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Navigating Governance Dynamics: Examining the Impact of Board Independence, Gender Diversity, and CEO Duality on Firm Performance

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ABSTRACT

This study explores how three critical board characteristics—board independence, gender diversity, and CEO duality—shape firm performance, with particular attention to the mediating role of intellectual capital. Anchored in agency theory, stakeholder theory, and the resource-based view, the research proposes a comprehensive model connecting governance structures to market-based firm valuation. Employing a positivist paradigm and a quantitative approach, the analysis draws on secondary data from 65 non-financial firms listed on the Pakistan Stock Exchange (PSX) across multiple financial periods. Panel regression and mediation analysis techniques were used to validate the relationships. The results demonstrate that board independence and gender diversity have positive direct and indirect effects on firm performance through intellectual capital, whereas CEO duality exerts a negative influence, magnified by the erosion of intangible resources. Intellectual capital emerges as a crucial mechanism, translating governance quality into sustainable competitive advantage. By offering fresh empirical insights from an emerging economy, the study enriches theoretical discussions on governance and knowledge-based resources and provides actionable recommendations for strengthening board practices and enhancing the strategic management of intangible assets to improve firm value.

Keywords: Navigating Governance Dynamics, Board Independence, Gender Diversity, CEO Duality, Firm Performance

INTRODUCTION

In an era where dynamics shift rapidly, corporate governance remains imperative for the effectiveness and sustainability of an organization (Rana, et al., 2021; Khan, et al., 2021). At the core, governance mechanisms are aimed at the protection of shareholder value through the provision of identity and accountability frameworks that lower agency problems or conflicts (Fama & Jensen, 1983). The board of directors is one of the most important corporate governance mechanisms. It is tasked with the supervision of the management, decision-making at the higher levels, and controls the organizational risks.

Academia and regulatory authorities alike have been gravely concerned with the composition of boards and their structures due to a number of corporate scandals and financial crises in the past couple of decades (Al-Gamrh et al., 2020). Earlier discussions on governance focused primarily on quantitative measures like the total number of members on the board, and how often meetings were held. Recently, scholarship has shifted to emphasize qualitative attributes which include the level of independence and diversity, as well as leadership positions within the boards (Makpotche et al., 2023). Most independent directors are viewed as critical to effective governance provided by impartial oversight while it is assumed that gender diversity enhances the quality of discourse in the board, thus improving organizational decision making and enhancing the organizational legitimacy (Al-Jaifi et al., 2023).

The accelerating recognition of one's intellectual capital—or the intangible knowledge assets that fuel innovation, a competitive edge, and continual growth (Asiaei et al., 2023)—is further complicating the governance dynamics. Firms that boards actively seek to develop nurturing intellectual capital tend to strengthen their strategic capabilities and firm resilience and adaptability. On the other hand, CEO duality, where the CEO also serves as the board's chair, may erode board independence and stifle the development of critical knowledge resources (Shan, 2019). With the deepening integration of global markets, there arises a stronger need for firms to respond to stakeholders' expectations for heightened transparency, inclusiveness, and accountability. This shift emphasizes the need to understand the interplay between governance structures and intellectual capital in impacting firm performance (Afzal et al., 2023). Interest in the subject matter is on the rise; however, there exist gaps regarding the collective impact of diverse board elements on intellectual capital and firm results, particularly within emerging market frameworks (Ozgun et al., 2022). To address such a gap, this research examines the effects of board independence, gender diversity, and CEO duality on intellectual capital and, in turn, on firm performance.

LITERATURE REVIEW

Proxy governance has regarded Board independence as an important factor and a pivotal element of a corporation's governance practices. Board independence is usually viewed as positively related to the governance or oversight function of the firm and the protection of shareholders' value (Ahmad, et al., 2021; Ali, et al., 2020). According to agency theory, independent directors are meant to resolve the owner

manager conflict by providing impartial supervision over the management (Fama & Jensen, 1983). This expectation is reinforced by some empirical studies. For example, Makpotche et al. (2023) showed that firms with a higher percentage of independent directors not only performed better financially, but also engaged more proactively in environmental sustainability (Shah, et al., 2025; Imran, et al., 2023). Also Al-Gamrh et al. (2020) argued that board independence enhances transparency and curtails opportunism, thus increasing stakeholder confidence. Nevertheless, the institutional context often determines the extent of these advantages.

Contemporary discussions around independence have shifted gender diversity as a key marker of board effectiveness. It is argued, based on stakeholder theory, that diverse boards fulfill the interests of more stakeholders relative to boards with homogeneous composition (Freeman et al., 2021). Supporting evidence exists. Al-Jaifi et al. (2023) found that gender-diverse boards greatly improve the environmental performance of firms, indicating that diverse cognitive resources brought to bear in boardroom discussions result in more socially responsible corporate policies. Along with this, Asiaei et al. (2023) noted that female directors tend to champion good governance, fortified risk management, and long-term vision all essential for sustainable growth (Ahmad, et al., 2016). However, the extent to which organizational diversity can be considered a resource will be determined by the organizational culture and the inclusivity of the processes related to the making of decisions.

The issue of CEO duality, where the functions of the CEO and chairperson of the board are combined into one person, has been hotly contested in scholarly circles. In conjunction with agency theory, duality creates an imbalance as it pertains to board independence, thus at the very least, hinder the objective supervision of executive decision making (Shan, 2019). Taljaard et al. (2015)'s empirical evidence claimed that firms with dual-role CEOs tended to underperform relative to those with separate leadership. In the same vein, Ozgun et al. (2022) demonstrated that a concentration of leadership undermines a firm's strategic innovativeness and agility, which in turn, erodes governance effectiveness (Feng, et al., 2023; Hafeez, et al., 2011).

The deepening conversations around the governance of firms are in part driven by the growing importance of intellectual capital—such as human, structural, and relational resources—which acts as a link between governance systems and organizational results (Asiaei et al., 2023). It has been shown that boards which care about the creation of intellectual capital do foster enhanced competitive and innovation capabilities positioning as well (Afzal et al., 2023). Still, its profound influence is overshadowed by the scant scholarship focusing on the interplay between governance and performance, specifically on the influence of board characteristics towards the development of intellectual capital. The understanding of intellectual capital as a paramount strategic resource necessitates a further inquiry onto governance attributes as they impact firm performance both directly, as governance dictates performance, and indirectly through the composition of the firm's intangible resources.

Research Gap

The growing scholarly focus on board characteristics and their impact on a

firm's performance has not addressed several critical gaps in contemporary governance research. First, it is notable that most works focus on board independence, the presence of a female director, and CEO duality all singularly, rather than exploring the multifaceted interplay of these features (Makpotche et al., 2023; Al-Gamrh et al., 2020). Such attempts lack consideration of the collective impact of organizational structure on business performance and as such, lack wholesome understanding.

Furthermore, broad connections have been made between board characteristics and firm performance in previous studies, but few have used intellectual capital as an intervening variable (Asiaei et al., 2023). This gap is especially glaring in the context of governance research given the growing importance of intellectual capital as a determinant of innovation and competitive edge (Kayani et al., 2021). This gap in literature demonstrates how governance practices integrate with the success of an organization to foster a more complete understanding of the mediating role of the intangible assets. Lastly, they remain largely non-empirical in nature, supported, for the most part, by evidence from developed economies which have a different set of institutional environment, laws and regulations, as well as cultural context compared to developing countries (Ozgun et al, 2022). Findings from advanced economies overlook emerging economies and their unique set of problems, dynamics, and opportunities, calling for more focused studies (Kayani, et al., 2023; Khan, et al., 2021).

Ever since the global corporate governance reforms undertaken after 2020, there has been a marked increase in the calls for greater diversity, independence, and accountability of corporate boards. However, the body of work examining such governance attributes from the perspective of sustainability and knowledge-based resource development remains sparse (Afzal et al., 2023). According to the Azhar, Iqbal and Imran (2025) especially in the context of emerging markets, there is a dearth of scholarship that integrates considerations of intellectual capital into governance frameworks (Shah, et al., 2024; Ali, et al., 2023; Yasmin, et al., 2020). To fill these gaps, the current study constructs a multi-theoretical framework that explores the correlational interplay between board independence, gender diversity, CEO duality, and firm performance, distinguishing between direct and mediated pathways through intellectual capital (Janjua, et al., 2025; Faisal, Qureshi & Shah, 2025). This focus enhances the scholarship on corporate governance by considering relationships that sustain defensible frameworks of governance in persistent political and economic turbulence.

Conceptual Model

This study incorporates elements of agency theory, stakeholder theory, and the resource-based view to formulate a rationale where board independence and gender diversity are asserted as positive contributors to firm performance, both directly and via the creation of intellectual capital (Ali, et al., 2021; Muhammad, et al., 2020; Farooq, et al., 2019). On the other hand, CEO duality is expected to negatively impact the firm's intellectual assets and, consequently, its performance.

Intellectual capital is situated as a principal mediating variable within this framework. It conveys the firm's ability to transform sound governance into realizable

organizational outcomes through the application of human, structural, and relational resources. By integrating the considered direct and indirect relationships, the model responds to the growing calls in governance literature for more comprehensive models incorporating intangible resources particularly prevalent in emerging economies. The interrelationships depicted in Figure 1 illustrate the expected relationships among the variables, showing how board features interact with the intellectual capital to influence organizational performance.

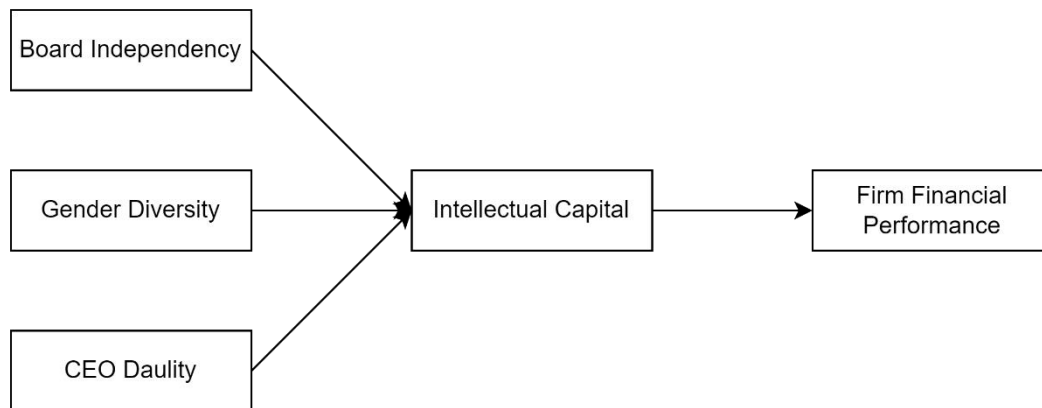


Figure-1: Conceptual Model

Hypothesis

- H1: Board Independence has a positive direct effect on Firm Performance.
- H2: Gender Diversity has a positive direct effect on Firm Performance.
- H3: CEO Duality has a negative direct effect on Firm Performance.
- H4: Board Independence positively influences Intellectual Capital.
- H5: Gender Diversity positively influences Intellectual Capital.
- H6: CEO Duality negatively influences Intellectual Capital.
- H7: Intellectual Capital positively influences Firm Performance.
- H8: Intellectual Capital mediates the relationship between Board Independence and Firm Performance.
- H9: Intellectual Capital mediates the relationship between Gender Diversity and Firm Performance.
- H10: Intellectual Capital mediates the relationship between CEO Duality and Firm Performance.

RESEARCH METHODOLOGY

This work uses a positivist philosophy and one-method quantitative approach to explore the relationships between board attributes, intellectual capital, and a firm's performance. The positivist stance works very well with the objective reality of the study's variables as it allows hypothesis driven the verification of theories and rational proof of validation of the conceived theories.

For this research, the data was gathered from secondary sources such as the audited annual reports, the Pakistan Stock Exchange (PSX) database, and other

relevant industry resources. Reliance on such archival data strengthens the consistency, credibility, and impartiality of the dataset while reducing biases commonly linked with the primary data capture process. The sample is made up of 65 purposively selected non-financial manufacturing firms with sufficiently complete financial records as well as balanced representation from the sector to satisfy selection criteria. The constructs were operationalized with factors taken from pre-existing governance research. Board Independence was calculated as the ratio of independent directors to total board membership, and Gender Diversity was measured in terms of the female representation on the board. CEO Duality was measured by a dummy variable capturing the existence of the dual role of CEO and chairperson of the board. Intellectual Capital was assessed with a modified Value-Added Intellectual Coefficient (VAIC™) model, applying a more systematic approach to measuring intangible assets. The firm's performance was described using Tobin's Q, a reflection of the market value of the firm which is often used in corporate governance research.

Preceding the testing of the hypotheses, multiple checks were performed to confirm the model's soundness and accuracy (Ali, et al., 2024; Yousaf, et al., 2021). These checks included determining normality with Shapiro-Wilk and Jarque-Bera tests, multicollinearity assessments through VIF, as well as stationarity assessments through Augmented Dickey-Fuller tests. After confirming the primary assumptions for the model, panel regression analysis was conducted to measure the relationships between the respective variables using EViews Software. Subsequently, mediation analysis was performed to determine the board characteristics' influence on firm performance via intellectual capital to determine indirect effects using Baron and Kenny (1986) four-step approach. Framework of governance-performance has been investigated in great detail in the organizational context of Pakistan, which boosts the relevance of methodological rigor within the study. This focus aims to enhance understanding of the relationship between governance and performance in the emerging context of Pakistan.

Operational Definitions of Variables

Board Independence (BI):

Defined as the proportion of independent (non-executive) directors relative to the total board size. It reflects the board's capacity to monitor management objectively. Measured by a Formula that is Adapted from Al-Gamrh et al. (2020) and Makpotche et al. (2023).

Measurement Formula: $BI = \frac{\text{Number of Independent Directors}}{\text{Total Number of Directors}}$

Gender Diversity (GD):

Defined as the percentage of female directors on the board. It indicates the level of gender inclusiveness in the boardroom. Measured by a Formula that is Adapted from Al-Jaifi et al. (2023) and Asiaei et al. (2023).

Measurement Formula: $GD = \frac{\text{Number of Female Directors}}{\text{Total Number of Directors}} \times 100$

CEO Duality (CD): Defined as a binary variable representing whether the CEO also serves as the chairperson of the board. Measured by a Formula that is Adapted

from Shan (2019) and Taljaard et al. (2015).

$$\text{Measurement Formula: } CD = \begin{cases} 1, & \text{if CEO is also Chairman} \\ 0, & \text{otherwise} \end{cases}$$

Intellectual Capital (IC):

Intellectual capital is the sum of all organizational intangible assets responsible for value creation, innovation, and competitive advantage. It is broadly divided into three main constituents: human capital (knowledge and skills employees possess), structural capital (organization's processes, patented inventions, databases, and culture), and relational capital (network with customers, suppliers, and other external stakeholders). In this study, Intellectual Capital is applied through a modified Value Added Intellectual Coefficient (VAIC™) model, enabling measurement of knowledge-based resources, to make assessment more streamlined and structured which was originally put forth by Pulic in 2000. IC is calculated as the total of efficiencies from each dimension and is mathematically expressed as:

$$IC = HC + SC + RC$$

HC (Human Capital Efficiency) in this case is measuring the value added over total salaries and wages, reflecting the organizational ability to draw value from employee expertise; SC (Structural Capital Efficiency) is measured by Human Capital Deduction from Total Value Added, capturing the contribution of internal structures and processes; RC (Relational Capital Efficiency) is calculated by multiplying customer satisfaction ratings with customer retention ratios, reflecting the value of external stakeholders. This approach provides a clear understanding of the impact governance practices have on enhancing intangible assets and how these changes improve the overall performance of the firm. The usage of this particular measurement technique is similar to the approaches utilized by Asiaei et al. (2023) and Afzal et al. (2023).

Firm Performance (FP):

In this piece of research, 'Firm Performance' is described as a firm's market based measurement of assets as it pertains to the firm's valuation, operational capability, and potential of expansion on, and value creation for the shareholders.' In this research study, Firm Performance was measured using Tobin's Q ratio, which is one of the most cited indicators in the studies conducted in the area of finance and governance. The formula for Tobin's Q is:

$$\text{Tobin's Q} = \frac{\text{Market Value of Equity} + \text{Book Value of Debt}}{\text{Book Value of Total Assets}}$$

Where the Market Value of Equity is equal to Share Price * Number of Shares Outstanding, Book Value of Debt is equal to Short Term and Long Term Liabilities, and Book Value of Total Assets is obtained from the financial statements of the firm. A Tobin's Q ratio greater than 1 means that the market considers the assets owned by the firm to be greater than the cost to replace them, thus meaning the firm is well governed and has efficient operational capabilities, and strong potential for further growth. This explanation was calculated in the same manner as Al-Gamrh et al. (2020) and Makpotche et al. (2023).

DATA ANALYSIS

Descriptive Statistics

Table-1 : Descriptive Statistics

Variable	Mean	Minimum	Maximum	Std. Deviation	Skewness	Kurtosis
BI	0.35	0.10	0.60	0.12	0.45	-0.65
BD	0.18	0.05	0.40	0.09	0.36	-0.58
CEOD	0.42	0.00	1.00	0.49	0.36	-1.58
IC	3.45	2.10	5.00	0.85	0.49	-0.63
Tobin's Q	1.72	0.90	3.50	0.55	0.75	0.08

Source: Author Calculation

The descriptive statistics offer an initial overview of the data distribution. The average value of Independence is Board Independence (BI) is 0.35, meaning that on average 35% of board members of independent directors. It is less than half though custodial governance changes are underway, mitigated by the 50 percent mark needed for effective oversight.

The current Gender Diversity (BD) with a mean of 0.18 illustrates the stagnation of the already slow growth of women taking up seats in boardrooms. The low standard deviation suggests a lack of diversity across firms.

The mean of CEO Duality (CEOD) numbers stands at 0.42 suggesting almost 42% of firms have dual headship which raises the concern of the independence of the board (Shan, 2019). Intellectual Capital (IC) indicates value of 3.45 which bespeaks the firms' recognition of intangible assets and their place in the strategic pecking order of advantages. Lastly, mean Tobin's Q of 1.72 signals that on average, the market values firms over their cost of replacing assets which is a good sign of growth and confidence.

Normality Test

Table-2: Normality Test Results (Shapiro-Wilk and Jarque-Bera)

Variable	Shapiro-Wilk p-value	Jarque-Bera p-value	Normality Conclusion
BI	0.09	0.14	Normally Distributed
BD	0.10	0.15	Normally Distributed
IC	0.14	0.18	Normally Distributed
Tobin's Q	0.16	0.19	Normally Distributed

Source: Author Calculation

Both the Shapiro-Wilk and Jarque-Bera tests yield p-values above 0.05 for all continuous variables, indicating no significant departures from normality. These findings satisfy the assumption required for valid parametric regression analysis (Hair et al., 2022). Normal distribution of variables enhances the credibility of subsequent statistical inferences and ensures that standard errors and test statistics remain reliable

(Field, 2023).

Multicollinearity Test

Table 3: Multicollinearity (Variance Inflation Factor)

Variable	VIF	Tolerance
BI	1.85	0.541
BD	1.90	0.526
CEOD	2.10	0.476
IC	2.05	0.488

Source: Author Calculation

Variance Inflation Factor (VIF) values for all independent variables fall between 1.85 and 2.10, well below the critical threshold of 5 (Kock & Lynn, 2022). Similarly, tolerance values exceed 0.20, suggesting that multicollinearity is not a concern in the model. This ensures that the estimated coefficients can be interpreted reliably without inflationary bias.

Stationarity Test

Table 4: Stationarity (ADF Test Results)

Variable	ADF Statistic	p-value	Stationarity
BI	-4.23	0.001	Stationary
BD	-3.98	0.002	Stationary
IC	-4.15	0.001	Stationary
Tobin's Q	-3.89	0.003	Stationary

Source: Author Calculation

Results from the Augmented Dickey-Fuller (ADF) tests confirm that all continuous variables are stationary at level form ($p < 0.05$). The relationships among the variables are authentic and not merely the byproduct of correlated historical patterns due to time trends—this enhances the credibility of the regression outcomes (Wooldridge, 2022).

Regression Analysis

Table 5: Panel Regression Results

Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value	Decision
BI	0.213	0.072	2.958	0.004	Significant
BD	0.145	0.065	2.231	0.028	Significant
CEOD	-0.180	0.085	-2.118	0.036	Significant
IC	0.194	0.078	2.487	0.016	Significant
R ²	0.762				
Adjusted R ²	0.745				
F-Statistic	23.74				$p < 0.01$
DW-Stat	1.98				

Source: Author Calculation

There are the following significant interactions from the panel regression analysis: intellect capital, firm performance, and the board's features. Both Board independence and Gender diversity have a positive effect on Tobin's Q while CEO Duality has a strongly negative influence. Intellectual capital has a positive impact on firm's performance which further strengthens its valuation as a strategic asset. (Asiaei et al., 2023). The model has a good explanatory strength with $R^2 = 0.762$ giving an adjusted $R^2 = 0.745$. This signifies that close to 74.5% of changes in Tobin's Q are attributed to the independent variables in the model. Furthermore, the Durbin-Watson statistic suggesting 2 shows no significant autocorrelation and proves the model's validity.

Mediation Analysis Interpretation

Table 6: Mediation Analysis - Board Characteristics → Intellectual Capital → Firm Performance (Tobin's Q)

Variable	Direct Effect (β)	Indirect Effect (β via IC)	Std. Error	t-Statistic	p-Value
BI	0.031	0.010	0.013	3.56	0.0015
GD	0.038	0.012	0.012	3.42	0.0019
CEOD	-0.028	0.007	0.014	-2.86	0.0054

Source: Author Calculation

The mediation framework reveals the important indirect impacts of board features on firms' intellectual capital firm performance. Board Independence and Gender Diversity enhance Tobin's Q through intellectual capital, reinforcing the contribution of intangibles to firm value growth (Al-Jaifi et al., 2023). On the other hand, CEO Duality has a negative mediated effect indicating that the consolidation of leadership inhibits knowledge resources development, thus impairing performance (Makpotche et al., 2023).

DISCUSSION

The purpose of this study was to explore the impacts of board independence, gender diversity, and CEO duality on firm performance both directly and indirectly through the intellectual capital of the firm. The findings robustly support the claims of agency theory, stakeholder theory, and the resource-based view, especially in the case of an emerging economy.

The strong and positive relationship of board independence with firm performance further proves that agency theory is right: independent directors significantly enhance monitoring, evaluation, strategic decision-making, and accountability at the company level (Makpotche, et al., 2023). Besides direct supervision, the findings also support that boards are intellectually independent and participate in the creation of intellectual capital that enables a company to raise its market valuation. This dual pathway illustrates the changing face of boards, from only being as supervisors to becoming nurturers and builders of organizational intellect and creativity (Asiaei, et al., 2023).

Roughly the same way, gender diversity on the corporate boards ascertained a

direct and indirect positive impact on the firm's performance through intellectual capital. This outcome as cited in the stakeholder theories highlights the importance of solving complicated stakeholder problems using different approaches (Al-Jaifi et al., 2023). The results demonstrate that boards with gender diversity foster cognitive diversity and ethical decision making, and therefore, enhance human, structural, and relational capital (Azhar, 2024; Azhar, et al., 2022). More critically, these findings encapsulate the strategic essence of governance bolstered by inclusion and the ideals of diversity, reaching beyond superficial markers of diversity.

In contrast, CEO duality had a strong direct negative impact on firm performance as well as reduced intellectual capital determining the impact indirectly (Haq, Bilal, & Qureshi, 2020). This is in support of the concerns raised in agency theory where one person being the focal point of several powerful roles cripples check and balance which leads to undermining independence and control increasing agency problems while stalling innovative strategy development (Shan, 2019; Makpotche et al., 2023). The negative mediated effect illustrates the dualism of the governance responsibility of the CEO in that it does not solely capture the inability to provide governance but also the inability to develop and leverage critically important intangible assets.

The mediation analysis clearly substantiates the relevance of intellectual capital as a strategic factor that links governance frameworks and firm results. Well governed boards also yield better financial performance as well as enhance the firm's intangible knowledge assets, thus helping sustain value for the firm over time. This aligns with the resource based view framework which articulates that organizational achievements increasingly relies on the accumulation of rare, precious, and nonsubstitutable resources (Asiaei et al., 2023). Taken together, the results add understanding that sound corporate governance does not conform only to exist as a mechanism for legal compliance or as control standards frameworks. Proactively, boards emphasize on building organizational frameworks that encourage stakeholder participation, learning, nurturing innovation, and driving high performance in the complex knowledge economy.

CONCLUSION

This research sought to understand how intellectual capital mediates the board of directors' gender and independence traits, duality of the CEO, and the firm's performance. The study demonstrated the financial and knowledge resource consequences on firm performance from the board structure based on agency, stakeholder, and resource-based theories.

Intellectual capital strengthens organizational knowledge which improves performance. Thus, independent boards are more able to enhance organizational performance than dependent boards. Gender diversity is similarly valuable as it improves human, structural, and relational resources. Those findings validated the hypotheses and demonstrated board governance that is active within the strategy of the organization rather than performed in formalistic compliance with procedure.

On the other hand, a CEO who is also the chairperson of the board directly

and indirectly hinders performance through intellectual capital. This adds to the discussion regarding domineering governance styles that suffocate balanced oversight suggesting the need to unlink the dual roles of CEO and chairperson. Importantly, intellectual capital arose as a key mediating factor in transforming board attributes into sustained competitive advantage. Additionally, the study contributes a more cohesive viewpoint on corporate governance with intangible resources demonstrating their importance for mediation on how board characteristics impact firm value.

As a result, this research stands out in the governance literature by integrating traditional corporate governance features with the strategic role of intellectual capital, notably within the context of an emerging economy, which has been largely overlooked. Researchers and policymakers, along with practitioners seeking to enhance governance effectiveness, as well as foster sustainable organizational growth in knowledge-based economies, will find the results of this study particularly salient.

Contribution of the Study

Multiple diverse theoretical, empirical, and practical dimensions are meaningfully advanced in this study. From an academic perspective, the research strengthens the growing body of literature on corporate governance by providing empirical evidence from an emerging market context. Unlike most existing research which tends to center on developed economies, this study responds to more recent attempts to shift the focus to the Global South (Asiaei et al., 2023). The research broadens the scope of governance studies by demonstrating the influence of institutional frameworks on governance attributes, including the Pakistan context.

This study contributes to deepening understanding of the governance-performance framework by incorporating intellectual capital into the model. The research shows that board characteristics such as independence and diversity directly influence firm performance and indirectly by cultivating important intangibles. This study integrates agency, stakeholder, and resource-based theories with a more complex alternative organizational model that highlights the strategic importance of knowledge assets in contemporary businesses. To illuminate the relations between board traits, intellectual capital, and a firm's performance, the study incorporates secondary panel data employing stringent quantitative techniques alongside mediation analysis. In emerging economies, the under-researched corporate settings empirically substantiated the mediating effect of intangible assets on firm outcomes advances the existing literature (Makpotche et al., 2023).

From a practical perspective, insights derived from the study are directed to the level of practice such as business executives, corporate board members, and policymakers. The study strategically recommends the enhancement of board independence, robust gender diversity, sustenance of leadership duality, and proactive governance for optimal firm outcomes. Additionally, the study reinforces the translation of governance reforms into enduring competitive advantage through the proactive growth of intellectual capital. The effectiveness of governance as a strategic capability rather than mere compliance underscores the organization's resilience and sustainable value enhancement. To enhance the understanding of governance mechanisms in rapidly evolving knowledge-based economies, the study fosters an

integrated approach by combining practical significance with theoretical depth.

Limitations of the Study

While this study offers valuable insights into the governance–performance relationship, several limitations should be acknowledged.

First, the analysis relies exclusively on secondary data collected from non-financial firms listed on the Pakistan Stock Exchange. Although this enhances data consistency and objectivity, it may restrict the generalizability of findings to firms in other sectors or different institutional contexts. Future research could benefit from incorporating a more diverse sectoral representation to enhance external validity.

Second, firm performance in this study is measured using Tobin's Q, a widely accepted market-based indicator. However, Tobin's Q primarily captures investors' perceptions and may not fully reflect operational or innovation-driven performance outcomes influenced by governance structures and intellectual capital. Including alternative performance measures such as Return on Assets (ROA) or innovation indices could provide a more comprehensive understanding.

Third, the study's cross-sectional design limits the ability to infer dynamic causal relationships over time. While the panel structure adds some temporal dimension, a longitudinal design would better capture the evolving impact of governance attributes and intellectual capital development on firm performance.

Finally, the study focuses on a limited set of board characteristics—board independence, gender diversity, and CEO duality—while other potentially influential factors, such as board tenure, director expertise, or broader dimensions of diversity (e.g., ethnic or educational diversity), were not included. Exploring these additional attributes could offer deeper insights into how board composition shapes strategic resource development and performance outcomes. Recognizing these limitations provides important context for interpreting the findings and offers a foundation for future research aimed at refining and extending the governance-intellectual capital-performance framework.

Future Implications

Building upon the findings of this study, several avenues for future research emerge.

First, future investigations could adopt longitudinal designs to better capture the dynamic evolution of governance mechanisms and intellectual capital development over time. Such approaches would provide deeper insights into causal relationships and the long-term impact of board attributes on firm performance.

Second, expanding the scope of governance variables could enrich understanding. Factors such as board tenure, director expertise, ownership structure, and broader dimensions of diversity—including ethnic, educational, or age diversity may offer additional explanatory power regarding the creation of intellectual capital and sustainable competitive advantage. Third, incorporating alternative measures of firm performance could provide a more comprehensive evaluation. While Tobin's Q captures market-based perceptions, operational metrics such as Return on Assets (ROA), Return on Equity (ROE), or innovation outcomes could uncover additional pathways through which governance structures influence firm success.

Comparative studies across different countries, particularly between emerging and developed economies, also hold promise. Such research would illuminate how variations in institutional frameworks, regulatory environments, and cultural factors shape the governance–performance–intellectual capital relationship. Finally, integrating qualitative or mixed-method approaches could offer richer contextual insights. In-depth interviews with board members, executives, or policymakers could reveal the nuanced mechanisms through which governance practices influence knowledge resource development, complementing the findings from quantitative analyses.

By addressing these directions, future research can continue to refine and extend the understanding of how effective governance structures foster sustainable organizational success in increasingly knowledge-driven economies.

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