EFFECTS OF DISCOUNTED CASHFLOW ANALYSIS MODEL ON THE FINANCIAL PERFORMANCE OF INSURANCE FIRMS

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EFFECTS OF DISCOUNTED CASHFLOW ANALYSIS MODEL ON THE FINANCIAL PERFORMANCE OF INSURANCE FIRMS

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ABSTRACT

The purpose of the study was to examine the effects of discounted cashflow analysis model on the financial performance of insurance firms. A descriptive research design was employed targeting insurance companies listed on the Nairobi Securities Exchange (NSE). 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 reflected as the most consistently utilized models while FVM is displayed as moderately applied model with EV least utilize due to its complexity through the descriptive analysis. From the findings there was significant effect between Discounted Cash Flow (DCF) and insurance financial performance in terms of ROA (β=0.303, p=0.000). The Discounted Cash Flow (DCF) model positively relates with the financial performance metrics (ROA) where its application in long-term capital budgeting and intrinsic valuation validates the importance of sound cash flow forecasting and appropriate discount rate estimation. The consistent mean and low standard deviation indicate that insurers are increasingly integrating DCF into strategic planning, enhancing financial performance. Insurance firms should refine Discounted Cash Flow (DCF) application through improved data management since the DCF model's effectiveness hinges on data quality and cost of capital estimation, firms must adopt enterprise resource planning (ERP) systems that centralize financial forecasting and historical trend analysis. This will enhance internal investment evaluations and guide strategic capital deployment.

Keywords: *discounted cashflow analysis, financial performance, insurance firms*

1.1INTRODUCTION

Financial Institutions such as banks and insurance companies are adopting financial technologies as an instrument of valuing assets to enhance accuracy in financial performance reporting. This, as a result, has rapidly transmogrified the global financial services setting unprecedented standards of reliability, competitiveness and efficiency. For instance, the author observed that Fintech has been adopted in financial institutions such as banks in facilitating transactions through Peer-to-Peer lending(P2P) and mobile banking platforms. Feyen et al., (2021) further noted that, the integration of financial technology in financial sector has offered array of solutions on banking sector, such as data driven pricing models and assets valuation models. These integrations have streamlined the operations, enhanced customer service, transparency and sustainability in the increasingly dynamic market the inclusion of financial technologies by many financial institution firms for competitive advantage in the dynamic market has helped them value their assets in accordance with General Accepted Accounting Principal (GAAP) and International Financial Reporting (IFRS 17) (Otiso, 2020).

Globally, insurance firms continue to play a pivotal role in financial stability and economic development. However, challenges related to competitiveness, transparency, and profitability have persisted, with several scholars identifying the lack of standardized fintech frameworks as a key impediment to progress. For instance, Shakil et al. (2024), argued that many insurance institutions within Asia struggle to maintain stability due to outdated or inconsistent valuation models that fail to capture real-time asset 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.

Regionally, valuation practices, remain industry specific. As Olbert (2024) observed, there is a marked shift towards the use of more contextual, technologically enabled valuation approaches such as multiple-period multiples in many North and South American countries, which account for evolving market dynamics. Olbert findings emphasize the need for insurers to adopt flexible and enhanced models that reflect real-time asset values, which in turn improves reporting accuracy and financial performance. In a similar observation, Yermack (2021) noted that legal frameworks across Sub-Saharan Africa significantly influence the development and use of fintech in insurance firm. Similarly, McKinsey & Company (2022) highlighted how financial innovation in the US is transforming asset valuation through digital products and services that increase accessibility and efficiency.

Mashamba (2023) echoed these findings, noting that fintech-driven reforms are positively influencing bank funding models and broader economic growth both of which have valuation implications for insurance assets in many African countries. Furthermore, Karim, Ashraf & Eldin (2021) revealed that emerging markets across the African region are shifting towards sophisticated valuation frameworks that incorporate cost of capital, aligning performance measurement with firm value. This evolution is supported by Chirairo & Molele (2024), who emphasized the

increasing role of intellectual capital in value enhancement, especially in South African firms adopting modern valuation strategies.

In Kenya, the insurance industry has been experiencing inefficiencies in valuation of their assets. Otiso (2020) noted that technological adoption significantly improves firm performance in Kenya's insurance sector. Similarly, Mwangi (2021) observed that integration of modern technology can leads to sustainable growth in insurance firms, though the author claimed the firms lack standardized valuation models and such continues posing a challenge to this firms.

Tracy (2022) noted that traditional valuation approaches such as the market, income, and asset methods—rely on historical data, leading to inaccuracies and misrepresentations in financial statements. This often results in underperformance or investor uncertainty, despite the potential for profitability. Rachael et al. (2024) added that asset quality directly impacts financial performance, particularly when using measurable indicators such as Return on Assets (ROA) and Return on Equity (ROE). These metrics offer crucial insights into a firm's profitability, asset efficiency, and long-term sustainability.

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-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 Discounted Cash Flow model complements the embedded value approach by assessing the intrinsic value of a firm or investment based on projected future cash flows, discounted to present value. It is grounded in the idea that the worth of a business lies in its capacity to generate future earnings. In insurance firms, DCF is commonly used to evaluate business lines, new investments, or strategic projects. The model requires careful estimation of cash inflows and outflows, alongside the application of an appropriate discount rate- usually the Weighted Average Cost of Capital—to reflect the time value of money and associated risks. DCF enables insurers to make long-term strategic decisions with confidence, ensuring that capital is directed toward ventures that enhance shareholder value (Leslie et al, 2022).

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, this valuation approaches rely on historical data which were 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.

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 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 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.

1.2 Objectives of the Study

To examine the effects of discounted cashflow analysis model on the financial performance of insurance firms.

1.3 Research Hypothesis

H_1: Discounted Cash Flow analysis model does not have a statistically significant effect on the financial performance of insurance firms in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature review

2.1.1 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) Theory was originally proposed by Wernerfelt (1984) and later developed by (Barney, 1991) that argued that competitive advantage is attributed by the firm's ability to leverage its valuables, non-substitutable and scarce resources. This theory serves as a valuable lens for understanding the sources of competitive advantage but fails to link with the successful strategy to put in place, thus calling for investment on development and maintenance of the essential resources (Johnson, & Lee, 2021).

In the context of insurance firms, the resource-based theory offers insights to firms that leverage their resources such as the advanced technological valuation models to enhance the performance, enhance accuracy of asset valuation and gain competitive advantage. This is perceived as a strategic resource the enhances the operational efficiency and financial performance (Leslie et al. 2022).

This theory supports the objective of examining the effects of the discounted cashflow analysis model on financial performance by emphasizing how leveraging advanced valuation tools as strategic resources enables insurance firms to improve operational efficiency, accuracy and long-term profitability.

2.2 Empirical Literature

Laitinen (2019), in his study investigated the efficacy of DCF models in evaluating the profitability of startup ventures. The independent variable was DCF analysis application, operationalized using Net Present Value (NPV) and Internal Rate of Return (IRR), while the dependent variable was financial success, measured by profit margins and investment return rates. Employing a quantitative methodology, Laitinen analysed data from 50 startups over a three-year period, using financial modelling and NPV/IRR calculations.

The study concluded that DCF is a reliable tool for forecasting profitability and evaluating investment viability, particularly in early-stage firms. However, the research was confined to startup companies and did not extend its analysis to established sectors such as insurance. Additionally, it did not assess Return on Assets (ROA) or other standard profitability indicators used in the insurance industry. The present study adapts DCF methodology to Kenya's insurance sector, offering empirical evidence of its impact on profitability metrics like ROA, thereby addressing the gap in sectoral applicability.

Jagannayaki et al. (2024), in their research focused on how DCF models improve financial valuation accuracy. The study's independent variable was application of DCF valuation, while the dependent variable was valuation accuracy, measured by the variance between projected and realized cash flows. Using regression analysis, the researchers demonstrated that DCF models significantly enhance the precision of financial valuations, particularly in dynamic economic environments. However, their study did not evaluate the profitability outcomes of DCF adoption, nor did it focus on insurance firms, which operate under different valuation and regulatory frameworks compared to other industries. The current research builds on their findings by linking DCF model use to financial performance (ROA) in insurance firms, thus extending the value of DCF beyond valuation accuracy to firm-level profitability.

Panigrahi and Mahapatra (2021), in their study examined how DCF valuation influences profitability and investment decisions in Indian manufacturing firms. Key variables included projected free cash flows and weighted average cost of capital (WACC) as components of DCF, with profitability ratios (ROA, ROE) as dependent variables. The researchers utilized financial modelling and sensitivity analysis, concluding that DCF adoption enhances profitability assessment and capital budgeting decisions. However, the study was industry-specific to manufacturing and did not address the unique cash flow dynamics and regulatory environment of insurance firms. This study fills that gap by analyzing DCF's influence on profitability in Kenyan insurers, where cash flow projections and valuation complexities differ significantly from manufacturing.

Estrada (2002), in his paper explored the application of DCF models in assessing systematic risk within emerging market contexts. The independent variable was DCF analysis, particularly its integration with the Discounted Capital Asset Pricing Model (D-CAPM), while the dependent variable was systematic risk, measured by beta coefficients and risk-adjusted return metrics. Estrada's study employed financial econometric models and revealed that DCF models, when adjusted for emerging market volatility, provide better risk assessment tools for investors. However, the study did not examine financial performance or profitability outcomes in insurance firms, instead focusing on risk measurement. This study leverages Estrada's methodological insights by evaluating how DCF contributes to financial performance (ROA), thereby bridging the gap between risk modelling and profitability assessment in the insurance sector.

Fang (2023), in his review examined several valuation techniques, including Discounted Cash Flow analysis, in the context of investment decision-making. His study highlighted DCF's strategic importance in evaluating the intrinsic value of firms, especially under volatile market conditions. Fang's variables included valuation method selection, investment decision outcomes, and market volatility indices. Using a descriptive research approach and case study analysis, he concluded that DCF is critical for accurate firm valuation and strategic capital allocation. However, his study lacked empirical analysis of profitability metrics such as ROA or net income, particularly in insurance firms. The current research builds upon Fang's descriptive findings by empirically assessing the effect of DCF on ROA, offering quantifiable insights into DCF's role in driving profitability among Kenyan insurers.

2.3 Conceptual Framework

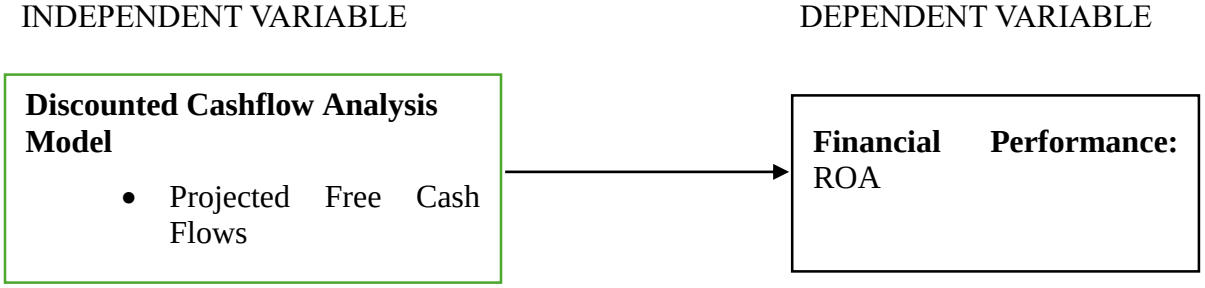

Figure 1: Conceptual Framework (Author 2025)

3.0 RESEARCH METHODOLOGY

Research design refers to the overall strategy used to integrate the different components of a study in a coherent and logical way (Otiso, 2020). This study adopted descriptive research design that examined the relationship between fintech valuation models and the financial performance of listed insurance firms in Kenya. 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 quantitative approach enabled the collection of the numerical data that gave statistical relationship between the variables thus it being reliable in providing quantifiable feedback on the accuracy level of the models, complexity, decision making and the overall overview of the influence of the models on financial performance. This was successful as the use of questionnaires with 5 Likert-scale gave room to perform standardization, correlation and regression this helped in coming up with the findings, conclusion and recommendations.

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. As fintech adoption varies across the sector, focusing on listed firms that allowed for examination of how fintech valuation models are implemented in well-regulated and publicly accountable environments.

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. These

individuals through the purposive sampling were selected based on their roles in finance, risk, and actuarial departments as they possess relevant knowledge and experience with the valuation models under investigation.

The sample included 12 participants from finance departments, 10 from risk management units, and 8 from actuarial teams, ensuring broad functional representation. Furthermore, selection also considered academic and professional qualifications, with a preference for individuals holding at least a bachelor's degree in finance, actuarial science, accounting, or economics, and/or professional certifications such as CPA, CFA, or actuarial credentials. These individuals provided primary data through structured questionnaires and a survey aimed at capturing firm-specific insights on fintech adoption and usage. As of 2024, there are approximately 6 listed insurance firms on the NSE, and these formed the entire population for the study. Given this manageable size, a census approach was adopted, whereby data was collected from all listed firms.

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 questionnaires and the survey were designed in a way where the respondent would give their demographic information such as age, gender, level of education, the organization they are in and years of service in the organisation.

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 categorize the number of respondents per firm and per department as stated in the research design. Descriptive statistics were done to summarize the variables of the study and get to explore the relationship among variables and the impacts of the models on the financial performance.

In addition to the quantitative analysis, qualitative data obtained from open-ended questionnaire responses, and the survey was analysed using thematic analysis. The responses were systematically reviewed and grouped into themes and sub-themes based on recurring patterns and keywords. These themes offered deeper insights into participants' perspectives on the benefits, challenges, and implementation experiences associated with fintech valuation models. This qualitative analysis complemented the statistical findings by contextualizing the quantitative results and enriching the overall interpretation of the study's outcomes.

Regression analysis was also conducted where the ANOVA was employed as it helped determined if the model explains the variation between the variables as well as evaluating if the combined effects of all independent variables offer a perfect fit. In this study ANOVA provided a strong statistical justification for the relevance of the model. The ANOVA result showed an F-statistics of 45.094 and P-values less than 0.05 which evidently shows that models have significant effect on the ROA. These findings validated the relevance of the financial technology practices in the insurance industry and that they are key in understanding the firm's profitability.

ANOVA confirms that the whole model adds explanatory value unlike the correlation analysis that only shows the direction and strength of pairwise relationships. It also ensures that the predictors collectively improve the ability of the model to clearly account for any change in financial performance hence offering the basis for the study's framework. The significant ANOVA result

helps in giving decision makers the opportunity to validate which model best influence the profitability. Therefore, ANOVA strengthens the conclusions of the study and underscores the real application of the models in the insurance industry.

The regression model applied was:

$ROA=\beta_0+ \beta_4DCF+\epsilon$

Where:

- ROA = Return on Assets (dependent variable)
- DCF = Discounted Cash Flow
- β_0 = Constant
- β_1–β_4 = Coefficients of independent variables
- ε = Error term

This regression model provided co-efficiency that showed strengths of the independent variables against financial performance where it illustrated how each fintech valuation model independently and collectively influenced financial performance. P-values tested the significance of the relationship while (R^2) gave the overall power of the model. The analysed data has been presented through tables, charts, and graphs, allowing for clear interpretation and visualization of the results in line with the study objectives and hypotheses. Data for fintech adoption scores was derived from structured questionnaire and survey responses using a Likert scale to quantify the extent of model implementation across firms.

The Findings from the descriptive and inferential analyses were well presented in graphs, tables and pie charts that gave a clear understanding of the trends, relationship and cross analysis comparison this enhanced the reader's ability to interpret and analyse the results effectively.

4.0 RESULTS

4.1 Demographic Information of Respondents

The demographic characteristics of the respondents were analysed to provide a comprehensive understanding of the sample population that helps interpreting the influence of the fintech models on financial performance. The following key variables were assessed: gender, age, level of education, years of experience in the organization, and department or office. The results are presented below accompanied by brief commentary offers an overview of the respondent's rate.

Gender of the Respondents

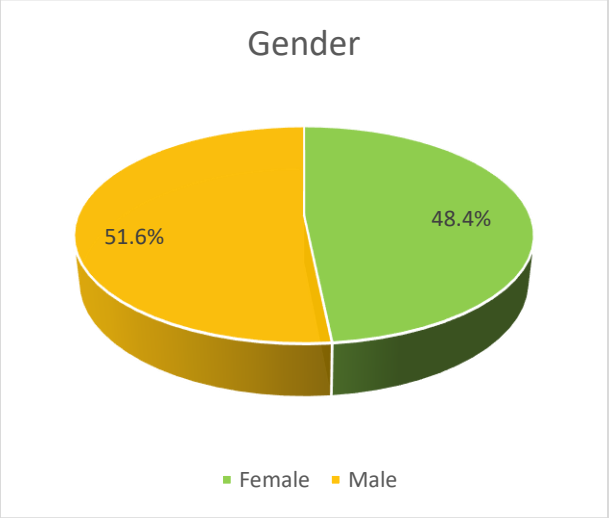

Figure 2: Gender response rate (Author 2025)

The gender distribution shows a predominance of male respondents, who make up 51.6% of the sample, compared to 48.4% female respondents. While the male respondents represent a larger proportion, the diversity of gender in the sample supports a balanced perspective in the findings.

Age of the Respondents

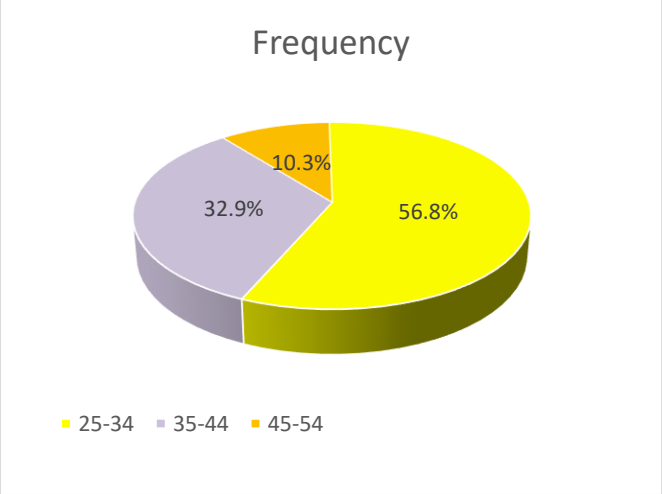

Figure 3: Age of respondents (Author 2025)

The age distribution indicates a significant portion of respondents are between the ages of 25 and 34 years (56.8%), followed by the 35-44 years group (32.9%) and the 45-54 years group (10.3%). The presence of respondents across all age groups suggests a range of experiences, which enhances the diversity of perspectives in the study.

Level of Education

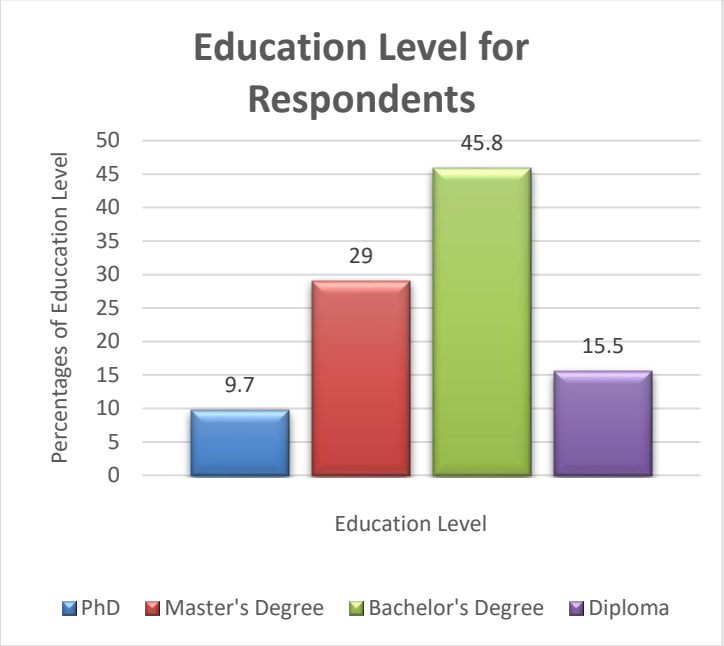

Figure 4: Education level (Author 2025)

Majority of the respondents hold a bachelor's degree (45.8%), followed by those with a master's degree (29%), those with Diplomas (15.5%) and finally those with Doctoral degrees were (9.7%) respectively, indicating a well-educated sample, with a focus on higher education qualifications.

Length of Service

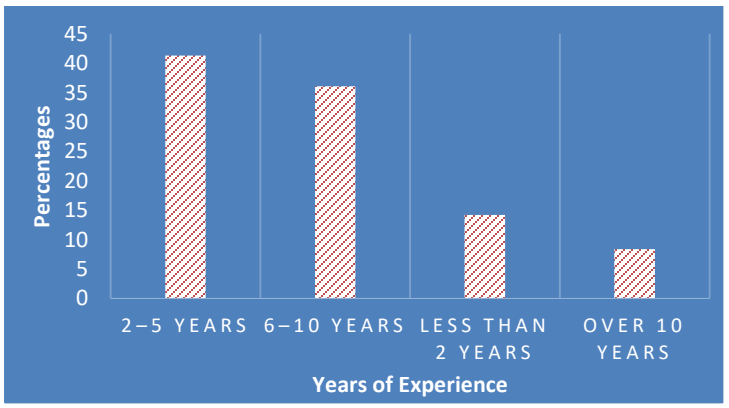

Figure 5: Years of service (Author 2025)

The respondents have varying levels of experience, with the majority (41.3%) from employees that have served for 2-5 years and those who have served between 6 and 10 years of service

(36.1%) in the organization. The data shows that a significant portion (14.2%) and (8.4%) for employees that have served less than 2 years and over 10 years.

Department or Office

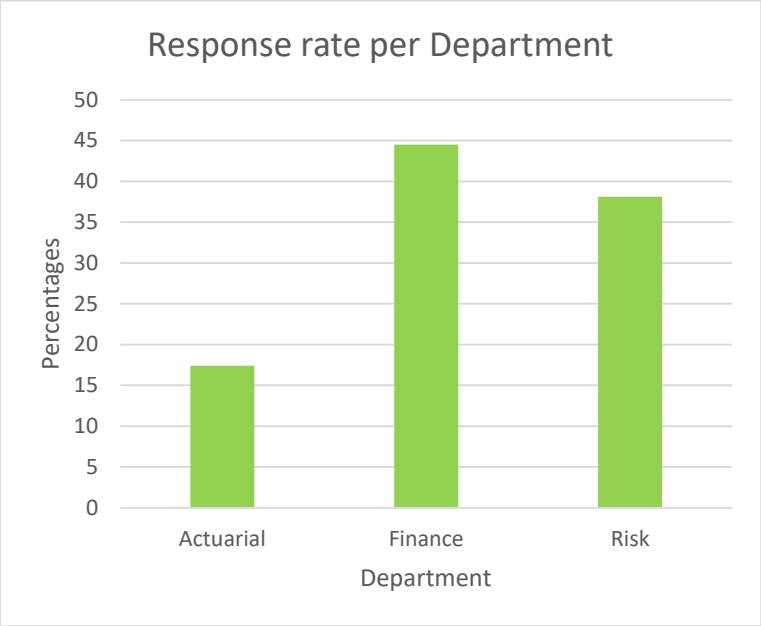

Figure 6: Respondents Department (Author 2025)

Most of the respondents (44.5%) are from the Finance department, followed by those in Risk Management (38.1%) and finally Actuarial (17.4%). This suggests that the sample largely represents individuals directly involved in financial decision-making and risk management within the insurance firms.

4.2 Descriptive Analysis

The section on descriptive statistics serves as basis for subsequent inferential analyses that provide a detailed summary of the measures of central tendency such 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: Discounted Cash Flow (DCF) alongside the Return on Assets (ROA) as the dependent variable.

Table 1: Descriptive Statistics

Statistic	*Discounted Cashflow (DCF)*	*Financial Performance (ROA)*
Mean	3.79	3.41
Median	3.8	3.28
Mode	3.8	3.28
Standard Deviation	0.39	0.22
Sample Variance	0.15	0.05
Minimum	3	3
Maximum	5	5
Count(N)	155	155
Kurtosis	0.13	0.81
Skewness	-0.04	1.44
Confidence Level (95%)	0.029	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 pustules 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.

DCF adoption was high, where a median of 3.8 and a mean of 3.79 and mode of 3.8 suggested a strong integration in valuation practices. The standard deviation of 0.39 postulated the stable adoption of the model among the insurance firms. The Negative skewness -0.04 confirms that there were higher adoption levels reported by insurers. Kurtosis reflects a slightly peaked distribution where a value of 0.13 recorded. The confidence of 95% with a width of 0.029 shows a prominent level of reliability in the estimate. In summary DCF stands alongside ECL as a consistently applied model, reflecting its strategic role in estimating future cash flows and supporting long-term decision-making.

4.3 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 and, Heteroscedasticity test and auto correlation through Durbin Watson test.

Table 2: OLS Diagnosis Test (Author 2025)

Test	*Variable / Model*	*Statistic*	df	*Sig. (p)*	*Interpretation*
Multicollinearity (Collinearity Statistics)	DCF_score	Tolerance = 0.701; VIF = 1.426	–	–	Low multicollinearity
Normality (Shapiro–Wilk)	DCF_score	W = 0.955	155	0.019*	Violates normality

4.3.1 Multicollinearity test

The Variance Inflation Factor (VIF) values for and DCF was 1.426 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.

4.3.2 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≈<1) where values close to 1 signify that distribution is approximately normal where Discounted Cashflow (DCF) had W≈0.955,p=0.019. This results collectively imply that the residuals violates normality thus null hypothesis was rejected despite the deviations from normality, the regression results remain valid.

4.4 Inferential statistics

4.4.1 Pearson correlation

Table 3: Pearson correlation

Pearson Correlation	ROA
ROA	1
DCF	0.19**

The results for DCF exhibited a **positive correlation with financial performance where** a r = 0.190, p < 0.01) was presented. This suggested that the model provided a more modest contribution to DCF as compared to other models as a result of forecasting problems of the future cashflows but its correlation with other models.

4.4.2 Linear Regression

This is an inferential statistical tool that is employed to show the relationship between one dependent variable and various independent variable. From the Table 8 multiple linear regression analysis was used to test the fintech valuation models and financial performance of insurance firms: a case of listed insurance firms in Kenya.

Table 4: Regression Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Discounted Cash Flow (DCF)	0.303	0.060	5.060	0.000

From the findings there was significant effect between Discounted Cash Flow (DCF) and insurance financial performance in terms of ROA (β=0.303, p=0.000)

4.5 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_1: Discounted Cash Flow analysis model does not have a statistically significant effect on the financial performance of insurance firms in Kenya. Reference is made to table 9 where the hypothesis testing was conducted and reported as follows where if $r<1$ and $p<0.05$ you reject the hypothesis.

Table 5: Hypothesis Results

	Hypothesis Statement	Correlation Result (r, p-value)	Decision	Interpretation
H1	Discounted Cash Flow (DCF) model does not have a statistically significant effect on the financial performance of insurance firms in Kenya.	r = 0.190, p=0.00072	Rejected	DCF contributes positively to financial performance, though its effect is weaker than other models.

The DCF recorded a positive yet statistically significant correlation with financial performance where it shows a correlation of r = 0.190 and a p-value less than the threshold of p < 0.01) as it showed a value of 0.0072. This indicated DCF provides a forward-looking approach that incorporate risk-adjusted projections and time value of money. The firms that employ this tool are likely to have their capital allocation, investments assessment and financial performance. Therefore, the null hypothesis (H_4) therefore, is rejected as the study show that DCF has a significant effect on financial performance.

4.6 Discussion of Empirical findings

The findings demonstrated that DCF significantly affect financial performance. This lends credence to valuation theory, especially the idea that intrinsic valuation techniques yield more accurate company value estimations. Studies by Jagannayaki et al. (2024) emphasized DCF's accuracy in dynamic markets, while Panigrahi & Mahapatra (2021) confirmed its effectiveness in guiding investment decisions. These conclusions are supported by the study's actual data, which shows that insurers using DCF are better equipped to predict profitability, allocate capital optimally, and maintain financial growth.

5.0 CONCLUSIONS

The Discounted Cash Flow (DCF) model positively relates with the financial performance metrics (ROA) where its application in long-term capital budgeting and intrinsic valuation validates the importance of sound cash flow forecasting and appropriate discount rate estimation. The consistent mean and low standard deviation indicate that insurers are increasingly integrating DCF into strategic planning, enhancing financial performance.

6.0 RECOMMENDATIONS OF THE STUDY

Insurance firms should refine Discounted Cash Flow (DCF) application through improved data management since the DCF model's effectiveness hinges on data quality and cost of capital estimation, firms must adopt enterprise resource planning (ERP) systems that centralize financial forecasting and historical trend analysis. This will enhance internal investment evaluations and guide strategic capital deployment.

Policy makers should incentivize technological investments through tax and licensing reforms to reduce the cost barrier for small and mid-sized insurers, policymakers should provide tax relief or accelerated depreciation incentives on fintech systems that support real-time asset valuation. Additionally, fast-track licensing for digital finance solutions may encourage adoption across the sector.

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