Capital Structure, Chief Executive Officer Duality and Firm Performance. Evidence From Firms Listed in Securities Exchange, Kenya

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Abstract:

Purpose: *The primary aim of the study was to determine the moderating effect of Chief Executive Officer (CEO) duality on the relationship between capital structure and firm performance among firms listed on the Nairobi Securities Exchange (NSE). The investigation sought to clarify whether the dual role of the CEO as board chair influences the effectiveness of capital structure decisions on firm outcomes.*

Methodology: *The study employed a longitudinal research design, focusing on all 45 firms consistently listed on the NSE between 2011 and 2016, irrespective of industry classification. Secondary data were collected using a documentary review guide sourced from NSE Handbooks and published financial statements. Data analysis was conducted using fixed and random effects generalized least squares (GLS) regression models to estimate the effects of capital structure and the interaction with CEO duality on firm performance.*

Findings: *Regression analysis revealed that capital structure has a statistically significant positive effect on firm performance ($\beta_1 = 0.0311$, $p < 0.05$), suggesting that a higher debt ratio improves firm outcomes. However, CEO duality demonstrated a significant negative moderating effect ($\beta_2 = -0.029$, $\Delta R^2 = 0.054$, $p < 0.05$), indicating that when the CEO also serves as the board chair, the beneficial impact of capital structure on firm performance is diminished.*

Conclusion: *The study concludes that while capital structure decisions are central to firm performance enhancement through strategic financing, governance mechanisms, particularly CEO duality, can either facilitate or constrain these effects. The presence of CEO duality appears to weaken the positive influence of debt utilization on firm performance due to potential conflicts of interest and reduced board independence.*

Value: *This study provides vital insights for corporate governance and financial policy in emerging capital markets. It recommends that listed firms adopt clear governance frameworks that preserve accountability and minimize entrenchment risks associated with CEO duality. Moreover, regulatory bodies may consider policies limiting dual roles or instituting checks and balances to safeguard shareholder value. Expanding the scope of similar studies to include a broader sample of firms and timeframes can further inform governance reforms and sustainable growth strategies in developing economies.*

Keywords: *CEO duality, Capital Structure, Firm Performance*

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1.Introduction

Firm performance refers to an organization's ability to effectively utilize and manage resources to achieve competitive advantage. Performance is commonly measured through financial indicators such as profitability, liquidity, and shareholder wealth, as well as non-financial indicators like innovation, product quality, customer satisfaction, and employee development (Ibrahim & Lloyd, 2011; Erasmus, 2013). Shareholders often evaluate financial performance using ratios derived from financial statements or stock prices to determine how much wealth has been created over time (Berger & Patti, 2014). Measuring performance therefore requires considering productivity, profitability, and market value dimensions, alongside the time frame and benchmarks against which performance is compared (Carneiro et al., 2007).

A critical determinant of performance is a firm's capital structure, which is the mix of debt and equity financing used to fund operations and growth (Shapiro & Balbirer, 2014; Damodaran, 2015). The debate around whether there exists an optimal capital structure remains central in corporate finance (Myers, 2015). Empirical studies provide mixed evidence: some suggest debt enhances profitability by providing tax benefits and financial discipline (Berger & di Patti, 2014; Hutchinson, 1995), while others find that excessive leverage creates agency conflicts and reduces profitability (Fama & French, 2013; Majumdar & Chhibber, 2015). These divergent findings highlight the complexity of the capital structure–performance relationship across contexts and industries.

Alongside financing decisions, corporate governance particularly CEO duality plays a role in shaping firm performance. CEO duality arises when the same individual serves as both the Chief Executive Officer and Chairperson of the board. Proponents argue that it strengthens leadership, enhances quick decision-making, and improves responses to external shocks (Boyd, 1995; Goyal & Park, 2002). However, critics warn that combining the two roles may weaken oversight, reduce board independence, and undermine accountability (Fosberg, 2004; Sheikh & Wang, 2012). Empirical studies also report mixed findings, with some showing positive, negative, or insignificant effects of CEO duality on firm leverage and performance (Abor, 2007; Nazir et al., 2012). This lack of consensus makes CEO duality a significant governance variable worth exploring in relation to capital structure.

In Kenya, the Nairobi Securities Exchange (NSE) plays a vital role in mobilizing capital, yet many listed firms have shown fluctuating performance despite meeting initial listing requirements (Ngugi, Amanja & Maana, 2009; Maina & Sakwa, 2010). While successful firms such as Safaricom and East African Breweries have consistently performed well, others like Kenya Airways and Eveready have struggled, raising concerns about corporate financial health and investor confidence. Previous studies in Kenya have investigated capital structure and profitability (e.g., Lokong, 2013; Muia, 2014), but findings remain inconclusive, and few have examined the moderating role of CEO duality. This study therefore seeks to fill this gap by establishing how capital structure influences the performance of NSE-listed firms and whether CEO duality strengthens or weakens this relationship.

2. Theoretical review

The Static Trade-Off Theory posits that firms determine their optimal capital structure by balancing the benefits of debt, such as tax shields, against the costs of bankruptcy, agency conflicts, and financial distress (Jensen & Meckling, 2013; Frank & Goyal, 2014). While debt can enhance performance by providing financing discipline, excessive leverage may harm profitability and increase default risk. In contrast, the Pecking Order Theory suggests that

managers prefer internal financing first, followed by debt, and only issue equity as a last resort, largely to minimize information asymmetry and control costs (Myers, 2014; Hawawini & Viallet, 2014). This hierarchy reflects a firm's preference for retaining control, lowering disclosure costs, and avoiding negative market perceptions of equity issues, although leverage may also signal poor future performance if overused.

The Agency Cost Theory emphasizes the conflicts between managers and shareholders, noting that debt can act as a disciplinary tool to reduce free cash flow misuse, thereby lowering inefficiencies and improving performance (Jensen, 2014; Stulz, 2013). However, high debt may also limit investment opportunities, highlighting the delicate balance firms must strike in financing decisions. Complementing this, the Stewardship Theory provides an alternative governance perspective by assuming managers act as stewards aligned with shareholder interests (Davis et al., 1997). It argues that CEO duality when the CEO also chairs the board can strengthen leadership unity, streamline decision-making, and positively influence firm performance (Donaldson & Davis, 1991; Boyd, 1995). Together, these theories offer competing but complementary insights into how capital structure and governance mechanisms shape firm outcomes., 1995).

3. Empirical Review Hypothesis development

Empirical studies across different contexts have produced mixed results on the relationship between capital structure and firm performance. Lu and Fang (2008) analyzed 234 listed companies in China and found a significant negative correlation between capital structure and performance, a result echoed by Lijia (2010) in a study on China Aerospace, and by Jesen, Solberg, and Zorn (1992), who observed a negative link between debt ratios and business performance. Similarly, Velnampy and Aloy (2012), in their study of ten listed Sri Lankan banks, reported a negative association between capital structure and profitability, noting that banks are highly leveraged, with debt representing 89% of total assets.

On the other hand, some research points to a positive relationship. For example, Song and Zhang (2010) found a positive correlation in state-owned holding companies in Liaoning Province, while Juan and Yang (1998) observed similar results among 461 listed firms on the Shanghai Stock Exchange. Long and Zhang (2003), focusing on China's power industry, also found capital structure to be positively associated with performance. Masulis (2013) further confirmed that higher levels of liabilities can positively influence firm performance, suggesting that in some contexts, debt financing may enhance profitability.

Other studies suggest a non-linear or insignificant relationship. Du and Jiang (2009) reported no significant correlation between capital structure and performance among Shanghai and Shenzhen listed firms, while Cheng (2004) found that changes in asset-liability ratios had little effect on performance. Lu and Fang (2008) additionally identified a secondary linear correlation, indicating complexity in the relationship. Moreover, Long and Zhang (2009) and Zhu (2010) found an inverted U-shaped relationship in Anhui and Shandong Provinces, respectively, where performance improves with leverage up to a certain point, after which excessive debt reduces performance. Based on these mixed findings, the study hypothesized that: H01: Capital structure significantly affects firm performance.

H_1: *capital structure significantly affects firm performance.*

Empirical evidence on CEO duality and firm performance remains mixed across different contexts. Rashid (2010) examined 825 firm-years in Bangladesh using 2SLS regression and found no significant relationship between CEO duality and performance, though the effect varied across industries. Similarly, Baptista et al. (2011), analyzing 204 Turkish firms, reported a negative effect of CEO duality on ROA, ROE, and Tobin's Q, supporting agency theory. Other studies such as Abdullah (2004), Chen et al. (2005, 2008), and Faleye (2007) reported no significant link between CEO duality and firm performance, while Peng et al. (2007) and Yu (2008) found mixed results in China, with duality positively influencing performance in certain periods.

In addition, several studies highlight industry, ownership, and governance contexts as important moderators. Lam and Lee (2008) found CEO duality negatively affected accounting performance in family firms but positively in other businesses, while Ehikioya (2009) showed a negative but insignificant relationship in Nigeria. Gill and Mathur (2011) identified a positive effect of CEO duality on firm value in Canadian manufacturing, and Valenti et al. (2011) found no significant relationship in U.S. companies. Ujunwa (2013) revealed a negative relationship between duality, board size, and gender diversity with performance in Nigeria, while Yıldız and Doğan (2012) showed CEO duality improved mutual fund company performance. These findings suggest the duality–performance link is highly contingent on institutional and organizational settings.

Scholars have also connected CEO duality with corporate financing and leverage decisions. Hart (1995) and Fosberg (2004) found duality influences capital structure, with CEOs holding both roles often pursuing higher debt policies. Abor and Biekpe (2014) similarly reported a positive relationship between CEO duality and firm gearing, aligning with agency cost arguments that concentrated CEO power may encourage risk-taking. Conversely, governance scholars argue duality weakens board oversight and increases agency costs (McWilliams & Sen, 2001; Core et al., 1999), though stewardship theory suggests it can strengthen leadership unity and decision-making efficiency. Based on these mixed results, this study hypothesizes that:

H2: CEO duality significantly moderates the relationship between capital structure and firm performance.

4. Methodology

This study adopted an explanatory research design with a quantitative approach to investigate the causal relationship between capital structure, CEO duality, and firm performance among firms listed on the Nairobi Securities Exchange (NSE). The target population comprised 67 firms consistently listed between 2011 and 2016, with a final purposive sample of 45 firms selected after excluding delisted or suspended companies. Secondary data was collected through content analysis of annual financial statements and investor reports covering earnings per share, profitability, firm size, firm age, and leverage. Capital structure was measured using the debt-to-equity ratio, as recommended by prior literature (Rajan & Zingales, 1995), while firm performance was proxied by earnings per share, which reflects the return to shareholders after deducting all business expenses, interest, and taxes.

Data analysis was conducted using descriptive statistics, correlation, and multiple regression models with Stata Version 13, testing hypotheses at a 95% confidence level. The analytical framework applied three models: a control-effect model including firm size and age, a direct-effect model incorporating capital structure and CEO duality, and a moderating-effect model

that introduced the interaction between capital structure and CEO duality. These models were designed to establish whether firm performance—measured by return on assets (ROA)—is influenced by capital structure and CEO duality, and whether CEO duality moderates this relationship.

The direct panel regression model for panel data used in this study is given as;

Control effect

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad \textit{model 1}$$

Direct effect

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}Cap_{it} + \beta_{4it}CEOd_{it} + \varepsilon \ldots\ldots \textit{model 2}$$

Moderating effect

$$FP_{it} = \beta_{0it} + \beta_{1it}SIZE_{it} + \beta_{2it}AGE_{it} + \beta_{3it}Cap_{it} + \beta_{4it}CEOd_{it} + \beta_{5it}Cap_{it} * CEOd_{it} + \varepsilon \ldots\ldots \textit{model 3}$$

Where,

y =financial performance measured by Return on Asset (ROA), α = constant, $\beta_1 \ldots \beta_5$= the slope which represents the degree in which financial performance changes as the independent variable change by one unit variable, Size = firm size, Age = firm age, Cap= capital structure, CEOd = CEO duality, ε = error term, t = measure of time, i = number of firm observation

5. Results And Discussions

This section presents the findings of the study and the discussion with reference to existing literature of the information that was collected view of the specific objectives. The analysis of the data was conducted using descriptive statistics such as means and standard deviations and correlation analysis. The findings were presented in such a manner as to address and test the stated hypotheses.

Descriptive statistics

The study collected data a sample of 45 firms listed in NSE for the past 5 years from 2011-2016. The study sought to establish the descriptive statistics of the panel data especially with regard to the mean, standard deviation and maximum and minimum values. The findings were summarized and presented in Table 1.

Table 1: Descriptive Statistics

Variable		Mean	Std. Dev.
Capital structure	Overall	8.879474	7.43178
	Within		2.98736
Firm size	Overall	6.79807	0.7120082
	Within		0.6800177
Firm age	Overall	56.24561	24.83161
	Within		22.85487
EPS	Overall	1.376726	3.41748
	Within		3.18797
CEO duality	Overall	0.33489	0.29057
	Within		0.14528

The findings in Table 1 revealed a mean of 8.879 for capital structure with an overall standard deviation of 17.432 and within standard deviation of 12.987. With regard to the firm size, the overall mean was 6.798 with an overall standard deviation of 0.712 and within standard deviation of 0.680. The overall mean for the firm age was 56.245 with an overall standard deviation of 24.831 and within standard deviation of 22.854. EPS, representing the measure of firm performance has a mean of 1.377 with an overall standard deviation of 3.417 and a within standard deviation of 3.188. Finally, the interaction of CEO duality and capital structure has a mean of 4.335 with an overall standard deviation 15.391 and a within standard deviation of 12.845.

Correlation Analysis

Correlation analysis is usually carried to determine the degree to which two variables converge or diverge together depending on the case so as to establish the significance of the relationship. As such, a positive value of the correlation coefficient shows that the two variables move together in the same trend, and when there is a negative value, it shows that the variables move in opposite direction or trend. Essentially, correlation analysis depicts to a given degree, the aspect of how one factor influences another although correlations do not imply a cause-effect relationship. Consequently, a correlation analysis of the independent factors and the dependent factor was carried out and the findings were summarized and presented in Table 2.

Table 2: Correlation Analysis

	EPS	Capital structure	CEO duality	Firm size	Firm age
EPS	1				
Capital structure	0.1599*	1			
CEO duality	0.2676*	0.0533	1		
Firm size	0.0847	-0.0479	0.335*	1	
Firm age	0.0253	-0.1944*	0.0312	0.042	1

* Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 4.2 revealed that although the year has a positive relationship with firm performance (EPS), the relationship is not significant at 0.05 level of significance. Furthermore, capital structure was found to have a positive and significant relationship with firm performance (EPS), r = 0.1599 at 0.05 level of significance. This implied that there is a probability of 0.1599 that firm performance will increase with increase in capital structure. In addition, CEO duality has a positive and significant relationship with firm performance (EPS), 0.2676 meaning that there is 26.76% chance that firm performance will increase with increase in CEO duality. However, firm size (0.0847) and firm age (0.0253) did not have a significant relationship with firm performance (EPS).

Hypothesis Testing

The Hausman test results ($\chi^2 = 4.15$, $p = 0.5284$) indicate that the random effects model was more appropriate than the fixed effects model for this study. Since the p-value was greater than the 0.05 threshold, the null hypothesis that random effects are consistent and efficient could not be rejected. This suggests that the unobserved firm-specific effects were not correlated with the explanatory variables, thus validating the choice of random effects estimation for interpreting the results.

The explanatory power of the models improved as more variables were added. Model 1, with only control variables, explained about 10.7% of the within-firm variation in performance, while Model 2, which included capital structure and CEO duality, increased explanatory power to 34.1%. Model 3, incorporating the interaction term, explained 35% of the variation, with an R-change of 0.054. The F-statistics for Models 2 ($p = 0.0211$) and 3 ($p = 0.0391$) were significant, confirming that the models were well-fitted and that the included predictors jointly explained firm performance among NSE-listed companies.

The results for Hypothesis 1 showed that capital structure, measured by the debt-to-equity ratio, had a positive and statistically significant effect on firm performance ($\beta = 0.0415$, $p < 0.05$). This supports the notion that a balanced use of debt financing can enhance firm performance by providing tax shields and disciplining managerial behavior, consistent with findings by Berger & di Patti (2014) and Hutchinson (2015). However, the relatively modest coefficient suggests that while leverage can improve performance, its effect is not overwhelming, echoing mixed evidence in the literature that excessive debt may harm long-term profitability (Fama & French, 2013).

For Hypothesis 2, CEO duality alone did not significantly affect firm performance (β = -0.432, p > 0.05). However, the interaction term between capital structure and CEO duality was negative and statistically significant (β = -0.301, p < 0.05), suggesting that CEO duality weakens the positive impact of capital structure on firm performance. Importantly, the inclusion of the interaction term in Model 3 led to a slight improvement in explanatory power, with the R-square increasing from 0.341 to 0.350 (R-change = 0.054). This indicates that while the moderating effect was statistically significant, its contribution to explaining additional variance in firm performance was modest. The findings align with agency theory, which argues that CEO duality reduces board independence and increases governance risks (Core et al., 1999; McWilliams & Sen, 2001). Conversely, they contrast with stewardship theory perspectives that view duality as enhancing leadership unity and decision-making efficiency (Donaldson & Davis, 1991). In the Kenyan NSE context, the results suggest that CEO duality may undermine the benefits of debt financing by eroding effective oversight.

Table 3: Hierarchical Random

	Model 1 **Beta (std. Error)**	**Model 2** **Beta (std. Error)**	**Model 3** **Beta (std. Error)**
(Constant)	-3.047 2.508	-3.146 2.47	-3.269 2.487
Control variables			
Firm size	0.582 (0.344)	0.520 (0.339)	0.531 (0.3417)
Firm age	0.008 (0.010)	0.0101 (0.0103)	0.0111 (0.2003)
Independent variable			
Capital Structure		0.0456* (0.0176)	0.0415* (0.0188)
CEO Duality		-0.289 (0.711)	-0.432 (-0.663)
Interaction effects			
Capital Structure*CEO duality			-0.301(--0.211) **
Model Summary			
R Square within	0.107	0.341	0.350
R change	0.017	0.052	0.054
F	1.53	3.32	2.58
Prob > F	0.2092	0.0211	0.0391
sigma_u	1.2698	1.31712	1.32573
sigma_e	3.481	3.428	3.443
rho	0.11742	0.1286	0.12914
chi2(5)	4.15		
P value	0.5284		

Dependent variable: Firm performance (EPS)

*Values of standardized regression coefficients with standard errors in parenthesis *p<0.05*

The results displayed in Figure 1 illustrate the moderating role of CEO duality in the relationship between capital structure and firm performance. The slopes of the lines indicate that as capital structure (CS) increases from low to high, firm performance (FP) consistently declines across all levels of CEO duality. However, the rate of decline differs depending on the degree of CEO duality. Firms with high CEO duality show the steepest negative slope, suggesting that greater concentration of leadership power significantly worsens the adverse impact of higher leverage on performance. In contrast, firms with low CEO duality exhibit the weakest negative slope, meaning their performance is less sensitive to increases in debt financing.

This pattern demonstrates an antagonistic moderation effect, where CEO duality does not mitigate but rather amplifies the negative consequences of high capital structure on firm performance. Instead of providing unified leadership and efficiency as suggested by stewardship theory, duality in this context undermines board independence, increases the risk of managerial entrenchment, and weakens monitoring mechanisms. As a result, firms with CEOs who also serve as board chairs are more vulnerable to the adverse outcomes of excessive leverage, thereby confirming the agency theory argument that CEO duality reduces accountability and shareholder protection. These findings emphasize the governance risks of CEO duality in highly leveraged firms, suggesting that separating leadership roles may help moderate the financial risk associated with capital structure decisions.

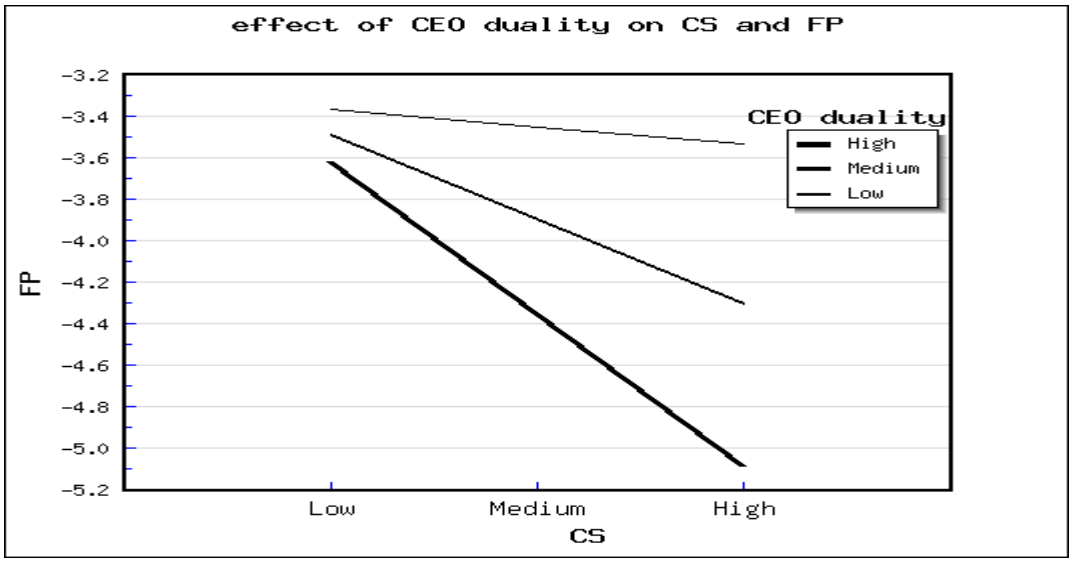

Figure 1: Moderating Effect of CEO Duality on the Relationship between Capital Structure and Firm Performance

6. Conclusion

The primary objective of this study was to examine the effects of capital structure and CEO duality on firm performance among companies listed at the Nairobi Securities Exchange. Specifically, the study aimed to determine the effect of capital structure on firm performance and to establish the moderating effect of CEO duality on the relationship between capital structure and firm performance.

The findings on capital structure revealed a significant relationship with firm performance, even after controlling for firm size and firm age. This underscores the importance of capital structure as a critical determinant of how firms finance their operations and growth through different sources of funds. Capital structure, viewed as a mix of debt and equity, directly influences a firm's ability to sustain operations, pursue new investments, and ultimately meet stakeholder needs. Firms with sound financing strategies are therefore better positioned to remain competitive, achieve growth, and enhance shareholder value.

With respect to CEO duality, the results showed that duality significantly moderates the relationship between capital structure and firm performance. When the CEO also serves as the

board chair, the concentration of power increases the risk of managerial entrenchment and weakens the board's ability to objectively evaluate and discipline the executive. Such entrenchment creates opportunities for the CEO to pursue personal interests at the expense of shareholder value, thereby undermining firm performance. These findings highlight the governance risks associated with CEO duality and suggest that separating the roles of CEO and board chair may strengthen oversight and protect shareholder welfare.

7.Recommendations

Basing on the findings of the study, it is evident that capital structure plays a critical role in how firms finance their operations and growth. Managers should therefore adopt strategies that ensure an optimal mix of debt and equity to balance risk and return. In particular, firms should diversify their product and investment portfolios to generate stable cash flows and reduce overdependence on a single revenue stream. This would not only enhance financial flexibility but also enable firms to meet their obligations to shareholders while sustaining long-term growth. Larger firms with diversified operations typically enjoy more stable earnings, allowing them to manage leverage more effectively.

From a managerial perspective, boards of directors and senior executives should institutionalize capital structure decisions into their strategic planning processes. Regular reviews of leverage levels, sensitivity analyses, and scenario planning would help managers anticipate financial risks and make more informed financing choices. Furthermore, managers must pay close attention to governance practices, particularly in contexts where the CEO also serves as the board chair. Strong internal controls, performance monitoring mechanisms, and separation of oversight responsibilities are essential to reduce the risks of managerial entrenchment under CEO duality.

At the policy level, regulators such as the Capital Markets Authority (CMA) and Nairobi Securities Exchange (NSE) should strengthen corporate governance codes to provide clear guidelines on CEO duality. This includes encouraging role separation between CEO and chairperson positions or, at the very least, requiring robust disclosure and justification when duality is practiced. Policies should also promote transparency in capital structure reporting, mandatory shareholder engagement on leverage policies, and sector-specific debt exposure benchmarks. These measures will improve accountability, protect shareholders, and minimize systemic risks associated with poorly managed leverage.

The theoretical implications of the study enrich both agency theory and stewardship theory. The findings suggest that while capital structure positively influences firm performance, CEO duality can act as an antagonistic moderator, amplifying the risks of debt mismanagement. This reinforces agency theory, which cautions that concentrated leadership power weakens oversight and increases self-serving behavior. However, in contexts with strong governance frameworks and clear operational policies, stewardship theory may still apply by enabling dual CEOs to provide unified leadership. Thus, the study highlights the contingent nature of CEO duality and contributes to the ongoing debate on whether it strengthens or undermines firm performance, particularly in emerging market settings such as Kenya.

8. Future Research

The study primary focus of this study was to establish the effect of capital structure and CEO duality on firm performance among listed firms in Kenya. The findings have pointed to the existence of a positive relationship between capital structure and firm performance controlling for firm size and firm age in a random effect model which assumes the absence of time invariant

variables such as the gender of the CEO and executive, board independence and others. Thus, there is need to carry out further research while also including such time- invariant variables and partial time invariant variables. In addition, there is need to pool in more firms that are listed on the stock exchange in order to enrich the data while providing an even firmer platform for regulators and policy makers to develop even more sound policies and frameworks that would guide the growth of the firm and safeguard the shareholders against loses.

Furthermore, the data utilized in this research was secondary data obtained from the Nairobi Securities Exchange. Thus, more research can be carried out by utilizing a research design that would enable collection and utilization of primary data from the firms thereby developing a confirmatory mechanism to the findings of this study.

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