

EFFECT OF EMBEDDED VALUE ON FINANCIAL PERFORMANCE OF INSURANCE FIRMS



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EFFECT OF EMBEDDED VALUE ON FINANCIAL PERFORMANCE OF INSURANCE FIRMS

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ABSTRACT

The purpose of the study was to evaluate the effects of embedded value on the financial performance of insurance firms. A descriptive research design was employed targeting insurance companies listed on the Nairobi Securities Exchange (NSE). The study targeted 30 key personnel within these insurance firms who are directly involved in the implementation and management of fintech valuation models. Primary data was collected, organised, coded and analysed using Microsoft Excel and SPSS. Regression analysis was applied to test the relationships between variables where the models under research showed a positive correlation with the Financial Performance. DCF and ECL were reflected as the most consistently utilized models while FVM is displayed as moderately applied model with EV least utilized due to its complexity through the descriptive analysis. From the findings there was significant effect between Embedded Value (EV), and insurance financial performance in terms of ROA ($\beta=0.177$, $p=0.0002$). The Embedded Value (EV) model also influenced financial performance, particularly among life insurers that have adopted the model. However, the high variability and limited adoption suggest that while EV is impactful despite its low implementation rate. By incorporating the present value of future profits from in-force policies, the EV model enabled firms to reflect long-term sustainability in their financial statements. Insurance firms should strengthen actuarial capabilities to fully utilize the Embedded Value (EV) model- for life insurance firms, embedded value must become central in communicating long-term financial strength. Firms should enhance internal actuarial functions and scenario-based forecasting to support EV calculations. This will improve long-range profitability planning and shareholder reporting.

Keywords: *embedded value, financial performance, insurance firms*

1.0 INTRODUCTION

The insurance industry is a key instrument of economic growth, which plays a major role in enabling protection, capital growth, creating certainty in investment, ensuring liquidity and mobilizing savings. The insurers enable other businesses to undertake operations without worrying about risk (Kemboi, 2019). In this regard, the financial stability of insurance companies is crucial for the sustainability of other businesses. However, the financial performance of insurance companies is seldom understood due to complexities in underwriting and models applied when valuing assets (Leslie et al., 2022).

The improved financial performance of an organization translates to positive effects on shareholders' wealth maximization. In this regard, effort should be directed towards improving the shareholders' wealth by addressing all the variables that may hinder the Insurance companies from reflecting the actual financial performance in each period. As observed by Kemboi (2019), a firm's financial success is not only because of one activity but rather out of synergistic actions that combine to create an enhanced value to the overall firm's performance.

In another study by Tsung-Kang et al. (2020) they explained that adoption of the embedded value model in valuing assets has improved the accuracy of financial statements leading to better decision-making regarding profitability of the company and thus attracting investors. (Leslie et al., 2022) in their part argued that fintech models such as Fair value Measurement Models provides accurate asset valuations enhanced investment and better pricing decisions. In a similar study, Jagannayaki et al. (2024) observed that discount cashflow analysis, model brought out the concept of financial valuation enhancement thus the need to understand and explore how the adoption of this model in insurance firm can contribute to the financial performance.

Fintech valuation models utilize technology to improve the accuracy and transparency of financial reporting by incorporating predictive analytics, automation, and real-time market data. These models support better risk management and capital allocation while promoting compliance with global financial standards. In the context of the insurance industry, four models stand out in their relevance and impact—Expected Credit Loss (ECL), Fair Value Measurement (FVM), Embedded Value (EV), and Discounted Cash Flow (DCF). These models have redefined how insurance firms globally evaluate their asset base, respond to regulatory expectations, and communicate their financial position to stakeholders (Maino et al., 2019). The current study focused on embedded value.

In life insurance, long-term profitability and value are often hidden in contracts that stretch over decades. To capture this future-oriented value, firms increasingly use the Embedded Value model. This model calculates the present value of future profits from in-force policies, in addition to the firm's adjusted net asset value. It provides a more comprehensive view of an insurer's financial strength and performance by incorporating future cash flows, policyholder behaviour and cost assumptions. By highlighting the economic value embedded in existing contracts, the model supports pricing decisions, capital planning and performance evaluation. Embedded value is especially critical in communicating value to shareholders and analysts, as it reflects not just historical performance, but the company's ability to generate profits in the years ahead.

According to the Kenya Economic Survey (2019), the finance and insurance sectors contributed 6.6% to Kenya's GDP. Despite this critical contribution to the GDP, insurance industry

contribution inputs to the country's economy declined for the period between 2015 and 2020 by 18%, from 2.79% to 2.3% (Aki Report,2020). According to the business daily dated 2nd Jan 2024, the insurance regulator fined 20 insurers a record of sh. 94.85 million over various breaches including failure to pay claims, late payment of annual licensing fee and late submission of financial records leaving the regulator in the darkness over their stability and safety of cover. This has put the insurance sector in Kenya on the spotlight considering the billions they collect from their customers.

The insurance sector in Kenya plays a pivotal role in economic development by enabling risk mitigation, capital accumulation, and financial stability (Mwangi, 2021). Over the past decade, the sector has witnessed increased interest in financial technology (fintech), which has significantly influenced how insurance firms conduct operations, particularly in asset valuation and financial reporting. According to Otiso (2020), the integration of technological innovations in the insurance industry has positively impacted operational performance and financial outcomes, indicating that technology adoption enhances efficiency, transparency, and customer service delivery. Mwangi (2021) further explored the influence of fintech on the growth of insurance firms in Kenya, concluding that technological tools—such as automated underwriting systems, digital claims processing, and mobile-based insurance platforms—have contributed to measurable improvements in growth indicators. However, both studies acknowledged that while technology has enhanced performance, the adoption of standardized fintech valuation frameworks remains limited, leading to inconsistencies in asset valuation and reporting.

The Insurance Regulatory Authority (IRA) has actively supported this shift by introducing platforms such as Bima Lab and Bima Box, which provide innovation-friendly environments for insurers to test and scale fintech solutions (IRA, 2023a). Additionally, the IRA's 2023–2027 Strategic Plan emphasizes the adoption of digital supervision and data reporting systems to enhance regulatory effectiveness and industry transparency (IRA, 2023b). The Association of Kenya Insurers (AKI) has also advanced fintech adaptation through its annual industry reports. The 2023 Insurance Industry Market Report, aligned with IFRS 17 standards, demonstrates the sector's efforts to modernize valuation and financial reporting processes, facilitating more accurate and real-time assessment of financial performance (AKI, 2023). These developments highlight a growing institutional commitment to fintech integration across Kenya's insurance firms.

As of 2023, there are 56 licensed insurance companies in Kenya (IRA, 2023). Out of these 6 are listed on the Nairobi Securities Exchange. Kenyan insurance firms listed on the Nairobi Securities Exchange (NSE) are particularly positioned to benefit from fintech valuation models due to their regulatory reporting requirements, which demand transparency and consistency. Despite the progress made, the sector still faces challenges such as resistance to change, skills gaps, and system integration issues (Rachael et al., 2024). Nonetheless, the growing body of research, including works by Otiso (2020), Mwangi (2021), Tracy (2022), and Rachael et al. (2024), underscores the transformative potential of fintech valuation models in enhancing the financial performance and sustainability of insurance companies in Kenya.

1.1 Problem statement

The financial performance of insurance firms is essential to the stability of financial markets, investor confidence and broader economic development. Despite the vital role played by Kenya's insurance sector, recent trends reflect a troubling decline in performance. The Aki Report (2020)

noted a drop in GDP contribution from 2.79% in 2015 to 2.30% in 2020, alongside increased regulatory non-compliance cases amounting to Ksh. 94.85 million in fines, this raises critical concerns about financial reporting accuracy and corporate accountability.

Past studies in relation to valuation of assets in insurance firms have relied on traditional methods such as market, income and asset-based models. However, these valuation approaches rely on historical data which are not sufficient in addressing the complexities brought by technological advancements (Tracy, 2022). This study investigated the effects of valuation of assets using fintech models among the insurance listed companies in Kenya.

Similarly, the inability of traditional approaches to account for dynamic market fluctuations and future risk exposure leads to inaccurate asset reporting and hampers sound financial decision-making. This therefore creates a contextual gap which the study has filled. By focusing on fintech valuation models such as Embedded Value (EV), the study seeks to provide a comprehensive understanding of how these models enhance valuation accuracy.

Emerging technologies have gained recognition for their ability to enhance valuation accuracy, facilitate better capital planning, and improve financial disclosure. Leslie et al. (2022) currently, most existing studies focus on developed markets with little empirical validation in emerging economies like Kenya. For instance, a study by Tsung-Kang Chen et al. (2020) who noted that adoption of the fintech model in valuing assets has improved the accuracy of financial statements, this highlights a scope gap, which has been addressed by this research by examining the effects of fintech models in Kenyan insurance context.

Additionally, while some scholars have explored the broad impact of fintech on operational efficiency and customer satisfaction (Otiso, 2020; Mwangi, 2021), few have conducted comparative analyses across different valuation models. Most studies isolate one model or focus on fintech adoption generally without evaluating the effect of combinations of different models such as ECL, FVM, EV, and DCF on profitability metrics. This presents a conceptual gap, where fintech valuation models in the study have been adequately applied or tested across varied contexts to generate comparative performance insights.

Similarly, previous studies have utilised descriptive or qualitative approaches without employing regression or panel data analysis to empirically link fintech model adoption with financial outcomes. As a result, the quantitative influence of these models on ROA in listed Kenyan insurance firms remains poorly understood. Bridging this gap requires a rigorous, data-driven study that not only quantifies the impact but also contextualizes it within Kenya's regulatory and economic framework, hence creating a methodological gap.

1.2 Objectives of the Study

To evaluate the effects of embedded value on the financial performance of insurance firms in Kenya.

1.3 Research Hypothesis

H₁: Embedded Value does not have a statistically significant effect on the financial performance of insurance firms in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Financial intermediation theory

Financial intermediation theory emerged to explain how financial institutions, such as banks, bridge the gap between savers and borrowers. Rooted in information asymmetry and transaction cost economics, the theory highlights the role of intermediaries in reducing risks, lowering costs, and improving capital allocation within the financial system. In 1960, Gurley and Shaw established the financial intermediation theory that is based on agency theory and information asymmetry theories, which explains the role of the financial intermediaries that pool resources from policyholders and invest in various financial instruments. The process of intermediation ensures liquidity, diversification and optimum resource allocation (Wanalo et al, 2020).

The improved financial performance of an organization translates to positive effects on shareholder's wealth maximization. (Kemboi, 2019) In this regard, effort should be directed towards improving the shareholder's wealth by addressing all the variables that may hinder the Insurance companies from reflecting the actual financial performance in each period. Therefore, the theory of financial intermediation is crucial in ensuring the shareholders wealth is maximized by increasing profitability in investments, efficient risk management, increasing market confidence and optimizing asset valuation.

In the insurance industry, the fintech models of asset valuation ensures assessment of risks, manages liquidity and enhance financial stability. The insurance firms as intermediaries of policyholders and brokers, the firm rely on the models to enhance the asset valuation accuracy, mitigate risk, improve investment efficiency and fosters for compliance with the regulatory. The incorporation of the fintech models contribute to the shareholders wealth maximisation and improved financial performance.

While financial intermediation theory effectively explains how institutions reduce information asymmetries and transaction costs, it has been critiqued for oversimplifying modern financial systems. The rise of fintech, peer-to-peer lending and decentralized finance challenges the assumption that intermediaries are always necessary. Additionally, the theory underestimates the role of technology in enhancing transparency and reducing transaction costs independently. Critics argue that traditional intermediaries can sometimes increase systemic risk, especially during financial crises, due to complex interdependencies and lack of accountability.

This theory supports the objective of evaluating the effects of the Embedded Value model on financial performance by highlighting how insurance firms, as financial intermediaries, optimize asset valuation and risk management to enhance shareholder wealth and profitability.

2.2 Empirical Literature

Tsung-Kang Chen et al. (2020), in their study examined the relationship between Embedded Value (EV) reporting quality and credit risk in life insurance firms. The independent variable was EV reporting quality, measured through standardized EV scores and disclosure practices, while the dependent variable was credit risk, quantified via credit default swap spreads and insurer credit ratings. The researchers employed regression analysis using SPSS software, analyzing data from 30 life insurance firms over a five-year period. Their findings indicated that higher EV reporting

quality correlated positively with reduced credit risk and enhanced profitability stability, suggesting that robust EV reporting improves stakeholder confidence and financial resilience. However, the study's scope was limited to credit risk, with no direct analysis of EV's influence on financial performance indicators such as Return on Assets (ROA). The current research expands this scope by evaluating EV's impact on ROA, thus addressing the gap in understanding how EV models contribute to profitability in Kenyan listed insurance firms.

Samir et al. (2022) in their study explored how EV reporting practices affect analyst forecast accuracy and shareholder value. The independent variable was EV disclosure level, while dependent variables included analyst forecast dispersion and shareholder value, measured by stock price volatility and dividend payouts. Using empirical analysis on financial data and stock performance records, the study revealed that transparent EV reporting reduces forecast uncertainty and supports shareholder wealth maximization. However, the research did not examine profitability metrics such as ROA or ROE, focusing instead on investor relations and forecast properties. This current study addresses this limitation by investigating the direct relationship between EV model adoption and financial performance, specifically profitability outcomes (ROA) in Kenyan insurance firms.

Hasheela, Happonen, and Homateni (2023), in their systematic literature review assessed the broader impact of fintech adoption on financial inclusion and long-term value creation. While their study did not focus exclusively on EV models, they highlighted EV's potential role in improving long-term value estimation in financial institutions, particularly in insurance. The variables discussed included fintech tools adoption, financial inclusion rates and institutional valuation methods. Using systematic review methods across multiple African studies, they concluded that EV models can support sustainable growth and value creation, especially when paired with digital innovations. However, their study lacked empirical data on profitability or ROA analysis in insurance firms. The present research builds upon their theoretical insights by offering quantitative analysis of EV's effect on profitability, thus adding practical value to their theoretical findings.

Mention (2019) in her study explored emerging fintech valuation models, including EV, using thematic analysis. Variables analysed included technological trends, valuation model adoption and strategic decision-making outcomes. The study concluded that EV enhances long-term strategic planning, particularly in life insurance firms, by providing accurate projections of future profits from in-force policies. However, the study's focus on strategic planning and future trends meant that financial performance outcomes, such as ROA, were not empirically analysed. This study addresses that limitation by providing firm-level data on EV's relationship to profitability, ensuring a quantitative link between strategic value and financial outcomes in Kenyan insurers.

Fang (2023) in his study reviewed several valuation approaches, including Embedded Value, within the broader context of corporate finance. Using a descriptive approach and case studies, Fang evaluated variables such as valuation method effectiveness, investment decision accuracy, and risk management practices. He emphasized that EV models are critical in investment decision-making due to their ability to accurately estimate the value of long-term insurance contracts. However, the study lacked empirical analysis of how EV adoption impacts profitability metrics, particularly within insurance firms. The current study fills this gap by examining the empirical effect of EV model adoption on ROA, offering evidence-based insights into how EV supports financial performance in listed Kenyan insurers.

2.3 Conceptual Framework

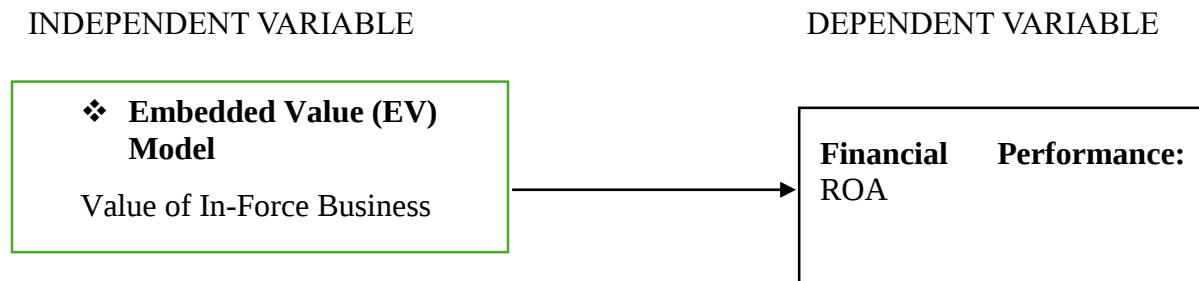


Figure 1: Conceptual Framework (Author 2025)

3.0 RESEARCH METHODOLOGY

This study adopted descriptive research design. Descriptive design was appropriate for this research as it allowed for the collection of detailed information through observation and analysis, which enabled comprehensive understanding of the influence of fintech valuation models on Return on Assets (ROA). The target population for this study comprised all six insurance firms listed on the Nairobi Securities Exchange (NSE) as of the year 2024. These firms were selected due to the availability of audited financial statements and their regulatory obligation to disclose financial data to both the Insurance Regulatory Authority (IRA) and the NSE, ensuring consistency, transparency, and comparability. Additionally, the study targeted 30 key personnel within these insurance firms who are directly involved in the implementation and management of fintech valuation models, based on prior evidence from Otiso (2020) and Mwangi (2021), who confirmed that listed insurers in Kenya have increasingly adopted fintech tools in core financial functions including asset valuation. The sample included 12 participants from finance departments, 10 from risk management units, and 8 from actuarial teams, ensuring broad functional representation. This study employed the use of closed-ended questionnaires that was designed with ordinal value of the Likert scale, this primary data ensured comprehensive and accurate findings from 30 key personnel in listed insurance firms, including finance officers, risk officers, and actuarial analysts. The data collected through questionnaires and survey was cleaned, coded and entered into excel, where descriptive statistics such as means, frequencies, percentages and standard deviations has been calculated to summarize responses and identify trends in the adoption of fintech valuation models. The analysis of the data was systematic where the demographic analysis was first that gave a clear picture of the respondent's background and helped to categorise the number of respondents per firm and per department as stated in the research design. Descriptive statistics were done to summarise the variables of the study and get to explore the relationship among variables and the impacts of the models on the financial performance.

4.0 RESULTS

4.1 Descriptive Analysis

This section on descriptive statistics serves as basis for subsequent inferential analyses that provide a detailed summary of the measures of central tendency such as frequencies, mean, median, mode, standard deviation, variance, Kurtosis, skewness, maximum and minimum (Min) and significant level of 95% or 0.05 for each construct and variability across the constructs. The study specifically analysed the fintech valuation models: Embedded Value (EV) alongside the Return on Assets (ROA) as the dependent variable.

Table 1: Descriptive Statistics

Statistic	<i>Embedded Value (EV)</i>	<i>Financial Performance (ROA)</i>
Mean	3.25	3.41
Median	3.2	3.28
Mode	3.2	3.28
Standard Deviation	0.23	0.22
Sample Variance	0.05	0.05
Minimum	3	3
Maximum	5	5
Count(N)	155	155
Kurtosis	6.38	0.81
Skewness	1.55	1.44
Confidence Level (95%)	0.03	0.03

*Significant at the 0.05 level (2-tailed).

The findings from the 155 respondents on the ROA as the financial performance metrics showed a mean of 3.41, a median and mode of 3.28, a standard deviation of 0.22 that shows low variability among the listed firms, the results put forward a minimum of 3 and a maximum of 4 indicating that all the firms use this metrics to value their financial performance. For the skewness was 1.44 this positively skewed distribution with non normal tails this implies that the responses spread around the mean which shows an even and flatter distribution than normal and a kurtosis of 0.81 and a confidence level of 0.03 that is below the threshold of 95% level of confidence revealing that ROA is the most adopted metrics of financial performance.

EV yielded a mean of 3.25, a median and mode of 3.2 this most likely resulted by firms that have not yet implemented the EV, the standard deviations projected as 0.23 showed the variations where only few firms have adopted the model. The skewness was 1.55 signifying there was concentration. The positive kurtosis 6.38 show a heavier tail thus the non normal distribution. Results also showed a confidence width of 0.03 that is lower than $p < 0.05$. The findings from EV showed the limited use of the model, most likely because of the complexity nature of the model and expertise required to execute the model thus making it less practicable to implement.

4.2 Diagnostic Tests

Prior to estimating the regression model, a series of diagnostic tests were done to ensure that the assumptions of Ordinary Least Squares (OLS) regression were not violated. These tests validated the robustness of the model explaining the influence of fintech valuation models on the financial performance of listed insurance companies in Kenya. These tests involved; Multicollinearity test through the use of VIF, Normality test through Shapiro-Wilk test.

Table 2: Diagnostic Tests

Test	Variable / Model	Statistic	df	Sig. (p)	Interpretation
Multicollinearity (Collinearity Statistics)	EV_score	Tolerance = 0.694; VIF = 1.441	–	–	Low multicollinearity
Normality (Shapiro–Wilk)	EV_score	W = 0.921	155	0.001*	Strong violation

4.2.1 Multicollinearity test

The Variance Inflation Factor (VIF) values for the EV was (1.441), and that were substantially below the cutoff point of 10, and even below conservative width of 5 as recommended. These findings therefore imply that multicollinearity was not a challenge in the regression model and that the items in the construct were correlated therefore each model contributed unique explanatory power to the analysis.

4.2.2 Normality test

Normality of residuals is a fundamental diagnostic requirement in regression analysis, as it underpins the validity of the classical linear regression model (CLRM) assumptions it also provides for statistical inferences. The Shapiro–Wilk test for normality returned $W \approx 0.921$ where values close to 1 signify that distribution is approximately normal where Embedded Value (EV) had $W \approx 0.921$, $p = 0.001$ this results collectively imply that the residuals violates normality thus null hypothesis was rejected despite the deviations from normality, the regression results remain valid.

4.3 Inferential statistics

The inferential statistics were conducted to understand the relationship between the dependent variable (ROA) and the independent variable Embedded Value (EV) where it aids in generalizing the findings. The inferential statistics employed were Pearson correlation linear regression that showed the relationship between the embedded value and financial performance.

4.3.1 Pearson correlation

The Pearson correlation is an inferential statistic tool that is employed to quantify how strong variable correlate. It ranges from -1 to +1 where a positive figure shows that one variable increases as the other reduces while a negative value posits there is an inverse relationship then a value close to 0 shows that there is no linear relationship. In this study this tool is key in providing the insights of whether the models influence financial performance.

Table 3: Pearson Correlation Analysis

Pearson Correlation	ROA
ROA	1

EV

0.516**

EV recorded the presented a positive correlation with financial performance where $r = 0.516$, $p < 0.01$) this shows that higher embedded value reflects the current value of future profits from the in-force business which led to improved firm profitability. Despite the model most likely being adopted in few firms it still highlights EV as an influential fintech valuation model in driving financial outcomes for insurers.

4.3.2 Simple Linear Regression

This is an inferential statistical tool that is employed to show the relationship between one dependent variable and independent variable.

Table 4: Simple Linear Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Embedded Value (EV)	0.177	0.017	10.370	0.0002

From the findings there was significant effect between Embedded Value (EV) and insurance financial performance in terms of ROA ($\beta=0.177$, $p=0.0002$)

4.4 Hypothesis Testing

This research employed the use of objectives and hypothesis where these tools were used to make conclusions based on the analysis performed on the collected data. Null hypothesis assumes that the independent variables do not influence the dependent variable, while alternative hypothesis assumes that there exists an effect on the dependent variable. The study was conducted to test four hypotheses i.e. H_3 : Embedded Value does not have a statistically significant effect on the financial performance of insurance firms in Kenya.

Table 5: Hypothesis Testing

Hypothesis Statement	Correlation Result (r, p-value)	Decision	Interpretation
H_3 Embedded Value (EV) does not have a statistically significant effect on the financial performance of insurance firms in Kenya.	$r = 0.516$, $p = 0.0002$	Rejected	EV has the strongest positive influence on financial performance among the four models.

Based on the results found EV show a strong positive correlation of $r = 0.516$ and significant level less than the conventional value of $p < 0.01$ where it had a value of 0.0002 suggesting that higher embedded values are strongly associated with profitability it reflects the present value of future profits from in-force business, this model hence allows for long-term value creation of the business thus increasing competitive advantage thus better performance of the firm. The null hypothesis (H_1) therefore, is rejected since the embedded value exerts a significant effect on financial performance.

4.5 Discussion of Findings

According to the results of the regression, embedded value affected financial performance. These results support the Resource-Based View (RBV) theory, which highlights how distinctive internal valuation techniques like EV give businesses a long-term competitive advantage. Similar data was presented by Tsung-Kang et al. (2020) and Samir et al. (2022) show that EV reporting reduces credit risk and enhances investor confidence. This implies that Kenyan insurers that use EV gain from more precise forecasts of upcoming cash inflows, boosting investor confidence and performance in general.

5.0 CONCLUSIONS OF THE STUDY

The Embedded Value (EV) model also influenced financial performance, particularly among life insurers that have adopted the model. However, the high variability and limited adoption suggest that while EV is impactful despite its low implementation rate. By incorporating the present value of future profits from in-force policies, the EV model enabled firms to reflect long-term sustainability in their financial statements. These findings aligns directly with Prospect Theory and Resource-Based View (RBV), which emphasize forward-looking valuation and the strategic use of internal capabilities to create sustained competitive advantage.

6.0 RECOMMENDATIONS OF THE STUDY

Insurance firms should strengthen actuarial capabilities to fully utilize the Embedded Value (EV) model for life insurance firms, embedded value must become central in communicating long-term financial strength. Firms should enhance internal actuarial functions and scenario-based forecasting to support EV calculations. This will improve long-range profitability planning and shareholder reporting.

NSE should integrate Valuation Model Disclosures into NSE reporting requirements the Nairobi Securities Exchange (NSE) should revise listing requirements to include detailed notes on valuation methodologies in audited financials. These disclosures will improve investor confidence and ensure inter-firm comparability in performance metrics such as ROA.

7.0 REFERENCES

- Fang, Z. (2023). Research and application of company valuation methods. *Business & Management*, 45. <https://doi.org/10.54691/bcpbm.v45i.4870>
- Hasheela, E., Happonen, A., & Homateni, F. (2023). Assessing the status quo of fintech in Africa: The role of African fintech and financial inclusion promotion—A systematic literature review. *Namibian Studies: History, Politics, Culture*, 37(1), 321–348. <https://doi.org/10.59670/jns.v37i.4834>
- Jagannayaki, K., Prasad, K., & Babu, S. (2024, May 5). Artificial intelligence applications in financial risk management. *International Research Journal on Advanced Engineering and Management*, 2, 1731–1736. <https://doi.org/10.47392/IRJAEM.2024.0253>
- Kemboi, B. J. (2019). *Effect of financial technology on the financial performance of commercial banks in Kenya* [Master's thesis, University of Nairobi]. University of Nairobi Research Archives. <http://hdl.handle.net/11295/105104>

- Leslie, D., Katell, M., Aitken, M., Singh, J., Briggs, M., Powell, R., ... & Mazumder, A. (2022). Advancing data justice research and practice: An integrated literature review. *arXiv preprint arXiv:2204.03090*.
- Maino, R., Massara, A., & Perez-Saiz, H. (2019). *Fintech in Sub-Saharan African countries* (IMF Policy Paper No. 19/04). International Monetary Fund. <https://doi.org/10.5089/9781484385661.087>
- Mention, A. L. (2019). The future of fintech. *Research-Technology Management*, 62(4), 59–63. <https://doi.org/10.1080/08956308.2019.1613123>
- Mwangi, J. (2021). Impact of Digital Learning Tools on Student Performance in Kenya. *African Journal of Education and Practice*, 9(2), 13-22.
- Otiso, S. N. (2020). *Effect of technology on the performance of insurance companies in Kenya* [Master's thesis, University of Nairobi]. http://erepository.uonbi.ac.ke/bitstream/handle/11295/154224/Otiso%20S_Effect%20of%20Technology%20on%20the%20Performance%20of%20Insurance%20Companies%20in%20Kenya.pdf
- Rachael, M., Kiptoo, J., & Obiero, A. (2024). Influence of asset quality on the financial performance of insurance companies in Kenya. *The University Journal*, 6(2), 56–66.
- Samir, M. E. G., Brown, K., & Zhou, L. (2022). Unregulated corporate financial disclosure and analysts' forecast properties: The case of embedded value reporting by life insurers. *Journal of Accounting, Auditing & Finance*, 39(2), 245–268. <https://doi.org/10.1177/0148558X211063262>
- Tracy, B. F. (2022). *Effect of asset valuation approaches on financial performance of real estate investments in Western Kenya region* [Doctoral dissertation, Maseno University]. <https://repository.maseno.ac.ke/handle/123456789/5932>
- Tsung-Kang, C., Tseng, Y., Hung, Y. S., & Lin, C. C. (2020). Embedded value reporting quality and credit risk: Evidence from life insurance companies. *Accounting and Business Research*, 51(1), 96–125. <https://doi.org/10.1080/00014788.2020.1749979>
- Wanalo, J., Mande, B., & Ngonga, S. (2020). Effects of technological financial innovations on the financial performance of commercial banks in Kenya. *International Journal of Business Management*, 8(1), 45–60. <https://doi.org/10.24940/theijbm/2020/v8/i4/BM2004-007>