*European Journal of Business and Management Research*
*Vol 9 | Issue 4 | July 2024*
*ISSN* 2507-1076

RESEARCH ARTICLE

# The Moderating Effect of Ownership Structure in the Relationship between Corporate Governance and Value of Non-Financial Firms Listed at the Nairobi Securities Exchange

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## ABSTRACT

**The ownership structure is a crucial aspect of corporate governance and firm value, understanding its implications allows companies to make informed decisions to enhance their value and governance practices. Therefore, this study empirically investigated if ownership structure influences the relationship between corporate governance and firm value. A composite index was developed to evaluate corporate governance, considering board independence, size, diversity, and audit committee independence, while Tobin's Q was employed to estimate non-financial stock exchange firms' value. Additionally, ownership structure was defined by three main categories: government ownership, managerial ownership, and foreign ownership. The study utilized a descriptive longitudinal research method to analyze secondary data, employing statistical measures like mean, median, standard deviation, and skewness and conducting a correlation test. Moreover, diagnostic tests were utilized to assess normality, multicollinearity, heteroskedasticity, stationarity, and autocorrelation, determining a random effects model as the most suitable. Correlation was also conducted using Pearson's coefficient (r) to measure the strength and direction of the linear relationship. The empirical results exhibited that ownership structure moderated the relationship between corporate governance and firm value.**

**Keywords:** Corporate governance, Descriptive longitudinal research method, Firm value, Ownership structure.

**Submitted:** April 14, 2024

**Published:** July 15, 2024

*10.24018/ejbmr.2024.9.4.2373*

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## 1. Introduction

Corporate governance (*CG*), based on agency theory, aims to enhance investor confidence through various control mechanisms, processes, policies, legal rules, customary practices, and institutional structures. The main goal is to ensure long-term success by balancing stakeholders' interests and promoting ethical, responsible, and sustainable behaviour (Dang *et al*., 2019). Over the past two decades, *CG* scandals like Enron, Royal Bank of Scotland, Parmalat, and China Aviation Oil have highlighted the need for robust governance structures to protect stakeholders and ensure sustainability (Letza, 2017). Countries with established *CG* systems attract higher investment and protect current owners' interests, emphasizing the need for robust internal governance and effective regulatory environments for competitiveness. Furthermore, investment attraction and long-term sustainability are crucial in today's competitive business environment (Farag & Mallin, 2018).

Ownership structure (*OS*) influences resource allocation, decision-making processes, and strategic direction of a company, ultimately impacting its overall value and influencing the firm's strategic direction (Alkurdi *et al*. 2021). Diversity in ownership stakes and inclusive board representation can enhance governance, reduce conflicts of interest, and facilitate strategic decisions that generate value for the firm. Balancing these diverse ownership interests is critical for reaping the benefits of improved corporate governance practices (Alves, 2012). *OS* averts profit manipulation, ensures accurate financial reporting, and

discourages self-interested activities among large shareholders, promoting transparency (Lioui & Sharma, 2016). Phung and Mishra (2016) highlight various techniques for analyzing *OS*, including concentration, managerial, foreign, government, and institutional ownership. *OS* has been operationalized in various ways, including percentage shares of multiple owners, concentration, foreign and institutional ownership, and government, managerial, and foreign ownership. Thus, this study adopts the *OS* operationalization proposed by Phung and Mishra (2016), as it is essential for effective *CG*, incentive alignment, and maximizing firm value.

Firm value (*FV*) is a crucial financial measure that maximizes shareholder value and attracts stakeholders (Shuaibu *et al*., 2019). It is linked to ownership structure and corporate governance, and is calculated using appropriate methods and pricing models. *FV* includes a firm's existing and projected advantages, as well as prevailing and anticipated profits. Increasing a firm's market value, reflected in its share price, benefits shareholders (Ibrahim, 2017). Methods for evaluating *FV* include examining financial records and using metrics like Tobin's Q (Butt *et al*. 2023). This study utilized Tobin's Q for a thorough market value ratio assessment, a reliable indicator of a firm's asset value, enabling industry comparisons, predicting future investments, economic expansion, outperforming other accounting ratios, and resistant to potential distortions.

The empirical and theoretical literature suggests that *CG* practices enhance *FV* directly, with the *OS* moderating this relationship. While good governance is important, the composition of ownership stakes determines the extent to which governance mechanisms can positively impact value creation (Phung & Mishra, 2016). Aligned ownership and effective oversight by shareholders enhance the value-adding effects of robust governance, while misaligned or dispersed ownership can hinder its ability to drive higher firm value and performance. Thus, synchronizing sound *CG* with an appropriate ownership configuration is crucial for maximizing a *FV* proposition.

## 2. Research Problem

Researchers frequently discuss the validity of *CG* and *OS* in affecting an FV, with a key focus on understanding how these practices affect a firm's performance and overall value (Haque & Arun, 2016). Effective *CG* can enhance *FV* by aligning managers and shareholders' interests, reducing agency costs, and enhancing transparency, but its exact mechanisms and outcomes may vary depending on the situation (Maulidi, 2017). The relationship between *CG*, *OS*, and *FV* is complex, influenced by governance practices, legal framework, industry dynamics, and company size, affecting share distribution among investors and institutional stakeholders. The complexity is further compounded by methodological challenges in research, as different approaches can lead to different conclusions.

Maulidi (2017) highlighted several scandals, including the 1995 Barings Plc debacle in the UK, the 2001 Enron scandal in the US, the 2005 American Insurance Group scandal, the 2008 Bernie Madoff and Lehman Brothers Holdings Inc. scandals in the US, and the 2008 Satyam software company scandal in India. However, crisis can significantly reduce a firm's overall value and, in some cases, even result in a loss of value (Boubaker & Nguyen, 2014). The complex relationship between *CG* and *FV* is challenging to comprehend, and previous studies have been criticized for methodological flaws, including model selection, data composition, and sample selection, leading to mixed results. This study seeks to fill these gaps by examining how the *OS* influences the relationship between *CG* and *FV* in listed companies in Kenya. The research aims to understand the intricate interplay between ownership stakes, governance mechanisms, and value creation in the Kenyan context, providing a comprehensive understanding of *FV*. The study suggests that addressing methodological flaws and considering ownership's moderating effects could offer valuable insights into optimizing governance structures for Kenyan companies, potentially maximizing value.

## 3. Research Objective

The objective of this study is to investigate the moderating role of ownership structure in the relationship between corporate governance and firm value of listed firms in Kenya.

## 4. Theoretical Underpinnings

Ownership structure significantly influences the principal-agent relationship within a firm, affecting *CG* and *FV*. Jensen and Meckling (1976) underscored the importance of ownership structure in mitigating agency problems and aligning managers and shareholders' interests. They proposed that concentrated, managerial, and other ownership structures could influence agency costs and the effectiveness of *CG* practices.

Davis *et al*. (1997) stewardship theory and agency theory emphasize the importance of ownership structure in the relationship between corporate governance and firm value. Stewardship theory views managers as trustworthy stewards, while agency theory suggests that OS that empowers and incentivizes managers can enhance the positive relationship between good *CG* and *FV* creation.

## 5. Empirical Literature

Previous studies have shown that ownership structure plays a moderating role in the relationship between corporate governance and firm value. Concentrated ownership or significant stake in the company can enhance governance practices, making it crucial to consider ownership structure when designing and implementing corporate governance practices. A study by Onguka *et al*. (2021) found a positive link between *CG*, *OS*, and *FV*, with a significant moderating effect of *OS* on *FV*. Aligning governance structures with effective managerial decision-making processes can improve firm performance. Additionally, Mwau *et al*. (2017) examined the impact of growth strategies on Kenyan insurance companies' performance, including

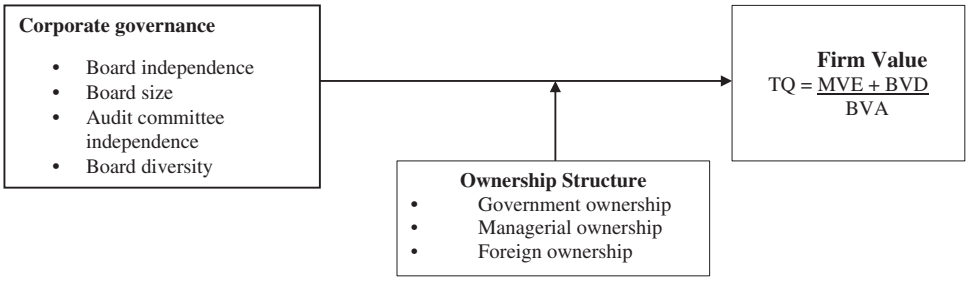


Fig. 1. Conceptual model.

diversification, market penetration, product development, and ownership structure. The study found that ownership structure moderated the relationship between growth strategies and insurance company performance, but the type of ownership, whether private or public, had no significant impact on the association between growth strategies and firm performance.

In Ghana, Sarpong-Danquah *et al*. (2022) examined the impact of board characteristics and *OS* on the financial performance of Ghanaian manufacturing firms. The study examined factors such as board independence, size, gender diversity, audit committee size, board salary, and *OS*. The findings showed a strong positive relationship between board attributes and financial performance despite gender diversity. Audit committee independence and size significantly influenced financial performance, while *OS* moderated the relationship between board size and financial performance. However, not all studies validated the findings regarding this relationship. For instance, Onguka *et al*. (2021) utilized the Baron and Kenny (1986) method to analyze the moderating effect of *OS* on the relationship between *CG* and *FV*, concluding that *OS* did not influence the relationship, suggesting sound *CG* practices often favor owners' interests.

## 6. Conceptual Framework

The study investigates the moderating role of *OS* in the relationship between *CG* and *FV*, revealing that the interaction between *OS* and *CG* practices significantly impacts a firm's performance and value creation. Thus, the effectiveness of *CG* in influencing *FV* is influenced by *OS* characteristics. The conceptual model illustrates the schematic linkages between study variables as demonstrated in Fig. 1.

## 7. Research Hypothesis

$H_{01}$: The moderating effect of ownership structure in the relationship between corporate governance and the value of non-financial firms listed at the NSE is not significant.

## 8. Methodology

### 8.1. Data

The study investigates *CG*, *OS*, and *FV* in 30 nonfinancial companies from 2012 to 2021 using secondary data from 300 firm-year observations, accounting for 75% of the dataset. It uses a longitudinal method and census survey on 30 NSE-listed firms, employing moderators to examine the relationship between variables. The study finds that *OS* significantly influences the relationship between *CG* practices and *FV*, influencing managerial behavior and shareholder interests. Higher managerial ownership can enhance monitoring and alignment of actions, potentially increasing *FV*. The presence of dominant shareholders can guide managers towards long-term value-maximizing strategies.

### 8.2. Data Analysis

The study utilized Baron and Kenny (1986) Moderated Multiple Regression methodologies to analyze the impact of ownership structure on the *CG-FV* nexus. It used descriptive statistics and inferential statistics, with a multicollinearity test to determine correlation. The study used OLS panel regression with a one-lag right-hand strategy to address endogeneity and causality issues. It also used series panel OLS regression with control variables to evaluate the effect of *CS* on *FP*, accounting for unobserved time-invariant firm characteristics. A general linear model was applied for estimation, with three sub-models generated to test sub-hypotheses.

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 OSit + \beta 3(CGit \times OSit) + \varepsilon it \quad (1)$$

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 GOit + \beta 3(CGit \times GOit) + \varepsilon it \quad (2)$$

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 MOit + \beta 3(CGit \times MOit) + \varepsilon it \quad (3)$$

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 FOit + \beta 3\,(CGit \times FOit) + \varepsilon it \quad (4)$$

The regression model demonstrates the influence of the independent variable (*CG*) on the dependent variable (*FV*), with *OS* (*GO*, *MO*, *FO*) acting as a moderating variable. It includes constant terms, beta coefficients, and the interaction term $CG * OS$, with an error term accounting for unexplained variance.

The findings displayed on Table I reveal diverse *CG* and *OS* among the listed non-financial firms studied. Board size (M = 0.818, SD = 0.2831, Minimum = 3, Maximum

TABLE I: Descriptive Statistics

| Variable | N | Mean (M) | Standard Deviation (SD) | Minimum | Maximum |
|---|---|---|---|---|---|
| Board independence | 300 | 0.670 | 0.208 | 0.20 | 1.000 |
| Board size | 300 | 0.818 | 2.831 | 3.00 | 17.000 |
| Audit committee Independence | 300 | 0.853 | 0.266 | 0.00 | 1.000 |
| Board diversity | 300 | 0.170 | 0.168 | 0.00 | 0.667 |
| GO | 300 | 0.082 | 0.192 | 0.00 | 0.700 |
| MO | 300 | 0.060 | 0.154 | 0.00 | 0.710 |
| FO | 300 | 0.167 | 0.269 | 0.00 | 0.950 |
| FV | 300 | 3.072 | 0.853 | 0.90 | 5.700 |

= 17) exhibited nominal variation with a nearly symmetrical distribution, implying fairly consistent board sizes across firms, while audit committee independence (M = 0.853, SD = 0.266, Minimum = 0, Maximum = 1) varied marginally, with a negatively skewed and platykurtic distribution, suggesting most firms had high independence. Board diversity (M = 0.170, SD = 0.168, Minimum = 0, Maximum = 667) displayed wider variation and a symmetrical distribution, indicating significant differences across firms. Additionally, GO (M = 0.082, SD = 0.192, Minimum = 0, Maximum = 0.700) fluctuated extremely, with a moderately right-skewed and platykurtic distribution, implying highly variable levels and some extreme values. Further, MO (M = 0.060, SD = 0.154, Minimum = 0, Maximum = 0.710, CV = 2.577) exhibited higher discrepancy, a moderately right-skewed and highly peaked distribution, suggesting substantial variability with some extremely high values. Moreover, FO (M = 0.167, SD = 0.269, Minimum = 0, Maximum = 0.950) demonstrated greater variation and a slightly right-skewed distribution, indicating varying levels across firms, with more on the lower end.

The longitudinal dataset underwent diagnostic tests to confirm regression assumptions and correct deviations. Breusch-Pagan and Hausman tests were used to select the best modeling approach, ensuring unbiased coefficient estimates and reliable statistical conclusions. Moreover, the Hausman specification test assessed model suitability using various regression models like pooled-ordinary least squares, fixed effects, or random effect models to estimate hypotheses. The study adopted the Kolmogorov-Smirnov (KS) test to assess the normality of a longitudinal dataset. It predicted and tested the error term, confirming its normal distribution, thus confirming the assumption of normality. Furthermore, the study evaluated multicollinearity in regression analysis using variance inflation factor (VIF) and tolerance value (TV). VIF values below 10 and TV greater than 0.1 indicated no multicollinearity. Moderating variables like government, managerial, foreign, and corporate governance showed VIF values below 10 and tolerance values above 0.1, confirming the validity and reliability of the regression analysis.

In addition, the study used ANOVA to determine if paired variables showed consistent variation across all scores. It found a linear relationship between corporate governance (*CG*), ownership structure (*OS*), and firm value (*FV*). The p-value was greater than 0.05, indicating no significant deviations from linearity. This suggests that linear models can accurately represent the relationships between these variables within the study's scope. The study also utilized the Wooldridge test to evaluate the independence of observations, specifically focusing on the correlation of error terms over time. The null hypothesis suggested no serial correlation, indicating no systematic relationship between errors across observations. F-statistic, calculated as F (1,29) = 0.035, showed no significant serial correlation. This F-statistic is not significant at the 5% level (Prob > F = 0.853 > 0.05), indicating no evidence of correlated error terms over time and supporting the assumption of independent observations in the dataset. Finally, the Breusch-Pagan/Cook-Weisberg test was used to examine heteroscedasticity in the model, with the null hypothesis suggesting constant residual variance. The Chi-squared test yielded a p-value of 0.153, higher

TABLE II: Estimation Results of Corporate Governance, Government Ownership Structure and Firm Value

| Overall Model Fit Statistics | | | | | | |
|---|---|---|---|---|---|---|
| Model: Random effect (GLS) regression | | | Number of observations = 300 | | | |
| Panel variable: ID (strongly balanced) | | | Number of groups | | | 30 |
| Time variable: TIME, 2012 to 2021 | | | Obs. per group | | Minimum | 10 |
| $R^2$ | Within | 0.088 | | | Average | 10 |
| | Between | 0.384 | | | Maximum | 10 |
| | Overall | 0.256 | Wald $chi^2$ (1) | | | 38.8 |
| Correlation | (u-i, x) | 0 | Prob $chi^2$ | | | 0 |
| Parameter estimates statistics | | | | | | |
| FV | Coefficient | Std error | z-stat | Prob | | |
| Constant | 5.901 | 1.511 | 3.91 | 0 | | |
| CG | −2.21 | 0.546 | −4.06 | 0 | | |
| GO | −30.729 | 8.498 | −3.62 | 0 | | |
| CG ∗ GO | 14.038 | 3.062 | 4.58 | 0 | | |

than the significance level of 0.05. The researchers concluded that no significant differences in residuals across the independent variable FV were observed, implying no heteroscedasticity ($\chi^2$ (1) = 2.05, p > 0.05). Accordingly, the model assumes constant residual variance, which is not violated. A correlation test using Pearson's coefficient (r) statistics was conducted to measure the strength and direction of the linear relationship between two variables, aiding in understanding how changes in one variable relate to changes in another.

## 9. Estimation Results and Discussions

To test for moderating influences of ownership on the relationship between corporate governance and firm value, the null hypothesis specified below was tested:

$H_{01}$: Ownership structure does not significantly moderate the relationship between corporate governance and the value of non-financial firms listed at the Nairobi Securities Exchange.

The random effect (GLS) moderation model applied for estimation is stated as follows:

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 OSit + \beta 3 CG * OSit + \varepsilon it \quad (5)$$

where $FV$ is Firm value; $CG$ is corporate governance; $OS$ is Ownership structure; $\beta_0$ is Constant term; $\beta_1$, $\beta_2$, $\beta_3$ is Beta coefficients; $CG * OS$ is Interaction term, which represents their combined effect on $FV$, while the error term ($\varepsilon$) accounts for unexplained variance in the dependent variable.

The results from Table II demonstrate the moderating effect of government ownership ($GO$) on the relationship between $CG$ and $FV$. The overall model was significant (Wald chi-square = 38.8, p < 0.05), indicating that $CG$, $GO$, and the interaction between $CG$ and $GO$ collectively predicted $FV$. The model explained 25.6% of the variance in $FV$ (R-squared = 0.256), with the remaining 74.4% attributed to other variables. Both $CG$ and $GO$ had negative and significant effects on $FV$ (CG: β = −2.21, z = −4.06, p < 0.05; $GO$: β = −30.729, z = −3.62, p < 0.05). The interaction term $CG * GO$ was positively significant (β = 14.038, z = 4.58, p < 0.05), indicating that the effect of $CG$ on FV varied with different levels of $GO$, strengthening as $GO$ levels increased. The study rejected hypothesis $H_{01a}$, concluding that GO positively and significantly moderated the relationship between $CG$ and $FV$, highlighting the critical role of $GO$ in influencing these dynamics.

The second null sub-hypothesis was tested, and the results are presented in Table III.

$H_{01b}$: Managerial ownership structure does not significantly moderate the relationship between corporate governance and the value of non-financial firms listed at the Nairobi Securities Exchange.

TABLE III: Estimation Results of Corporate Governance, Managerial Ownership Structure

| Overall model fit statistics | | | | | | |
|---|---|---|---|---|---|---|
| Model: Random effect (GLS) regression | | | | Number of observations = 300 | | |
| Panel variable: ID (strongly balanced) | | | | Number of groups | | 30 |
| Time variable: TIME, 2012 to 2021 | | | | Obs. per group | Minimum | 10 |
| $R^2$ | Within | 0.064 | | | Average | 10 |
| | Between | 0.33 | | | Maximum | 10 |
| | Overall | 0.193 | | Wald $chi^2$ (1) | | 29.6 |
| Correlation | (u-i, x) | 0 | | Prob $chi^2$ | | 0 |
| Parameter estimates statistics | | | | | | |
| FV | Coefficient | Std error | z-stat | Prob | | |
| Constant | 5.921 | 1.52 | 3.89 | 0.033 | | |
| CG | −2.74 | 0.446 | −6.143 | 0 | | |
| MO | −29.99 | 7.998 | −3.74 | 0.039 | | |
| CG * MO | 13.653 | 3.142 | 4.345 | 0.001 | | |

TABLE IV: Estimation Results of Corporate Governance, Foreign Ownership Structure and Firm Value

| Overall model fit statistics | | | | | | |
|---|---|---|---|---|---|---|
| Model: Random effect (GLS) regression | | | | Number of observations = 300 | | |
| Panel variable: ID (strongly balanced) | | | | Number of groups | | 30 |
| Time variable: TIME, 2012 to 2021 | | | | Obs. per group | Minimum | 10 |
| $R^2$ | Within | 0.091 | | | Average | 10 |
| | Between | 0.304 | | | Maximum | 10 |
| | Overall | 0.299 | | Wald $chi^2$ (1) | | 37.9 |
| Correlation | (u-i, x) | 0 | | Prob $chi^2$ | | 0.04 |
| Parameter estimates statistics | | | | | | |
| FV | Coefficient | Std. error | z-Stat | Prob. | | |
| Constant | 6.201 | 1.486 | 4.172 | 0.021 | | |
| CG | −6.47 | 0.981 | −6.595 | 0 | | |
| FO | −45.029 | 12.108 | −3.71 | 0.034 | | |
| CG * FO | 17.721 | 5.602 | 3.163 | 0.042 | | |

The model utilized for testing the second sub-hypothesis is as follows:

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 MOit + \beta 3(CGit * MOit) + \varepsilon it \quad (6)$$

Table III examines the moderating effect of *MO* on the relationship between *CG* and *FV*. The Wald test chi-square for the overall model significance ($\chi^2 = 29.6$, $p < 0.05$) indicates that *CG*, *MO*, and the interaction between *CG* and *MO* collectively predicted *FV*. Approximately 19.3% ($R^2 = 0.193$) of the variability in *FV* was explained by *CG*, *MO*, and *CGMO*, while other factors accounted for the remaining 80.7%. Both *CG* ($\beta = -2.74$, $z = -6.143$, $p < 0.05$) and *MO* ($\beta = -29.99$, $z = -3.74$, $p < 0.05$) had significant negative effects on *FV*. The interaction coefficient $CG * MO$ was significantly positive ($\beta = 13.653$, $z = 4.345$, $p < 0.05$), indicating that the effect of *CG* on *FV* varied with different levels of *MO*. This suggests that the strength of the *CG-FV* relationship increased as *MO* levels increased. The study supported rejecting the third hypothesis ($H_{01b}$), concluding that *MO* positively and significantly moderated the association between *CG* and *FV*. The conclusions of the test for the third null sub-hypothesis are presented in Table IV.

$H_{01c}$: Foreign ownership structure does not significantly moderate the relationship between corporate governance and the value of non-financial firms listed at the Nairobi Securities Exchange.

The model used to test the third sub-hypothesis is as indicated below:

$$FVit = \beta 0 + \beta 1 CGit + \beta 2 FOit + \beta 3(CGit * FOit) + \varepsilon it \quad (7)$$

Table IV presents findings on the moderating influence of *FO* on the relationship between *CG* and *FV*. The Wald test chi-square value for the overall model significance ($\chi^2 = 37.9$, $p < 0.05$) indicates that *CG*, *FO*, and the interaction between *CG* and *FO* collectively predicted *FV*. Approximately 29.9% ($R^2 = 0.299$) of the variation in *FV* was explained by *CG*, *FO*, and $CG * FO$, with the remaining 70.1% attributed to other factors. Both *CG* ($\beta = -6.47$, $z = -6.595$, $p < 0.05$) and FO ($\beta = -45.029$, $z = -3.71$, $p < 0.05$) had a substantial negative impact on FV. The positive and significant coefficient of the interaction term *CGFO* ($\beta = 17.721$, $z = 3.163$, $p < 0.05$) indicates that the effect of *CG* on *FV* varied with different levels of *FO*, suggesting that the strength of the *CG-FV* relationship increased with higher levels of *FO*. The study rejects hypothesis $H_{01c}$, confirming that *FO* positively and significantly moderated the connection between *CG* and *FV*.

## 10. Conclusions and Discussions

The study confirms that OS moderates the relationship between CG and FV, rejecting the null hypothesis. It aligns with previous research by Sarpong-Danquah *et al*. (2022), suggesting that aligning governance structures with efficient managerial decision-making enhances productivity and firm performance. However, the study differs from Onguka *et al*. (2021) in its significant moderating influence due to its focus on non-financial listed firms, variations in ownership concentration, and differing stakeholder interests in both financial and non-financial firms. The study used a correlation and descriptive research methodology to explore the relationships between variables. However, it has limitations in establishing cause-and-effect relationships. Observing correlations does not necessarily imply direct causation, as causality is multifaceted. The study cannot definitively establish causation due to its design, and other factors, like intervening or moderating variables, may influence the observed relationships. The study offers valuable insights but cannot establish causal relationships or fully explore the intricacies of interactions among variables.

## Conflict of Interest

The authors declare that they do not have any conflict of interest.

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