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Abstract

The general objective of the study was to investigate the effect of investment diversification in equities on the financial performance of Pension schemes in Kenya. The study further examined the moderating effect of foreign exchange rate on the relationship between investment diversification in equities and financial performance. The study adopted the descriptive research design. The population employed comprised of 421 Pension schemes. The stratified random sampling technique used resulted into having 206 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} , thus depicting that investment diversification in equities has a significant positive effect on the financial performance of the Pension schemes in Kenya. The hypothesis testing for the moderated relationship model led to the rejection of H_{02} , thus confirming that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in equities and the financial performance of the Pension schemes in Kenya. The study concludes that investment diversification in equities has a significant positive effect on the financial performance of Pension schemes in Kenya. Furthermore, the study concludes that foreign exchange rates play a significant moderating role in the relationship between investment diversification in equities and financial performance. The study recommends that the Pension schemes should consider diversifying their investments in equities because it affects their financial performance. In addition, 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 in equities and their financial performance. Schemes should also establish robust monitoring systems to regularly evaluate the performance of their diversified equity portfolios and make adjustments as necessary. Furthermore, Pension schemes should invest in enhancing the financial literacy and expertise of their management teams and investment committees, particularly in areas related to equity diversification and foreign exchange risk management.

Keywords: *Investments, Diversification, Equities, Financial Performance, Pension Schemes, Portfolio*

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1.0 Introduction

Investments, financing, dividends as well as working capital management decisions constitute fundamental financial decisions frequently undertaken by entities (Duong & Nguyen, 2020). Investment decisions involve renunciation of present expenditure in favor of saving and imminent spending with a view of wealth maximization (Gathara, Kilika, & Maingi, 2019). 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 products, services, income streams and their entire investment portfolios, their financial performance will upsurge (Aregu & Tassew, 2018). This current research sought to delve deep into investment diversification by precisely studying investment diversification in equities. The focus on investment diversification in equities is particularly relevant in the context of Pension schemes, which play a crucial role in managing long-term savings and providing financial security for retirees. Equities, as a form of investment, offer potential for high returns but also come with inherent risks. By diversifying investments across different types of equities, such as ordinary shares, preference shares, redeemable shares, and income stocks, Pension schemes can potentially optimize their risk-return profile. This study aims to investigate the effect of such diversification strategies on the financial performance of Pension schemes in Kenya. Hence, conducting of the study is expected to be worthy for policy formulations.

1.1 Problem Statement

The performance of the Pension 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 to superior performances (Kioko & Ochieng, 2020). The reviewed empirical literature section brought about the methodological gap, since other researchers used mixed research designs as opposed to the descriptive research design used in this study. Other scholars also used the multiple linear regression analysis method as opposed to the simple linear regression model used in this study. Some of the reviewed studies were done outside Kenya and in other industries. Again, the researchers in the reviewed articles, conceptualized their study variables differently from the way this study conceptualized its variables. In response to the problem in performance, methodological, contextual and the conceptual research gaps, this present study endeavored to conduct an investigation incorporating the Pension schemes in Kenya. This study therefore, focused efforts in investigating the effect of investment diversification in equities on the financial performance of Pension schemes in Kenya.

1.2 Research Objectives

- i. To determine the effect of investment diversification in equities on the financial performance of Pension schemes in Kenya.
- ii. To investigate the moderating effect of foreign exchange rate on the relationship between investment diversification in equities and the financial performance of Pension schemes in Kenya.

1.3 Hypotheses

H₀₁: Investment diversification in equities has no significant effect on the financial performance of Pension schemes in Kenya.

H₀₂: Foreign Exchange rate has no significant moderating effect on the relationship between investment diversification in equities and the financial performance of Pension schemes in Kenya

2.0 Literature Review

The literature review was presented in sections.

2.1 Conceptual Framework

This is a terse depiction of investigated occurrences complemented with visual-graphics of the principal factors being examined (Cooper & Schindler, 2019). The relationship between the independent and the dependent variable was moderated by the foreign exchange rate. The conceptual framework employed in this research was presented in figure 1.

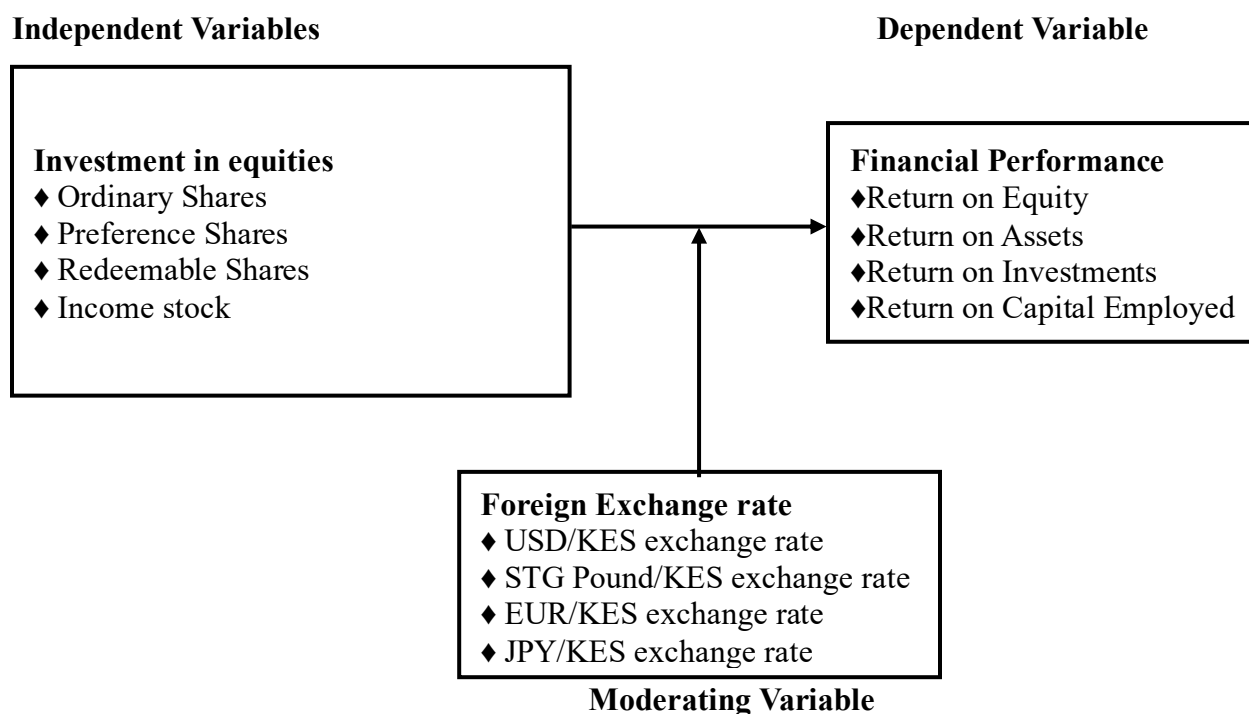


Figure 1: Conceptual Framework

2.2 Empirical Literature Review

Equities are financial instruments which give the holder a share of ownership of the company they are drawn from (Chindengwike, 2021). Equities are also referred to as stocks or shares and they offer their holders the probability of earning dividends as well capital appreciation (Nyang'au & Muturi, 2019). Investment portfolio diversification in equities involves spreading the investment in equities across the various classes of equities (Gathara, Kilika, & Maingi, 2019). Investment diversification in equities is undertaken in an attempt to mitigate the overall inherent portfolio risk in equities (Kioko & Ochieng, 2020). In this study, Ordinary Shares, Preference Shares, Redeemable Shares as well as Income stock constituted the proxies for the investment diversification in equities variable.

Ordinary share capital gives the holders a residual claim on the assets of the company and they are in most cases settled last after all other assets class have been settled (Kamau & Maina, 2019). On the other hand, holders of preference share capital get preference when it comes to settling them, they are normally paid first before the ordinary shareholders are paid their dividends (Gathara, Kilika, & Maingi, 2019). The redeemable share capital, represents the section of the company's share capital which can be bought back before its expiration date due to their built-in call option (Banafa, Kenga, Ifire, & Umulkulthum, 2022). On the other hand, income stocks are issued by well established companies, since they give their holders regular and predictable dividends (Kiboi & Bosire, 2022). These various characteristics of the constructs of the equities variables calls for prudence when investing, so that a company may mix these constructs in such a way that will maximize the overall return in investments (Nzau, Kung'u, & Onyuma, 2019). A study by Kamau and Maina (2019) pointed that incorporating a well diversified investment portfolio in equities has a tendency of mitigating risks as well as boosting the performance of companies. This entails that a thorough analysis is required before a company settles on the constructs that they want to employ in their investment diversification in equities.

A study undertaken by Chindengwike (2021) in Tanzania on equity investments and financial performance resolved that investment diversification in equities has a statistical significant positive influence on financial performance. The research was undertaken in the small and medium enterprises (SMEs) and it incorporated a descriptive research design. The author employed the simple random sampling technique in sample size determination whereas data analysis was through the regression model. The author used the ROA, ROE and ROCE as the proxies of the financial performance of the SMEs under inquiry. In another research on investment decisions and financial performance, Nyang'au and Muturi (2019) established that equities diversification affect financial performance. The agency theory supported the research study of Nyang'au and Muturi (2019). The researchers used the descriptive research design whereas sample size determination was through the stratified random sampling technique. The scholars used questionnaires in collecting their primary data, whereas data analysis was through the multi-linear regression model in SPSS.

In their research on equities and financial performance of selected companies operating at the NSE, Gathara, Kilika and Maingi (2019) revealed that investment in equities significantly affect financial performance. The study was supported by the pecking order as well as the trade off theories. The scholars espoused the positivism research philosophy approach as well as the exploratory research design in their study. The authors employed quantitative panel data in their study and data analysis was through the ordinary least squares (OLS) method. In another study on investment portfolio diversification and financial performance, Kioko and Ochieng (2020)

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concluded that investment in equities significantly affect financial performance. The study was supported by the MPT thoery. The researchers adopted the descriptive research approach whereas data was analysed via the regression model enshrined in STATA software.

2.3 Critique of the Existing Relevant Literature and Research Gap

The reviewed empirical literature showed that the concept of investment diversification has attracted various researchers around the globe, for instance, Chindengwike (2021) carried out his study in Tanzania whereas Nyang'au and Muturi (2019) did their study in Kenya. The reviewed studies also revealed that the studies were done in different industries other than the Pension schemes, for instance, the study by Gathara, Kilika and Maingi (2019) was conducted in the companies listed at the Nairobi Securities Exchange. The empirical review also revealed that some scholars embraced diffrenet data analysis methods different form this study. For instance Chindengwike (2021) used simple random sampling technique in their sample size determination whereas their data was analysed using the multiple linear regression model. This current study employed the startified random sampling technique and data analysis was via the simple linear regresion analysis model. Again it was eveident that none of the reviewed studies used the foreign exchange rate as a moderating variable. This study therefore, sort to constrict the indentified research gaps by conducting a reseach study in an attemptp to unravle the effect of investment diversification in equities on the financial performance of the Pension schemes.

3.0 Research Methodology

The study employed a descriptive research design. The target population for this study constituted of the 87 Pension schemes in Kenya. The Yamane Taro 1967 formular was used in sample size determination as shown in equation 3.1.

$$n = \frac{N}{1 + Ne^2} \dots\dots\dots \text{Equation 3.1}$$

Where:

- N: Target population
- n: Sample size
- ε: Epsilon (Error term)

Therefore, the sample size for this study was:

$$n = \frac{421}{(1+(421*0.05^2))}$$

n = 206

The stratified random sampling technique was used in selecting the 206 units of analysis out of the pool of the Pension schemes in Kenya. The study used research questions and data observation schedules in data collection. The collected data was cleaned, coded and analyzed through the Statistical Package for Social Sciences (SPSS). Data analysis was through descriptive statistics, correlation statistics as well as the regression statistics. The reliability and validity of the research instruments was confirmed through a pilot study before embarking on the full-fledged data collection exercise. Diagnostic tests were conducted on the data prior to running the simple linear regression model. The regression coefficients generated from the model were used in testing the research 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.

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

Where:

Y: Represented the Financial performance (Dependent variable)

X₁: Represented investment diversification in equities (Independent variable)

The moderated regression model was espoused in determining the moderation effect of the foreign exchange rate on the relationship between investment diversification in equities and the financial performance of the Pension 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 (3.3)

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

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 (3.4).

$$Y = \beta_0 + \beta_1 X_1 + \beta_{1Z} X_1 * Z + \epsilon \dots \dots \dots \text{Equation 3.4}$$

Where:

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

4.0 Research Findings and Discussion

This section presented the results from the data analysis exercise. Data analysis was in line with the objective of the study as well as the methodology described in the previous sections. Specifically, this section presented the reliability and validity test of the research instruments, diagnostic test results, the descriptive test results, the Pearson's test results as well as the regression test results. Afterwords, the hypothesis were tested and a discussion on the key findings given.

4.1 Reliability Test of Research Instruments

The test for reliability in this study was conducted through the Cronbach's Alpha enshrined in SPSS. The outcomes obtained were tabulated in table 1. The overall Cronbach Alpha results of .780 indicated that the research instruments were reliable since it was above the required minimum threshold proposed by Cooper and schindler (2019) of .7

Table 1: Reliability Test of Research Instruments

Variable	Number of Items	Co-efficient Alpha	Comment
Financial Performance	4	.816	Accepted
Investment Diversification in Equities	4	.702	Accepted
Foreign Exchange rate	4	.710	Accepted
Overall Reliability	12	.780	Accepted

4.2 Validity Test of Research Instruments

The validity test of the research instruments was confirmed by the Keiser-Mayo-Oklin test (KMO) and the Bartlett test of sphericity. Creswell and Creswell (2022) recommend values above .5 to be acceptable KMO values confirming that the sample size considered is adequate. The Bartlett test of sphericity was employed in determining the significance of the overall connotation among the study variables, this was in an attempt of ensuring that the variables are uncorrelated, thus further confirming the validity of the research tools (Ghauri, Gronhaug, & Roger, 2020). A p-value of less than .05 from the Bartlett test of sphericity signifies acceptable threshold for significant connotation among the study variables (Cooper & Schindler, 2019). The generated outcomes were tabulated in table 2. The KMO result of .537 as well as the Bartlett test of sphericity result of .000 signified that the research instruments used in this study were valid.

Table 2: Validity Test of Research Instruments

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.537
	Approx. Chi-Square	36.917
Bartlett's Test of Sphericity	df	205
	Sig.	.000

4.3 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 liner distribution pattern (Kothari & Garg, 2019). Figure 2 shows that the data points in the P-P plot follow a linear distribution pattern, thus confirming that the data set was normally distributed.

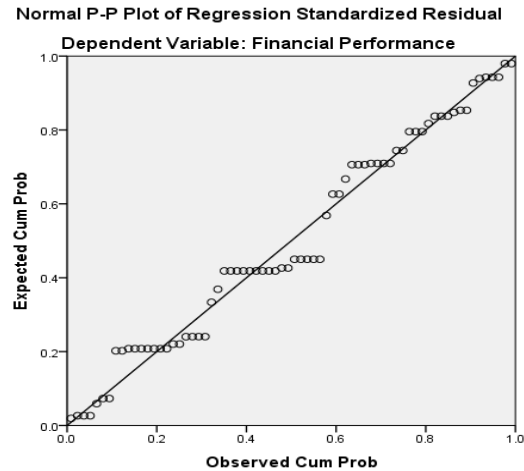


Figure 2: Normal P-P Plot
4.4 Test for Linearity

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 2 confirmed the presence of linearity, thus paving way for the successful application of the linear regression model.

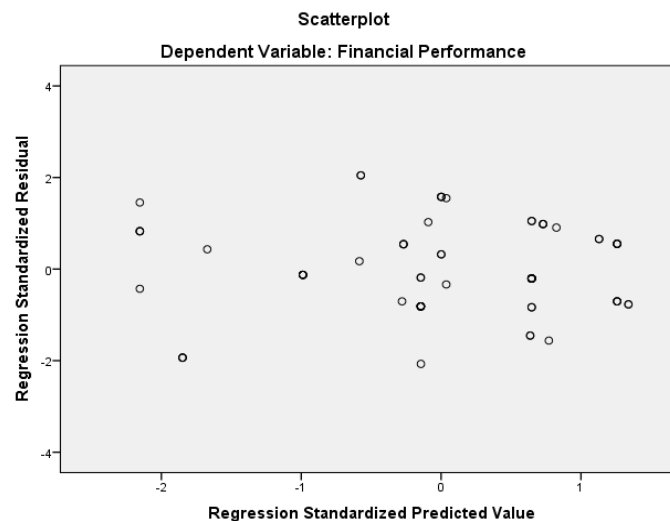


Figure 3: Scatter Plot

4.5 Descriptive Test Results

The descriptive statistics for the investment diversification in equities were generated using SPSS and the results were tabulated in table 3.

Table 3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Financial Performance	206	2.25	4.25	3.6214	.50494
Investment Diversification in Equities	206	2.50	4.75	3.6500	.68021
Foreign Exchange rate	206	2.75	4.75	3.8929	.56397

The overall mean statistics for the financial performance variable was 3.6214, whereas the standard deviation value for the same variable was .50494. The standard deviation value of .50494 for the financial performance variable which was less than the mean statistics value, entailed that the data for the financial performance variable was well distributed around the central tendency. Table 3 showed that the overall mean for the investment diversification in equities was 3.6500. The mean statistic of 3.6500 indicated the general agreement by the respondents that the Pension schemes incorporated equities in their investment portfolio. The standard deviation statistics value of .68021 which was less than the mean value indicated that the data for the investment diversification in equities was well distributed around the central tendency. Again, the overall mean statistics of 3.8929 and the standard deviation of .56397 for the foreign exchange rate moderating variable depicted that data for the moderating variable was well dispersed around the mean.

4.6 Pearson's Correlation Analysis Results

The Pearson's correlation analysis statistics were generated and tabulated in table 4

Table 4: Pearson's Correlations Coefficients

		Financial Performance	Investment Diversification in Equities	Interaction between Investment Diversification in Equities and Foreign exchange rate
Financial Performance	Pearson Correlation	1.000		
	Sig. (2-tailed)			
	N	206		
Investment Diversification in Equities	Pearson Correlation	.368**	1.000	
	Sig. (2-tailed)	.002		
	N	206	206	
Interaction between Investment Diversification in Equities and Foreign exchange rate	Pearson Correlation	.014	.168	1.000
	Sig. (2-tailed)	.907	.166	
	N	206	206	206

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

The pearson's correaltion analysis outcomes presented in table 4 indicated a strong positive ralationship of .368 between investment diversification in equities and financial performance,

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which was significant at .05 level (2-tailed). The correlation coefficient for the moderated relationship between investment diversification in equities and financial performance was a weak positive .014.

4.7 Regression Analysis Results

This section comprised of the table 5 for the model summary, table 6 for the ANOVA and table 7 for the regression coefficients of the direct relationship model. Table 4.8 was used in presenting the regression coefficients for the moderated relationship model.

Table 5: 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 Equities, Interaction between Investment Diversification in Equities and Foreign exchange rate				
b. Dependent Variable: Financial Performance				

The R-square outcomes of .414 in table 5 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 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.291	4	1.823	11.500	.000 ^b
	Residual	10.302	201	.158		
	Total	17.593	205			
a. Dependent Variable: Financial Performance						
b. Predictors: (Constant), Investment Diversification in Equities, Interaction between Investment Diversification in Equities and Foreign exchange rate						

The significant F test results of .000 in table 6 indicated that the model was fit and statistically significant, thus paving way for the successful running of the regression model.

Table 7: Regression Coefficients for the Direct Relationship Model

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.969	.639		6.212	.000
	Investment Diversification in Equities	.397	.090	.535	4.435	.000

Out of the findings in table 7, the regression model for the direct relationship model was fitted as shown in equation 4.1.

$$Y = 3.969 + 0.397X_1 \dots\dots\dots \text{Equation 4.1}$$

Where:

Y: is the financial performance

X₁: is investment diversification in equities

Table 8: Regression Coefficients for the Moderated Relationship Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	2.561	.326	7.865	.000
	Investment diversification in Equities	.283	.085	.381	.001
	Interaction between Investment Diversification in Equities and Foreign exchange rate	.152	.076	.227	.041

a. Dependent Variable: Financial Performance

Out of the findings in table 8, the regression model for the moderated relationship was fitted as shown in equation 4.2.

$$Y = 2.561 + .283 X_1 + 0.152_{1Z} X_1 * Z \dots\dots\dots \text{Equation 4.2}$$

Where:

Y: is the financial performance

X₁: is the Investment diversification in equities

_{1Z}X₁*Z: is the interaction between investment diversification in equities and foreign exchange rate

4.8 Hypothesis Testing

The p-value statistics from the regression model in table 7 and 8 were employed in testing the hypothesis at .05 level of significance. The results for the hypotheses testing were presented in table 9.

Table 9: Hypothesis Testing for the Direct relationship Model

Hypothesis Statement	P-value	Decision Rule
H₀₁: Investment diversification in equities has no significant effect on the financial performance of Pension schemes in Kenya	.000	Reject H₀₁ , Since P-value < 0.05
H₀₂: Foreign Exchange rate has no significant moderating effect on the relationship between Investment diversification in equities and the financial performance of Pension schemes in Kenya	.041	Reject H₀₂ , Since P-value < 0.05

4.9 Discussion of Key Findings

The chief objective of the study was to investigate the effect of investment diversification in equities on the financial performance of Pension Schemes in Kenya. The study further endeavored to determine the moderating effect of the foreign exchange rate on the relationship between investment diversification in equities and financial performance. The Statistical Package for Social Sciences (SPSS) was espoused in data analysis and the outcomes were presented in tables, charts and plots. The hypothesis testing for the direct relationship model in table 9 led to the rejection of H_{01} , because the P-value of .000 was less than the given threshold of .05. The rejection of H_{01} showed that investment diversification in equities has a significant positive effect on the financial performance of the Pension schemes in Kenya. These outcomes were in agreement with the conclusions of Chindengwike (2021) who reported a statistical significant positive relationship between investment diversification in equities and financial performance of Small and Medium Enterprises (SMEs) in Tanzania.

Similar results were reported by Nyang'au and Muturi (2019) in their study on the effect of investment decision and financial performance of retail investors in Kisii town. In their study on portfolio diversification and financial performance of firms listed at the NSE, Kioko and Ochieng (2020) also reported that investment diversification in equities has a significant positive effect on financial performance. The hypothesis testing for the moderated relationship between investment diversification in equities and financial performance in table 9 led to the rejection of H_{02} since the P-value of .041 was $< .05$. The rejection of H_{02} indicated that foreign exchange rate has a significant positive moderating effect on the relationship between investment diversification in equities and the financial performance of Pension schemes in Kenya. These findings were in agreement with the findings of Gathara, Kilika and Maingi (2019) in their study on selected companies at the Nairobi Securities Exchange.

5.0 Conclusion

The study concludes that investment diversification in equities has a significant positive effect on the financial performance of Pension schemes in Kenya. This conclusion is supported by the rejection of the null hypothesis H_{01} , with a p-value of 0.000, which is well below the 0.05 significance threshold. Furthermore, the study concludes that foreign exchange rates play a significant moderating role in the relationship between investment diversification in equities and financial performance. This conclusion is based on the rejection of the null hypothesis H_{02} , with a p-value of 0.041, which is also below the 0.05 significance level. The moderating effect of foreign exchange rates suggests that the impact of investment diversification on financial performance is not constant but rather influenced by currency fluctuations. These findings highlight the importance of considering both diversification strategies and external economic factors in financial management.

6.0 Recommendations

The study recommends that the pension schemes should consider diversifying their investments in equities because it affects their financial performance. In addition, 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 in equities and their financial performance. To implement these recommendations effectively, pension schemes should develop comprehensive investment

strategies that incorporate a balanced mix of equity investments across various sectors, industries, and company sizes. This diversification approach should be guided by thorough market analysis, risk assessment, and alignment with the scheme's long-term financial goals. Schemes should also establish robust monitoring systems to regularly evaluate the performance of their diversified equity portfolios and make adjustments as necessary. Regarding foreign exchange rate volatility, it is recommended that schemes implement currency risk management strategies, such as hedging techniques or currency diversification, to mitigate the potential negative impacts of exchange rate fluctuations on their equity investments. Furthermore, pension schemes should invest in enhancing the financial literacy and expertise of their management teams and investment committees, particularly in areas related to equity diversification and foreign exchange risk management. This can be achieved through ongoing training programs, workshops, and collaborations with financial experts. Lastly, regulatory bodies overseeing pension schemes in Kenya should consider these findings when developing or updating investment guidelines, potentially incorporating requirements for diversification strategies and foreign exchange risk management in scheme operations to ensure the long-term financial stability and performance of the pension sector

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