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Abstract

The study investigated the effect of investment diversification in short-term government securities on the financial performance of the retirement benefits schemes in Kenya. The study further investigated the moderating effect of the foreign exchange rate on the relationship between the independent and the dependent variable. The liquidity preference theory was employed in supporting this study. The study embraced a descriptive research design and the study population constituted of 87 retirement benefits schemes. The stratified random sampling technique used resulted into having 72 units of analysis. Primary and secondary quantitative data were employed in this study. Data analysis was through the statistical package for social sciences. The hypothesis testing led to the rejection of H_{01} , and H_{02} . The rejection H_{01} confirmed that investment diversification in short-term government securities has a significant positive effect on the financial performance of the retirement benefits schemes in Kenya. The rejection of H_{02} confirmed that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in short-term government securities and the financial performance of the retirement benefits schemes in Kenya. The researcher therefore, recommends that the retirement benefits schemes should consider diversifying their investments in short-term government securities because it affects their financial performance. The researcher also recommends that the schemes should be cautious on the volatility of the foreign exchange rate

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because it has a moderating effect on the relationship between the investment diversification in short-term government securities and their financial performance.

Keywords: *Short-term Government Securities, Investments Diversification, Portfolio, Financial Performance, Retirement Benefits Schemes*

1.1 Introduction

Investment diversification refers to a scenario where a company undertakes various types of investments with different inherent risks as opposed to committing all its finances in one investment (Kioko & Ochieng, 2020). This concept is in congruent with the old adage of not putting all your eggs in one basket (Aregu & Tassew, 2018). As a result of investment diversification, people can invest in various financial securities such as equities, bonds as well as government securities through the commercial banks, pension schemes as well as the investment banks (Kiboi & Bosire, 2022). It is anticipated that as the financial intermediaries diversify their investment portfolios, their financial performance will upsurge (Aregu & Tassew, 2018). This current research sought to undertake an investigation regarding the investment diversification in short-term government securities.

1.2 Problem Statement

The performance of the retirement benefits schemes in Kenya has not been optimal over the years as portrayed in its contribution to the country's GDP which stood at 13.3% in 2020 as well as increased complaints from investors (Muli & Ambrose, 2022). The subpar performance can be attributed to lack of investment diversification, since studies around the globe shows that embracing investment portfolio diversification has a tendency of subverting the poor performance of entities into superior performances (Kioko & Ochieng, 2020). Previous researchers on the concept of investment diversification such as Muli and Ambrose (2022) used mixed research designs as opposed to the descriptive research design used in this study. Other scholars such as Aregu and Tassew (2018) used the multiple linear regression analysis method as opposed to the simple linear regression model used in this study. Some of the research studies such as the study by Aregu and Tassew (2018) was done outside Kenya as well as in other industries.

In response to the problem in performance, methodological, contextual as well as the conceptual research gaps, this present study endeavored to conduct an investigation in an attempt to unravel the effect of investment diversification in short-term government securities on the financial performance of retirement benefits schemes in Kenya.

1.3 Objectives

- i. To determine the effect of investment diversification in short-term government securities on the financial performance of retirement benefits schemes in Kenya.
- ii. To investigate the moderating effect of foreign exchange rate on the relationship between investment diversification in short-term government securities and the financial performance of retirement benefits schemes in Kenya.

1.4 Hypothesis

H₀₁: Investment diversification in short-term government securities has no significant effect on the financial performance of retirement benefits schemes in Kenya.

H02: Foreign Exchange rate has no significant moderating effect on the relationship between investment diversification in short-term government securities and the financial performance of retirement benefits schemes in Kenya

2.0 Literature Review

2.1 Liquidity preference theory

This philosophy was primarily propagated by John Maynard Keynes in the 1930s (Keynes, 1936). The theory hypothesizes that stockholders favor holding extremely liquid securities in their portfolios which can easily be converted into cash without much strain (Banafa, Kenga, Ifire, & Umulkulthum, 2022). The assimilation of this theory by majority of investors is because of their speculative predispositions which could range from precautionary to transactionary motives (Shukrani & Banafa, 2019). This theory purports that the transactionary motive push investors to hold highly liquid assets such as the short-term government securities (SGS) so that they may not suffer from illiquidity (Almeida & Gonçalves, 2023). Liquidity maybe a concern to an entity based on their assets and liabilities combination as well as their working capital status (Kiboi & Bosire, 2022). For instance, a company which is highly geared may prefer to be liquid so as to be able to settle its monetary obligations as and when they fall due (Banafa, Kenga, Ifire, & Umulkulthum, 2022). This theory was relevant in this study as it informed what may be included in a given investment portfolio based on the investor’s liquidity preferences. This is because investors who incline towards liquidity preferences will in most cases tend to invest in securities which will payback within shorter periods.

2.2 Conceptual Framework

It is a diagrammatic representation of the relationship between the independent and the dependent variables under investigation (Cooper & Schindler, 2019). The relationship between the independent and the dependent variable in this study was moderated by the foreign exchange rate as presented in figure 2.1.

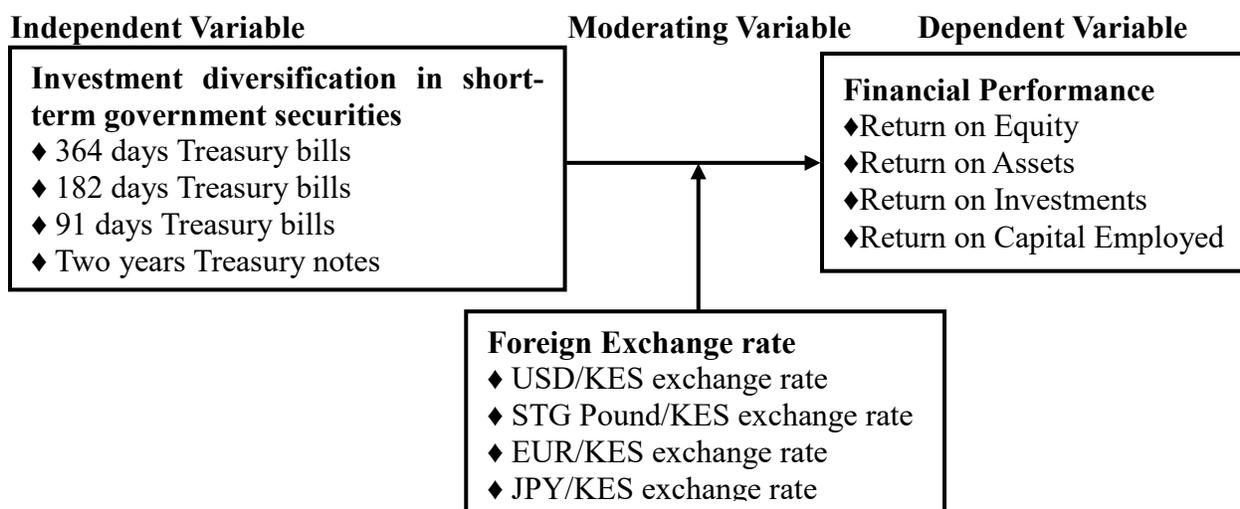


Figure 2. 1: Conceptual Framework

2.3 Empirical Literature Review

Short-term government securities (SGS) are also known as treasury bills (T-bills) and they are short-term debt instruments employed by governments in financing their short-term finance needs (Aregu & Tassew, 2018). T-bills have a short-term maturity which ranges between a few days and probable one year depending on the jurisdiction in which they are offered (Muthui & Wepukulu, 2019). Investment diversification in short-term government securities therefore involves spreading the risk of investment in short-term government securities across their various classes. This study used the 364 days T-bills, the 182 days T-bills, 91 days T-bills as well as the two years Treasury notes as the proxies for the investment diversification in short-term government securities (SGS) variable.

These short-term government securities pose a vital investment vehicle to companies which do not want to commit their finances over a long period of time. A proper mix of the constructs in the investment diversification in short-term government securities gives the investing company an opportunity to plan for its short-term financial obligations and settle them amicably (Aregu & Tassew, 2018). Researchers such as Aregu and Tassew (2018) confirmed that a well diversified investment portfolio in the short-term government securities results into reporting positive performance results, this is because the company will not be in distress when settling its stakeholders. This, therefore entails that a rigorous analysis on the constructs to be included in the investment diversification in short-term government securities is required if the company wants to report good results. The 364 days T-bills, the 182 days T-bills, 91 days T-bills as well as the two years Treasury notes were used as the constructs of the investment diversification in short-term government securities in this study.

Aregu and Tassew (2018) investigated investment diversification and financial performance of Ethiopian banks. The Ethiopian researchers amassed their data between 2013 and 2017. The researchers employed quantitative research design approaches on their panel data, whereas data analysis was through the regression analysis model. The findings revealed that investment diversification in government securities has a significant positive effect on the financial performance of the Ethiopian banks. In another study, Rop, Kibet and Bokongo (2016) studied the effect of investment diversification on financial performance. The researchers adopted an exploratory research design whereas data collection was through observation schedules on all commercial banks in Kenya. The researchers employed the multiple linear regression model in analysing their data and reported that investment diversification in government securities has a significant positive effect on financial performance.

Muthui and Wepukulu (2019) researched on investment diversification and financial performance. The researchers conducted a census on the banks operating at the NSE between 2013 and 2017. The authors adopted the descriptive research design and the secondary data collection was via observation schedules/ data collection sheets. The researchers analyzed their data through the regression statistics enshrined in SPSS and the hypothesis testing revealed that investment diversification in government securities significantly affect financial performance.

2.4 Research Gap

The reviewed empirical literature brought about the research gap which this study endeavored to address. For instance, the study by Aregu and Tassew (2018) was done in Ethiopia and not in Kenya. The study by Muthui and Wepukulu (2019) was done in the banking industry and not in

the retirement benefits schemes. Rop, Kibet and Bokongo (2016) used explanatory research design instead of the descriptive research design. Aregu and Tassew (2018) used the multiple linear regression model instead of the simple linear regression model. Again none of the researchers conceptualised their study variables in the same way as in this present study. In response to the contextual, methodological and conceptual research gaps, this study conducted an investigation in an attempt to unravel the effect of investment diversification in short-term government securities on the financial performance of retirement benefites schemes inKenya.

3.0 Research Methodology

The descriptive research design was employed in this study, whereas the population for the study comprised of the 87 retirement benefits schemes in Kenya. The Yamane Taro 1967 formular employed in determining the sample size resulted into having a total sample size of 72 units. The stratified random sampling technique was used in selecting the 72 units of analysis out of the population. Data for the study was collected via questionnaires and data observation schedules. The collected data was analyzed through the Statistical Package for Social Sciences. Descriptive statistics, correlation statistics as well as the regression statistics were generated in this study. Diagnostic tests were conducted on the data before running the simple linear regression model. The regression coefficients generated were used in testing the hypothesis at 0.05 level of significance and decision made on whether to reject or fail to reject the null hypothesis. The regression model guiding this study was formulated in the following manner.

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots \dots \dots \text{Equation 3.1}$$

Where:

Y: Represented the Financial performance

X₁: Represented investment diversification in short-term government securities

The moderated regression model was espoused in determining the moderation effect of the foreign exchange rate on the relationship between investment diversification in short-term government securities and the financial performance of the retirement benefits schemes. The moderated regression model was specifically employed in testing for H₀₂. The moderated regression model tests whether the prediction of a dependent variable (Y), from an independent variable (X) varies across levels of a moderating variable (Z). The moderated regression model comprised of two stages, the first stage involved estimating the main effect of the predictor variable (X) and the hypothesized moderator (Z) as shown in equation (3.2)

$$Y = \beta_0 + \beta_1 X_1 + \beta_Z Z + \epsilon \dots \dots \dots \text{Equation 3.2}$$

Where:

Z: Represented the moderating variable (Foreign exchange rate)

β_Z: Represented the beta coefficient of the moderating variable

The second stage encompassed adding the interaction of the moderating variable so as to obtain equation (3.3).

$$Y = \beta_0 + \beta_1 X_1 + \beta_Z Z + \beta_{1Z} X_1 * Z + \epsilon \dots \dots \dots \text{Equation 3.3}$$

Where:

β_{1Z} : Represented the beta coefficients of the product term ($X*Z$)

4.0 Research Findings and Discussion

4.1 Diagnostic Tests

Diagnostic tests were conducted on the data as a prerequisite for the successful running of the simple linear regression model.

4.1.1 Test for Normality

For the successful running of the linear regression model, the data ought to be distributed normally (Creswell & Creswell, 2022). Normality of the data is confirmed when the normal (Probability to Probability) (P-P) plot tends to follow a linear distribution pattern (Kothari & Garg, 2019). Figure 4.1 shows that the data points in the P-P plot follow a linear distribution pattern, thus confirming that the data set was normally distributed.

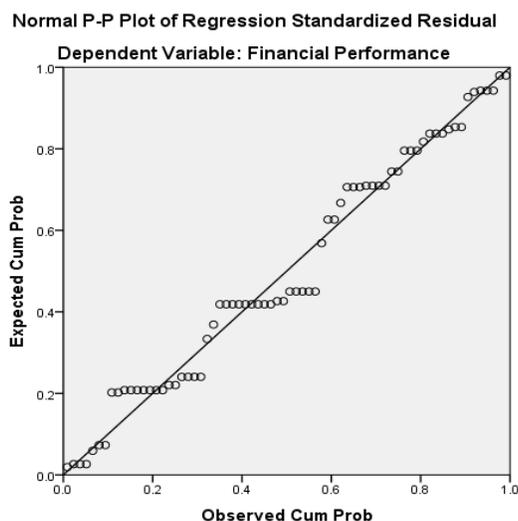


Figure 4.1: Normal P-P Plot

4.1.2 Test for Linearity

The scatter plots enshrined in SPSS were used in testing for linearity (Field, 2017). Researchers confirm the presence of linear relationship between the independent and the dependent variables when the scatter plot portray an oval shape distribution (Holmes, 2019). The oval shape distribution pattern of the scatter plot presented in figure 4.2 confirmed the presence of linearity, thus paving way for the successful application of the linear regression model.

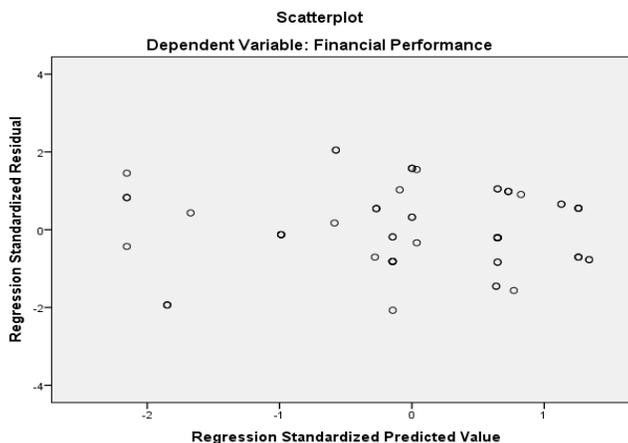


Figure 4. 2: Scatter Plot

4.2 Descriptive Test Results

The descriptive statistics for the investment diversification in short-term government securities were generated using SPSS and the results tabulated in table 4.1.

Table 4. 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Investment Diversification in Short-term Government Securities	70	3.00	4.25	3.6607	.27922
Moderated Investment Diversification in Short-term Government Securities	70	4.00	5.00	4.7857	.41329

Table 4.1 showed that the overall mean for the investment diversification in short-term Government Securities variable was 3.6607, thus portraying the general agreement by the respondents that the retirement benefits schemes incorporated Short-term Government Securities in their investment portfolio. The standard deviation statistics value of 0.27922 which was less than the mean value indicated that the data for the investment diversification in short-term government securities was well distributed around the central tendency. Again, the mean statistics of 4.7857 and the standard deviation of 0.41329 for the moderated investment diversification in Short-term Government Securities showcased that data was well dispersed around the mean.

4.3 Pearson’s Correlation Analysis Results

The Pearson’s correlation analysis statistics were generated and tabulated in Table 4.2

Table 4. 2: Pearson’s Correlations Coefficients

		Financial Performance	Investment Diversification in Short-term government Securities	Moderated Investment Diversification in Short-term Government Securities
Financial Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	70		
Investment Diversification in Short-term government Securities	Pearson Correlation	.095	1	
	Sig. (2-tailed)	.432		
	N	70	70	
Moderated Investment Diversification in Short-term Government Securities	Pearson Correlation	.266*	.782**	1
	Sig. (2-tailed)	.026	.000	
	N	70	70	70

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

The Pearson’s correlation analysis outcomes presented in table 4.2 indicated a weak positive relationship of 0.095 between investment diversification in Short-term Government Securities and financial performance, which was significant at 0.05 level (2-tailed). The outcomes indicated that for every unit increase in investment diversification in Short-term Government Securities, financial performance increases by 0.095 units. The correlation coefficient for the moderated relationship between investment diversification in Short-term Government Securities and financial performance was a strong positive .266.

4.4 Regression Analysis Results

This section comprised of table 4.3 for the model summary, table 4.4 for the ANOVA table and table 4.5 for the regression coefficients of the direct relationship model. Table 4.6 was used to represent the regression coefficients for the moderated relationship model.

Table 4. 3: The Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644 ^a	.414	.378	.39811

a. Predictors: (Constant), Investment Diversification in Short-term Government Securities, Moderated Investment Diversification in Short-term Government Securities
 b. Dependent Variable: Financial Performance

The R-square outcomes of 0.414 from the model in table 4.3 indicated that over 41.4% of the variability of the dependent variable could be explained by the independent variables. The R-square results showed that the model was a good fit.

Table 4. 4: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.291	4	1.823	11.500	.000 ^b
	Residual	10.302	65	.158		
	Total	17.593	69			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Investment Diversification in Short-term Government Securities, Moderated Investment Diversification in Short-term Government Securities

The significant F test results of 0.000 in table 4.4 indicated that the model was fit and statistically significant, thus paving way for the successful running of the regression model.

Table 4. 5: Regression Coefficients for the Direct Relationship Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.969	.639		6.212	.000
	Investment Diversification in Short-term Government Securities	.643	.201	.356	3.206	.002

Out of the findings in table 4.5, the simple linear regression model for the direct relationship model was fitted as shown in equation 4.1.

$$Y = 3.969 + 0.643X_1 \dots\dots\dots \text{Equation 4.1}$$

Where,

Y: is the financial performance

X₁: is investment diversification in short-term government securities

Table 4. 6: Regression Coefficients Results for the Moderated Relationship Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.677	.967		2.767	.007
	Moderated Investment Diversification in Short-term Government Securities	.128	.092	.281	1.401	.016

a. Dependent Variable: Financial Performance

Out of the findings in table 4.6, the simple linear regression model for the moderated relationship model was fitted as shown in equation 4.2.

$$Y = 2.677 + 0.128_{1Z}X_1 * Z \dots\dots\dots \text{Equation 4.2}$$

Where,

Y: is the financial performance

$_{1Z}X_1 * Z$: is the moderated investment diversification in short-term government securities

4.5 Hypothesis Testing

The p-value statistics from the regression model in table 4.5 and 4.6 were employed in testing the hypothesis at 0.05 level of significance. The results for the hypotheses testing using both models were given in table 4.7

Table 4. 7: Hypothesis Testing

Hypothesis Statement	P-value	Decision Rule
H₀₂ : Investment diversification in Short-term Government Securities has no significant effect on the financial performance of retirement benefits schemes in Kenya	.002	Reject H₀₁ , Since P-value <0.05
H₀₂ : Foreign Exchange rate has no significant moderating effect on the relationship between Investment diversification in Short-term Government Securities and the financial performance of retirement benefits schemes in Kenya	.016	Reject H₀₂ , Since P-value <0.05

4.6 Discussion of Key Findings

The hypothesis testing in table 4.7 lead to the rejection of **H₀₁**, since the P-value of 0.002 was <0.05. The rejection of **H₀₁** confirmed that investment diversification in short-term government securities has a significant positive effect on the financial performance of the retirement benefits schemes in Kenya. These results were in agreement with the findings of Aregu and Tassew (2018) who found a statistical significant positive relationship between investment diversification in short-term government securities and financial performance of the commercial banks in Ethiopia. Similar results were reported by Rop, Kibet and Bokongo (2016) in their study on the effect of investment diversification and financial performance of commercial banks in Kenya. Muthui and Wepukulu (2019) also reported that investment diversification in short-term government securities significantly affect financial performance in their study on investment portfolio diversification and financial performance of banks operating at the NSE.

The hypothesis testing in table 4.7 reported a P value of 0.016 which was < 0.05, thus resulting to the rejection of the **H₀₂**. The rejection of **H₀₂** indicated that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in short-term government securities and the financial performance of retirement benefits schemes in Kenya.

These outcomes were congruent with the findings of Aregu and Tassew (2018) who found a statistically significant positive effect on investment diversification in government securities and financial performance among the Ethiopian banks.

5.0 Summary

The objective of the study was to investigate the effect of investment diversification in short-term government securities on the financial performance of retirement benefits schemes in Kenya. The hypothesis testing in table 4.7 led to the rejection of H_{01} . These findings depicted that investment diversification in short-term government securities has a significant positive effect on the financial performance of the retirement benefits schemes in Kenya. The hypothesis testing for the moderated relationship between investment diversification in short-term government securities and the financial performance of the retirement benefits schemes in table 4.7 led to the rejection of H_{02} . These findings indicated that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in short-term government securities and the financial performance of the retirement benefits schemes in Kenya.

5.1 Conclusion

With reference to the main objective, the researcher concluded that investment diversification in short-term government securities has a significant positive effect on the financial performance of retirement benefits schemes in Kenya. With reference to the moderating effect of the foreign exchange rate on the relationship between investment diversification in short-term government securities and the financial performance of retirement benefits schemes in Kenya, the researcher gave the following conclusion. The researcher concluded that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in short-term government securities and the financial performance of the retirement benefits schemes in Kenya.

5.2 Recommendations

The researcher therefore, recommends that the retirement benefits schemes should consider diversifying their investments in short-term government securities because it affects their financial performance. The researcher also recommends that the schemes should be vigilant on the volatility of the foreign exchange rate because it has a moderating effect on the relationship between the investment diversification short-term government securities and their financial performance.

In the same endeavor, the research recommends that policy formulating and regulatory bodies such as the ministry of finance, the Retirement Benefits Authority (RBA), the Central bank of Kenya (CBK), the Kenya National Bureau of Statistics (KNBS) as well as the Capital Market Authority (CMA) should devise mechanisms which ensures a close monitoring of the foreign exchange rate as well as the entire macro-economic variable volatility so as to mitigate adverse effect on the financial performance of entities.

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