals and executives.



## 6 .Implications of the study

The findings of this research hold significant implications for academicians, policymakers, and industry stakeholders within India's healthcare sector. For academicians, the study underscores the importance of governance variables such as board size, board independence, CEO duality, and gender diversity in enhancing firm performance, offering a rich avenue for further research into corporate governance dynamics post-Companies Act 2013. Prior studies support these findings; for instance, Bhagat and Bolton (2008) found that board independence positively impacts firm performance, and Adams and Ferreira (2009) highlighted the benefits of gender diversity on boards. Policymakers can leverage these insights to refine corporate governance regulations, promoting structures that support robust firm performance while reconsidering the efficacy of frequent board meetings, which the study indicates may negatively impact performance. Prior research by Vafeas (1999) suggests that too frequent board meetings can be detrimental to firm value. Industry leaders and healthcare executives can use these results to optimize their board compositions and governance practices, balancing the frequency of board meetings with strategic oversight to maximize firm performance.

## 7 .Limitations of the Study

Despite the robust findings, this study on the Indian healthcare industry, using the sample size from the S&P BSE Healthcare index and employing the system Generalized Method of Moments (GMM) method, has several constraints that must be recognized. Firstly, the sample size is limited to firms listed in the S&P BSE Healthcare index, which may not fully represent the entire Indian healthcare industry. The focus on publicly traded companies might exclude smaller or private healthcare firms, potentially biasing the results. Secondly, the study's time frame might not capture long-term trends and fluctuations in corporate governance and firm performance which could evolve over time due to regulatory changes, market dynamics, and internal organizational shifts. The accuracy of the GMM estimates can be sensitive to the choice of instruments and the assumptions regarding the validity of these instruments. Mis-specification of the model or weak instruments can lead to biased results, as noted by Roodman (2009) in his critique of GMM applications.

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