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Agency Costs and the Financial Performance of Insurance Firms in Kenya

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Abstract
The insurance industry supports economic development by facilitating corporate operations, risk protection, and capital formation. Despite growth in gross premiums, declining profitability in Kenya necessitates an examination of agency costs stemming from conflicts between principals and agents. This study assessed the impact of agency costs—monitoring costs, bonding costs, and residual loss—on the financial performance of Kenyan insurance firms, while also exploring the moderating role of board gender diversity.
Grounded in free cash flow, agency costs, and stakeholder theories, the study adopted a positivist philosophy and causal research design. Using secondary data from audited financial statements submitted to the Insurance Regulatory Authority (2018–2022), panel data from 48 insurance firms were analyzed via STATA. Descriptive statistics, correlation, and linear panel regression analyses were conducted, with diagnostic tests ensuring data suitability. Hypotheses were tested at a 0.05 significance level.
Findings indicated that monitoring costs had a negative but statistically insignificant impact on financial performance, while bonding costs positively and significantly influenced profitability, highlighting the role of performance-based incentives in mitigating agency conflicts. Residual loss had a negative but insignificant effect. Although board gender diversity correlated positively with financial performance, it did not significantly moderate the agency costs-financial performance relationship. The study recommends balancing resource allocation for agency cost management, strengthening governance mechanisms, and enhancing risk management. Policymakers should refine monitoring procedures to ensure compliance and financial stability. Future research could integrate qualitative methods for deeper insights.
Keywords: Agency Costs, Financial Performance, Insurance Firms, Kenya, Board Gender Diversity.
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1. Introduction

The economic output and success of insurance firms have been crucial in the global economy. The total assets of the global insurance industry grew from $33.3 trillion in 2016 to $37.3 trillion in 2020, with premiums averaging an annual growth rate of 5.8% (NAIC, 2022). The global insurance premium reached USD 6.78 trillion in 2022, comprising 6.8% of the world's GDP (IRA, 2022). The USA and China dominate the market, accounting for 54% of the global premium, followed by the UK and Japan (Swiss Re Sigma No.3/2023). The performance of global insurance firms varies due to economic and operational factors. Less than 50% of firms reported positive real investment rates of return (IAS, 2021). The COVID-19 pandemic accelerated innovation, with insurers focusing on digitalization to improve cost-efficiency and customer engagement (OECD, 2023). Poor financial performance threatens solvency and claim payments (Fatihudin, 2018; Osman & Samontaray, 2022). ROA is a critical metric in measuring financial health, and declining ROA impacts insurers' ability to meet obligations (OECD, 2023).

The industry faces management challenges, evident in the 2008 AIG crisis due to subprime mortgage exposure and the collapse of the UK's Equitable Life Assurance Society (Li et al., 2018; van der Heide, 2023). African insurers also struggle with management issues and regulatory changes. Africa's total premiums reached US$ 70.17 billion in 2022, accounting for only 1% of the global market (IRA, 2022). South Africa's Constantia Insurance Company was placed in receivership amid the Risk-Based Capital (RBC) implementation (Deloitte, 2022). The non-life insurance sector faced mixed outcomes, with some firms adapting through financial resilience and risk management (KPMG, 2020). Nigeria's insurance industry exhibited strong growth, with gross premium income rising by 20.1% to N369.2 billion in Q2 2022 (Inokotong, 2023). Life insurance comprised 40.6%, while the non-life segment dominated at 59.3%. However, settlement challenges persisted, with only 88.9% of life insurance and 76.8% of non-life claims settled (Felix & Emmanuel, 2019). Limited market penetration, capital constraints, and economic instability remain barriers to growth (Adenikinju, 2017).
Kenya's insurance sector, regulated by the IRA, has grown steadily, with gross premiums rising to KES 306.7

billion in 2022 (IRA, 2022). However, challenges such as low penetration (2.29% in 2022), subpar service quality, and claim settlement delays persist (Khisa, 2023). The IRA has proposed regulatory improvements and financial literacy programs to enhance industry performance (Murigu, 2014).

Agency Costs

Agency costs arise due to conflicts of interest between management and shareholders. These costs include monitoring, bonding, and residual loss (Rashid, 2016). Monitoring costs, such as audits and legal oversight, ensure managerial accountability but can deter innovation if excessive (Wanyonyi, 2018; Abid et al., 2015). Bonding costs, such as performance-linked incentives, align managers' interests with shareholders' (Nehme et al., 2020). Residual loss occurs when agency conflicts persist despite control measures (Ali, 2020).

Board Gender Diversity

Board gender diversity (BGD) enhances decision-making and governance. Greater female representation is linked to improved financial performance and risk management (Kabir et al., 2023; EmadEldeen et al., 2021). In Kenya, women's board representation increased from 12% in 2012 to 36% in 2021 (James, 2021). Despite progress, gender biases persist, particularly in conservative cultures (Maxfield et al., 2010). BGD correlates with stronger corporate governance and financial stability (Teodósio et al., 2021).

Financial Performance

Financial performance (FP) is crucial for insurers' sustainability and risk underwriting capacity (Morara & Sibindi, 2021). Metrics like ROA assess asset utilization efficiency (Alshehadeh et al., 2022; Setiawan & Rosa, 2023). ROA is vital in the insurance sector, normalizing profitability across firms of different sizes (Angga et al., 2020; Shawar & Danish, 2019). Poor FP leads to reduced investor confidence and solvency risks (Ng'etich, 2021).

Kenya's Insurance Industry Performance

Kenya's insurance market is diverse, comprising insurers, brokers, agents, and service providers (AKI, 2022). The industry recorded a 13% premium increase in 2022, with total assets rising by 12.5% to KES 956.87 billion (IRA, 2022). Despite growth, penetration remains low at 2.29% (IRA, 2022). The general insurance sector, comprising 57.6% of gross premiums, relies heavily on motor and medical insurance (AKI, 2022). However, rising claims, fraud, and regulatory challenges affect profitability (Kimani, 2023). Higher underwriting risks negatively impact ROA, while solvency adequacy is crucial for financial stability (Kimani, 2023). Effective risk management and compliance improve insurer performance (Kiptoo et al., 2021). Managerial competency, equity capital, and leverage positively influence profitability, while firm size and ownership structures may introduce complexities (Murigu, 2014). The economic viability of Kenyan insurers depends on regulatory adaptations and market resilience (Ogalloh, 2021). Underwriting losses remain a challenge, with the general insurance sector recording KES 3.2 billion in losses in 2022 (IRA, 2022). Motor insurance contributed significantly to deficits, highlighting the need for risk assessment and pricing adjustments. Regulatory lapses and financial mismanagement have led to company failures, such as the liquidation of Concord Insurance and Standard Assurance (Mwongela, 2022).

1.1 Statement of the Problem

The declining financial performance of Kenyan insurance firms, as evidenced by persistent underwriting losses and fluctuating ROA (IRA, 2022), threatens solvency, shareholder value, and investor confidence (Bosman, 2013; Osman & Samontaray, 2022). Despite growth in gross premiums, the industry's GDP contribution declined from 3.4% in 2013 to 2.31% in 2020 (Kamau et al., 2021), highlighting the sector's financial instability. Fraud, inflated claims, and weak governance exacerbate these challenges (Kiptoo et al., 2021). To address these concerns, this study aims to assess the effect of agency costs on the financial performance of Kenyan insurance firms. Specifically, it seeks to examine the impact of monitoring, bonding, and residual loss on firm profitability, investigate the moderating role of board gender diversity, and provide recommendations for improving financial stability and governance in the sector.

1.2 Research Questions

1. What is the effect of monitoring costs on the financial performance of insurance firms in Kenya?
2. How do bonding costs influence financial performance in Kenya's insurance industry?
3. What is the relationship between residual loss and financial performance in the insurance sector?
4. Does board gender diversity moderate the relationship between agency costs and financial performance?

1.2.1 Research Objectives

1. To examine the effect of monitoring costs on the financial performance of insurance firms in Kenya.
2. To analyze the influence of bonding costs on financial performance in Kenya's insurance industry.
3. To assess the impact of residual loss on the financial performance of insurance firms.
4. To evaluate whether board gender diversity moderates the relationship between agency costs and financial performance.

1.2.2 Research Hypotheses

H01: Monitoring costs have no significant effect on the financial performance of insurance firms in Kenya.
H02: Bonding costs have no significant effect on the financial performance of insurance firms in Kenya.
H03: Residual loss has no significant effect on the financial performance of insurance firms in Kenya.
H04: Board gender diversity does not significantly moderate the relationship between agency costs and financial performance.

This study seeks to bridge the existing research gap by assessing the effects of agency costs—monitoring costs, bonding costs, and residual loss—on the financial performance of Kenyan insurance firms. Additionally, it investigates whether board gender diversity moderates this relationship. Using a causal research design, the study employs panel regression analysis on secondary data collected from 48 insurance firms licensed by the IRA between 2018 and 2022. The findings are expected to provide empirical insights for policymakers, regulators, and industry practitioners on optimizing governance structures to enhance financial stability.

The significance of this study lies in its potential contributions to corporate governance literature, particularly within the context of emerging markets. By analyzing agency cost components and their influence on financial performance, this research provides actionable recommendations for strengthening monitoring mechanisms, optimizing resource allocation, and enhancing governance policies. The study further underscores the need for regulatory bodies to balance compliance requirements with cost-effectiveness, ensuring sustainable industry growth.

The remainder of this paper is organized as follows: Section 2 reviews relevant theoretical and empirical literature, providing a conceptual framework for understanding agency costs and financial performance. Section 3 details the research methodology, including data sources, variable measurements, and econometric models. Section 4 presents the study's findings and discusses their implications. Finally, Section 5 offers conclusions and policy recommendations, highlighting areas for future research.

2. Literature Review

2.1 Theoretical Framework

The study is anchored on Agency Theory, Free Cash Flow Theory, and Stakeholder Theory, which provide different perspectives on agency costs and financial performance.

2.1.1 Agency Cost Theory

Jensen & Meckling (1976) developed the Agency Theory, which describes conflicts between shareholders (principals) and managers (agents) due to misaligned interests. The separation of ownership and control in modern firms allows managers to pursue personal interests, potentially leading to inefficiencies and increased agency costs (Mitnick, 2019). Adam Smith (1776) first recognized this issue, suggesting that managers may not act in the best interest of shareholders.

Agency costs arise from monitoring expenses, bonding costs, and residual losses (Ross, 2015). Monitoring expenses include audits and oversight mechanisms, while bonding costs involve managerial incentives to align interests. Residual loss occurs when conflicts persist despite these interventions. To mitigate agency costs, firms implement governance structures such as performance-based compensation and board oversight (Mitnick, 2019). In the insurance sector, agency conflicts are particularly relevant because managers handle large cash inflows from premiums, which may lead to inefficient investment decisions or excessive risk-taking. Proper governance structures are essential to ensuring that insurance companies remain financially stable and profitable (Ross, 2015).

2.1.2 Free Cash Flow Theory

Jensen (1986) introduced Free Cash Flow (FCF) Theory, arguing that managers with excess cash flow may invest in low-return projects, increasing agency costs. Free cash flow represents surplus funds after operational

and capital investment needs are met. If not properly managed, it can lead to wasteful expenditures or managerial self-interest projects (Smith & Pennathur, 2019).

In the insurance industry, premiums are collected in advance, creating substantial free cash flow. Managers may use these funds for non-core activities rather than enhancing underwriting efficiency (Degeorge, Martin & Phalippou, 2019). This misallocation can negatively impact financial performance by reducing shareholder value. While the FCF theory highlights the risks of excess cash, it has been criticized for its short-term focus. Long-term investments, which may initially appear as unnecessary expenditures, can contribute to firm growth over time (Eberhart, Eesley & Eisenhardt, 2017). Nonetheless, the theory provides valuable insights into how cash flow mismanagement contributes to agency costs and financial instability.

2.1.3 Stakeholder Theory

Freeman (1984) proposed a Stakeholder Theory, arguing that firms should consider the interests of all stakeholders, not just shareholders. Stakeholders include employees, customers, suppliers, regulators, and the broader community (Kivits et al., 2021). This theory suggests that a firm's success depends on balancing diverse stakeholder interests rather than prioritizing shareholder wealth maximization. In the insurance industry, policyholders expect financial security, while regulators focus on solvency. Managers must ensure financial sustainability while meeting the expectations of various stakeholders (Freeman & Dmytriyev, 2017). Failure to address stakeholder concerns can lead to reputational damage, legal penalties, and declining customer trust. Critics argue that Stakeholder Theory lacks a clear framework for prioritizing conflicting stakeholder interests (Donadelli, Fasan & Magnanelli, 2014). However, its broad perspective helps explain how governance decisions impact agency costs and financial performance.

2.2 Empirical Review

2.2.1 Monitoring Costs and Financial Performance

Monitoring costs are incurred to oversee managerial actions and align them with shareholder interests (Ndeto, 2019). A study on Kenyan microfinance institutions found that high monitoring costs correlate with better financial performance, as increased oversight reduces opportunistic behavior (Ndeto, 2019). Similarly, Abdirahman (2021) examined audit quality in Kenyan banks, concluding that rigorous audits enhance financial transparency and investor confidence. Firms with strong audit mechanisms experience lower fraud risks and improved financial outcomes. These findings align with Agency Theory, which suggests that monitoring is essential to mitigating agency conflicts (Ross, 2015).

2.2.2 Bonding Costs and Financial Performance

Bonding costs refer to expenses incurred to align managerial interests with those of shareholders. Chakravarty & Grewal (2016) examined executive compensation structures and found that bonus-driven CEOs were more likely to cut research and development (R&D) budgets to meet short-term earnings targets. This behavior reduces long-term profitability, highlighting the trade-off between incentive alignment and strategic growth. Martin, Wiseman, & Gomez-Mejia (2019) investigated how monitoring and incentive alignment strategies interact. They found that high CEO earnings management leads to increased agency costs, particularly when institutional ownership is concentrated. These findings suggest that while incentives can align managerial behavior, they must be carefully structured to avoid unintended consequences.

2.2.3 Residual Loss and Financial Performance

Residual loss represents agency costs that persist despite monitoring and bonding mechanisms (Ali, 2020). Ali's study found that although oversight and incentives reduce fraud, they also introduce residual costs that hinder efficiency. Purayil & Lukose (2020) analyzed earnings management in Indian IPO firms, revealing that pre-IPO shareholders manipulate earnings to increase short-term valuation, affecting post-IPO financial performance. Their findings suggest that agency conflicts extend beyond operational inefficiencies to include financial reporting distortions. In Kenya, Thiong'o & Kiama (2018) found that while asset quality positively affects financial performance in commercial banks, excessive loan portfolios negatively impact profitability. These findings indicate that poor financial management can lead to residual loss, reducing firm stability.

2.2.4 Board Gender Diversity, Agency Costs, and Financial Performance

Board gender diversity influences governance, agency costs, and financial performance. Wellalage & Locke (2013) found that gender-diverse boards improve ethical decision-making and reduce managerial opportunism, leading to lower agency costs and better financial performance. Odero & Egessa (2023) reviewed literature on board diversity and found that diverse boards enhance governance and financial stability. However, their study

did not specifically examine gender diversity in Kenyan insurance firms, highlighting a research gap.
Kemei (2018) studied Kenyan insurance firms and found that board size and meeting frequency impact financial performance. While gender diversity improves governance, large boards and excessive meetings may lead to inefficiencies. This suggests that governance structures must balance diversity with operational effectiveness.

2.3 Research Gaps

Despite the extensive research on agency costs and financial performance, significant gaps remain, particularly within Kenya's insurance sector. While studies such as Odero and Egessa (2023) and Wellage and Locke (2013) have examined board diversity's influence on governance and financial outcomes, few have explicitly linked gender diversity to agency costs in Kenya's insurance firms. Furthermore, prior research has primarily focused on developed economies, where governance structures differ significantly from those in emerging markets like Kenya. Studies such as Kemei (2018) highlight the importance of board composition but do not directly address the interaction between gender diversity and agency costs in financial performance. Additionally, while bonding costs have been identified as critical for aligning managerial interests with shareholder goals, their specific effect in the Kenyan insurance industry remains underexplored. Moreover, residual loss—one of the key components of agency costs—has not been extensively studied in relation to financial performance, particularly in industries with complex regulatory environments like insurance. This study seeks to bridge these gaps by analyzing the relationship between agency costs, board gender diversity, and financial performance within Kenya's insurance sector.

3. Research Methodology

3.1 Introduction

This chapter outlines the methodologies used in the study, covering research philosophy, design, empirical model, variable operationalization, target population, sampling, data collection, data analysis, and ethical considerations.

3.2 Research Philosophy

Research philosophy defines how knowledge is acquired and interpreted (Aliyu et al., 2015). The study adopts positivism, which emphasizes objective reality and empirical observation (Park et al., 2020). Positivism aligns with this study's focus on agency costs and financial performance by allowing for hypothesis testing and statistical analysis, ensuring objectivity and generalizability (Orsini et al., 2020).

3.3 Research Design

Research design refers to the overall strategy for collecting and analyzing data (Pathiranage et al., 2020). This study uses a causal research design to establish cause-and-effect relationships between agency costs and financial performance. Additionally, a longitudinal (panel) design is applied to examine financial trends over time (Lewis et al., 2016). This approach ensures the reliability of findings by tracking changes in financial performance across multiple years.

3.4 Empirical Model

The study employs a linear panel regression model (Greene, 2008) to analyze the relationship between agency costs and financial performance. The model is specified as:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 BGD_{it} + \varepsilon_{it}$$

where financial performance (ROA) is the dependent variable, and monitoring costs, bonding costs, and residual loss are independent variables. Additionally, board gender diversity (BGD) is introduced as a moderating variable following Whisman & McClelland (2005):

$$Y_{it} = \beta_0 + \beta_1 ACC_{it} + \beta_2 BGD_{it} + \beta_3 (ACI*BGD) \varepsilon_{it}$$

This model assesses whether board gender diversity influences the relationship between agency costs and financial performance.

3.5 Variable Operationalization and Measurement

The dependent variable, financial performance (ROA), measures asset efficiency. The independent variables—monitoring costs, bonding costs, and residual loss—quantify different agency costs, while board gender diversity represents governance effectiveness. These variables are measured as percentages of financial metrics such as net income, total assets, and gross written premiums (Abdulrahman, 2014).

3.6 Target Population and Sampling

The target population consists of 56 licensed insurance companies in Kenya (IRA, 2022). Due to operational

inconsistencies, purposive sampling was used to select 48 firms that were consistently active from 2018 to 2022 (Etikan et al., 2016). This ensures the inclusion of companies with complete financial data over the study period.

3.7 Data Collection

This study relies on secondary panel data sourced from IRA reports and audited financial statements. A data extraction sheet in Microsoft Excel was used to systematically collect and record financial variables, ensuring accuracy and consistency.

3.8 Data Analysis and Presentation

Data was analyzed using STATA, a powerful tool for handling panel data (Gray & Kinnear, 2012). Descriptive statistics (mean, standard deviation, minimum, maximum) provided an overview of financial performance, while inferential statistics, including Pearson correlation and regression analysis, tested relationships between variables (Cohen et al., 2013). Findings were presented in tables and graphs for clarity.

3.9 Validity and Reliability

To ensure validity, the study based its measurement definitions on established theoretical frameworks (Sürücü & Maslakci, 2020). Reliability was maintained by standardizing data collection procedures and minimizing human error using electronic records (Taherdoost, 2021).

3.10 Diagnostic Tests

Several diagnostic tests ensured the robustness of the regression model. Multicollinearity was tested using Variance Inflation Factor (VIF); values below 10 indicated no multicollinearity (Daoud, 2017). Normality was checked using the Shapiro-Wilk test, where $p > 0.05$ confirmed normal distribution (Hanusz et al., 2016). Heteroscedasticity was assessed using the Breusch-Pagan test; a $p > 0.05$ value indicated homoscedasticity (Verbeek, 2012). The Hausman test determined whether a fixed or random effects model was appropriate for panel regression.

3.11 Ethical Considerations

This study adhered to ethical guidelines by ensuring data credibility, transparency, and compliance with NACOSTI and university research policies. Data sources were properly cited, and confidentiality was maintained when handling financial records.

4. Findings and Discussions

4.1 Introduction

This chapter presents the findings of the study, focusing on the relationship between agency costs and the financial performance of Kenyan insurance firms, as well as the moderating role of board gender diversity. The results are based on panel data analysis conducted on secondary data collected from audited financial statements of 48 insurance firms for the period 2018–2022. The findings are structured into descriptive statistics, diagnostic tests, regression analysis, and hypothesis testing.

4.2 Descriptive Statistics

Table 4.1 presents the descriptive statistics for the study variables, including the mean, standard deviation, minimum, and maximum values.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	240	5.173293	30.1677	-134.828	147.4902
MonCost	240	95.80377	778.0873	.005285	11360.76
BonCost	240	417.6521	1774.814	.816045	12925.54
ResdLoss	240	150.3013	727.1987	.083444	8836.711
Bddiverfe	240	23.39821	13.89048	0	50

Table 4. 1 Descriptive Statistics

The findings from Table 4.1 reveal significant variability in the financial performance, governance structures, and agency cost management practices among Kenyan insurance firms between 2018 and 2022. The mean ROA was 5.1733, with a wide range from -134.828 to 147.4902, indicating that while some firms reported losses, others achieved high profitability. Monitoring costs averaged 95.8038, with a large standard deviation of 778.0873, reflecting substantial differences in governance and oversight mechanisms. Bonding costs varied widely, averaging 417.6521, with a maximum of 12,925.54, suggesting that some firms incurred significantly

higher expenses to align managerial and shareholder interests. Residual loss, representing inefficiencies from agency conflicts, had a mean of 150.3013 but fluctuated greatly, ranging from 0.0834 to 8,836.711. Board gender diversity varied considerably, with an average of 23.3982% and some firms having no female representation. These findings underscore the diversity in corporate strategies, governance frameworks, and financial outcomes across Kenya's insurance industry.

4.3 Correlation Analysis

Table 4.2 presents the correlation coefficients among the study variables.

	ROA	MonCost	BonCost	ResdLoss
ROA	1.0000			
MonCost	-0.0842	1.0000		
BonCost	0.1130	0.0938	1.0000	
ResdLoss	-0.0750	0.2383	0.2910	1.0000

Table 4. 2 Correlation Coefficients

The results indicate weak relationships between ROA and the independent variables. Monitoring costs have a weak negative correlation with ROA (-0.0842), suggesting that higher monitoring costs are slightly associated with lower financial performance. Bonding costs show a weak positive correlation (0.1130), implying that incentive-based compensation may improve profitability. Residual loss exhibits a weak negative correlation (-0.0750), indicating that inefficiencies arising from agency conflicts slightly reduce financial performance. The findings align partially with studies like Wellage and Locke (2013), which indicated that bonding mechanisms (e.g., incentive-based compensation) could improve financial outcomes by positioning managerial interests with those of shareholders. However, the weak and negative relationship between MonCost and ROA contrasts with Chakravarty and Grewal (2016), who found that monitoring mechanisms generally reduce agency conflicts and improve performance.

4.4 Diagnostic Tests

To ensure the robustness of the regression model, diagnostic tests were conducted to verify key assumptions of regression analysis. The tests included multicollinearity, normality, heteroscedasticity, and model specification using the Hausman test.

4.5 Multicollinearity Test

Multicollinearity was assessed using the Variance Inflation Factor (VIF). The results in Table 4.3 show that all variables had VIF values below 10, indicating no significant multicollinearity concerns.

Variable	VIF
ResdLoss	1.15
BonCost	1.09
MonCost	1.06

Table 4. 3 VIF Values

Since all VIF values were below the threshold of 10, the null hypothesis of no multicollinearity was not rejected, confirming that multicollinearity was not a problem in this study.

4.6 Normality Test

The Shapiro-Wilk test was conducted to assess whether the data followed a normal distribution. Table 4.4 presents the results.

Variable	Obs	W	V	z	Prob>z
ROA	240	0.82577	30.485	7.935	0.00000
MonCost	240	0.09753	157.906	11.754	0.00000
BonCost	240	0.23077	134.592	11.383	0.00000
ResdLoss	240	0.19448	140.943	11.490	0.00000
Bddiverfe	240	0.93226	11.853	5.741	0.00000

Table 4. 4 Shapiro-Wilk Test

Since all p-values were below 0.05, the null hypothesis of normality was rejected, indicating that the data was not normally distributed. This non-normality suggests that the study should rely on robust standard errors to address potential biases.

4.7 Heteroscedasticity Test

The Breusch-Pagan/Cook-Weisberg test was used to check for heteroscedasticity, and the results are shown in Table 4.5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
chi2(1) = 5.87
Prob > chi2 = 0.0154

Table 4. 5 Breusch-Pagan/Cook-Weisberg test

Since the p-value (0.0154) is below 0.05, the null hypothesis of homoscedasticity was rejected, suggesting that heteroscedasticity was present in the model. To address this issue, robust standard errors were applied to improve the reliability of the standard errors.

Table 4.6 presents the results using robust standard errors.

Robust

		Robust		
ROA	**Coef.**	**Std. Err.**	**t**	**P>t**
MonCost	-.0032185	.0015577	-2.07	0.040
BonCost	.0028454	.0006795	4.19	0.000
ResdLoss	-.005025	.003175	-1.58	0.115
Bddiverfe	.2689899	.1346309	2.00	0.047
_cons	-1.245363	3.68914	-0.34	0.736

Table 4. 6 Robust standard errors

From the results, monitoring costs have a significant negative impact on financial performance (p = 0.040), bonding costs have a highly significant positive impact (p = 0.000), while residual loss is not significant (p = 0.115). Board gender diversity positively influences financial performance (p = 0.047), indicating that firms with higher female representation on boards perform better.

4.8 Model Specification Test

The Hausman test was conducted to determine whether the fixed or random effects model was appropriate. The results are shown in Table 4.7.

	Fixed Effects (b)	**Random Effects (B)**
MonCost	-.0001929	-.0005015
BonCost	.0090472	.0030861
ResdLoss	-.0057515	-.0020473
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 7.54		
Prob>chi2 = 0.1098		

Table 4. 7 Hausman Test

Since the p-value (0.1098) is greater than 0.05, the null hypothesis that the random effects model is appropriate was not rejected. This indicates that the random effects model was preferred for this study as there was no significant difference between the coefficients of the fixed and random effects models.

4.9 Model Regression Analysis

The study conducted regression analyses to explore the relationship between the variables. Two sets of results were presented: the first regression analysis was performed without including any moderating variables, while the second analysis incorporated the moderating effect of board gender diversity to assess its influence on the relationships.

4.10 Panel Regression Results

A panel regression analysis was performed to determine the impact of monitoring costs, bonding costs, and residual loss on financial performance (measured by ROA). The results are presented in Table 4.8.

		Robust		
ROA	**Coef.**	**Std. Err.**	**z**	**P>z**
MonCost	-.0004835	.0004463	-1.08	0.279
BonCost	.0030205	.0011706	2.58	0.010
ResdLoss	-.0019488	.0015509	-1.26	0.209
_cons	4.250983	3.567838	1.19	0.233

R squared = 0.0210
Wald chi-squared = 11.28
Prob > Chi2 = 0.0103

Table 4. 8 Panel Regression Results

Model Statistics:

- R-squared = 0.0210
- Wald chi-squared = 11.28
- Prob > Chi2 = 0.0103

The estimated model equation: Where:

- = Financial Performance (ROA) of insurance firms at time
- = Monitoring Costs
- = Bonding Costs
- = Residual Loss
- = Regression constant
- = Error term

The results indicate that bonding costs exert a positive and significant effect on ROA (coefficient = 0.0030, p = 0.010). This suggests that as bonding costs increase, financial performance improves, supporting the notion that incentive-based compensation mechanisms align managerial and shareholder interests. Conversely, monitoring costs and residual loss do not have significant effects on financial performance, as their p-values are 0.279 and 0.209, respectively. The overall model is statistically significant, though its explanatory power is relatively low, with an R-squared of 2.1%. This implies that while bonding mechanisms significantly influence financial performance, other factors beyond agency costs may contribute to firm profitability.
The results further indicate that in the absence of monitoring costs, bonding costs, and residual loss, the baseline financial performance of insurance firms (proxied by ROA) would be 4.250983 units.

4.11 Hypothesis Testing

The study tested the following hypotheses using panel multiple regression analysis:
H01: Monitoring cost has no significant effect on financial performance of insurance firms in Kenya.
The regression results show that monitoring costs have a negative but insignificant impact on financial performance (-0.0004835, p = 0.279). Since the p-value is greater than 0.05, the null hypothesis is not rejected, indicating that monitoring costs do not significantly affect financial performance.

H02: Bonding cost has no significant effect on financial performance of insurance firms in Kenya.
Bonding costs exhibit a positive and significant effect on financial performance (0.0030205, p = 0.010). Since the p-value is below 0.05, the null hypothesis is rejected. This confirms that bonding costs play a crucial role in enhancing financial performance by aligning managerial incentives with shareholder interests.

H03: Residual loss has no significant effect on financial performance of insurance firms in Kenya.
The results show that residual loss negatively affects financial performance (-0.0019488, p = 0.209), but the effect is not statistically significant. Since the p-value is greater than 0.05, the null hypothesis is not rejected. This suggests that while inefficiencies from agency conflicts exist, they do not significantly determine financial performance.

H04: Board gender diversity has no significant moderating effect on the relationship between agency costs and financial performance of insurance firms in Kenya.
The analysis incorporating board gender diversity as a moderating variable found no statistically significant interaction effect. This suggests that while diversity in board composition is important for governance, it does not significantly alter the relationship between agency costs and financial performance. Consequently, the null hypothesis is not rejected.

4.11.1 Summary of Regression Analysis and Hypothesis Testing

The findings from the regression analysis highlight that bonding costs significantly impact financial performance, while monitoring costs and residual loss do not have statistically significant effects. Additionally, board gender diversity does not play a significant moderating role in the agency cost-performance relationship. These results suggest that insurance firms should focus on strengthening incentive-based governance mechanisms while ensuring cost-effective monitoring practices to optimize financial outcomes.

5. Conclusions, and Recommendations

5.1 Conclusion

This study aimed to examine the relationship between agency costs and the financial performance of insurance firms in Kenya, with a particular focus on monitoring costs, bonding costs, and residual loss. Additionally, it explored the moderating role of board gender diversity. The findings indicate that bonding costs significantly enhance financial performance, supporting the argument that aligning managerial compensation with shareholder interests fosters profitability. Conversely, monitoring costs and residual loss exhibit negative but statistically insignificant effects on financial performance, suggesting that excessive compliance expenditures and inefficiencies do not substantially influence firm profitability. Moreover, board gender diversity does not significantly moderate the relationship between agency costs and financial performance, indicating that its governance benefits may not directly translate into financial improvements.

Overall, the study highlights the importance of cost-effective governance mechanisms, particularly incentive-based structures, in optimizing financial outcomes for insurance firms. While corporate governance practices are crucial for accountability and risk management, their financial impact varies depending on the efficiency of implementation. The study contributes to the ongoing discourse on agency theory by providing empirical evidence from Kenya's insurance sector and underscores the need for tailored governance strategies to enhance firm performance.

5.2 Recommendations

5.2.1 Recommendations for Policy and Practice

Enhancing Incentive-Based Governance: Insurance firms should strengthen bonding mechanisms, such as performance-based compensation, to align managerial interests with shareholder value. This will help improve financial performance by motivating executives to prioritize firm profitability.

Optimizing Monitoring Costs: Companies should adopt risk-based and technology-driven monitoring approaches to reduce excessive governance expenditures while maintaining compliance and oversight effectiveness. Regulatory bodies should also consider streamlining compliance requirements to prevent financial strain on firms.

Addressing Residual Loss through Strategic Governance: Firms should continuously refine their governance structures and decision-making processes to minimize inefficiencies that contribute to residual loss. Implementing robust risk assessment frameworks and accountability mechanisms will help reduce financial mismanagement.

Board Diversity and Governance Efficiency: Although board gender diversity did not significantly moderate the agency cost-performance relationship, firms should continue promoting inclusive leadership to enhance governance quality and corporate reputation.

5.2.2 Recommendations for Future Research

Expanding the Scope of Study: Future research should explore the impact of agency costs on financial performance across different sectors beyond insurance to determine whether the findings hold in other industries.

Longitudinal Studies on Governance Reforms: Future studies could investigate how changes in corporate governance policies over time influence financial performance, particularly in response to regulatory reforms.

Alternative Performance Measures: Future research should consider using additional financial performance metrics, such as Return on Equity (ROE) and Earnings Before Interest and Taxes (EBIT), to provide a more comprehensive analysis of the impact of agency costs.

Board Composition and Performance: Further studies could analyze the broader aspects of board composition, including expertise, tenure, and independence, to assess their influence on financial performance and governance effectiveness.

5.2.3 Contribution to Knowledge

This study contributes to corporate governance and agency theory literature by providing empirical insights into the financial implications of agency costs within Kenya's insurance industry. By demonstrating that bonding costs significantly enhance financial performance while monitoring costs and residual loss have limited effects, the study offers valuable guidance for firms seeking to optimize their governance structures. Furthermore, the findings emphasize the need for targeted governance reforms that balance compliance, incentive structures, and overall financial efficiency.

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