



**EFFECT OF PORTFOLIO MANAGEMENT ON  
THE FINANCIAL PERFORMANCE OF LISTED INSURANCE  
FIRMS IN THE NAIROBI SECURITIES EXCHANGE, KENYA**

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**Abstract:**

The performance of listed insurance companies in Kenya has over time been unstable, despite its contribution to Kenya's GDP. Whereas the firms have diversified investment asset portfolios, the financial performance of these companies has generally remained low; as evidenced by inconsistent revenues. The purpose of this paper is to establish the relationship between portfolio management and the financial performance of the listed insurance firms in Nairobi Securities Exchange (NSE), Kenya. The study has been guided by Modern Portfolio Theory, allowing for the integration of mixed securities. correlational research design has been employed on a target population of six (6) listed insurance companies at the Nairobi Securities Exchange. census technique of data collection to obtain secondary data through the document review method was used. Analyzing data through descriptive and inferential statistics, the following results were obtained; showing a positive significant effect of both portfolio size ( $\beta = 0.4859$ ,  $p = 0.002$ ) and portfolio asset allocation ( $\beta = 0.4031$ ,  $p = 0.000$ ) on the financial performance of listed insurance firms at NSE. However, the results yielded a negative but significant effect of portfolio risk ( $\beta = - 0.02546$ ,  $p = 0.002$ ) on financial performance; implying that a unit increase in portfolio size and portfolio asset allocation leads to 48.59% and 40.31% increase in financial performance of listed insurance firms, respectively. However,

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Portfolio risk has a negative effect, implying that a unit increase in portfolio risk leads to a 2.55% reduction in financial performance. It can therefore be concluded that portfolio management influences the financial performance of insurance firms listed at the NSE, thereby recommending that listed insurance firms in the NSE should increase the level of portfolio management by giving attention to such elements as portfolio size, portfolio asset allocation, and portfolio risk; which are important predictors of the firms' financial performance, alongside determining the specific mix of investments generating the highest return for a given level of risk, which will lead to increased profitability.

**Keywords:** financial performance, portfolio size, portfolio asset allocation, portfolio risk, listed insurance firms

**JEL:** G10; G20; G22

## 1. Introduction

The financial performance of the listed insurance companies in Kenya has been unsteady with a declining trend in its profits (Ombima & Njiru, 2018). The insurance industry contributes to the economy by providing financial security, mobilizing savings, and promoting direct and indirect investments (Regulatory Report, 2017). Regardless of insurance companies having developed policy structures, most of them still struggle financially. The developed countries have advanced in portfolio management, and different models have been developed to enhance portfolio choice and forecasting, which can minimize risk and enhance financial performance (Morara & Sibindi, 2021).

The situation in developing countries however is different due to unpredictable economic conditions that affect the financial abilities of firms in developing countries. This is evidenced by the Insurance Regulatory Report of Kenya (2018), which showed a decrease in profits from Ksh.13,642,971 to Ksh.7,269,263, for years 2017-2018 and 15,119,923 to Ksh.6,388,958 for 2019-2020 respectively. This indicates deprived economic value-addition that threatens economic growth. Several studies, such as Amayo (2018), Iraya (2018), Nshimiyimana, Rwamashongo, Niyizigama (2019), have been conducted on the relationship between portfolio management and financial performance but the results have been inconsistent.

The main key elements identified from these studies for portfolio management are; portfolio size, portfolio asset allocation, and portfolio risk, these elements have been considered the most important for greater financial performance (Ombima, & Njiru, 2018). Portfolio size refers to the value of stocks, projects, or investments that should be put together in order to form an optimal portfolio. Most studies show that there is an inverse relationship between the value of securities forming a portfolio and the portfolio risk; (Kiptoo, Kariuki & Ocharo, 2021; Kioko, Olweny & Ochieng, 2019). Therefore, it's very important to understand the relationship between portfolio size and financial performance.

Asset allocation is the sharing out of an investment portfolio among different asset classes, such as cash, bonds, and stocks. It also means spreading your capital among different types of investments. The main objective of asset allocation is to minimize risk (Sandeep, 2017). An optimal mix in the allocation of resources and the nature of the relationship existing between the returns of the assets forming the portfolio are important factors for the attainment of higher returns (Kenya & Ombok, 2018). Usually, investments that are made for capital appreciation include some risk exposure to get the desired return. In optimal investment on profit margins, the firm must be indifferent between investing today and transferring those resources to tomorrow, as long as an appropriate discount rate is identified to reduce the payoff in the next period (Kimeu, 2015).

Portfolio risk is a chance that the combination of assets or units, within the investments that you own, fail to meet financial objectives. Ombima & Njiru (2018) notes that each investment within a portfolio carries its own risk, with higher potential return typically meaning higher risk. The risk of a two-asset portfolio is dependent on the proportions of each asset, their standard deviations, and the correlation (or covariance) between the assets' returns (Iraya & Wafula, 2018). As the number of assets in a portfolio increases, the correlation among asset risks becomes a more important determinant of portfolio risk (Amayo, 2018).

### **1.1 Statement of The Problem**

Insurance companies receive regular contributions from their clients and the money is invested in assets, such as stocks, bonds, and other investments. Later on, when an event occurs to their client or at the elapse of the agreed period, they pay their clients with a lump sum, which is paid out of the income generated from the plan assets (dividends, interest, or money from the sale of some plan assets). Insurance companies, therefore, aim at making a profit which enables them to commit to providing sustainable growth for their shareholders. The financial performance of the listed insurance companies is therefore very important. In Kenya, the financial performance has been unsteady, with a declining trend in its profits. This is evidenced by the Kenya Insurance Regulatory Report, (2020), which showed a decrease in profits from Ksh.13,642,971 to Ksh.7,269,263, for years 2017 - 2018 and 15,119,923 to Ksh.6,388,958 for 2019 - 2020, respectively. This indicates deprived economic value-addition that threatens economic growth. A great dilemma for management and investors is whether various portfolio management decisions influence financial performance. Empirical evidence demonstrates credible but inconsistent relationships between portfolio management and financial performance (Blanchett & Straehl, 2018; Salman, Mata, Kurfi & Ado, 2020). Additionally, most studies tested the association between portfolio management and financial performance for insurance firms listed in the NSE; but focused on either accounting-based or market-based performance measures, which fails to predict the value-creation abilities of the firm (Kiptoo et al., 2021; Kioko et al., 2019). It's yet to be established the relationship between portfolio management and economic value-added financial performance, particularly in

Kenya. Therefore, the objective of the study was to analyze the influence of portfolio management on the financial performance of listed insurance companies in Kenya.

## 2. Literature Review

### 2.1 Theoretical Literature Review

This study was guided by Modern portfolio theory (MPT) introduced by Harry Markowitz in 1952, which attempts to maximize portfolio expected return for a given level of portfolio risk, or equivalently lower risk for a given level of expected return, by choosing carefully the proportions of various assets (Markowitz, 1952). A number of scholars and academicians have been ascribed with the shaping of practices in regard to portfolio management and thus contributed to the theory. Omisore et al. (2012) state that MPT theory is a sophisticated investment decision approach that aids an investor to estimate, classify, and control both the kind and the amount of expected risk and return. He states that the MPT mathematically formulates the concept of diversification in investing, with the aim of selecting a collection of investment assets that have collectively lower risk than any individual asset. Omisore et al. (2012), continue to state that portfolio management should be considered when assessing the effectiveness of an investment and a firm's return. This seems to indicate that portfolio management elements form important constituents when assessing firm financial performance.

De Reyck et al. (2005), Jones (2012), Omisore et al. (2012), Persson Lejon & Kierkegaard (2006) seem to agree that portfolio size, portfolio asset allocation, and portfolio risk are important issues that the management of the firm are concerned with. De Reyck et al. (2005), assert that MPT allows one to determine the specific mix of investments generating the highest return for a given level of risk. This theory is a concrete method for selecting investments in order to maximize their overall returns (financial performance of a firm) within an acceptable level of risk. Nyora (2015) extended the theory by stating that the insurance firms in Kenya have been seen combining different securities and investing in them, investing in bank deposits, government securities, the real estate business, and also mutual funds. Thus, the theory suggests that investors can improve the performance of their portfolios by allocating their investments to different classes of financial securities and industrial sectors that are not expected to react similarly if new information emerges.

According to Persson et al. (2006), MPT develops a framework where any expected return is composed of various future outcomes and is thereby risky, and this relationship between risk and return can be optimized through diversification. This theory seeks to identify the choices of practice that may help a firm improve its financial performance in respect of portfolio management and specifically portfolio size, portfolio asset allocation, and portfolio risk. The theory, therefore, helps to examine the direct relationship between portfolio management elements and firms' financial performance.

## 2.2 Empirical Studies

The empirical evidence on the influence of portfolio management and financial performance in Kenya has been varied. Ngari (2018) conducted a study on the effect of portfolio management on the profitability of commercial banks in Kenya. The study examined eleven listed commercial banks in Kenya within a period of four years (2014-2017). The findings revealed that the amount of financial assets and liquidity held by a commercial bank had a significant influence on the profitability of the firm. However, only commercial banks were explored and the relationship between portfolio management and the financial performance of listed insurance firms was not explored. Amayo (2018) examined portfolio optimization and its effect on the performance of commercial banks in Kenya. The results showed a significant positive relationship between asset allocation and performance in commercial banks in Kenya. The study used accounting-based financial performance measures and focused on commercial banks only, thus the effect of portfolio management on the financial performance of listed insurance firms was not studied.

Mpumwire and Mulyungi (2018) conducted research on the effect of Portfolio Management on The Financial Performance of The Banking Industry in Rwanda. The objective of the study was to analyze the effect of portfolio management on the financial performance of the banking industry. A correlational research design was used where primary data was collected from a population of 80 employees out of which a sample of 79 employees was selected and analyzed using inferential statistics. The results showed that there is a positive correlation and relationship between portfolio management and the financial performance of commercial banks. This study concentrated only on one development bank. Therefore, its results cannot be generalized to the Kenyan economy.

Mokaya, Chogi & Nyamute (2020) conducted a study on the effects of asset allocation on the financial performance of Unit Trust Schemes in Kenya. A descriptive research design was adopted; secondary sources of data were used where data was collected for a period of 5 years. The multiple regression model was applied to evaluate the association of the variables. The proportion of the composition of different asset classes to the fund value was used as the independent variable. The control variable was fund age, and the Sharpe ratio was used to measure investment yields and that represented the dependent variable of the study. The study established that asset allocation significantly influences the performance of a fund. Although the study established that asset allocation significantly influences the performance of a fund, the findings cannot be generalized to other firms since only unit trusts were sampled.

Salman, Mata, Kurfi, & Ado (2020) studied on the relationship between the investment portfolio and banking financial performance in Nigeria. The study aimed at investigating the relationship between investment portfolios and banking's financial performance in Nigeria. The study took an ex-post factor research design and firm was used as the unit of analysis.

The study revealed that investment in bonds has a significant but negative effect on return on the asset while cash reserve had a positive but insignificant effect on financial performance. The study also indicated that treasury bills had an insignificant and negative effect on financial performance. These results conflict with that of Kioko and Ochieng (2020) who noted a positive and significant effect in investment in bonds. The study used ROA which lacks the ability to predict the future performance of the firm. This present study differs since financial performance is measured by EVA and not ROA. Iraya & Wafula (2018) researched whether portfolio diversification affects the performance of balanced mutual funds in Kenya. The study used a descriptive research design technique on the weekly performance of mutual funds, using a sample of 7 balanced mutual funds for the year 2013. Secondary data was used from the sources available at the Capital Market Authority offices and from each mutual fund. The returns of a portfolio were established by calculating the variations in prices of the balanced fund as traded at the Nairobi Securities Exchange (NSE) while diversification was established from the degree of diversifiable risk in the performance. The study used the Ordinary Least Squares (OLS) multiple linear regression equation. Control variables of the age and size of the fund were presented in the regression model. The results showed that there is the existence of a positive association between diversifiable risk and the performance of balanced mutual funds. This study was limited to the performance of mutual funds and thus failed to analyze the effect of portfolio management on the financial performance of listed insurance firms.

### **3. Methodology and Results**

This present research used a correlational research design to achieve the set objectives of the study. Correlation design entails the use of correlational statistical tests to assess the extent of relationships between the variables under investigation (Kenyanaya & Ombok, 2018). The researcher used secondary data from the listed insurance companies in Kenya, where a census technique was applied. The document review technique was used to collect the secondary data for study variables. The population comprised all the 6 listed insurance companies at the NSE where data was collected for the period 2011-2020. Unit root tests were conducted for portfolio management elements; portfolio size operationalized by the value of stocks, portfolio asset allocation operationalized by the proportion of asset value on total investment, portfolio risk operationalized by variance from returns, and financial performance operationalized by EVA. The unit root tests also helped establish whether the variables possessed unit roots or if shifts in time caused changes in the distribution.

**Table 3.1:** Unit root test for the variables

Method	Statistic	Prob.**	Cross-sections	Obs.
Null: Unit root (assumes common unit root process)				
<b>Levin, Lin &amp; Chu t*</b>				
EVA	-2.38506	0.01700	1	60
Portfolio asset allocation	-1.7454	0.02143	1	60
Portfolio size	-1.9343	0.02510	1	60
Portfolio risk	-1.3982	0.00850	1	60
Null: Unit root (assumes individual unit root process)				
<b>Im, Pesaran and Shin W-stat</b>				
EVA	-1.90420	0.0284	1	60
Portfolio asset allocation	-3.07814	0.0010	1	60
Portfolio size	-2.4481	0.0072	1	60
Portfolio risk	2.2713	0.00884	1	60

**Source:** Field Data, 2023.

As shown in Table 3.1, the Levin-Lin-Chu test revealed  $p \leq 0.05$  for all the variables. Hence, all the statistics were significant at the testing level. These findings imply that the null hypothesis that the series of variables have a unit root was rejected. Thus, it was concluded, the series were stationary. That is, the statistical properties were not changed through the period under review. The use of the Levin-Lin-Chu test as a panel unit method in the present study is its significantly greater power compared to standard unit root tests for time-series.

Table 3.1 shows IM, Pesaran, and Shin W-statistics were at  $p \leq 0.05$ , implying statistical significance at the test level. These findings led to the rejection of the null hypothesis of the IPS test, which is that the series included are non-stationary. The rejection of the IPS null hypothesis confirms the series or some of them were stationary or converging to their means over time.

### 3.2 Model Specification

The following panel data regression model 1 was mathematically tested.

$$EVA_{it} = \alpha_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} + \epsilon_{it} \quad (1)$$

Where,

$X_1$  = portfolio size;

$X_2$  = asset allocation;

$X_3$  = portfolio risk;

EVA = economic value added;  $i$  = insurance firms (1-6);

$t$  = time (2011-2020);

$\alpha$  = regression constant;

$\beta_1, \beta_2, \beta_3, \beta_4$  = coefficients of the independent variables in the regression model;

$\mu_{it}$  = the unobservable individual heterogeneity;

$\epsilon_{it}$  = the error term.

The study used inferential statistics analysis such as correlation analysis and regression analysis to test null hypotheses. These statistical tests were at a 5% significance level.

## 4. Result and Discussion

### 4.1 Descriptive Analysis

Table 4.1 below shows the descriptive statistics of the study variables of portfolio management elements and financial performance (EVA).

**Table 4.3:** Descriptive statistics of the study variables of portfolio management elements and financial performance (EVA)

	Portfolio size	Portfolio asset allocation	Portfolio risk	EVA
Mean	7.389622	0.228952	5.602480	6.798206
Median	7.403900	0.136651	5.866865	6.851510
Maximum	8.065260	1.218370	6.984670	7.287370
Minimum	5.998410	0.001436	2.426610	5.566090
Std. Dev.	0.345819	0.215608	0.921306	0.325012
Skewness	-1.033673	2.065831	-1.633357	-1.197972
Kurtosis	6.236153	8.864343	5.247052	5.242872
Jarque-Bera	36.86651	128.6529	39.30166	26.92756
Probability	0.000000	0.000000	0.000000	0.000001
Sum	443.3773	13.73711	336.1488	407.8924
Sum Sq. Dev.	7.055851	2.742710	50.07944	6.232324
Observations	60	60	60	60

Source: Field Data, 2023.

Table 4.1 above shows that the mean portfolio size is 7.389622 with a maximum and minimum of 8.065260 and 5.998410 respectively. Since portfolio size was measured as value of stock, it implies that on average, the listed insurance firms in NSE have a portfolio size of 7.389622 stocks. The skewness figure of -1.03367 shows that most firms have portfolio size that is higher than the mean of 7.389622. This mean value obtained compares consistently with that of Li, C. (2022) who noted that the ideal portfolio size should be limited to 6 to 12 stocks. This mean value however contradicts that of Kimani & Aduda, (2016) who noted that an optimal portfolio should hold between 16 and 20 stocks, and Kisaka, Mbithi, and Kitu (2015) noted that optimal portfolio size lies between 18-22 stocks. Results obtained in Table 4.1 further indicate that the mean of portfolio asset allocation is 0.228952 with maximum and minimum of 1.218370 and 0.001436 respectively. Portfolio asset allocation was measured by the proportion of the asset value on total investment and this means that on average the listed insurance firms in the NSE have a portfolio asset allocation of 0.228952 of total investments. The skewness value of



2.065831 obtained shows that most insurance-listed firms have portfolio asset allocations that are positively skewed. These results are in tandem with that of Mokaya, Chogi & Nyamute (2020) who found a mean of 0.25. However, it contradicts that of Ombima & Njiru (2018) who reported a mean of 4.12. Results presented in Table 4.1 further show that the mean portfolio risk is 5.602480 with maximum and minimum of 6.984670 and 2.426610 respectively. Portfolio risk was measured by the variance from returns and this means that on average, listed insurance firms in the NSE have a portfolio risk of 5.602480.

The skewness value of -1.633357 obtained shows that most listed firms have portfolio risk that is higher than the mean of 5.602480. These results contradict that of Amayo (2018), Catherine (2020), Iraya & Wafula (2018), and Mpumwire & Mulyungi (2018) who presented a mean of 3.6 for portfolio risk.

Table 4.1 further shows that the mean of financial performance for EVA is 6.798206, with a maximum of 7.287370 and a minimum of 5.566090. These standard deviation values imply that these variables were more dispersed from the mean than the other variables. On the other hand, with 0.215608, 0.325012, and 0.345819 portfolio asset allocation, financial performance (EVA), and portfolio size were most clustered around the mean. The kurtosis values show that data for portfolio asset allocation had the most outliers. Table 4.1 further shows that financial performance (EVA) and portfolio size and portfolio risk were negatively skewed while portfolio asset allocation was positively skewed.

#### 4.2 Effect of Portfolio Management on the Financial Performance of Insurance Firms Listed at the NSE

The objective of the study sought to determine the effect of portfolio management on the financial performance of insurance firms listed in the NSE. Table 4.2 below presents results on the correlation between portfolio management and the financial performance of insurance firms listed at the Nairobi Securities Exchange (NSE).

**Table 4.2:** Correlation of Portfolio Management with EVA for Insurance Firms Listed at NSE

Correlation				
t-Statistic				
Probability	EVA	Portfolio size	Portfolio asset allocation	Portfolio risk
EVA	1.000000			
Portfolio Size	0.10127	1.000000		
	1.633178	-----		
	0.0041	-----		
Portfolio Asset Allocation	0.894617	0.115275	1.000000	
	27.88642	1.616368	-----	
	0.0000	0.0076	-----	
Portfolio Risk	0.462286	0.085857	0.469701	1.000000
	7.261385	1.200282	7.410501	-----
	0.0000	0.0315	0.0000	-----

Source: Field Data, 2023.

Correlation analysis was conducted to establish the directionality and the magnitude of the relationship between the independent variables and the dependent variable. Correlation analysis shows the direction, strength, and significance of the relationships among the variables of the study (Mule & Mukras, 2015). Since portfolio management was operationalized by portfolio size, portfolio asset allocation, and portfolio risk, results in Table 4.2 above show a weak positive correlation between portfolio size and financial performance measured by economic value added (EVA) for the NSE-listed insurance firms, ( $r = 0.10127$ ;  $p = 0.0041$ ). The value of 0.10127 indicates a weak positive correlation between portfolio size and economic value added (EVA) for the NSE-listed insurance companies for the 10-year period sampled in the study. This means that a 10.127% increase in portfolio size, results in a corresponding increase of 10.127% in the financial performance of listed insurance firms. These findings also mean that whereas the financial performance of the NSE-listed insurance companies increases with an increase in the portfolio size, the influence or change is rather small. Nonetheless, the correlation is significant at a 95% confidence level. Therefore, it may be concluded, there is a correlation between portfolio size and financial performance of NSE-listed insurance companies. These results are consistent with empirical literature, Kimani & Aduda, (2016); Kisaka et al. (2015); Mpumwire & Mulyungi (2018); Ngari (2018), who noted a positive relationship between portfolio size and the financial performance of firms. However, the findings contradict those by Auma (2013) who found that there is an inverse relationship between portfolio size and the overall profitability in the insurance industry.

Additionally, results in Table 4.2 shows a strong positive relationship between portfolio asset allocation and financial performance (EVA) of listed insurance companies under study ( $r = 0.894617$ ;  $p = 0.0000$ ). These figures indicate that an 89.46% increase in portfolio asset allocation leads to a significant increase in the financial performance of listed insurance firms by 89.46%, thus the financial performance of the insurance companies increases as the portfolio asset allocation increases. This is in agreement with prior literature by Blanchett & Straehl (2018), Ombima & Njiru (2018), Mokaya, Chogi & Nyamute (2020), who noted a significant and positive influence of portfolio asset allocation on the financial performance of firms. The study however contradicts that of Salman, Mata, Kurfi & Ado (2020), in a study on the relationship between the investment portfolio and banking firms' financial performance in Nigeria who found a significant but negative effect of bond investment on the financial performance of the banking firms. It also contradicts that of Kothan & Shanke (2019) study results which showed a low correlation.

Table 4.2 further displays a moderate positive correlation between portfolio risk and financial performance (EVA) for the listed insurance firms in the 10-year period sampled ( $r = 0.4622$ ;  $p = 0.0000$ ), implying that 46.22% increase in portfolio risk leads to a 46.22 increase in the financial performance of listed insurance firms at the NSE. Similarly, a decrease in the portfolio risk is likely to cause a decrease in the financial performance of NSE-listed insurance firms. These results are in tandem with those of Amayo (2018),

Catherine (2020), Iraya & Wafula (2018), Mpumwire & Mulyungi (2018) & Kimani & Aduda (2016) who reported a positive relationship between portfolio risk and financial performance. It however contradicts that of Kiptoo, Kariuki & Ocharo (2021), Kioko, Olweny & Ochieng (2019) who showed a negative relationship between risk and financial performance.

To realise the results for the first objective, a null hypothesis, H01, assuming that there is no relationship between portfolio management and the financial performance of insurance firms listed in Kenya was formulated. Multiple regression analysis was then conducted to establish the effect of portfolio management on financial performance.

Table 4.3 below presents the results.

**Table 4.3:** Effect of Portfolio Management on Financial Performance (EVA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.257689	1.151308	2.829555	0.0065
Portfolio size	0.485938	0.151772	3.201755	0.0023
Portfolio asset allocation	0.403143	0.241318	1.670592	0.0004
Portfolio risk	-0.025468	0.043758	-0.582006	0.0029
R-squared	0.558039	Mean dependent var	6.798206	
Adjusted R-squared	0.512934	S.D. dependent var	0.325012	
S.E. of regression	0.306110	Akaike info criterion	0.534593	
Sum squared resid	5.247371	Schwarz criterion	0.674216	
Log likelihood	-12.03779	Hannan-Quinn criter.	0.589207	
F-statistic	3.503810	Durbin-Watson stat	1.571314	
Prob(F-statistic)	0.021128			

Source: Field Data, 2023.

In Table 4.3 the constant (C), is the y-intercept in the regression analysis set to establish the magnitude of the impact of changes of independent variables, consisting of portfolio size, portfolio asset allocation, and portfolio risk on financial performance (EVA) with the study generated 3.257 constant value of 3.257, it implies that the regression equation would only predict an EVA of 3.257 if the portfolio size is equal to zero. On the other hand, the value that multiplies the predictors of EVA is 48.59% for portfolio size. This means that a unit increase in portfolio size would result in a 48.59% increase in the financial performance (EVA) of the NSE-listed insurance companies. Most importantly, the at ( $p= 0.0023 < 0.05$ ) implies there is a statistically significant correlation between portfolio size and financial performance of the NSE-listed insurance companies. Therefore, the results in Table 4.3 show that portfolio size is a significant positive predictor of financial performance (EVA), ( $\beta = 0.485938$ ,  $p = 0.0023 < 0.05$ ). This result is concurrent with the findings of Kimani & Aduda (2016) who evaluated the effect of portfolio size on the financial performance of portfolios of investment firms in Kenya and found a positive and significant effect of portfolio size on the financial performance. Kisaka et al. (2015) also carried out a study on determining the optimal portfolio size on the Nairobi Securities Exchange, the intention was to determine the optimal portfolio size

for investors on the Nairobi Securities Exchange in Kenya, they also found a positive influence of portfolio size on the financial performance of listed firms at the NSE. These results on the other hand contradict that of Auma (2013), who sought to determine the relationship between portfolio holding and financial performance of insurance companies in Kenya and found that there is a negative relationship between portfolio size and the overall financial performance of the insurance industry. The results, therefore, reveal that listed insurance firms at the NSE could differ in financial performance based on the portfolio size because an increase in portfolio size will result in an increase in financial performance. This result supports the Modern Portfolio Theory which proposes that portfolio size influences the financial performance of the firm.

Additionally, Table 4.3 shows the coefficient value of portfolio asset allocation of 0.403143. This shows that a unit increase in portfolio asset allocation translates into a 40.31% increase in the financial performance (EVA) of the NSE-listed insurance companies. The P value of 0.0004,  $p \leq 0.05$  shows a statistically significant correlation between portfolio asset allocation and the financial performance of the NSE-listed insurance companies. The results, therefore, reveal that portfolio asset allocation is a significant positive predictor of financial performance ( $\beta = 0.403143$ ,  $p = 0.0004$ ,) implying that a unit increase in the value of portfolio asset allocation results in an increase of 40.31% in the financial performance of listed insurance firms. These results support prior empirical findings, Amayo (2018) who studying on portfolio optimization and its effect on the performance of banks in Kenya, his findings revealed that there was a significant positive relationship between asset allocation and performance in commercial banks in Kenya, Mokaya, Chogi & Nyamute (2020) conducted a study on the effects of asset allocation on the financial performance of unit trust schemes in Kenya, and results showed that asset allocation significantly influences the performance of a fund. Moreover, Hailu and Tassew (2018), carried out research on the impact of investment diversification on the financial performance of commercial banks in Ethiopia, and the results showed that investment in numerous assets positively affects the financial performance of commercial banks in Ethiopia.

On the other hand, this result contradicts that of Salman, Mata, Kurfi & Ado (2020), who studied the relationship between the investment portfolio and banking firms' financial performance in Nigeria and found that investment portfolio had a significant but negative effect on financial performance. This result indicates that portfolio asset allocation is a principal determinant of the listed insurance firm's financial performance. This also means that for insurance firms to perform well, they should work towards increasing their portfolio asset allocation.

Furthermore, Table 4.3 shows the constant (C) of 3.257689 which is the value that the regression equation would predict for financial performance (EVA) if the portfolio risk was equal to zero. The value of -0.025468 shows a negative effect between portfolio risk and financial performance. It further shows that a unit decrease in portfolio risk will lead to a 2.55% increase in financial performance (EVA). The p-value of 0.0029  $P \leq 0.05$ , implies a statistically significant correlation between portfolio risk and financial

performance (EVA) of the NSE-listed insurance companies. That is, there is a linear relationship between portfolio risk and financial performance (EVA). This result is consistent with the findings by Kiptoo, Kariuki & Ocharo (2021), who conducted a study on the relationship between risk management and the financial performance of insurance firms in Kenya, the purpose of the study was to analyse the correlation between the management of risk and the financial performance. The results showed that credit risk negatively and significantly affects financial performance. Kisaka et al. (2015) in their study showed that portfolio risk decreased as the number of securities in the portfolio rose but beyond the optimal portfolio size, the risk started increasing again. On the other hand, this study contradicts that of Catherine (2020), Iraya & Wafula (2018), Amayo (2018) who reported findings that showed a positive relationship between portfolio risk and financial performance. The results of the correlational and regression analysis and the equations derived from the original regression model led to the rejection of the null hypothesis ( $H_{01}$ ) that there is no relationship between portfolio management and the financial performance of insurance firms listed in Kenya. Instead, the alternative hypothesis ( $H_{0a}$ ) that there is a relationship between portfolio management and the financial performance of NSE-listed insurance firms in Kenya is accepted.

$$EVA_{it} = 3.2576 + 0.485938X_{1it} + 0.403143X_{2it} - 0.025468X_{3it} + \mu_{it} + 1.51308it \quad (2)$$

## 5. Conclusion and Recommendation

A positive but significant effect was established between portfolio size and financial performance. Additionally, the study established a strong positive significant effect of portfolio asset allocation on financial performance. However, a negative significant effect was found to exist between portfolio risk and financial performance for the insurance firms listed at the NSE. It is recommended that listed insurance firms in the NSE should increase the level of portfolio management by giving attention to its elements; portfolio size, portfolio asset allocation, and portfolio risk which are important predictors of firm's financial performance.

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## Conflict of Interest Statement

The authors declare no conflicts of interest.

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