Effect of Portfolio Diversification on the Financial Performance of Investment Firms Listed in the Nairobi Securities Exchange

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Abstract

Investment involves a possibility of variation or deviation in the actual return from the expected return. The return of an investment is a major determinant of whether the investors will sacrifice their present resources or not. The investors are more interested in investments or securities that promise higher returns than those that promise lower returns. Portfolio management still remains as a science that does not give clear answers on the portfolio construction., This study sought to establish the effect of portfolio diversification on the financial performance of Kenya's quoted investment firms. The specific variables were bond investments, equity investments, mutual fund investments and real estate investments on return on investments for the investments firms at Nairobi Securities. The theoretical framework was informed by portfolio theory, Black-Litterman theory and capital asset pricing model. The study adopted descriptive research design approach. The five listed investment companies at the NSE which formed the target population of this study and a census technique was used to select the five listed investment companies in the NSE. The study used secondary data that was extracted from the NSE and the websites of the respective listed investment companies. Data was collected covering 6 years from 2014 to 2019. Descriptive statistics was presented in mean, median, standard deviation while the inferential statistics included diagnostics tests and multiple linear regression model. The results revealed a negative and insignificant relationship between bond investments and return on investments for the investments firms at Nairobi Securities Exchange. There was a positive and significant relationship between Equity investments and return on investments for the investments firms at Nairobi Securities Exchange. Mutual Funds' investments had a negative and insignificant relationship with return on investments for the investments firms at Nairobi Securities Exchange. Real Estate investments revealed a positive and significant relationship with return on investments for the

investments firms at Nairobi Securities Exchange. The study concluded that bond investment has negative influence on the financial performance of investment companies listed firms. Mutual fund investment has a negative influence on the financial performance of investment companies listed firms. In contrast, Equity and real estate have a positive influence on the financial performance of investment companies listed firms. The study recommends that listed investments firms should invest more on the real estate compared to bond and mutual funds securities since real estate had higher significant effect on financial performance. The study further recommends that investment firms should maintain investment in equity so that to increase their financial performance, but they should invest less compared to the real estate investment. The management of the investment firms listed at the NSE should strive to improve the financial performance of their firms to enhance their firms' equity returns. Based on the weak relationship on bonds and mutual funds with financial performance which is seen by regression analysis, the study recommends that investment firms should consider investing less on bonds and mutual funds given the same market conditions.

Keywords: *Bonds, Equities, Mutual Funds', Financial Performance & Nairobi Securities Exchange*

1.1 Introduction

Investment is the commitment of present financial resources with the hope of achieving higher returns in the future. It involves sacrificing certain present values in order to gain future uncertain benefits. It also deals with time, inflation and uncertainty of future payments. Investment requires strategic decision making such as timing, amount, mix, type and grade of investment. According to Estrada (2019), the term investing may be associated with a variety of activities involving the spending of money and whose focus is geared towards the improvement of the investors' wealth. Institutional investors invest majorly because of the desire to pass money from the present into the future as well as increasing and protecting investors' wealth.

Investment involves a possibility of variation or deviation in the actual return from the expected return. This possible variation is known as investment risk which is inherent in all investments. The investment return is a measure of the growth in wealth resulting from that investment. This growth measure is expressed in percentage terms to make it comparable across large and small investors (Karimi, 2013). The return of an investment is a major determinant of whether the investors will sacrifice their present resources or not. The investors are more interested in investments or securities that promise higher returns than those that promise lower returns.

Portfolio management still remains as a science that does not give clear answers on the portfolio construction (Aliu, Pavelkova & Dehning, 2017). In their study on portfolio risk-return, Aliu, Pavelkova and Dehning (2017) further argue that raising the number of companies in a portfolio reduces the risk level of the portfolio. They conclude that the choice of a portfolio that an investor chooses depends on their risk profile and not only on returns. Similarly, Sethilnathan (2016) argues that in investment, more so in portfolio management, risk and return are the most crucial measures in making investment decisions. Kumar (2001) argues that even though Investors are aware of the benefits of diversification they appear to adopt a naive diversification strategy where they form portfolios without giving proper consideration to the correlations among the stocks.

A portfolio can be defined as a collection of investments which can be owned directly by individuals or managed by professionals. Markowitz (1959) argues that a good portfolio is more than a long list of good stocks and bonds. Portfolio is a balanced whole that provides investors with protection and opportunities with respect to a wide array of contingencies. He further argues that an investor should construct an integrated portfolio which suits his individual needs. Investment diversification is a widely accepted investment strategy, aimed at reducing investment uncertainty, while simultaneously keeping the expected return on investment unaltered (Lekovic, 2018). There are various sectors that investment companies invest their funds including bond investments, mutual funds' investments, equity investments and real estate investments (Norsim, Yakob & McGowan, 2019; Myskova & Hajek, 2017).

A bond is a debt in the form of a loan between the lender and the borrower (Felicien, 2015). For the lender, a bond is an investment that promises fixed returns while it is a debt to the borrower who should pay periodical fixed interest to the lender. Generally, bonds bear less risk than stocks while at the same time promising lower returns (Iqbal, Hameed & Qadeer, 2012). However, bonds still carry reasonable risk in terms of price risk and risk of default (also known as credit risk). The bonds can be widely classified into two categories, that is, corporate bonds and government bonds. Government bonds promise lower returns with corresponding lower risk while corporate bonds promise higher returns with commensurate high risk (Bhattacharjee, 2017).

Mutual funds are open-end professionally managed investment fund that pools money from many investors to purchase securities (Kimeu, 2015). These investors may be retail or institutional in nature. Mutual funds make money by charging investors a percentage of assets under management and may also charge a sales commission (load) upon fund purchase or redemption (Osano, 2013).

An equity investment is money that is invested in a company by purchasing shares of that company in the stock market. These shares are typically traded on a stock exchange (Sang, 2017). It is an operation where an individual or company invest money into a private or public company to become a shareholder. The most basic equity investment operation is the purchase of a common share. Common shares are pieces of a given business, also known as stocks. These stocks entitle the owner to a certain portion of the profits and assets and they can be bought either privately or publicly, depending on how the company is currently structured (Wafula, 2014).

Real estate investment involves the purchase, ownership, management, rental and/or sale of real estate for profit (Andelinovic, Samodol & Pavkovic 2018). Improvement of realty property as part of a real estate investment strategy is generally considered to be a sub-specialty of real estate investing called real estate development (Dabara *et al*, 2016) Real estate is an asset form with limited liquidity relative to other investments, it is also capital intensive (although capital may be gained through mortgage leverage) and is highly cash flow dependent. If these factors are not well understood and managed by the investor, real estate becomes a risky investment (Yat *et al*, 2017).

Minimization of risk of assets used in the portfolio construction by individual investors and investment professionals is achieved through diversification. Diversification is a technique that that is employed to reduce risk by allocating funds across various financial assets and industries. Effective diversification is achieved where assets with negative correlation are combined in the portfolio with the motive of achieving optimal portfolio (Vishwanath, 2007). Positive diversification value exists for any assets that are imperfectly correlated, the lower the correlation

between the assets, the higher the diversification value (Norsim, Yakob & McGowan, 2019). Little (2013) argues that for a portfolio to be truly diversified, stocks from different industries and different sized companies must be used in its construction. He further argues that portfolio diversification is increased with dissimilar companies from various industries due to the fact that stocks are not all affected by the same economic factors.

Investment companies in Kenya are licensed by the capital markets authority of Kenya (CMA). Registration of investment firms is done under the Capital Markets Act 2001, whereby the firms are registered under collective investment schemes (CIS). Each investment company is required by the Act to operate following the conditions set out in the license given. As at 31st January 2020, only five investment firms were registered with the CMA and listed with the NSE in Kenya. The listed investment companies are Kurwitu Ventures limited, Olympia Capital Holdings Limited, Trans-century Limited, Centum Investment Company limited, and Home Afrika Limited.

Listed Investment companies in Kenya typically invest in a diversified portfolio of assets. To make money for their shareholders and investors, they employ professional fund managers to invest in a wide range of assets than most people could not practically invest in themselves and are responsible for the management of billions of shillings' worth of assets on behalf of investors (Nairobi Securities Exchange, 2020). To diversify portfolios, the investment companies hold a wide range of assets which can include shares, securities and property, meaning that investor's investment is not exposed to the fortunes of just one or a few investments. Performance of the investment companies is based mainly on portfolio diversification especially of the best performing securities reflecting the financial performance of the firms. Performance evaluation of investment companies quoted at the NSE involves a risk-based analysis approach. There are numerous methods for the performance evaluation and efficiency analysis as appropriate tools of the company.

1.2 Statement of the Problem

The type of investment a company invests in is highly informed by its ability to generate the highest returns while at the same time offering lower risk. This can be informed by undertaking prior market analysis with projections on future market predictions. The rate of returns on the investment for the listed Investment Services firms in Nairobi Securities Exchange have recorded a steady decline from the year 2016 to 2018 (NSE, 2018). This is evidenced by investment firms such as, Home Afrika which made KSh 888.8 Million Loss in 2019 (Home Afrika Annual Report, 2019). The company posted a KSh 346.2 million net loss in 2018. The group attributed this poor performance to the depressed investment portfolios. This is also evidenced by Investment firm Centum which reported a 66 per cent drop in profit after tax in 2018 due to poor performance (Centum Annual Report, 2019). Kurwitu Ventures Limited despite having been listed on the Nairobi bourse in 2014, the company has been dormant, revising its investment strategy several times without hitting the target and booked a net loss of Kshs Sh10.8 million in 2017 and a further net loss of Kshs 5.4 million in 2018 (Kurwitu Annual Report, 2018). Further, Trans Century in 2020 had announced plans to de-list from the Nairobi Security Exchange following years of losses. In addition, investigations on the determinants of the relationship between diversification and company performance have been performed. However, Hitt, Hoskinson and Kim (2017) find that many of the studies differed on the kind of association between diversification and company performance.

A study carried out by Iqbal, Hameed and Qadeer (2012) evaluated the impact of diversification on firms' performance. The companies were selected through the use of specialization ratio. The findings of the study were that all firms performed equally whether they were highly diversified, moderately diversified or less diversified. On their study on firm-diversification effects on performance using Tobin's q, Llyod and Jahera (2014) established that there were no significant findings to relate diversification and performance. These findings were in agreement with Wan (1998) who had found that diversification had no positive effect on firm's profitability.

Locally, an investigation on the impact of portfolio composition on financial performance was attempted by Kimeu (2015). The study used Bond, Equity, Real estates and Size as the variables with the listed investment firms at the NSE for the period 2012 to 2014. However, the time span of 2012-2014 is considered very small since the investment returns from Bond, Equity, Real estates are long term and thus a longer period of time is considered necessary and therefore the study presented a methodological gap. Kimeu study found that investment in bonds had a positive consequence on the financial performance of the quoted investment firms. In addition, the current study has incorporated investments in mutual funds and thus presenting a conceptual gap. The empirical review by Musembi and Jagongo (2018) on portfolio diversification further presents a conceptual gap on the use of macro-economic factors such as GDP while the current study focused on Bond, Equity, Real estates and mutual funds. The study by Obiero (2018) on the effects of portfolio diversification on the financial performance of investment companies listed at the NSE adopted ROA as the measure of the investments performance while the current study used Return on Investments since the study is focused on bond investments, mutual funds' investments, equity investments and real estate investments. The study found that investment in bonds had a positive and consequential influence on the economic performance of the investment companies quoted in the NSE.

The effect of portfolio diversification on financial performance remains a debated topic because of the differences in study findings, especially in the global arena. Majority of the studies are carried out in developed economies with minimal attention paid to the emerging economies. Additionally, the study of the effect of portfolio diversification on investment firms' performance has not been receiving sufficient attention in Kenya. Consequently, there exists a gap in the empirical literature on emerging economies inclusive of Kenya. This study, therefore, sets to fill this void by investigating the situation of the investment companies in Kenya and build more related evidence on the effect of portfolio diversification on investment companies' performance in Kenya.

1.3 Research Objectives

The study was guided by the following objectives;

i.   To evaluate the effect of bond investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange.
ii. To examine the effect of equity investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange.
iii. To establish the effect of mutual funds' investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange.
iv. To determine the effect of real estate investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange.

1.4 Research Hypotheses

i. Bonds Investment has no significant effect on the financial accomplishment of investment companies.
ii. Equity investments has no significant effect on the financial accomplishment of investment companies.
iii. Mutual funds Investment has no significant effect on the financial accomplishment of investment companies.
iv. Real estate investment has no significant effect on the financial accomplishment of investment companies.

2.1 Theoretical Review

2.1.1 Portfolio Theory

The Portfolio theory was developed by Markowitz (1952) and first presented in his seminal paper on portfolio selection. The theory has since been modified by several researchers to be what is now commonly referred to as the Modern Portfolio Theory (MPT). MPT currently forms a cornerstone of finance and is widely accepted and applied in the field of finance and economics. The model suggests that investors must diversify their portfolios to achieve maximum returns while at the same time reducing the risk in the portfolio. According to the portfolio theory, diversification is achieved through the allocation of resources to securities that promise maximum returns and minimum variance. Markowitz further posits that the securities with the highest expected returns are not necessarily the ones with the least variance. Due to the intercorrelation of the securities' returns, diversification cannot eliminate all variance, and therefore the portfolio with maximum expected returns is not necessarily the one with the least variance.

The Portfolio Theory is relevant to the study as it informs firms to design a portfolio to maximize returns by accepting a quantifiable amount of risk. The firms could reduce risk by diversifying their assets and asset allocation of their investments using a quantitative method such as such as bond investments, mutual funds' investments, equity investments and real estate investments.

2.1.2 Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) was independently advanced by Jack Treynor (1961), William Sharpe (1964) and John Lintner (1965). The model is built upon the work of Harry Markowitz (1952; 1959) on portfolio selection and diversification and depends on the risk-return tradeoff. CAPM was developed to estimate the cost of capital for firms and the theoretical required rate of returns by investors. The model takes into consideration the security's sensitivity to systematic risk (un-diversifiable or market risk) which is denoted by the asset beta (β) and also the theoretical risk-free rate (Rf) and the market return (Rm). To determine the relationship between market risk and the expected return of securities, CAPM generally assumes that investors need to be compensated for the time value of their money and the risk involved in the investment.

The Capital Asset Pricing Model is relevant to the study as it informs the diversification of the various investments in bond, mutual funds', equity, real estate and the risk associated. The theory categorically describes the relationship between systematic risk and expected return investment such as bond investments, mutual funds' investments, equity investments and real estate investments. CAPM is widely used throughout finance for pricing risky securities and generating expected returns for assets given the risk of those assets and cost of capital.

2.1.3 Black-Litterman Model

The mathematical asset allocation was developed by Fischer Black and Robert Litterman (1990) at Goldman Sachs. The Black-Litterman Model (BLM) was meant to overcome the flaws of modern portfolio theory (MPT) encountered by investors. In the model, Black and Litterman incorporate ideas from both Markowitz's portfolio theory, CAPM, and the mean-variance optimization theory. Black and Litterman (1992) argue that the inclusion of global CAPM equilibrium equities, bonds, and currencies can greatly improve the behaviour of qualitative asset allocation models.

The BL model uses the Bayesian approach to infer the probability distribution of assets' expected returns. This helps to combine the views of an investor with the expected excess returns hence generating optimal portfolio weights for given securities. The optimal portfolio for an unconstrained investor is proportional to the market equilibrium portfolio plus a weighted sum of portfolios reflecting the investor's views (He & Litterman, 1990). According to Litterman, equilibrium is the state where demand equals supply. Arguably, this state never occurs in the financial markets. However, the presence of some players in the economic system such as arbitrageurs eliminates deviations from equilibrium and hence equilibrium is viewed as a centre of gravity as opposed to a static position

The Black-Litterman theory is relevant to the study as it enables investors to combine their unique views regarding the performance of various assets with the market equilibrium in a manner that results in intuitive, diversified portfolios.

2.2 Empirical Review

Badia, Pina, and Torres (2019) studied the financial performance of government bond portfolios based on Environmental, Social and Governance criteria (ESG). They took a sample of 24 countries from the developed world using a sustainability rating between the countries for the period between the years 2006 and 2017. The study used RobecoSAM information to classify government bonds according to ESG performance and assessed financial differences between high- and low-ranked government bonds. Using various financial performance measures, the findings suggested that high-rated government bonds, according to environmental, social, and governance (ESG) dimensions, outperformed low-ranked bonds under any cut-off, although the study found no significant difference.

Barnes and Burnie (2014) investigated the effects of bond portfolio composition on the performance of industries in Canada. They obtained six-year samples for the periods 2008-2013 mainly from the listed industries that were perceived to be well diversified in the Canadian Stock Exchange. The study employed the use of yield curves which were used in the generation of returns. The study used a regression model to obtain the actual portfolio performance. The findings

of the research revealed that the expectations generated by time-series returns obtained from the yield curves of bonds did not positively influence the performance since the individual bonds had different maturities.

Krishnamoorthi and Murigesan (2018) analysed the risk and return of selected mutual funds schemes in India. This study aimed at analysing the average return and the risk involved in investing in mutual funds. The BETA value was calculated for all the six companies to know whether the investment in each company was risky or not. In the study, risk-adjusted methods of Sharpe, Treynor, and Jenson alpha measures were determined for the performance evaluation of dividend open-ended schemes of equity funds of mutual funds in the mutual fund industry. Yearly return analysis was performed on the sample of equity funds of mutual funds clearly showing that all sample funds earned positive returns in the excess of the risk-free rate of return. The study revealed that while the funds were supposed to be the best investment vehicle for small investors, mutual funds had not reached their expectations.

Hailu and Tassew (2018) evaluated the effect of mutual funds on the economic performance of commercial banks operating in Ethiopia. They used data for five (5) years' period from 2013 to 2017 for Seventeen (17) operating commercial banks in Ethiopia. The researchers adopted a quantitative research approach and analysed the data using panel random effect regression model. The finding of the study showed that banks that had invested in mutual funds reported higher yields. The study established that investment diversification positively influenced the financial performance of commercial banks in Ethiopia. Further, the researchers recommended that commercial banks in Ethiopia should focus on building up confidence in portfolio diversification.

Hailu (2018) investigated the significance of investment in equity on the financial performance of insurance companies in Ethiopia. The researcher considered the presence of both private and public insurance companies. The study used a sample of nine (9) insurance companies out of seventeen (17) companies from the year 2006 to the year 2016 financial statements. The random effect regression technique and correlation were used to analyse the data using the econometric package Eviews software. The sampled data was also presented and analysis carried out by the use of descriptive statistics to establish the standard deviation, mean, maximum and minimum. The dependent variable used to estimate insurance companies' performances was return on asset. The study concluded that investment in equity had an unfavourable and inconsequential consequence on return on assets.

A comparative analysis of the impact of asset allocation on portfolio performance as medium-term investments in India was carried out by Bhattacharjee (2017). The researcher collected secondary data from the mutual fund India website for three years from the year 2014 to the year 2017. The independent sample t-test was run using SPSS on the data selected. The results revealed that the average return on Equity fund was significantly greater than the average return on Debt but significantly lower than the average return on balanced funds. The researcher reckoned that investment in equity had a positive impact on portfolio performance.

A study on asset allocation and profitability of insurers in the pre-solvency II period in Croatia was carried out by Andelinovic, Samodol and Pavkovic (2018). The researchers collected data from the published accounts of the insurance organizations for the years 2008 to 2015. The data collected was analysed using cluster analysis and panel data analysis techniques. Cluster analysis

was employed for the classification of insurers according to their investment strategies and its results used in the prediction of the changes in asset allocation that financial regulation would bring. The study revealed that investments in real assets had a negative and significant impact on the profitability of Croatian insurers.
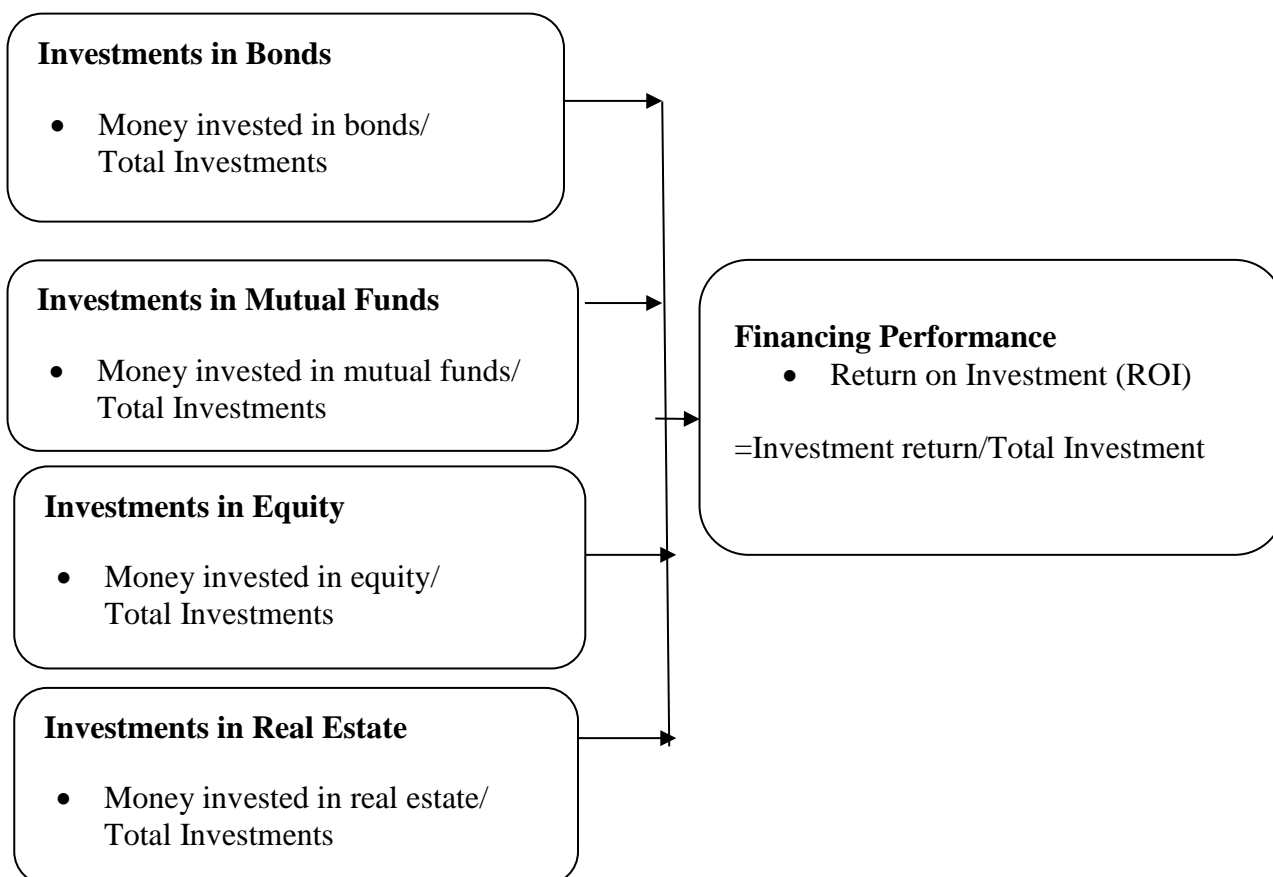
Bhuyan *et al* (2015) studied the effect of Mortgage real estate investments trust on portfolio diversification in the US. The researchers collected data from the US financial markets for the period 2002 to 2012 to determine the magnitude and benefits of Mortgage Real Estate Investment Trust (MREIT). The research sample consisted of ex-post prices and dividends for a total of 82 firms -26 REITs, 16 MREITs, and 42 common stocks listed on various stock exchanges. The study observed that investors cannot benefit from diversification using MREITs. Further, the research revealed that MREITs turn out to be the worst asset class to be used in portfolio diversification. The research recommended that small investors should not use MREITs for diversification.

2.3 Conceptual Framework

A conceptual framework illustrates how variables are linked and related to each other. The variables, in this case, are the independent (explanatory) along with the dependent variable (response). Notably, an independent variable affects and determines the effect of another variable. The figurative illustration of the dependent and independent variables in this study is shown below in the conceptual framework.

Independent Variables   **Dependent Variable**

Investments in Bonds

- Money invested in bonds/ Total Investments

Investments in Mutual Funds

- Money invested in mutual funds/ Total Investments

Financing Performance
- Return on Investment (ROI)

=Investment return/Total Investment

Investments in Equity

- Money invested in equity/ Total Investments

Investments in Real Estate

- Money invested in real estate/ Total Investments

3.1 Methodology

The study adopted descriptive research design approach. Mugenda and Mugenda (2003) assert that descriptive research design is applicable majorly when the objectives of the study are systematic. There are five quoted investment companies at the NSE which formed the target population of this study. The research adopted the use of secondary data. The data was extracted from the NSE and the websites of the respective listed investment companies. Data was collected covering 6 years from 2014 to 2019. The research utilized a panel regression model using STATA software. The study adopted the use of panel regression analytical model as shown;

$$Y_{it} = \beta_O + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Where;

Y= Financial performance

β_0 = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = Beta coefficients of the independent variables

X_1 = Investments in bonds (as a ratio of total investments)

X_2 = Investments in mutual funds (as a ratio of total investments)

X_3 =Investments in equity (as a ratio of total investments)

X_4 =Investments in Real Estate (as a ratio of total investments)

ε = Error term (Margin of error)

i = Investment company. i = 1…5

t = the index of time period. t = 1…6

4.0 Results and Discussions

4.1 Descriptive Statistics

The descriptive statistics shows the mean, standard deviation, minimum and maximum values of the variables financial performance (Return on Investments), Bond investments ratio, Mutual Fund investments ratio, Equity investments ratio and Real Estate investments ratio to total investments for the investment companies at the NSE for period 2014-2019. The results are depicted in percentages and are presented in Table 1.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Bond investments	30	5.38	1.92	1.10	8.40
Equity investments	30	13.50	13.75	1.90	73.30
Mutual fund investments	30	6.80	2.87	1.30	19.10
Real Estate investments	30	32.51	16.41	6.40	88.00
Return on Investments	30	2.15	1.34	0.85	5.60

The bond investments ratio to total investments had a mean of 5.38 and a standard deviation of 1.92. The minimum ratio was 1.10 and the maximum of 8.40. The bond investments ratio mean of 5.38% implied that most of the investment companies had no appetite in investing in the bonds as a key source for their returns. This is also depicted by the low maximum of 8.40% out of a 100 for the investment companies at the Nairobi Securities Exchange implying that none of the investment companies had more than a quarter of their total investments under bonds. The equity investments to total investments had a mean of 13.50 and a standard deviation of 13.50. The minimum ratio was 1.90 and the maximum of 73.3. The equity investments mean of 13.50% implied that the investment companies further did not put much of their investment portfolios in investing in the equity fund as a key source for their returns. However, the maximum of 73.3% implied that there were firm(s) that had singled their investments at equity funds since it was more than three quarters of the total investments.

The mutual fund investments to total investments had a mean of 6.80 and a standard deviation of 2.87. The minimum ratio was 1.30 and the maximum of 19.10. The mutual fund investments mean of 6.80% implied that most of the investment companies further had no desire in investing in the mutual fund as a key source for their returns. This is also depicted by the maximum of 19.10% out of a 100 for the investment companies at the Nairobi Securities Exchange and also implied that none of the investment companies had more than a quarter of their total investments under mutual funds. The real estate investments ratio had a mean of 32.51 and a standard deviation of 16.41. The minimum ratio was 6.40 and the maximum of 88. The real estate investments ratio mean of 16.41% implied that the investment companies had a considerable funds scheduled for of their investment portfolios in investing in the real estate investments as a key source for their returns. The maximum of 88% implied that real estate was thus the most invested sector for the NSE investments companies.

Lastly, the performance of the investments companies under return on investments had a mean of 2.15 and a standard deviation of 1.34. The minimum ratio was 0.85 and the maximum of 5.60. The mean of 2.15% implied that the companies were able to make returns from their key investments portfolios however the ratio in percentage was low at 2.15% out of 100%. The minimum of 0.85 implied that some companies were struggling to attain a return from their investments since the return was below 1% out of a possible 100% considering a desired 5% return rate. However, the maximum of 5.6% implied that some companies were able to make a good return from their investments portfolios. In conclusion, the descriptive statistics portray that the investments companies at the NSE had diversified investments portfolios that led to different investments returns with the highest being real estate and the lowest being bonds.

4.2 Correlation Analysis

The study conducted correlation analysis for the various variables that are bond investments, equity investments, mutual fund investments and real estate investments on return on investments for the investments firms at Nairobi Securities Exchange in order to examine the nature of the statistical relationships between each pair of variables. Table 2 shows the correlation matrix of all the variables included in the study.

Table 2: Correlation Matrix

	Return on Investments (ROI)	Bond investments	Equity investments	Mutual fund investments	Real Estate investments
Return on Investments (ROI)	1.000				
Bond investments	-0.010	1.000			
	0.959				
Equity investments	0.908*	0.126	1.000		
	0.000	0.508			
Mutual fund investments	-0.017	0.773*	0.091	1.000	
	0.927	0.000	0.633		
Real Estate investments	0.897*	0.199	0.938*	0.184	1.000
	0.000	0.292	0.000	0.330	

The results in Table 2 show that Bond investments (r=-0.010, p=0.959) had a negative and insignificance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Equity investments (r=0.908*, p=0.000) had a positive and a significance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Mutual Fund investments (r= -0.017, p= 0.927) had a negative and insignificance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Lastly, Real Estate investments (r=0.908*, p=0.000) had a positive and a significance relationship on return on investments for the investments companies in the Nairobi Securities

Exchange. This positive coefficient implied that an increase in equity investments and real estate investments led to an increase on return of investments for the investments firms at Nairobi Securities Exchange. However, the negative coefficient implied that increase in the bond investments and mutual fund investments had a negative effect on the return on investments for the investments firms at Nairobi Securities Exchange.

4.3 Regression Analysis

The study sought to carry out regression analysis to establish the statistical significance relationship between portfolio diversification on the financial performance of Kenya's quoted investment firms. The variables were bond investments, equity investments, mutual fund investments and real estate investments on return on investments for the investments firms at Nairobi Securities Exchange. The regression includes techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results are presented in Table 3.

Table 3: Regression Analysis

Return on Investments	Coef.	Std. Err.	z	P>|z|
Bond investments	-0.087	0.080	-1.080	0.278
Equity investments	0.044	0.021	2.090	0.037
Mutual Funds' investments	-0.026	0.054	-0.480	0.633
Real Estate investments	0.041	0.018	2.320	0.020
_cons	1.678	0.319	5.260	0.000
Wald chi2(4)	164.09			
Prob>chi2	0.000			
R squared Overall = 0.8678				

The regression equation was as shown below;

$Y_{it} = 1.678 - 0.087X_{1it} + 0.044X_{2it} - 0.026X_{3it} + 0.041X_{4it}$

X_{1it} = Bond investments of Investment Firm i at time t

X_{2it} = Equity investments of Investment Firm i at time t

X_{3it} = Mutual Funds' investments of Investment Firm i at time t

X_{4it} = Real Estate investments of Investment Firm i at time t

The overall R squared of 0.8678 implied that the four variables namely bond investments, equity investments, mutual funds' investments and real estate investments explained 86.78% on the variations on performance for the investments firms. The overall model was significant as indicated by the Prob>chi2 of 0.000 with a Wald chi2 (4) of 164.09. In addition, the constant of 1.678 showed that when Bond investments, Equity investments, Mutual Funds' investments and Real Estate investments are held constant, performance will remain at 1.678 units.

The results further portrayed a negative and insignificant relationship between Bond investments and return on investments for the investments firms at Nairobi Securities Exchange (β= -0.087, p=0.278). There was a positive and significant relationship between Equity investments and return on investments for the investments firms at Nairobi Securities Exchange (β= 0.044, p= 0.037). Mutual Funds' investments had a negative and insignificant relationship with return on investments for the investments firms at Nairobi Securities Exchange (β= -0.026, p= 0.633). Lastly, Real Estate investments revealed a positive and significant relationship with return on investments for the investments firms at Nairobi Securities Exchange (β= 0.041, p= 0.020).

4.4 Discussion of Findings

The first objective of the study was to evaluate the effect of bond investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange. Correlation results showed that Bond investments (r=-0.010, p=0.959) had a negative and insignificance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Further, regression analysis indicated a negative and insignificant relationship between Bond investments and return on investments for the investments firms at Nairobi Securities Exchange (β= -0.087, p=0.278). This implies that a unitary increase in Bond investments led to a decrease in the financial performance of investment companies quoted at the Nairobi Securities Exchange by 0.087 units holding other factors constant.

The null hypothesis was therefore not rejected that bonds investment has no significant effect on the financial accomplishment of investment companies. The findings agree with Barnes and Burnie (2014) who investigated the effects of bond portfolio composition on the performance of industries in Canada and findings of the research revealed that the expectations generated by time-series returns obtained from the yield curves of bonds did not positively influence the performance since the individual bonds had different maturities. However, the findings disagree with Rop, Muturi and Bokongo (2015) who analysed the development of investment diversification on the financial performance of Kenya's commercial banks. The research affirmed the presence of a consequential association between government securities and the financial performance of Kenyan commercial banks. This implied that government securities had a positive and consequential strength on the performance of commercial banks in Kenya. Nonetheless the bond dimension was applied to the banking sector whereas the current study used key investment firms.

The second objective of the study was to evaluate the effect of equity investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange. Correlation results showed that Equity investments (r=0.908*, p=0.000) had a positive and a significance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Regression analysis indicated that there was a positive and significant relationship between Equity investments and return on investments for the investments firms at Nairobi Securities Exchange (β= 0.044, p= 0.037). This implies that a unitary increase in equity investments led to an increase on the financial performance of investment companies quoted at the Nairobi Securities Exchange by 0.044 units holding other factors constant.

The null hypothesis was therefore rejected and the alternative hypothesis was adopted that equity investment has a significant effect on the financial accomplishment of investment companies. The findings are consistent with the comparative analysis of the impact of asset allocation on portfolio

performance as medium-term investments in India was carried out by Bhattacharjee (2017) whose results revealed that the average return on Equity fund was significantly greater than the average return on Debt but significantly lower than the average return on balanced funds. The researcher reckoned that investment in equity had a positive impact on portfolio performance. The results are in tandem with Sang (2017) who analysed the effect of the weight of equity on the performance of unit trusts in Kenya and found that there existed a significantly positive relationship between the weight of equity and funds returns of unit trusts in Kenya.

The findings are also in agreement with Rop, Muturi and Bokongo (2015) who explored the importance of investment diversification on the economic performance of Kenya's commercial banks and determined that there existed a substantial relationship between buying shares and financial performance of commercial banks in Kenya and hence the need of commercial banks to regularly buy shares to raise their performance and provide the enabling environment that will accelerate financial growth. Lastly, Ngunjiri (2016) on an attempted to establish whether there existed a relationship between financial performance and equity returns for the quoted companies in Kenya established that there was a direct association between financial performance and equity returns of quoted companies at the NSE.

The third objective of the study was to evaluate the effect of mutual fund investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange. Correlation results showed that Mutual Fund investments (r= -0.017, p= 0.927) had a negative and insignificance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. Regression analysis indicated that Mutual Funds' investments had a negative but insignificant relationship with return on investments for the investments firms at Nairobi Securities Exchange (β= -0.026, p= 0.633). This implies that a unitary increase in mutual fund investments led to a decrease on the financial performance of investment companies quoted at the Nairobi Securities Exchange by 0.026 units holding other factors constant.

The null hypothesis was therefore not rejected that mutual funds investment has no significant effect on the financial accomplishment of investment companies. These findings are in line with Iraya and Wafula (2018) who measured the strength of diversification on the economic performance of Kenya's mutual funds. The portfolio return was determined by computing the changes in prices of the balanced fund as traded at the NSE while the portfolio diversification was ascertained from the level of diversifiable risk in the financial achievement. The study revealed that lower diversification represented by the level of the diversifiable risk positively influences the achievement of mutual funds. This implied an inverse relationship between diversification and portfolio return and thus shows no major value in portfolio diversification. However, the findings differ with Krishnamoorthi and Murigesan (2018) analysed the risk and return of selected mutual funds schemes in India and found that mutual funds earned positive returns in the excess of the risk-free rate of return. However, a disclaimer was put that while the funds were supposed to be the best investment vehicle for small investors.

The fourth objective of the study was to determine the effect of real estate investments on the financial performance of investment companies quoted at the Nairobi Securities Exchange. Correlation results showed that Real Estate investments (r=0.908*, p=0.000) had a positive and a significance relationship on return on investments for the investments companies in the Nairobi Securities Exchange. The regression outputs indicated that real estate investments revealed a

positive and significant relationship with return on investments for the investments firms at Nairobi Securities Exchange (β= 0.041, p= 0.020). This implies that a unitary increase in real estate investments led to an increase on the financial performance of investment companies quoted at the Nairobi Securities Exchange by 0.041 units holding other factors constant.

The null hypothesis was therefore rejected that real estate investment has no significant effect on the financial accomplishment of investment companies. The results acknowledge Dabara *et al* (2016) who examined the investment performance of real estate versus decided on economic assets in Nigeria as well as presented that investment in a straight building provided the greatest gains (22.48%) in addition to the highest degree of risk (8.72%) in the investment collection. The research further presented that simply the straight property investment illustrated the presence of both variation and also inflation-hedging potentials. Njiiri (2015) assessed the strength of the association between investment in real estate and the performance of Kenya's insurance companies and the research affirmed the existence of a positive and consequential relationship between real estate investments and the financial performance of insurance businesses. Auma (2013) on the effectiveness of portfolio holding on the financial performance of insurance organizations in Kenya established that investment in real estate had a direct relationship with the overall profitability of the insurance industry and recommended that insurance companies seeking to increase their financial performance should reduce investments in real estate. Kimeu (2015) who evaluated the influence of real estate investment on the economic performance of investment businesses quoted at the NSE established that real estate investment positively impacted on the companies' financial performance.

The Portfolio theory portends that high-risk investments usually promise equally high- returns while low-risk assets equally promise low returns. All portfolios, therefore, exhibit all the characteristics of the individual assets used in their formation in terms of risk and return. Any investor who wishes to construct an optimal portfolio will be contending with a portfolio that neither promises the highest returns nor the lowest risk. The optimal portfolio will, however, seek to achieve a balance between the expected return and the acceptable level of risk.

5.1 Conclusion

The study concluded that effect portfolio composition affects the financial performance of investment companies listed in the Nairobi Securities Exchange in diverse ways. Each of the specific conclusions is as discussed;

Real estate and equity investments had a positive and significant coefficient with financial performance of investment companies. This positive coefficient for real estate and equity implied that an increase in equity investments and real estate investments led to a significant increase on return on investments for the investments firms at Nairobi Securities Exchange. Real estate yields higher gains due to appreciation of land and development and thus lucrative for the investors. This explains real estate ass the highest form of investment by the investment firms at the Nairobi securities Exchange with the highest having 88% of the funds invested in real estate.

The study concluded that equity investment has positive and significant influence on the financial performance of investment companies listed firms. The positive and significant coefficient for equity implied that increase in the equity investments had a significant increased effect on the return on investments for the investments firms at Nairobi Securities Exchange. Equity

investments thus offers an opportunity for high returns when invested with stable or fast growing firms in the market. In addition the equity markets offers dividends and price yields for the investors within shorter periods of time.

6.1 Recommendations

Based on the weak relationship on bonds investments with financial performance which is seen by and regression analysis, the study recommends that investment firms should consider investing less on bonds given the same market conditions. The study further found that the bond funds are better off invested through the banks and the insurance companies that have large portfolios from the member funds and thus can be used for long term bonds.

The study further recommends that investment firm should maintain investment in equity so that to increase their financial performance, but they should invest less compared to the real estate investment. The management of the investment firms listed at the NSE should strive to improve the financial performance of their firms to enhance their firms' equity returns.

Based on the weak relationship on mutual funds with financial performance which is seen by regression analysis, the study recommends that investment firms should consider investing less on mutual funds given the same market conditions. The study found that the mutual funds are better off invested through the banks and the insurance companies that have large portfolios from the member funds and maturity periods.

The study recommends that there is need to increase or improve investments in real estates, since the investment have positive effect on the financial performance of investment companies, as found in the study. The study also recommends that listed investments firms should invest more on the real estate compared to bond and mutual funds securities since real estate had higher significant effect on financial performance.

References

Auma, M. (2013). *The Relationship between Portfolio Holding and Financial Performance of Insurance Companies in Kenya*. MBA thesis, University of Nairobi.

Bhattacharjee, (2017). Awareness about equity investment among retail investors: a kaleidoscopic view. *Qualitative Research in Financial Markets*.

Bhuyan, R., Kuhle, J., Talla, M.A., & Munir, M. (2015). The portfolio benefits of using real estate investment trusts and commercial real estate. *International Journal of Economics and Financial Issues*, 5(4), 922-928.

Dabara, I.D., Odewade, G.A., Ikpeme, A.A., & Olatunde, L.A. (2016). Financial performance evaluation of investment in real estate and selected financial assets in Nigeria between 2005 and 2014. *International Journal of Business and Management Studies*, 5(1), 197–210.

Felicien, F.M (2015). *The effect of portfolio composition on the financial performance of investment companies listed in Nairobi securities exchange*. MBA thesis, University of Nairobi.

Iqbal, A., Hameed, D., & Qadeer, M. (2012). Impact of diversification on firms' performance. *American Journal of Scientific Research*, *80*, 42-53.

Karimi, D.G. (2011). *Relationship between investment portfolio choice and profitability of investment companies listed in the Nairobi securities exchange*. MBA thesis, Kenyatta University.

Kimeu (2015). The effect of portfolio composition on the financial performance of investment companies listed in Nairobi Securities Exchange. *Master's Thesis. University of Nairobi*.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics*, Vol. 47, No. 1 pp. 13-37

Malhotra, N. (2007). Marketing Research: An applied orientation, 5th ed., *PHI, New Delhi*.

Markowitz, H. (1952). Portfolio Selection, Journal of Finance. *Markowitz HM—1952.—№*, 77-91.

Martins, F. S., Lucato, W. C., & Da Silva, D. (2019). Can diversification explain financial performance in agribusiness co-operatives?. *British Food Journal*.

Mathuva, D. (2016). Revenue diversification and financial performance of savings and credit co-operatives in Kenya. *Journal of Co-operative Organization and Management*, *4*(1), 1-12.

McBurney, H.D. & Theresa, L.W. (2010). Research Methods (8th ed.). Belmont: *Cengage Publishers*.

McMillan, J. H., & Schumacher, S. (2010). Research in education: Evidence based inquiry. New York, NY: *Longman*.

Mugenda, O., & Mugenda, A. G. (2003). *Research methods: Quantitative and Qualitative methods*. Revised in Nairobi.

Mulwa, J. M., & Kosgei, D. (2016). Commercial bank diversification and financial performance: the moderating role of risk.

Musembi, M. M., & Jagongo, A. (2017). A Theoretical Review of The Impact of Portfolio Diversification on Financial Performance of Investment Firms Listed in Nairobi Securities Exchange, Kenya. *Future*, *8*(19).

Ngechu, M. (2004). Understanding the research process and methods. An introduction to research methods. *MBA Thesis, School of Business: University of Nairobi*.

Ngware, S. G., Muturi, W., & Olweny, T. (2019). Sectoral Credit Portfolio Diversification and Financial Performance of Commercial Banks in Kenya. *Journal of Finance and Economics*, *7*(4), 127-136.

Ngware, S. G., Olweny, T., & Muturi, W. (2020). Do Bank Size Moderate Relationship between Banks' Portfolio Diversification and Financial Performance of Commercial Banks in Kenya?. *SEISENSE Journal of Management*, *3*(2), 14-30.

Nwakoby, N. P., & IHEDIWA, A. (2018). Effect of diversification on the financial performance of selected firms in Nigeria. *International Journal of Advanced Academic Research*, *4*(12), 1-16.

Obiero, C. O. (2019). *Effects of Portfolio Diversification on the Financial Performance of Investment Companies Listed At the Nairobi Securities Exchange* (Doctoral dissertation, United States International University-Africa).

Odhiambo, F. O. (2015). The Effect of Real Estate Finance on the Financial Performance of Listed Commercial Banks in Kenya: A Panel Evidence. *Journal of Finance and Accounting*, *3*(4), 61-68.

Ogada, A., Achoki, G., & Njuguna, A. (2016). Effect of diversification on the Financial Performance of Merged Institutions.

Osano, B.O. (2013). *The effect of investment strategies on financial performance of investment funds in Kenya*. MBA thesis, University of Nairobi.

Philita, G. E. R. A. L. D. (2018). Effects of Portfolio Diversification on Financial Performance of Commercial Banks in Kenya. *University of Nairobi: KE*.

Raisch, K and Birkinshaw, S. (2018). Investment performance of international mutual funds. *Journal of Financial Research.1-14*.

Reilly, F (2013). *Investment analysis and portfolio management*. 7th edition, South- Western.

Reilly, F and Brown, K. (2016). *Investment analysis and portfolio management*. 7thedition, South-Western.

Renshaw, A. (2008). Real word case studies in portfolio construction optimization using robust optimization. *Axioma Research Paper*, (007).

Robicheck, M. (2016). Mutual fund performance: An empirical decomposition into stock picking talent, style, transactions costs, and expenses. *The Journal of Finance, 55(4), 1655-1695*.

Sang, F.K. (2017). *The effect of asset allocation on the financial performance of unit trusts in Kenya*. MBA thesis, University of Nairobi.

Scott, J. (2017). An examination of the selectivity and market timing performance of UK unit trusts. *Journal of Business Finance & Accounting*, *22*(1), 143–156.

Sharpe, (2016). Mutual Fund Performance. *Journal of Business 39,119-138.*

Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance*, 19(3), 425-442.

Shi, Y., Lim, J. M., Weitz, B. A., & France, S. L. (2018). The impact of retail format diversification on retailers' financial performance. *Journal of the Academy of Marketing Science*, *46*(1), 147-167.

Shyu, J., & Chen, Y. L. (2009). Diversification, performance, and the corporate life cycle. *Emerging Markets Finance and Trade*, *45*(6), 57-68.

Stock hammer, W. F. (2014). A simplified model for portfolio analysis. *Management Science,* 9(2) 277-293

Tornell, C. (2010). Y*our money, your choice... mutual funds: Take control now and build wealth wisely*, Financial Times Prentice Hall, New Jersey.

Trygve, R. S. (2016). Risk return measurement in portfolio selection and performance appraisal models. *Journal of financial and quantitative analysis,* Financial Times Prentice Hall, New Jersey.

Vares, H., Kazaei, S., & Bannazadeh, M. J. (2019). Investigating the Effectiveness of Business Portfolio Diversification Strategy on Financial Performance using Nonlinear Model in Parent Companies. *Journal of Business Management*, *11*(2), 437-456.

Vishwanath, S. R. (2007). *Corporate finance: Theory and practice*. SAGE Publications India.

Wafula, F.J. (2014). *The effects of diversification on portfolio returns of mutual funds in Kenya.* Nairobi: MBA Project; University of Nairobi.

Wan, C. C. (1998). International diversification, industrial diversification and firm performance of Hong Kong MNCs. *Asia Pacific Journal of Management*, *15*(2), 205-217.