OWNERSHIP STRUCTURE, AGENCY COSTS, BOARD INDEPENDENCE AND CORPORATE RISK AMONG FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE, KENYA

ABSTRACT

This study explored how ownership structure influences corporate risk in firms listed on the Nairobi Securities Exchange, with agency costs acting as a mediator and board independence as a moderator. Guided by agency theory and supported by mean variance-portfolio theory, stewardship theory, and resource dependence theory, the research adopted a positivist approach and employed a causal survey design to investigate the relationships between ownership structure, agency costs, board independence, and corporate risk. Panel data from 61 firms over an 11-year period (2011-2021) was analysed.

The findings revealed that foreign ownership, government ownership, and diffuse ownership were negatively correlated with corporate risk, while managerial ownership showed a positive relationship with risk. However, managerial, corporate, and diffuse ownership had insignificant effects on corporate risk. Agency costs had a minimal mediating effect, but board independence significantly influenced the relationship between ownership structure and corporate risk.

The study recommends diversifying ownership to avoid excessive control by a few shareholders, which could increase risk. It also suggests encouraging corporate ownership for long-term stability and attracting foreign ownership to benefit from better risk management practices. For firms with government ownership, enhanced risk management strategies are advised. Lastly, balancing board composition with both independent and non-independent directors is recommended to reduce management influence, and effective systems to monitor and control agency costs should be implemented to mitigate potential risk.

In conclusion, the study highlights the complex interplay between ownership structure, agency costs, and board independence in shaping corporate risk, with practical implications for firms seeking to manage and reduce their risk exposure.

Key words: ***Ownership structure ,Agency Cost ,Board independence ,Corporate Risk***

1.INTRODUCTION

In contemporary management of corporations, understanding the interrelationship among ownership structure, board independence and agency cost is fundamental to understanding organizational performance, stability and corporate risk. Ownership structure defines how equity is distributed among shareholders, influencing the degree of control and influence exercised by different stockholders.

Agency costs arise due to conflicting interests of shareholders and management. Effective board independence can help align managerial actions with shareholder interests, thereby reducing .and consequently lowering agency expenses. Additionally, the interaction of ownership structure and board independence affects the organization's risk profile, as different structures can either mitigate or exacerbate corporate risk. The structure of a company's ownership is crucial for good corporate governance because it influences decision-making at the top of the organization which in turn impacts a firm's efficiency and corporate risks (Jensen &Meckling,1976).In today's corporate landscape, ownership structures of firms can either mitigate or amplify corporate risk. The board and the managers of a firm can be influenced by its shareholders. Principal-agent conflicts may arise because ownership and management responsibilities are separated . Managers' self-interest may cause them to misuse corporate assets, such as pursuing excessively risky or reckless projects that hurt the firms' capital providers and owners (Shleifer &Vishny,1986). This thesis explores how varying ownership structures affect corporate risk in the presence of board independence and agency costs.

Research indicates that corporate risks are affected by ownership structure, the degree of board independence, and agency costs. According to Paligorova (2010), corporate risks is influenced by ownership structure. When firm managers engage in activities that are in conflict with the desires of owners of the firms, agency costs arise. To minimize agency costs, the firm is compelled to create an independent board in order to monitor firm activities. Independent board can contribute independent views and proactively engage in monitoring firm activities (Fuzi et al.,2016). Independent board also ensures that corporate risks that may emanate from bad corporate governance are detected and remedied (Paligorova,2010).

Globally, listed companies' ownership and board structures differ from one nation to the next. Germany utilizes an organizational format that is a two-tier structure. One level is the executive level, headed by a chief executive officer (CEO). The other tier is a supervisory board, led by chairpersons. Likewise, in China, there exists a two-tier system of board structure comprising the executive and non-executive board of directors (Khan et al.,2020). In a one-tier system like that of the USA and Kenya, the board chairperson and the Chief executive officers sit in the same board. In Kenya, the Capital Markets Authority (CMA) regulates the listed firms. The firms have to restructure their boards as per the CMA corporate governance guidelines. Firms listed on Nairobi Securities Exchange (NSE) comprise foreign owned and locally owned firms (NSE, 2021). Foreign ownership limits were lifted in 2015 so foreigners can own over 75% of shares of NSE listed firms.

2. RESEARCH PROBLEM

Corporate governance research has predominantly focused on the role of boards, with less attention given to shareholders or firm owners. One critical area of research is the relationship between ownership structure and corporate risk, an issue that has been explored in limited, often contradictory studies. Research indicates that ownership structure can influence a firm's risk level, but the findings are inconsistent. Some scholars argue that ownership structure significantly affects corporate risk, while others suggest it has minimal or even negative impacts. For instance, Boubakri et al. (2013), Marchini et al. (2020), and Laporsek et al. (2021) consider ownership structure a key determinant of risk, while Langit and Adhariani (2017) claim it negatively impacts corporate risk and governance standards. Studies by Adachi (2016) and Chun and Lee (2017) find no significant relationship between ownership structure and corporate risk, while Paligorova (2010) contends that ownership concentration increases corporate risk.

A study by Marchini et al. (2020) on Italian firms highlights a potential contextual gap, as board structures in Italy differ from those in Kenya. Additionally, Marchini et al.'s study was cross-sectional, which may limit the comprehensiveness of the findings. The relationship between ownership structure and corporate risk remains underexplored, with scholars suggesting that factors like agency costs and board independence could influence this relationship. For example, Coles et al. (2008) emphasize the importance of both ownership structure and board composition for firm performance. Gadhoum and Ayadi (2003) also examine the connection between ownership and risk, while Paligorova (2010) asserts that an independent board can help monitor and mitigate corporate risks.

Although many studies indicate a complex relationship between ownership and corporate risk, gaps remain in understanding the impact of agency costs and board independence. Langit and Adhariani (2017) did not examine how agency costs mediate the ownership-risk relationship, presenting a conceptual gap. Similarly, Hastori et al. (2015) treated agency costs as an independent variable, but it is better viewed as an intervening variable in the current research. Mironenkova and Yahaya (2024) studied ownership type and firm performance in Nigeria, finding that institutional and CEO ownership positively affect performance, but did not address moderating or mediating variables.

Tarus et al. (2020) focused on ownership structure's impact on risk management among non-financial firms listed on the Nairobi Securities Exchange (NSE), finding a significant positive impact. However, their study is limited to non-financial firms, and its findings cannot be generalized across all sectors. The current research aims to address this by examining all listed firms, providing more comprehensive insights for regulators and policymakers.

Chumba (2015) found that board size negatively affected risk-taking at the NSE, while board independence moderated the relationship between board performance and corporate risk. However, Chumba treated board independence as an explanatory

variable, whereas the current research views it as a moderating variable. Similarly, Mukaria (2021) explored the effect of agency costs and firm size on equity distribution and valuation, with agency costs as a mediating variable. The current research focuses on corporate risk as the dependent variable, with agency costs operationalized as operating expenses relative to annual revenue and board independence as a moderating variable.

The lack of consensus on the relationship between ownership structure and corporate risk, along with the contradictory findings in the literature, suggests the presence of other variables that influence this relationship. This research aims to address conceptual, methodological, and contextual gaps by investigating how agency costs and board independence affect the ownership-risk relationship in firms listed on the NSE, Kenya. The study will contribute to a better understanding of the mechanisms linking ownership structure to corporate risk, particularly in the context of emerging markets.

3.THEORETICAL FOUNDATION

Several distinct theories underlie this research study, and four of them were identified for discussion. The first and most influential was agency theory, which served as the study's anchor theory. The other three: stewardship theory, resource dependency theory and mean variance-portfolio theory, were also employed in the investigation. Agency theory, proposed by Jensen and Meckling (1976), explores the conflicts between managers (agents) and shareholders (principals), highlighting how agency problems arise when managers act in their own interests, potentially leading to agency costs and affecting corporate governance. The Mean Variance-Portfolio Theory (Markowitz, 1959) focuses on balancing risk and return in investment decisions, emphasizing the importance of selecting optimal asset portfolios for firms. Stewardship theory (Donaldson & Davis, 1991) challenges agency theory by positing that managers, motivated by intrinsic rewards, generally act in the best interests of shareholders, fostering cooperative partnerships. Resource Dependence Theory (Salancik, 1978) examines how firms rely on external resources for survival and success, asserting that greater control over resources can reduce corporate risks and enhance strategic decision-making, though it faces criticism for its narrow focus on one-way dependencies.

4.EMPIRICAL LITERTURE REVIEW

Research on the relationship between ownership structure and corporate risk reveals diverse and sometimes contradictory findings, highlighting several conceptual, contextual, and methodological gaps. For instance, Lotfi and Mohammadi (2014) found that ownership structure positively influences risk management in Iran, while Farwis and Azeez (2019) observed that management ownership reduces firm risk, but concentrated and institutional ownership increases it. These studies did not explore the impact of agency costs and board independence on firm risk, creating a conceptual gap.

Chun and Lee (2017) found that ownership structure reduces risk-taking in Japanese firms, but their study's context differs from that of Kenyan firms, presenting a contextual gap. Similarly, Marchini et al. (2020) showed that higher ownership concentration reduces risk-taking, though their focus on Italian firms creates a contextual gap with Kenyan firms, where board structures may differ. Tarus et al. (2020) focused on non-financial firms listed on the NSE and found that ownership structure positively impacts risk management, but they did not explore how ownership type influences board structure, which introduces a conceptual gap.

Zhang et al. (2018) explored the impact of state ownership and board independence on stock return volatility in China, finding governance factors influencing risk, but their study focused on non-financial firms, whereas the current study examines all firms listed on the NSE, addressing a contextual gap. Hastori et al. (2015) investigated agency costs and their relationship with corporate governance, concluding that agency costs affect corporate risk, but they treated agency costs as an independent variable, while the current study views it as a mediating variable, presenting a conceptual gap. They also did not explore how ownership impacts board structure.

Mutende (2018) found that agency costs positively affect firm performance, particularly when free cash flows are considered. Unlike Mutende's study, which treated agency costs as an independent variable, the current research treats it as an intervening variable. Chinelo and Iyiegbuniwe (2018) examined how ownership structure and corporate governance influence agency costs in Nigerian firms, but their focus was on governance and ownership, whereas the current research centers on ownership structure and corporate risk. Weak governance, as they noted, often leads to increased corporate risk.

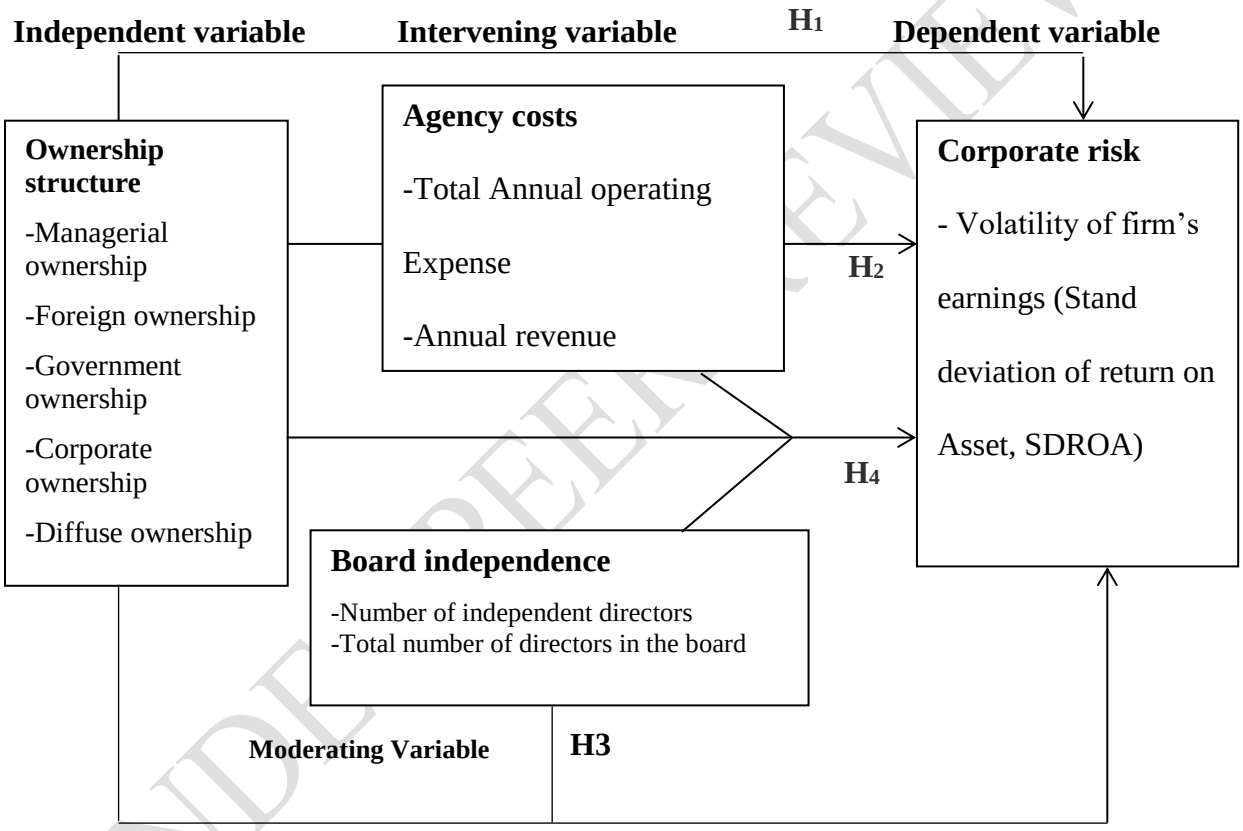
Warisa et al. (2019) found that board independence and family ownership structures significantly impact risk-taking. However, they treated board independence as an explanatory variable, while the current study views it as a moderating variable, creating a conceptual gap. Similarly, Chumba (2015) explored how board structure and performance influence risk-taking, but in his study, board independence was an explanatory variable, while the current research treats it as a moderator. Chumba's use of an explanatory research design also contrasts with the causal research design employed in the current study, presenting a methodological gap.

Overall, the existing literature demonstrates inconsistent findings and a variety of gaps, particularly in how agency costs and board independence mediate or moderate the relationship between ownership structure and corporate risk. These gaps suggest the need for further research, particularly in the context of Kenyan firms listed on the Nairobi Securities Exchange (NSE).

5.CONCEPTUAL FRAMEWORK

The conceptual framework links ownership structure (explanatory variable), agency costs (mediating variable), board independence (moderating variable), and corporate risk (dependent variable), proposing that board independence moderates the impact of ownership structure on corporate risk by enhancing governance and risk management, while agency costs mediate this relationship by influencing the alignment of shareholder interests and managerial behavior.

Figure 1: Conceptual Model



The study hypothesized that ownership structure influences corporate risk among listed firms at Nairobi Securities Exchange and that the relationship is mediated by agency costs and further moderated by board independence. The hypotheses to be tested were:

H_1. There is no significant effect of ownership structure on corporate risk among listed firms at NSE.

H_2. There is no significant intervening effect of agency costs on the relationship between ownership structure and corporate risk among firms listed on the NSE.

H_3. There is no significant moderating effect of board independence on the relationship between ownership structure and corporate risk among firms listed on NSE.

H_4. There is no significant joint relationship of ownership structure, agency costs and board independence on corporate risk among listed firms at NSE.

6.RESEARCH METHODOLOGY

The study utilizes a causal survey research design, which is effective for exploring the causal relationships between key variables like ownership structure, agency costs, and board independence, and their impact on corporate risk. This approach is ideal for examining how these variables influence corporate risk in a natural setting without the need to control or manipulate the variables. By focusing on relationships rather than causality in a controlled environment, it provides valuable insights into the patterns and connections between the studied factors.

The research benefits from a well-defined study population, consisting of 63 companies listed on the Nairobi Securities Exchange (NSE) as of December 31, 2021. Data were gathered from secondary sources, specifically NSE yearbooks, over an extensive period of 11 years (2011–2021). This comprehensive approach ensures a robust dataset and offers a detailed longitudinal view of the variables under study. The use of panel data allows for analyzing firms that were listed for the entire period, as well as those that joined or were delisted during the timeframe. Missing data were handled effectively with unbalanced panel data analysis, ensuring the integrity and accuracy of the dataset.

The study operationalizes four key variables with clear and measurable indicators: Corporate Risk (the dependent variable) is quantified using the standard deviation of Return on Assets (ROA). Ownership Structure, the independent variable, includes various forms of ownership (managerial, foreign, government, corporate, and diffuse), each represented as a ratio. Agency Costs, the intervening variable, are measured as the ratio of operating expenses to revenue. Lastly, Board Independence, the moderating variable, is captured by the ratio of independent directors to the total board size. These well-defined variables help to ensure precision in analyzing the relationships between them.

A range of diagnostic tests were conducted to validate the assumptions underlying the data and regression models, including tests for stationarity, multicollinearity, normality, serial correlation, and heteroscedasticity. These tests are crucial for ensuring the robustness of the model, as they address potential issues like data inconsistency and incorrect significance estimates that could distort the findings. The study's attention to detail in diagnostic testing ensures reliable results and reduces the risk of errors in analysis. The study conducted several diagnostic tests to ensure the validity of the regression model and address potential issues like spurious results. These tests included the Bera-Jarque normality test**,** which confirmed that the residuals followed a normal distribution, and the Variance Inflation Factor (VIF)**,** which showed no significant multicollinearity among the predictor variables. The Breusch-Pagan test for heteroscedasticity indicated consistent variance in the error terms, while the Dickey-Fuller test confirmed that all variables were stationary, avoiding spurious regression. The Wooldridge test for autocorrelation revealed no first-order autocorrelation in the residuals, and the Hausman test indicated that a random-effects model was more appropriate than a fixed-effects model. Overall, these diagnostic tests affirmed that the data met the necessary assumptions for regression analysis, ensuring the robustness and reliability of the study's findings.

For data analysis, the study employs linear multiple regression and other statistical techniques to assess the relationships between the variables. The use of regression coefficients and p-values enables precise hypothesis testing. The analysis investigates several key aspects: the effect of ownership structure on corporate risk, the mediating role of agency costs in this relationship, the moderating effect of board independence, and the joint influence of ownership structure, agency costs, and board independence on corporate risk. These complex analyses provide a nuanced understanding of how these factors interact to influence corporate risk.

Finally, the study's use of regression models allows for clear interpretation of the results, particularly through the coefficient of determination (R^2) and the significance of coefficients. By testing for moderation and mediation, the study provides insights into the mechanisms by which ownership structure affects corporate risk, offering a deeper understanding of the roles played by agency costs and board independence. This comprehensive approach helps to clarify the dynamics of corporate governance and risk management in publicly listed companies.

It was necessary to perform correlation analysis in order to evaluate how closely the variables in question were related to one another. The relationship between the composite scores of each variable was examined using Pearson's correlation. The research found various correlations between ownership structure, agency costs, board independence, and corporate risk among firms listed on the NSE,

showing that managerial ownership is positively correlated with corporate risk, while foreign and corporate ownership are negatively correlated with risk; government ownership and diffuse ownership are also linked to higher corporate risk, while dispersed ownership reduces risk due to better checks and balances; agency costs are positively related to both ownership structure and corporate risk, with higher agency costs increasing risk; board independence is negatively correlated with corporate risk, reducing risk by providing unbiased oversight; and board independence is positively associated with ownership structure, especially in dispersed ownership, while it negatively correlates with agency costs, suggesting that independent boards help mitigate agency costs.

7. RESEARCH FINDINGS AND DISCUSSION

The results are examined in light of the study's objectives and hypotheses, with an emphasis on how ownership structures, agency costs, and board independence influence corporate risk

Effect of Ownership Structure on Corporate Risk

The first hypothesis investigated how ownership structure influences corporate risk among firms trading at the NSE. Ownership structure was assessed using managerial share ownership, foreign share ownership, government share ownership, corporate ownership and diffuse ownership. Below is the hypothesis that was framed for testing:

H_1: There is no significant effect of ownership structure on corporate risk among listed firms at Nairobi Securities Exchange.

$$CR_{it} = \beta_0 + \beta_1 MO_{2t} + \beta_2 FO_{2t} + \beta_3 GO_{3t} + \beta_4 CO_{4t} + \beta_5 DO_{5t} + \varepsilon_i$$

Table 1: Regression Results for Ownership Structure and Corporate Risk

			99% Confidence Interval(CI)	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P-Value***
Managerial ownership	0.17	0.04	4.42	0.02
Foreign ownership	-0.19	0.04	-4.98	0.00
Government ownership	0.18	0.04	4.46	0.00
Corporate ownership	-0.18	0.04	-4.57	0.03
Diffuse ownership	-0.24	0.04	-6.27	0.05
Constant	0.65	0.05	14.02	0.00
F – Statistics	848.87			
Sig (*p* – value)	0.00			
R-squared	0.68			

The regression model fitted was:

$$CR_{it} = 0.645 - 0.19FO_{2t} + 0.18GO_{3t} + \varepsilon_i$$

Where;
CR= Corporate Risk
MO= Managerial ownership
FO=Foreign ownership
GO= Government ownership
CO= Corporate ownership

DO= Diffuse ownership

The findings of the study indicate that ownership structure accounts for 68% of the variation in corporate risk, with a statistically significant relationship confirmed by an F-statistic of 848.87 and a p-value of 0.000, leading to the rejection of the null hypothesis (H1). Specifically, managerial ownership (β = 0.17, p = 0.02) does not significantly affect corporate risk, while foreign ownership (β = -0.19, p = 0.00) significantly reduces corporate risk by 19%. Government ownership (β = 0.18, p = 0.00) increases corporate risk by 18%, and both corporate ownership (β = -0.18, p = 0.03) and diffuse ownership (β = -0.24, p = 0.01) do not have significant impacts, as their p-values exceed the 0.01 threshold.

Intervening Effect of Agency Costs on the Relationship between Ownership Structure and Corporate Risk

The null hypothesis for this test is stated as follows:

H_2: There is no significant intervening effect of agency costs on the relationship between ownership structure and corporate risk among firms listed on the NSE.

The study evaluated the mediating influence of agency costs using the regression coefficients and the R-squared values for coefficient of determination. The analysis followed the stepwise regression approach outlined by Baron and Kenny (1986). This method involved four key steps to examine the mediating role of agency costs:

Step i. $CR_{it} = \beta_0 + \beta_1 OS_{it} + \varepsilon_i$

Step ii. $AC_{it} = \beta_0 + \beta_1 OS_{it} + \varepsilon_i$

Step iii. $CR_{it} = \beta_0 + \beta_1 AC_{it} + \varepsilon_i$

Step iv. $CR_{it} = \beta_0 + \beta_1 . OS_{it+} \beta_2 . AC_{it} + \varepsilon_i$

Step one predicted the relationship between ownership structure and corporate risk as indicated in the table below.

Table 2: Regression Results for Ownership Structure and Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P* - value**
Ownership Structure	-0.74	0.03	-29.14	0.00
Constant	0.88	0.01	62.73	0.00
F - Statistics (1)	848.87			
Sig (p-value)	0.00			

R-squared	0.57

The estimated regression model was:

$CR_{it}= 0.88 – 0.74OS_{it} + \varepsilon_i$

In step one, the regression model was significant with β=-0.74, p=0.000<0.01. In step two, the analysis forecasted the link between ownership structure and agency costs, as detailed in the table below.

Table 3: Regression Results for Ownership Structure and Agency Cost

			99% CI	
Agency Cost	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.75	0.03	-29.42	0.02
Constant	0.88	0.01	61.63	0.00
F - Statistics (2)	865.3			
Sig (p-value)	0.02			
R-squared	0.57			

The regression model that was applied was:

$AG_{it}= 0.882 + \varepsilon_i$

In step two, the regression model of ownership structure on agency cost was not significant with β=-0.75, p=0.02>0.01. Step three predicted the relationship between agency cost and corporate risks as indicated in the table below.

Table 4: Regression Results for Agency Cost and Corporate Risk

Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Agency cost	0.75	0.03	29.26	0.03
Constant	0.13	0.01	9.42	0.00
F - Statistics (3)	856.15			
Sig (p-value)	0.00			
R-squared	0.57			

The regression model used was:

$CR_{it}= 0.13 + \varepsilon_i$

In step three, the regression model of agency cost and corporate risk was also found to be insignificant with β=0.75, p=0.03>0.01. Step four predicted the relationship between ownership structure and agency cost on corporate risk as indicated in the table below.

Table 5: Regression Results for Ownership Structure and Agency Cost on Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.42	0.04	-11.91	0.00
Agency Cost	0.43	0.04	12.07	0.03
Constant	0.51	0.03	14.98	0.00
F - Statistics (4)	1184.93			
Sig (p-value)	0.00			
R-squared	0.65			

The regression model used was:

$CR_{it} = 0.51 - 0.42OS_{it} + \varepsilon_i$

In step four, the regression model of ownership structure on corporate risk was significant with β_1=-0.42, p=0.000<0.01. However, agency cost seemed to have weak influence on corporate risk β_2=0.43, p=0.03>0.01. Intervention occurs if ownership structure predicts corporate risk, ownership structure predicts agency cost, agency costs predict corporate risk and still ownership structure predicts corporate risk when agency cost is in the model.

Consequently, the findings suggest that in step one, the regression model was significant. In step two, the regression model was found not to be significant. In step three, the regression model was also not significant. In step four, the regression model indicated that only ownership structure was significant, unlike agency cost. The results indicate that among all the steps (1, 2, 3 and 4), only step 1 achieved a P-value of below 0.01. Consequently, the study did not find enough evidence to disprove the null hypothesis, therefore agency costs was found to be a significantly mediator.

Moderating Effect of Board Independence on the Relationship between Ownership Structure and Corporate Risk

The third hypothesis examined whether board independence moderates the link between ownership structure and corporate risk among companies listed on the Nairobi bourse. The null hypothesis for this test is stated as follows:

H_3: There is no significant moderating effect of board independence on the relationship between ownership structure and corporate risk among firms listed on NSE.

The study explored how board independence moderates the correlation between ownership framework and corporate risk. The findings were assessed using regression coefficients and the coefficient of determination (R-Square) to provide a clear understanding of the moderating effects .The study conducted a hierarchical regression analysis, wherein an interaction term, specifically the product of board independence and ownership structure, was included as an additional predictor. The presence of moderation is observed when the relationship between board independence and ownership structure serves as a significant predictor of corporate risk, with a statistical significance level of less than 0.01. The moderating effect was analyzed in 3 models/steps in line with the following models:

Step i. $CR_{it} = \beta_0 + \beta_{1.} OS_{it} + \varepsilon_i$

Step ii. $CR_{it} = \beta_0 + \beta_{1.} OS_{it+} \beta_{2.} BI_{it} + \varepsilon$

Step iii $CR_{it} = \beta_0 + \beta_{1.} OS_{it+} \beta_{2.} BI_{it} + \beta_3 OS_{it*} BI_{it} + \varepsilon_i$,

The first model's regression coefficients are presented in the table below.

Table 6: Regression Results for Ownership Structure and Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.74	0.03	-29.14	0.00
Constant	0.88	0.01	62.73	0.00
F - Statistics (1)	848.87			
Sig (p-value)	0.00			
R-squared	0.57			

The regression model used was:

$CR_{it} = 0.88 - 0.74 OS_{it}$

The first step involved conducting a regression analysis to assess the correlation between ownership framework and corporate risk among firms trading at the NSE. The findings showed that the regression model had statistical significance. The model returned a beta coefficient of -0.74. The model also returned a p-value of 0.00 which is less than the predetermined level of 0.01. Table 7 displays the

anticipated correlation between ownership structure and board independence with regards to corporate risk, as outlined in step two.

Table 7: Regression Results for Ownership Structure and Board Independence on Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.45	0.04	-12.66	0.00
Board Independence	-0.40	0.04	-10.99	0.006
Constant	0.93	0.01	68.18	0.00
F - Statistics (2)	1127.19			
Sig (p-value)	0.00			
R-squared	0.64			

The estimated regression model was:

$CR_{it} = 0.93 - 0.45OS_{it} - 0.40AC_{it}$

In step two, the regression model of ownership structure and board independence on corporate risk showed significance with $\beta 1=-0.45$, $p=0.00<0.01$, $\beta_2=-0.40$, $p=0.006<0.01$.

Step three predicted the relationship between ownership structure, board independence and the interaction term on corporate risk as indicated in Table 8.

Table 8: Regression Results for Ownership Structure, Board Independence and Interaction Term on Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.31	0.04	-8.44	0.00
Board Independence	-0.27	0.04	-6.95	0.02
Ownership Structure * Board Independence	-0.32	0.04	-8.62	0.00
Constant	0.96	0.01	72.28	0.00
F - Statistics (2)	1329.62			
Sig (p-value)	0.00			
R-squared	0.67			

The fitted regression model was:

CR_{it}= 0.95-0.31OS_{it}-0.32OS*BI_{it}

In step three, the regression model of ownership structure and interaction term on corporate risk were significant with β_1=-0.31, p=0.00<0.01, and β_3=-0.32, p=0.00<0.01. On the other hand, board independence produced a weak relationship β_2=-0.27, p=0.02>0.01. Moderation occurs when the interaction between board independence and ownership structure significantly predicts corporate risk (p<0.01). Therefore, the interaction term of ownership structure and board independence (OS*BI) had a stronger p-value of 0.00 .This indicates that board independence substantially moderates the relationship between ownership structure and corporate risk for firms listed on the NSE.

Joint Effect of Ownership Structure, Agency Costs and Board Independence on Corporate Risk

The fourth focus of the research was to evaluate how ownership structure, agency costs, and board independence collectively impact corporate risk. The null hypothesis for this objective is stated as follows:

H_4: There is no significant joint effect of ownership structure, agency costs and board independence on corporate risk among listed firms at NSE.

The combined impact of ownership structure, agency costs, and board independence on corporate risk was assessed through a joint regression analysis. This analysis was conducted using a multiple regression model, as detailed below:

CR_{it}= β_0 + $\beta_{1.}OS_{it.}$ + $\beta_{2.}AC_{it}$+ $\beta_{3.}BI_{it}$+ ε

Table 9: Joint Effect of Ownership Structure, Agency Costs and Board Independence on Corporate Risk

			99% CI	
Corporate Risk	**Coef.**	**Std. Err.**	***T* - value**	***P – value***
Ownership Structure	-0.32	0.04	-8.51	0.00
Agency Cost	0.31	0.04	8.12	0.02
Board Independence	-0.26	0.04	-6.60	0.00
Constant	0.64	0.04	16.62	0.00
F – Statistics	1306.6			
Sig (p-value)	0.00			
R-squared	0.70			

The fitted model was;

CR_{it}= 0.64-0.32OS_{it} – 0.26BI_{it} + ε

The findings indicate that the regression analysis conducted on the variables of ownership structure, and board independence in relation to corporate risk yielded statistically significant results, as evidenced by the values of β1=-0.32, p=0.00<0.01; and β3=-0.26, p=0.00<0.01. On contrary, agency cost did not report significant relationship in the model having a β2=0.31 and a p=0.02>0.01. According to the model, ownership structure, agency cost, and board independence account for 70% of the variance observed in corporate risk. The statistical significance of the model's adequacy in assessing the impact of ownership structure, agency cost, and board independence on corporate risk is indicated by the F - Statistics value of 1306.6. The statistical significance of the ownership structure, and board independence was observed with P values below 0.01. The R-squared value of the joint model exhibited a 13% increase from 57% in the single model to 70% in the joint model. Consequently, the null hypothesis is disproved, indicating a strong combined relationship among all the variables of the study.

This study explored how ownership structure affects corporate risk in firms listed on the Nairobi Securities Exchange (NSE), finding that foreign and government ownership significantly influence corporate risk, while managerial, corporate, and diffuse ownership do not. These results align with Langit and Adhariani (2017) and Chun and Lee (2017), but contradict Farwis and Azeez (2019) and Marchini et al. (2020). The study also examined whether agency costs mediate the relationship between ownership structure and corporate risk, revealing that agency costs do not significantly mediate this relationship, contrary to findings by Hastori et al. (2015) and Mutende (2018). Additionally, board independence was found to significantly moderate the effect of ownership structure on corporate risk, supporting studies by Sanni et al. (2019) and Gouiaa (2018). Finally, the combined effects of ownership structure, agency costs, and board independence were shown to significantly impact corporate risk, aligning with Wellalage and Locke (2011).

8. CONCLUSION

This study explored the impact of ownership structure on corporate risk among firms listed on the Nairobi Securities Exchange (NSE), with a focus on the mediating role of agency costs and the moderating effect of board independence. The research tested four hypotheses concerning the relationships between ownership structure, agency costs, board independence, and corporate risk. The findings showed a significant correlation between ownership structure and corporate risk, with managerial, foreign, government, and corporate ownership types all influencing risk levels. The study found no significant mediating effect of agency costs, suggesting that while ownership structure impacts corporate risk, agency costs do not substantially alter this relationship. However, board independence was found to significantly moderate the relationship between ownership structure and corporate risk, with higher board independence reducing corporate risk.

The study also revealed that ownership structure, agency costs, and board independence jointly account for a significant portion of corporate risk variance, with ownership structure and board independence being particularly influential. Specifically, managerial ownership and government ownership were positively correlated with corporate risk, while foreign ownership and corporate ownership were negatively correlated. Board independence showed a negative relationship with corporate risk, indicating that independent boards help mitigate risk through effective oversight.

The research contributes to agency and stewardship theories, demonstrating how ownership structures can influence risk-taking behavior and aligning managerial interests with those of shareholders. Policy implications suggest revising corporate governance regulations to address ownership concentration and enhance disclosure requirements, while practical recommendations focus on diversifying ownership to reduce risk and strengthening board independence to improve governance practices.

Limitations of the study include reliance on secondary data, a narrow focus on NSE-listed companies, and the exclusion of other corporate governance factors. Future research could expand to other regions or sectors, employ different research methodologies, and explore additional variables such as CEO duality or gender diversity in governance. Additionally, alternative measures of corporate risk and agency costs should be considered to strengthen the findings.

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