

Enterprise Risk Management and Organizational Resilience of Insurance Companies in Kenya: A Partial Least Squares Structural Equation Modelling Approach

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Abstract

Insurance companies operate in an increasingly volatile risk environment shaped by regulatory reform, claims volatility, cyber exposure, fraud, and macroeconomic instability, which makes organizational resilience an urgent strategic priority. Although enterprise risk management (ERM) has been widely promoted as a mechanism for building resilience, empirical evidence on how specific ERM dimensions translate into preparedness, adaptive capacity, and recovery capability remains scarce, particularly in emerging-market insurance sectors. This study examined the effect of ERM, operationalized as risk governance structure, risk identification and assessment, risk appetite and tolerance, and risk monitoring and reporting—on the organizational resilience of licensed insurance companies in Kenya. Anchored on dynamic capabilities theory and complemented by the resource-based view, contingency theory, and institutional theory, the study adopted an explanatory, cross-sectional design. A census of the 58 licensed insurers in Kenya was targeted, with risk managers, internal auditors, and senior operations managers as key informants. Of 174 questionnaires administered, 148 were valid for analysis (85.1% usable response rate). Data were analyzed using partial least squares structural equation modelling (PLS-SEM). The measurement model demonstrated acceptable indicator reliability, internal consistency, convergent validity, and discriminant validity. The structural model showed that all four ERM dimensions exerted positive and statistically significant effects on organizational resilience, jointly explaining 86.3% of its variance ($R^2 = 0.863$; $Q^2 = 0.802$). Risk governance structure was the strongest predictor ($\beta = 0.417$, $f^2 = 0.800$), followed by risk monitoring and reporting ($\beta = 0.374$, $f^2 = 0.725$), risk appetite and tolerance ($\beta = 0.225$, $f^2 = 0.197$), and risk identification and assessment ($\beta = 0.203$, $f^2 = 0.249$). The findings indicate that resilience among Kenyan insurers is built substantially on governance-led, information-rich risk management rather than compliance alone. The study contributes theoretically by integrating multiple organizational theories, empirically by isolating the differential contribution of each ERM dimension, methodologically through the application of PLS-SEM, and contextually by generating sector-specific evidence from an under-researched emerging market. Policy, managerial, and practical recommendations for strengthening ERM-driven resilience are discussed, alongside the limitations of the cross-sectional, single-sector design and directions for future longitudinal and cross-sectoral research.

Keywords: *enterprise risk management; organizational resilience; risk governance; PLS-SEM; insurance sector; Kenya; emerging markets*

1. Introduction

Organizations worldwide operate amid escalating economic volatility, regulatory change, technological disruption, and systemic risk exposure, all of which have elevated organizational resilience from an operational concern to a strategic imperative (Shojaee et al., 2025). Resilience refers to the capacity of a firm to anticipate, absorb, adapt to, and recover from adverse events while preserving core functions (Monazzam & Crawford, 2024). For insurance companies, resilience is not merely desirable but foundational, since insurers exist to absorb and redistribute risk on behalf of others while remaining solvent and operationally stable in the process (Fung et al., 2025). Enterprise risk management (ERM) has emerged as the principal organizational response to this challenge, offering an integrated, enterprise-wide approach to identifying, assessing, and managing uncertainty in a manner aligned with strategic objectives (Al Lawati et al., 2025).

Empirical evidence from developed markets broadly associates mature ERM practice with greater organizational stability, adaptability, and crisis preparedness (Fung et al., 2025; Dahmen, 2023). Yet these findings are not uniform: several studies report weak or non-significant relationships, attributed variously to shallow implementation, weak risk culture, or fragmented governance (Adhillah, 2025). This inconsistency suggests that the resilience dividend of ERM is conditional on institutional context, which is precisely why emerging-market evidence—where regulatory architecture, market maturity, and organizational capacity differ markedly from developed economies is needed (Monazzam & Crawford, 2024).

In Sub-Saharan Africa, insurance penetration remains low, averaging under 3% of GDP, and insurers face resilience challenges rooted in macroeconomic instability, thin capital markets, and evolving regulatory expectations (Moonstone Information Refinery, 2025). Kenya illustrates these dynamics closely: gross written premiums have grown steadily following the adoption of IFRS 17, yet penetration remains at approximately 2.4% of GDP, well below the global average of 6–7% and behind regional peers such as South Africa (Cytonn Investments, 2024; Association of Kenyan Insurers, 2024). ERM adoption among Kenyan insurers has risen in response to regulatory pressure from the Insurance Regulatory Authority (IRA), but implementation is frequently compliance-driven rather than strategically embedded, limiting its contribution to resilience (Kajwang, 2022; Njiru, 2025).

Although the COSO ERM framework provides a comprehensive template for risk governance, risk identification and assessment, risk appetite and tolerance, and risk monitoring and reporting, little empirical work has examined how these specific components jointly shape organizational resilience among Kenyan insurers (Otieno et al., 2020; Njiru, 2025). Existing local studies have concentrated on the ERM–financial performance or ERM compliance relationship, leaving resilience as a strategic outcome comparatively under-examined (Kajwang, 2022). This creates a

theoretical, empirical, and practical gap that this study addresses by testing the direct effect of four ERM dimensions on organizational resilience among all 58 licensed insurance companies in Kenya.

1.1 Objectives and Hypotheses

The general objective of the study was to examine the effect of enterprise risk management on organizational resilience among insurance companies in Kenya. The specific objectives were to:

- i. Assess the effect of risk governance structure on organizational resilience of insurance companies in Kenya.
- ii. Evaluate the effect of risk identification and assessment on organizational resilience of insurance companies in Kenya.
- iii. Examine the effect of risk appetite and tolerance on organizational resilience of insurance companies in Kenya.
- iv. Determine the effect of risk monitoring and reporting on organizational resilience of insurance companies in Kenya.

Correspondingly, four null hypotheses were tested:

H₀₁: Risk governance structure has no significant effect on organizational resilience of insurance companies in Kenya.

H₀₂: Risk identification and assessment has no significant effect on organizational resilience of insurance companies in Kenya.

H₀₃: Risk appetite and tolerance has no significant effect on organizational resilience of insurance companies in Kenya.

H₀₄: Risk monitoring and reporting has no significant effect on organizational resilience of insurance companies in Kenya.

2. Literature Review and Hypothesis Development

2.1 Theoretical Framework

The study is anchored on dynamic capabilities theory (Teece et al., 1997), which holds that firms achieve sustained performance in volatile environments by developing the capacity to sense threats and opportunities, seize them through resource reconfiguration, and transform internal structures to preserve competitiveness. ERM is conceptualized here as a dynamic capability: sensing is embodied in risk identification and assessment; seizing is embodied in risk appetite and tolerance frameworks that guide resource allocation; and transforming is embodied in the governance and monitoring architecture that reconfigures oversight in response to emerging threats. This framing directly supports the expectation that stronger ERM practice yields greater preparedness, adaptive capacity, and recovery capability.

Three complementary theories extend this anchor. The resource-based view (Barney, 1991) frames ERM capabilities governance systems, assessment routines, appetite frameworks, and monitoring infrastructure as valuable, organization-specific resources that generate resilience precisely because they are difficult for competitors to replicate quickly. Contingency theory (Burns & Stalker, 1961; Lawrence & Lorsch, 1967) explains why the effectiveness of ERM is not universal but depends on alignment between risk management structures and the regulatory, market, and operational context of the firm implying that insurers whose ERM architecture matches the intensity of their risk environment should exhibit stronger resilience outcomes. Institutional theory (Meyer & Rowan, 1977; DiMaggio & Powell, 1983) accounts for why ERM adoption in a heavily regulated sector such as insurance is shaped by coercive pressure from the IRA, normative pressure from professional standards, and mimetic pressure from industry peers, which explains cross-firm variation in the depth of ERM institutionalization. Jointly, these theories justify treating ERM as a multidimensional, context-sensitive capability rather than a uniform compliance artefact.

2.2 Risk Governance Structure and Organizational Resilience

Risk governance structure reflects the role of the board, senior management, and formal policy in overseeing risk management activity, typically operationalized through board oversight, risk committee activity, and clarity of accountability (Erin et al., 2023). Dahmen (2023) found that ERM frameworks embedding risk leadership and culture enabled insurers to anticipate, adapt to, and recover from severe disruptions such as the COVID-19 pandemic, although the study relied on qualitative, cross-national executive interviews without standardized resilience measures. Horvey and Odei-Mensah (2024) reported that governance-oriented ERM characteristics were positively associated with underwriting performance and return on assets among South African insurers, a performance-based proxy consistent with, but not a direct test of, resilience. Similarly, Mosa (2025) linked ERM governance practices to solvency and operational stability among Saudi insurers under a sustainability rather than resilience framing. These studies converge on the expectation that stronger risk governance enhances organizational resilience, though none directly measures resilience using validated, multidimensional indicators in an African insurance context. Accordingly, it was hypothesized that risk governance structure has a positive and significant effect on organizational resilience.

2.3 Risk Identification and Assessment and Organizational Resilience

Risk identification and assessment denote the systematic process by which firms recognize and evaluate internal and external risks using tools such as risk registers, scenario analysis, and stress testing (Mehta, 2024). In the Kenyan context, Jiraw et al. (2024) found that risk identification improved financial performance among Nairobi-based insurers, while Njagi and Njuguna (2020) reported that weak, non-proactive identification practices constrained ERM effectiveness across 49 Kenyan insurers. Kaniaru (2022) showed that risk identification and assessment jointly explained a substantial share of variance in organizational performance among Kenyan insurers, and Williams and Tesunbi (2025) linked risk identification to adaptability and decision-making

quality within a Nigerian insurer. Across these studies, resilience is inferred from performance or adaptability proxies rather than measured directly, leaving a clear empirical gap that this study addresses by testing the relationship using validated resilience indicators. It was hypothesized that risk identification and assessment has a positive and significant effect on organizational resilience.

2.4 Risk Appetite and Tolerance and Organizational Resilience

Risk appetite and tolerance capture the level and nature of risk an organization is willing to accept in pursuit of its objectives, typically measured through the existence of board-approved appetite statements, risk limits, and their alignment with strategy (Rasedi & Sibindi, 2023). Fraser and Simkins (2024) found that clearly articulated risk appetite structures significantly strengthened resilience among large North American and European financial institutions, while Kumar et al. (2025) reported comparable effects among Indian insurers using perceptual measures of underwriting limits and solvency margins. Werner et al. (2020), studying general organizational settings outside insurance, found that well-specified tolerance thresholds accelerated response to disruption. These studies are concentrated in developed or non-insurance-specific contexts, motivating the present study's focus on Kenyan insurers. It was hypothesized that risk appetite and tolerance has a positive and significant effect on organizational resilience.

2.5 Risk Monitoring and Reporting and Organizational Resilience

Risk monitoring and reporting reflects an organization's capacity to track risk exposures continuously and communicate risk information through timely, transparent reporting and escalation mechanisms (Macharia et al., 2025). Mutiso (2024) found that stronger monitoring and reporting practices were associated with improved strategic response and resilience among Kenyan organizations, though the study did not isolate monitoring from other ERM elements. Mahama et al. (2022) reported that structured monitoring and reporting enhanced continuity and resilience among SMEs, while Monazzam and Crawford (2024) found that proactive monitoring and transparent reporting supported adaptive resource reconfiguration in a Swedish mining firm undergoing strategic change. These cross-sectoral findings support a positive relationship but leave open whether monitoring and reporting exerts an independent, quantifiable effect within a regulated insurance context. It was hypothesized that risk monitoring and reporting has a positive and significant effect on organizational resilience.

2.6 Summary of Literature and Research Gap

Table 1 synthesizes the reviewed empirical studies. Three recurring gaps emerge. First, resilience is rarely measured directly; most studies rely on financial performance, solvency, or competitive advantage as proxies. Second, the bulk of ERM–resilience evidence originates in developed economies or non-insurance sectors, limiting contextual applicability to Kenya. Third, few studies model the differential contribution of individual ERM dimensions within a single analytical framework, which obscures which components matter most for practitioners and regulators

seeking to prioritize resource allocation. This study addresses these gaps by measuring organizational resilience directly through preparedness, adaptive capacity, and recovery capability, and by simultaneously estimating the effects of four ERM dimensions on resilience among a full census of licensed Kenyan insurers using PLS-SEM.

Table 1. *Summary of Selected Empirical Literature on ERM Dimensions and Organizational Resilience*

Author(s) / Year	Focus	Key Finding	Gap Addressed by Current Study
Dahmen (2023)	ERM and resilience during COVID-19 (global insurers)	ERM enhanced anticipation, adaptation, and recovery	Applies quantitative, validated resilience indicators
Horvey & Odei-Mensah (2024)	ERM features and performance (South Africa)	Governance features improved underwriting performance and ROA	Links governance directly to resilience outcomes
Mosa (2025)	ERM, sustainability, and resilience (Saudi Arabia)	ERM improved solvency and operational stability	Isolates resilience as the dependent construct
Al Lawati et al. (2025)	ERM and non-financial performance (Oman)	ERM positively affected performance via competitive advantage	Measures organizational resilience directly
Jiraw et al. (2024)	Risk identification and financial performance (Nairobi)	Risk identification improved financial performance	Measures adaptability and recovery directly
Njagi & Njuguna (2020)	ERM adoption and maturity (Kenya)	Weak identification hindered ERM effectiveness	Empirically tests the ERM–resilience link
Kaniaru (2022)	Risk identification/assessment and performance (Kenya)	Identification and assessment explained performance variance	Uses direct resilience constructs
Fraser & Simkins (2024)	Risk appetite frameworks and resilience (North America/Europe)	Defined risk appetite improved resilience	Examines the Kenyan insurance context
Kumar et al. (2025)	Risk appetite alignment and resilience (India)	Defined risk appetite enhanced resilience	Combines perceptual and structural-model evidence
Mutiso (2024)	Monitoring and reporting and resilience (Kenya)	Monitoring correlated with resilience	Isolates monitoring/reporting as an independent predictor
Mahama et al. (2022)	Risk monitoring/reporting and resilience (SMEs)	Monitoring improved preparedness and adaptability	Targets regulated insurance firms
Monazzam & Crawford (2024)	ERM and resilience (Swedish mining sector)	Transparent reporting supported resilience	Tests mechanisms within the insurance industry

Note. Adapted and condensed from the empirical review; full citations appear in the reference list.

2.7 Conceptual Framework

The conceptual model specifies enterprise risk management as a multidimensional independent construct comprising risk governance structure, risk identification and assessment, risk appetite and tolerance, and risk monitoring and reporting, each hypothesized to exert a direct, positive effect on organizational resilience the dependent construct, operationalized through preparedness, adaptive capacity, and recovery capability. The model is consistent with dynamic capabilities theory in framing ERM as an enabling capability rather than a static compliance requirement, and with contingency and institutional theory in recognizing that the strength of these relationships is shaped by the regulatory and operational context of the Kenyan insurance sector.

3. Methodology

3.1 Research Design

The study adopted an explanatory research design within a quantitative approach, appropriate for testing hypothesized cause-and-effect relationships between ERM dimensions and organizational resilience and for generating empirical evidence to inform theory, policy, and practice (Dane & Carhart, 2023).

3.2 Population, Census, and Unit of Analysis

The target population comprised all 58 licensed insurance companies in Kenya, spanning life, general, and composite insurers, as listed by the Insurance Regulatory Authority. Given the manageable population size, a census approach was adopted, and no firm-level sampling was applied. The unit of analysis was the individual insurance company, since ERM is implemented at the organizational level while resilience outcomes are assessed at the firm level; the unit of observation comprised key informants risk managers, internal auditors, and senior operations managers within each firm.

Table 2. *Target Population by Respondent Role*

Role	Number
Risk managers	58
Internal auditors	58
Senior operations managers	58
Total	174

3.3 Data Collection Instrument and Measurement

Primary data were collected using a structured, five-point Likert-scale questionnaire (1 = strongly disagree to 5 = strongly agree), organized into six sections covering respondent demographics, risk governance structure, risk identification and assessment, risk appetite and tolerance, risk monitoring and reporting, and organizational resilience. Measurement items were derived from prior empirical studies and aligned with the COSO ERM framework. A pilot test involving assistant-level risk professionals from five insurance companies was conducted to assess clarity, sequencing, and completion time prior to full administration; ambiguous items were revised accordingly.

Table 3. *Summary of Measurement of Study Variables*

Variable Type	Variable	Indicators	Scale
Dependent	Organizational resilience	Preparedness; adaptive capacity; recovery capability	5-point Likert
Independent	Risk governance structure	Board oversight; risk committees; accountability; role clarity	5-point Likert
Independent	Risk identification and assessment	Assessment processes; analysis techniques; review frequency; impact measurement	5-point Likert
Independent	Risk appetite and tolerance	Appetite clarity; strategic alignment; risk limits; communication/enforcement	5-point Likert
Independent	Risk monitoring and reporting	Risk tracking; reporting quality/transparency; escalation mechanisms	5-point Likert

3.4 Reliability, Validity, and Diagnostic Testing

Instrument quality was assessed through indicator reliability (outer loadings ≥ 0.70), internal consistency reliability (Cronbach's alpha, ρ_A , and composite reliability ≥ 0.70), convergent validity (average variance extracted, AVE ≥ 0.50), and discriminant validity (Heterotrait–Monotrait ratio, HTMT < 0.90 , and the Fornell–Larcker criterion). Prior to structural model estimation, multicollinearity was assessed via the variance inflation factor (VIF < 5.00) and heteroskedasticity via the Breusch–Pagan/Cook–Weisberg test. Because PLS-SEM is a variance-based, prediction-oriented technique, strict multivariate normality was not required (Hair & Alamer, 2022; Hair et al., 2022).

3.5 Analytical Technique

Partial least squares structural equation modelling (PLS-SEM) was used to estimate both the measurement and structural models simultaneously. The structural model is specified as:

$$OR = \beta_0 + \beta_1RGS + \beta_2RIA + \beta_3RAT + \beta_4RMR + \varepsilon$$

where OR denotes organizational resilience; RGS, risk governance structure; RIA, risk identification and assessment; RAT, risk appetite and tolerance; RMR, risk monitoring and reporting; β_0 the intercept; β_1 – β_4 the standardized path coefficients; and ε the error term. Model adequacy was evaluated using the coefficient of determination (R^2), effect size (f^2), predictive relevance ($Q^2_{predict}$), and model fit indices (SRMR, d_{ULS} , d_G , chi-square, NFI). Hypotheses were tested via bootstrapped path coefficients (5,000 resamples), with the null hypothesis rejected at $p < 0.05$.

3.6 Ethical Considerations

Ethical approval was obtained from the university's Institutional Scientific and Ethics Review Committee, with subsequent research authorization from the National Commission for Science, Technology and Innovation (NACOSTI). Participation was voluntary and based on informed consent, with respondents free to withdraw at any stage without penalty. Responses were anonymized and reported only in aggregate to protect the identity of respondents and participating firms.

4. Results

4.1 Response Rate

Of the 174 questionnaires administered, 152 were returned (87.4% response rate), and after screening for completeness and consistency, 148 were retained for analysis (85.1% valid response rate). Both rates substantially exceed the 70% threshold conventionally regarded as very good for social science survey research, indicating a low risk of non-response bias and a dataset well suited to PLS-SEM estimation.

Table 4. *Questionnaire Response Rate and Usable Questionnaires*

Category	Frequency (n)	Percentage (%)
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Questionnaires issued	174	100.0
Questionnaires returned	152	87.4
Non-usable questionnaires	4	2.3
Valid questionnaires	148	85.1

4.2 Demographic Profile of Respondents

Respondents were fairly evenly distributed across professional roles: risk managers (34.5%), internal auditors (33.1%), and operations managers (32.4%), reflecting a balance of perspectives on risk oversight, internal control, and operational continuity. Most respondents were experienced professionals: 37.2% had 5–10 years of experience and 26.4% had 11–15 years, while only 18.9% had less than five years and 17.6% had more than fifteen years of experience in the insurance sector. This profile supports the credibility and informational quality of the data collected.

Table 5. Demographic Characteristics of Respondents (n = 148)

Variable	Category	Frequency (n)	Percentage (%)
Position held	Risk manager	51	34.5
	Internal auditor	49	33.1
	Operations manager	48	32.4
Experience in insurance sector	Less than 5 years	28	18.9
	5–10 years	55	37.2
	11–15 years	39	26.4
	Over 15 years	26	17.6

4.3 Diagnostic Tests

Variance inflation factors ranged from 1.218 (risk identification and assessment) to 1.874 (risk appetite and tolerance), well below the conservative threshold of 5.00, indicating that multicollinearity did not threaten the stability of the structural coefficients. The Breusch–Pagan/Cook–Weisberg test for heteroskedasticity was non-significant, $\chi^2(1) = 0.19$, $p = 0.659$, supporting the assumption of homoscedastic residual variance.

Table 6. Diagnostic Tests for Multicollinearity and Heteroskedasticity

Test	Path / Statistic	Result	Interpretation
Multicollinearity (VIF)	RAT → OR	1.874	No serious multicollinearity
Multicollinearity (VIF)	RGS → OR	1.592	No serious multicollinearity
Multicollinearity (VIF)	RIA → OR	1.218	No serious multicollinearity
Multicollinearity (VIF)	RMR → OR	1.411	No serious multicollinearity
Heteroskedasticity	Breusch–Pagan/Cook–Weisberg	$\chi^2(1) = 0.19$, $p = 0.659$	Homoscedastic; not significant

4.4 Measurement Model Assessment

4.4.1 Indicator Reliability and Internal Consistency

All indicator outer loadings exceeded the 0.70 threshold with the exception of one item within risk appetite and tolerance (risk appetite clarity and strategic alignment, loading = 0.667), which was retained because it remained statistically significant ($t = 5.838$, $p < .001$) and theoretically central to the construct, and because overall construct reliability and validity were satisfactory.

Organizational resilience indicators loaded most strongly (0.901–0.935), followed by risk appetite and tolerance (0.667–0.890), risk governance structure (0.837–0.846), risk identification and assessment (0.817–0.882), and risk monitoring and reporting (0.807–0.871).

Table 7. *Outer Loadings of Constructs and Indicators*

Construct	Indicator	Loading	SE	t	p
Organizational Resilience	Adaptive capacity	0.901	0.040	22.749	0.000
	Recovery capability	0.922	0.023	40.398	0.000
	Preparedness	0.935	0.026	35.802	0.000
Risk Governance Structure	Board oversight & risk committees	0.846	0.069	12.225	0.000
	Accountability	0.839	0.062	13.525	0.000
	Role clarity	0.837	0.041	20.485	0.000
Risk Identification & Assessment	Assessment processes & analysis	0.817	0.093	8.817	0.000
	Frequency of risk reviews	0.882	0.070	12.604	0.000
	Risk evaluation & impact measurement	0.822	0.069	11.965	0.000
Risk Appetite & Tolerance	Appetite clarity & strategic alignment	0.667	0.114	5.838	0.000
	Risk limits	0.859	0.073	11.741	0.000
	Appetite communication & enforcement	0.890	0.026	34.366	0.000
Risk Monitoring & Reporting	Risk tracking	0.848	0.082	10.361	0.000
	Reporting quality & transparency	0.871	0.051	17.074	0.000
	Escalation mechanisms	0.807	0.073	11.109	0.000

Internal consistency reliability and convergent validity were also acceptable across all constructs. Cronbach's alpha ranged from 0.736 (risk appetite and tolerance) to 0.908 (organizational resilience), with composite reliability (rho_C) ranging from 0.851 to 0.942—all above the 0.70 threshold and below the 0.95 ceiling associated with item redundancy. Average variance extracted ranged from 0.659 to 0.845, exceeding the 0.50 minimum and confirming that each construct captured a substantial share of variance in its indicators.

Table 8. *Internal Consistency Reliability and Convergent Validity*

Construct	Cronbach's Alpha	rho_A	rho_C (Composite Reliability)	AVE
Organizational Resilience	0.908	0.910	0.942	0.845
Risk Governance Structure	0.796	0.812	0.878	0.706
Risk Identification and Assessment	0.795	0.816	0.879	0.707
Risk Appetite and Tolerance	0.736	0.780	0.851	0.659
Risk Monitoring and Reporting	0.795	0.796	0.880	0.710

4.4.2 Discriminant Validity

All HTMT ratios fell below the conservative 0.90 threshold, with the highest value observed between risk appetite and tolerance and organizational resilience (0.896) and the lowest between risk identification and assessment and risk monitoring and reporting (0.325). The Fornell–Larcker criterion corroborated this result: the square root of AVE for each construct (diagonal values in Table 10) exceeded its correlations with all other constructs, confirming that the five constructs captured empirically distinct concepts.

Table 9. *Discriminant Validity: Heterotrait–Monotrait (HTMT) Ratio*

Construct Pair	HTMT Ratio
Risk Appetite & Tolerance ↔ Organizational Resilience	0.896
Risk Governance Structure ↔ Organizational Resilience	0.882
Risk Governance Structure ↔ Risk Appetite & Tolerance	0.712
Risk Monitoring & Reporting ↔ Organizational Resilience	0.822
Risk Monitoring & Reporting ↔ Risk Appetite & Tolerance	0.662
Risk Identification & Assessment ↔ Organizational Resilience	0.624
Risk Identification & Assessment ↔ Risk Appetite & Tolerance	0.478
Risk Monitoring & Reporting ↔ Risk Governance Structure	0.466
Risk Identification & Assessment ↔ Risk Governance Structure	0.418
Risk Identification & Assessment ↔ Risk Monitoring & Reporting	0.325

Note. All HTMT values are below the 0.90 threshold, supporting discriminant validity.

Table 10. Discriminant Validity: Fornell–Larcker Criterion

Construct	OR	RAT	RGS	RIA	RMR
Organizational Resilience (OR)	0.919				
Risk Appetite & Tolerance (RAT)	0.744	0.812			
Risk Governance Structure (RGS)	0.769	0.585	0.840		
Risk Identification & Assessment (RIA)	0.540	0.384	0.362	0.841	
Risk Monitoring & Reporting (RMR)	0.710	0.527	0.393	0.265	0.843

Note. Diagonal values (bold in the original model output) represent the square root of AVE; off-diagonal values are inter-construct correlations.

4.5 Structural Model Assessment

4.5.1 Model Fit

Global model fit indices indicated a relatively weak approximate fit: SRMR = 0.114 (above the 0.080–0.100 threshold) and NFI = 0.588 (below the 0.90 benchmark), with $d_{ULS} = 1.560$, $d_G = 1.084$, and $\chi^2 = 200.353$. Because PLS-SEM is fundamentally a prediction-oriented rather than covariance-fitting technique, these global fit statistics are interpreted cautiously and are supplemented by explanatory power, effect size, and predictive relevance, which are more diagnostic of PLS-SEM model adequacy (Hair et al., 2022).

Table 11. Model Fit Statistics

Fit Index	Saturated Model	Estimated Model	Interpretation
SRMR	0.114	0.114	Above conventional thresholds; weak approximate fit
d_{ULS}	1.560	1.560	Interpreted comparatively
d_G	1.084	1.084	Interpreted comparatively
Chi-square	200.353	200.353	Interpreted cautiously in PLS-SEM
NFI	0.588	0.588	Below 0.90; weak model fit

4.5.2 Explanatory Power, Effect Size, and Predictive Relevance

The model explained a substantial proportion of variance in organizational resilience ($R^2 = 0.863$; adjusted $R^2 = 0.848$), indicating that the four ERM dimensions jointly account for 86.3% of variation in resilience among Kenyan insurers. Effect size analysis (f^2) showed that risk governance structure exerted the largest individual contribution ($f^2 = 0.800$, a large effect), followed by risk monitoring and reporting ($f^2 = 0.725$, large effect), risk identification and assessment ($f^2 = 0.249$, medium effect), and risk appetite and tolerance ($f^2 = 0.197$, medium effect). The model's predictive relevance was strong ($Q^2_{\text{predict}} = 0.802$, well above the zero threshold),

with a root mean square error of 0.477 and mean absolute error of 0.355, confirming that the ERM dimensions not only explain but also meaningfully predict organizational resilience out of sample.

Table 12. *Structural Model Summary: R^2 , f^2 , and Q^2 predict*

Statistic	Path / Construct	Value	Interpretation
R^2 (Coefficient of Determination)	Organizational Resilience	0.863	Substantial explanatory power
Adjusted R^2	Organizational Resilience	0.848	Substantial explanatory power
f^2 (Effect Size)	Risk Governance Structure $\rightarrow$ OR	0.800	Large effect
f^2 (Effect Size)	Risk Monitoring and Reporting $\rightarrow$ OR	0.725	Large effect
f^2 (Effect Size)	Risk Identification and Assessment $\rightarrow$ OR	0.249	Medium effect
f^2 (Effect Size)	Risk Appetite and Tolerance $\rightarrow$ OR	0.197	Medium effect
Q^2 predict	Organizational Resilience	0.802	Strong predictive relevance
RMSE	Organizational Resilience	0.477	Low prediction error
MAE	Organizational Resilience	0.355	Low prediction error

4.5.3 Hypothesis Testing

All four hypothesized paths were positive and statistically significant at $p < .05$, leading to rejection of all four null hypotheses. Risk governance structure was the strongest predictor of organizational resilience ($\beta = 0.417$, $t = 4.799$, $p < .001$), followed by risk monitoring and reporting ($\beta = 0.374$, $t = 4.393$, $p < .001$), risk appetite and tolerance ($\beta = 0.225$, $t = 2.237$, $p = 0.025$), and risk identification and assessment ($\beta = 0.203$, $t = 2.166$, $p = 0.030$).

Table 13. *Hypothesis Testing Results (Path Coefficients)*

Hypothesis	Path	β	SE	t	p	Decision
H01	RGS $\rightarrow$ OR	0.417	0.087	4.799	<.001	Rejected
H02	RIA $\rightarrow$ OR	0.203	0.094	2.166	0.030	Rejected
H03	RAT $\rightarrow$ OR	0.225	0.100	2.237	0.025	Rejected
H04	RMR $\rightarrow$ OR	0.374	0.085	4.393	<.001	Rejected

Note. RGS = risk governance structure; RIA = risk identification and assessment; RAT = risk appetite and tolerance; RMR = risk monitoring and reporting; OR = organizational resilience. Decision rule: reject H_0 when $p < 0.05$.

5. Discussion

The finding that risk governance structure is the strongest predictor of organizational resilience underscores the centrality of board oversight, active risk committees, and clear accountability in enabling Kenyan insurers to prepare for, adapt to, and recover from disruption. This result is consistent with Dahmen (2023), who found that resilience-oriented ERM leadership enabled insurers to rebound from severe crisis events, and with Horvey and Odei-Mensah (2024) and Mosa (2025), who linked governance-oriented ERM to improved operational performance and solvency in South African and Saudi insurance markets, respectively. The present study extends this literature by demonstrating, through a validated structural model, that governance exerts a direct and quantifiable effect on resilience itself rather than on performance proxies alone, and that this

effect is the largest among the ERM dimensions tested ($f^2 = 0.800$). Practically, this suggests that embedding risk oversight within strategic decision-making, rather than treating it as a compliance formality, is the single most consequential lever available to Kenyan insurers seeking to strengthen resilience.

Risk monitoring and reporting emerged as the second-strongest predictor, corroborating Mutiso (2024) and Mahama et al. (2022), who found that continuous tracking, transparent reporting, and clear escalation pathways support rapid response to emerging threats. The present findings extend this evidence by isolating monitoring and reporting as an independent predictor within a multi-dimensional ERM model, showing that its resilience-enhancing effect ($f^2 = 0.725$) is nearly as large as that of governance and substantially larger than either risk identification and assessment or risk appetite and tolerance. This suggests that in a claims-intensive, regulation-sensitive sector such as insurance, the timeliness and quality of risk information may matter as much as the formal governance architecture surrounding it, consistent with Monazzam and Crawford's (2024) observation that real-time risk information enables adaptive resource reconfiguration.

Risk appetite and tolerance and risk identification and assessment also exerted positive, statistically significant, though comparatively moderate, effects on resilience. The risk appetite finding is consistent with Fraser and Simkins (2024) and Kumar et al. (2025), both of whom found that clearly defined risk appetite frameworks strengthened resilience in financial institutions, while extending this evidence to an emerging-market insurance context where institutional capacity and regulatory intensity differ from North America, Europe, or India. Similarly, the identification and assessment finding aligns with Jiraw et al. (2024) and Kaniaru (2022), who linked these practices to financial performance among Kenyan insurers, while advancing the literature by testing their effect on resilience directly rather than through a performance proxy. The comparatively smaller effect sizes for these two dimensions suggest that, while indispensable, appetite-setting and risk scanning function as necessary but not sufficient conditions for resilience—arguably because their resilience-enhancing potential is realized only when translated into governance oversight and operational monitoring.

Collectively, the results support the theoretical proposition that ERM functions as a dynamic capability: risk identification and assessment perform the sensing function, risk appetite and tolerance perform the seizing function by guiding resource allocation within acceptable risk boundaries, and risk governance together with monitoring and reporting perform the transforming function by reconfiguring oversight and information flows in response to disruption. The dominance of governance and monitoring in the results is consistent with the resource-based view's emphasis on organization-specific capabilities that are difficult to replicate, and with institutional theory's expectation that, in a heavily supervised sector, coercive and normative pressure from the IRA channels resilience-building efforts disproportionately toward governance and reporting infrastructure. The findings also affirm contingency theory's premise that ERM effectiveness is context-dependent: the strength of the governance and monitoring effects likely reflects the high regulatory intensity and claims volatility characteristic of the Kenyan insurance environment.

Notwithstanding the strength of the structural relationships, the comparatively weak global fit indices (SRMR = 0.114; NFI = 0.588) indicate that the estimated model, while highly explanatory and predictive, does not perfectly reproduce the observed covariance structure. This is a common characteristic of PLS-SEM applications to complex, multi-indicator behavioural models and does not undermine the substantive conclusions, which rest primarily on explained variance, effect size, and predictive relevance rather than covariance-based fit (Hair et al., 2022).

6. Conclusion, Contributions, and Implications

6.1 Conclusion

This study set out to examine the effect of enterprise risk management on organizational resilience among insurance companies in Kenya. The evidence demonstrates that all four ERM dimensions—risk governance structure, risk identification and assessment, risk appetite and tolerance, and risk monitoring and reporting—exert positive, statistically significant effects on organizational resilience, jointly explaining 86.3% of its variance with strong predictive relevance. Risk governance structure is the most consequential dimension, followed closely by risk monitoring and reporting, with risk appetite and tolerance and risk identification and assessment contributing meaningful but comparatively smaller effects. The overall pattern indicates that resilience among Kenyan insurers is built substantially through governance-led, information-rich risk management practice rather than through compliance-oriented, symbolic ERM adoption alone.

6.2 Theoretical, Empirical, Methodological, and Contextual Contributions

Theoretically, the study integrates dynamic capabilities theory with the resource-based view, contingency theory, and institutional theory to provide a multi-lensed explanation of how ERM builds resilience, treating ERM as an organization-specific, context-contingent, and institutionally shaped dynamic capability. Empirically, the study contributes direct, quantitative evidence—rather than performance or solvency proxies on the differential contribution of four ERM dimensions to resilience, clarifying that governance and monitoring exert substantially larger effects than appetite-setting and identification within the Kenyan insurance sector. Methodologically, the study demonstrates the applicability of PLS-SEM for simultaneously testing measurement and structural models in ERM–resilience research, offering a replicable analytical template for future studies in similarly regulated, risk-intensive sectors. Contextually, the study addresses a longstanding gap by generating sector-specific evidence from Kenya's insurance industry, an emerging market characterized by low penetration, regulatory reform, and claims volatility, thereby extending the ERM–resilience literature beyond its predominantly developed-economy and non-insurance origins.

6.3 Policy Recommendations

The Insurance Regulatory Authority should strengthen supervisory expectations around risk governance by requiring active board-level risk committees, documented accountability structures,

and clearly defined risk oversight roles, framing governance as a strategic rather than purely compliance function. Regulatory guidance should similarly mandate structured risk identification and assessment practices—including regular risk registers, stress testing, and scenario analysis—and require insurers to maintain formal, board-approved risk appetite statements aligned with capital position and strategic objectives. Given the strength of the monitoring and reporting effect, the IRA should also standardize reporting requirements for key risk indicators, breaches, and remedial actions to enhance sector-wide transparency and early-warning capacity.

6.4 Managerial and Practical Recommendations

Boards and senior management should prioritize the resourcing and empowerment of risk committees, ensure clear allocation of risk responsibilities across departments, and formally cascade risk appetite statements to underwriting, claims, investment, and operations teams so that appetite functions as an operational decision rule rather than a board-level document alone. Insurers should invest in integrated ERM systems incorporating risk registers, heat maps, dashboards, and escalation workflows to strengthen the monitoring and reporting infrastructure identified as a near-equal driver of resilience alongside governance. Regular risk management training for board members, risk officers, internal auditors, and operations managers is recommended to embed risk-aware decision-making into organizational culture and to sustain the practical translation of ERM policy into resilience outcomes.

7. Limitations and Directions for Future Research

The study's cross-sectional design captures ERM–resilience relationships at a single point in time and cannot establish how these relationships evolve as insurers respond to market shocks, regulatory shifts, or technological change; longitudinal designs would strengthen causal inference and reveal whether the relative importance of governance and monitoring persists over time. The exclusive focus on Kenya's insurance sector, while enabling contextual depth, limits generalizability to other financial services or non-financial sectors with different risk profiles; cross-sectoral comparative studies would clarify whether the dominance of governance and monitoring observed here is insurance-specific or more broadly applicable. Finally, reliance on self-reported, perceptual survey data introduces the possibility of social desirability bias, notwithstanding efforts to mitigate this through informed, experienced key informants and validated measurement items. Future research should therefore consider longitudinal and mixed-methods designs, extend the analysis to other regulated sectors, and examine mediating or moderating variables such as risk culture, digital transformation, business continuity planning, and regulatory intensity to further illuminate the mechanisms linking enterprise risk management to organizational resilience.

References

- Adeniran, I. A., Abhulimen, A. O., Obiki-Osafiele, A. N., Osundare, O. S., Agu, E. E., & Efunniyi, C. P. (2024). Strategic risk management in financial institutions: Ensuring robust regulatory compliance. *Finance and Accounting Research Journal*, 6(8), 1582–1596.
- Adhillah, M. N., Syalwa, M., Meilanda, P., & Sari, R. (2025). *Systematic literature review: The development of enterprise risk management*.
- African Climate Foundation (2024). *Climate risk and financial system resilience in Africa*.
- Aguinis, H. (2024). *Research methodology: Best practices for rigorous, credible, and impactful research*. Sage Publications.
- Ahmad, A. S., Abdul Hamid, M., & Wahab, S. (2023). The seven strategic imperatives of enterprise risk management (ERM) implementation in financial institutions. *International Journal of Academic Research in Business and Social Sciences*, 13(12).
- Aksom, H., & Tymchenko, I. (2020). How institutional theories explain and fail to explain organizations. *Journal of Organizational Change Management*, 33(7), 1223–1252.
- Alaeddin, O., Thabet, A. A., Anees, R. T., & Albashiti, B. (2021). *The effect of enterprise risk management (ERM) on organizational performance: Empirical investigation from the diversified industry of the United Arab Emirates*.
- Alexander, D. (2021). *Disaster and crisis preparedness*. Oxford University Press.
- Al Lawati, A., Hussin, B. M., Kadir, A., & Khudari, M. (2025). The impact of enterprise risk management on firm competitiveness: The mediating role of competitive advantage in the Omani insurance industry. *Risks*, 13(10), Article 199.
- Amanawa, D. E. (2022). Universality of the contingency theory of management. *Environment*, 6(5).
- Amjad, M. S., Rafique, M. Z., Rahman, M. N. A., Zaheer, M. A., & Haider, S. M. (2020). *Research aspects for methodology design*.
- Andia, S. (2024). Fraud prevention strategies and financial stability of insurance companies in Kenya. *African Journal of Commercial Studies*, 5(1), 42–50.
- Assibi, A. T. (2024). *The role of enterprise risk management and business continuity in strengthening resilience in public sector financial management in Ghana* [Doctoral dissertation, Westcliff University].
- Association of Kenyan Insurers (2024). *Kenya's insurance sector records steady growth in second year of IFRS 17 adoption*.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Basir, A. R., Jamaluddin, A., & Tanggamani, V. (2025). Analyzing risk: Developing resilience and adaptability in the dynamic business environment. *Issues in Social and Environmental Accounting*, 19(5), 1–12.
- Brower, J., & Dacin, P. A. (2020). An institutional theory approach to the evolution of the corporate social performance–corporate financial performance relationship. *Journal of Management Studies*, 57(4), 805–836.
- Burns, T., & Stalker, G. M. (1961). *The management of innovation*. Tavistock.
- Canton, H. (2021). Organisation for Economic Co-operation and Development—OECD. In *The Europa Directory of International Organizations 2021* (pp. 677–687). Routledge.
- Cytonn Investments (2024). *Kenya listed insurance sector report*.

- Dahmen, P. (2023). Organizational resilience as a key property of enterprise risk management in response to novel and severe crisis events. *Risk Management and Insurance Review*, 26(2), 203–245.
- Dane, F. C., & Carhart, E. (2023). *Evaluating research: Methodology for people who need to read research*. Sage Publications.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13(1), 215–246.
- Durst, S., Hinteregger, C., & Zieba, M. (2024). The effect of environmental turbulence on cyber security risk management and organizational resilience. *Computers & Security*, 137, Article 103591.
- Erin, O., Okoh, J. I., & Okika, N. (2023). Risk governance and risk disclosure quality: An empirical evidence. *Journal of Financial Reporting and Accounting*.
- Fraser, J., Quail, R., & Simkins, B. (2024). What's wrong with enterprise risk management?. *Journal of Risk and Financial Management*, 17(7), Article 274.
- Fung, D. W. H., Lee, W. Y., & Yang, C. C. (2025). Surviving the storm: Evaluating the role of enterprise risk management in property and liability insurers' performance during the COVID-19 pandemic. *Journal of Corporate Finance*, 91, Article 102751.
- Hair, J. F., & Alamer, A. (2022). Partial least squares structural equation modeling (PLS-SEM) in second language and education research. *Research Methods in Applied Linguistics*, 1(3), Article 100027.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications.
- Horvey, S. S., & Odei-Mensah, J. (2024). Enterprise risk management and performance of South African insurers: The moderating role of corporate governance. *Risk Management*, 26(4).
- Horvey, S. S. (2025). Insurers' risk-taking behaviour in an emerging economy: Unpacking the linear and nonlinear effects of enterprise risk management and corporate governance. *Cogent Business & Management*, 12(1), Article 2514169.
- Insurance Regulatory Authority (2023). *Strategic plan 2023–2027: Promoting insurance, protecting the insured*.
- Insurance Regulatory Authority (2024). *Insurance industry annual report 2024*.
- Jiraw, S., Ooko, & Ahmad, A. (2024). Effect of risk management strategies on financial performance of insurance companies in Nairobi County. *Journal of African Interdisciplinary Studies*, 8(10), 190–198.
- Kajwang, B. (2022). Theoretical review of enterprise risk management culture drivers for insurance firms in Kenya. *International Journal of Research in Business and Social Science*, 11(5), 210–217.
- Kaniaru, L. (2022). *Effect of risk management strategy on performance of insurance companies in Kenya*.
- Kenya National Bureau of Statistics (2023). *Economic survey 2023*.
- Kumar, S., Rao, P., & Barai, M. K. (2025). *Investigation into enterprise risk management practices in the Indian insurance sector*.
- Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment: Managing differentiation and integration*. Harvard University Press.

- Levantesi, S., & Piscopo, G. (2021). COVID-19 crisis and resilience: Challenges for the insurance sector. *Advances in Management and Applied Economics*, 11(3), 1–12.
- Macharia, G. M., Ndumo, D., & Muriiki, S. (2025). Effect of risk monitoring practices on financial performance of commercial banks in Kenya. *International Journal of Innovations and Interdisciplinary Research*, 3(1), 71–85.
- Mahama, H., Rana, T., Marjoribanks, T., & Elbashir, M. Z. (2022). Principles-based risk regulatory reforms and management control practices: A field study. *Accounting, Auditing & Accountability Journal*.
- Mehta, R. (2024). *Risk assessment techniques in modern enterprise risk management*.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.
- Monazzam, A., & Crawford, J. (2024). The role of enterprise risk management in enabling organisational resilience: A case study of the Swedish mining industry. *Journal of Management Control*, 35(1), 59–108.
- Moonstone Information Refinery (2025). *SA leads Africa's insurance market—but execution will define the next wave*.
- Mosa, H. A. H. (2025). *The role of enterprise risk management in enhancing the sustainability of Saudi insurance companies under Vision 2030*.
- Mutiso, N. (2024). *The effects of risk management practices on performance of United Nations agencies in Nairobi*.
- Njagi, C., & Njuguna, A. (2020). Evaluation of the level of enterprise risk management adoption and maturity of insurance companies in Kenya. *International Journal of Finance and Accounting*, 1(2), 1.
- Njiru, A. K. (2025). *Influence of enterprise risk management integration on financial performance of non-life insurance companies in Kenya with the moderating effect of regulatory framework* [Doctoral dissertation, Strathmore University].
- Otieno, E. A., Ogutu, M., Ndemo, B., & Pokhariyal, G. (2020). Influence of enterprise risk management on organizational performance: Evidence from Kenyan state-owned corporations. *DBA Africa Management Review*, 10(2), 102–124.
- Rasedi, K., & Sibindi, N. (2023). Enterprise risk management culture and strategy: A conceptual alignment. *Organizational Cultures: An International Journal*, 23(2).
- Shojaee, A., Rashed, M., Islam, M. F., & Vasa, L. (2025). Innovative configurations for organizational resilience: Bridging the proactive and reactive capability in volatile environments. *Sustainable Futures*, 10, Article 101236.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Werner, M. J. E., Yamada, A. P. L., Domingos, E. G. N., Leite, L. R., & Pereira, C. R. (2020). Exploring organizational resilience through key performance indicators. *Journal of Industrial and Production Engineering*, 38(1), 51–65.
- Williams, & Tesunbi (2025). Strategic financial risk management and organizational effectiveness in NEM Insurance Plc, Lagos, Nigeria. *International Journal of Research and Innovation in Social Science*, 9(7), 5243–5255.