

## The Moderating Role of Fund Size on the Relationship between Overconfidence and Portfolio Financial Performance of Mutual Funds in Kenya

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### ABSTRACT

*A decline in financial performance has recently been observed for a number of mutual funds in Kenya. Overall, differences in important metrics show inconsistent economic performance among Kenya's mutual funds year over year. It was critical to determine whether overconfidence bias would be to blame for the portfolio performance trend while evaluating this. The goal of this study was to ascertain the impact of overconfidence bias on mutual funds' performance in Kenya and to scrutinize the moderating effect of fund size on the relationship between overconfidence and mutual funds' portfolio performance in Kenya. The study employed a causal research design. Study panel data were gathered. Secondary information was gathered from previously released financial statements of mutual funds during a period of eleven years, from 2011 to 2021. With the use of the data gathering tool, secondary data was gathered. Stata software version 15 was used to conduct the data analysis. A test for stationarity called the unit root test was conducted. Regression using panel data was utilized. Regression analysis with fixed and random effects was utilized. The following tests were run to determine the validity and reliability of the data: the Levin-Lin-Chu test, the Augmented Dickey-Fuller test, the Im-Pesaran and Shin tests, the Philips-Peron test, and the Hadri 2000 test. The Jarque-Bera test was used to gauge normality. In the panel analysis, the random effects model and the fixed effects model were separated using the Hausman test. The variables were distributed properly, as shown by the skewedness and kurtosis tests. There was no approaching multicollinearity among the variables, according to the pairwise correlation study. The findings showed that Overconfidence had a positive substantial influence on the financial performance of mutual funds in Kenya with a regression coefficient of 2.7295960. The study additionally found that fund size influences the financial performance of mutual funds in Kenya by negatively moderating the relationship between overconfidence and mutual funds' financial performance in Kenya with a coefficient of -3.023683. Based on the results of the multiple regression analysis, it should be underlined when making financial investment decisions that overconfidence, with a regression coefficient of 2.7295960, had a favorable but significant impact on the financial performance of Kenyan mutual funds. The study, therefore, recommends that overconfidence should be emphasized during financial investment decision-making processes.*

**Keywords:** Overconfidence; Mutual Funds' Portfolio Financial Performance; Fund Size; Mutual Funds; Kenya

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### I. INTRODUCTION

A stock market is advantageous for investors since it offers chances to build money. In order to mobilize savings and investments and to plan the production of products and services that create jobs, healthy stock markets can be quite important. In the end, this improves the nation's overall economic development. Long-term investors in particular boost the economy's potential for production with their riches. The preferences of individual investors for a company's stock in terms of risks, liquidity, returns, and other non-financial variables have a significant impact on the financial markets.

Hayat and Anwar (2016) carried out a study on the impact of Behavioral Biases on Security Decision making processes with the moderating role of Financial Knowledge in the Pakistan stock market. The research concentrated on the influence of behavioral factors on the financial making of investment decisions by using financial knowledge as a moderating role in Pakistan. A simple valuation questionnaire was used for data collection as of one hundred fifty eight stockholders transacting in the stock market of Pakistan. The outcomes indicated that herding behavior; overconfidence as well as disposition effects have substantial constructive influence on financial investment decision making processes. The study established that financial literacy had an undesirable controlling influence on herding behavior and a constructive regulating role on overconfidence in the financial investment decision making. The outcomes established that energetic stockholders display additional overconfidence whereas inactive stockholders show further herding behavior. The research recommended that one of the ways of overwhelming the biases could be offering training and education opportunities to stockholders. The results in this study controverts with those of Bailey

et al. (2011) which discovered that behavioral biases have a positive influence on the decision making processes conflicting the findings of Bailey et al. (2011) which revealed that behavioral aspects led to deprived investment decision making processes.

## **1.1 Research objectives**

### **1.1.1 General objective**

The broad objective of this research was to find out the influence of overconfidence on the mutual funds' portfolio financial performance in Kenya using fund size as the moderating role.

### **1.1.2 Specific Objectives**

- i) To analyze the effect of overconfidence on portfolio financial performance of mutual funds in Kenya.
- ii) To explore the moderating effect of fund size on the relationship between overconfidence and portfolio financial performance of mutual funds in Kenya.

## **1.3 Research hypotheses**

The research was guided by the following hypotheses:

H<sub>01</sub>: Overconfidence does not significantly affect portfolio financial performance of mutual funds in Kenya.

H<sub>02</sub>: Fund size does not significantly moderate the association between overconfidence and portfolio financial performance of Kenyan mutual funds.

## **II. LITERATURE REVIEW**

Behavioral finance is a comparatively new area in asset investment decision making. Lots of investors and predominantly established investors for a protracted period of time have replicated on the information that market behavior can be prominently expounded by psychological underpinnings. This configuration has appeared to advance the thought and information around investor behavior, touching through to asset investment decision making processes in security investment (Karanja, 2017).

### **2.1 Theoretical Literature Review**

#### **2.1.1 Prospect Theory.**

The prospect hypothesis, developed by Tversky and Kahneman in 1979, contends that investors evaluate gains and losses differently, giving apparent gains more weight than perceived losses. Prospect theory says that if an investor is offered a choice both equal, will choose the one presented in terms of possible gains as compared to one presented in terms of probable loss. These theory points out that the superior amongst risky prospects show abundant clear characteristics which contest the predictions as shown by the modern portfolio theory; stockholders time and over again undervalues concerns which are most probably in divergence with conclusions which are realized with a lot of assurance occasioning risk hatred in choices encompassing unquestionable accomplishments and also to risk undertaking in selections regarding certain losses. Prospect theory summaries various circumstances of the knowledge which are expected to arouse institutional as well as the individual investment decision making processes (Rossi, 2018). Behavioral features depicted by investors are perceived by the states of mind while bearing in mind making investments as well as readjusting their portfolio securities (Kahneman & Tversky, 1979).

### **2.2 Conceptual Literature Review**

The documentation and study of literature from the perspective of conceptions was required for conceptual literature evaluation. Based on studies conducted by different institutions, it entailed the documenting and definition of overconfidence as an independent variable, mutual fund financial performance in Kenya as the dependent variable, and fund size as the moderating variable.

#### **2.2.1. Overconfidence**

Overconfidence is the predisposition for stockholders to overemphasize their projecting skills or take on more information than they have coming to bear in investment decision making processes. Disproportionate trading is recognized in innumerable studies to be one of the leading effects of overconfidence (Evans & Andersen, 2006). It is very challenging to make alterations in their philosophies; hence suggestion indicates that market analysts are hesitant to go through their preceding valuation of a company's prospective impending financial investment performance, even after there is robust indication that their prevailing valuation is inappropriate. Investors are overoptimistic in their

individual capabilities; stockholders and market specialists are predominantly overoptimistic in capacities wherever they have some understanding (Cherono, 2018). Overconfidence surrounded by others has the uppermost influences on the financial investment decisions of separate stockholders at the NSE (Shikuku, 2018).

### 2.2.2 Fund Size

The Fund size of a mutual fund is well thought-out to be an essential feature with an influence on the yields received by mutual funds (Ciccotello & Grant, 1996; Yan, 2008). The Size of a mutual Fund denotes the aggregate amount of the trust to be accomplished by the investment fund manager. The overall securities under management of the joint fund can propagate in binary ways: one or the other there is an upsurge in the introduction of investors' resources or the assets encompassed the portfolio presentation a robust performance or (Cicotelto & Grant, 2008). In individual circumstances, fund size lean towards increasing. In the first case, as the fundamental assets show resilient financial performance, it hints to an upsurge in the value of essential securities, henceforth the security size intensifies. In the subsequent position as additional stockholders are appealed to a precise mutual fund, the mutual fund manager is offered with a meaning fully huge quantity of funds. The invasion of stockholder funds is as a result of the previous performance of the mutual fund (Bouteska & Boutheina, 2017).

## 2.3 Empirical Literature review

This segment explored a number of researches which interrelated to the study area. There are numerous available researches about mutual fund on overall. Nevertheless, the amount of experimental researches on the empirical mutual funds' financial performance is moderately insignificant. This dissection of the study attempted to review the inferences of some collection of researches.

### 2.3.1 Overconfidence and portfolio performance

Eshraghi (2011) conducted a study on the impact of overconfidence on mutual fund investing financial performance. According to the cross sectional deviations, high levels of confidence, self-reference, and conviction, which were used in this study, increase overconfidence when there has been good prior financial performance. A comparable arrangement was witnessed with hubris measures which are associated with overconfidence. It was also witnessed that self-reference and over assurance were further characteristic pointers of overconfidence than conviction. In conclusion, fund manager interval gives the impression of correlation with fund manager which conveyed hubris and overconfidence in the elongated time. For the identical unit of fund managers considered all through the assortment of the sample data, the measured overconfidence inclines to increase progressively and in settlement with theoretical prospects.

Makokha (2012) conducted a study on the impact of behavioral overconfidence bias on security yields of companies listed at the NSE. The variables that were looked into included stock returns, overconfidence, firm size, and profitability. The findings indicated that overconfidence influences the security earnings of the firms listed at the Nairobi Securities Exchange. Overconfidence had a strong positive correlation with security yields. The correlation coefficient of 0.634 showed that there was a progressive association amongst profitability, security returns, overconfidence bias and the size of the firm. The research endorses that a supervisory outline that would reinforce market surveillance and oversight be established. The outcomes of this research diverge marginally from those of Eshraghi (2011). Whereas Makokha (2012) displayed a resilient positive association between overconfidence and security returns, Eshraghi (2011) disclosed that there is a comparatively weaker correlation between mutual funds financial performance and overconfidence bias.

### 2.3.2 Fund size and Portfolio Performance

Ramesh and Dhume (2014) carried out a research on Fund Size and its influence on mutual funds financial Performance: A Practical Suggestion from designated Indian Mutual Fund Companies was explored. The main objective of this research was to assess the influence of mutual fund features on the mutual funds financial investment performance in India. Mutual fund features incorporated in the research were Fund Size, Flow of the Fund, and Age of the Fund, Expense Ratio and Turnover Rate of the Portfolio. The research purposes to cover a period of 5 years extending as of 1st April 2007 through to 31st March 2012. The findings disclose that intensification in the mutual fund inflow wear away the mutual funds financial performance. Upsurge in turnover rate of the portfolio escalates the expense ratio demonstrating that, advanced trading activities sustain greater costs.

Over the past few decades, mutual fund investment has grown significantly, as has its significance to different economies. The performance of mutual funds is affected by a variety of factors, one of which is fund size. The effect of fund size on mutual fund performance in Egypt was looked into by the researcher. The findings demonstrated that

age had a significant negative impact on mutual fund performance, as well as a significant negative impact on log net asset value NAV (log fund size). The study came to the additional conclusion that the Fund type significantly affects the performance of mutual funds while the performance of mutual funds is significantly impacted by log total fund expense (Farid & Wahba, 2022).

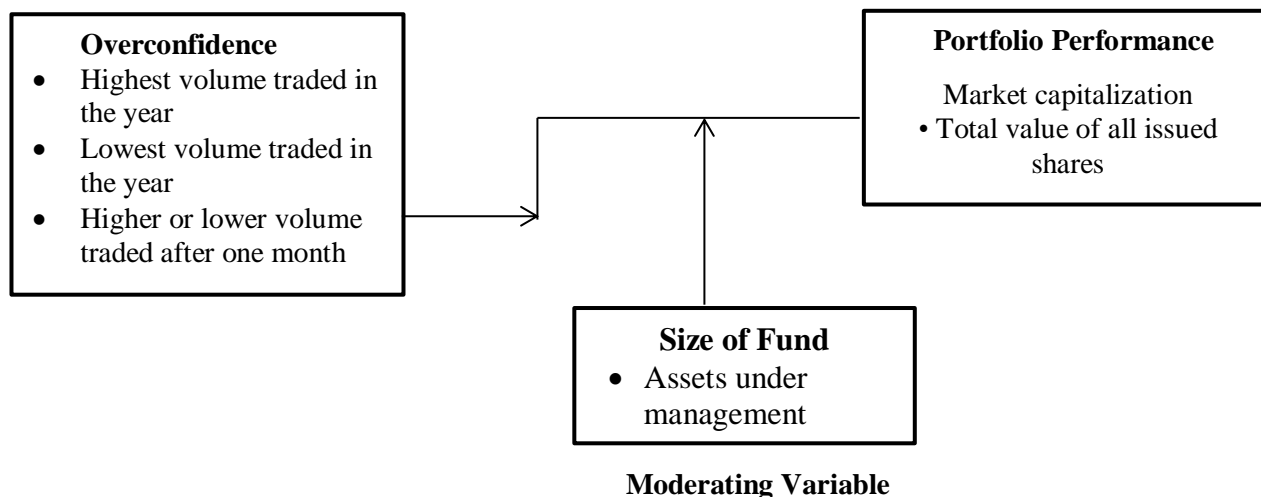
The primary goal of all investments made by investors is to grow their wealth. When share prices rise, this is realized. However, compared to its counterparts around the world, Kenyan unit trusts have performed poorly. In addition to deterring individual and corporate investors, the poor performance has an impact on the achievement of financial stability in line with Kenya Vision 2030. Fund size is proposed as an explanation for the success of unit trust funds in empirical literature from established and emerging countries. Therefore, this study looked into how Kenyan unit trust fund performance is impacted by fund size (Nthimba et al., 2021)

## 2.4 Conceptual Framework

The financial performance of Kenyan mutual funds' financial investments served as the study's dependent variable. Overconfidence was used as the independent variable. Fund size was also a moderating element in the study. The conceptual framework is summarized by Figure 1 below.

### Independent Variable

### Dependent Variable



**Figure 1**  
*Conceptual Framework*

## III. RESEARCH METHODOLOGY

### 3.1 Research Design

This research used a causal research design. This entailed establishing the consequence caused by overconfidence on mutual funds portfolio performance in Kenya. Overconfidence was manipulated to monitor the change on mutual funds portfolio performance in Kenya. This study measured, described, and examined the impact of overconfidence on mutual fund financial performance in Kenya for the years 2011 through 2021 using panel data regression analysis. This was in order to select the most current data.

The Panel data regression ideal was embraced for the reason that it took care of heterogeneity accompanying mutual funds in Kenya by permitting discrete precise variables. Furthermore, by linking the cross sectional interpretations of time series, the panel data gave additional variability, more revealing data, supplementary degrees of freedom and less collinearity amongst variables as well as more competence. This study research design was appropriate for this research as the data which was poised for the research variables was used to investigate past volume of securities traded, prices of securities and market capitalization whose analysis was quantitative.

### 3.2 Target Population

The population in this study comprised all 16 registered Kenya's mutual funds in the country.



### 3.3 Data Collection Instruments

Secondary data was used in this study to investigate the effect of overconfidence on mutual fund financial performance in Kenya. The secondary data came from previous mutual fund financial statements that were published and covered an eleven-year period starting in 2011 and ending in 2021. Sources of secondary data included the capital markets authority, the online database of the World Bank and the retirement benefits authority databank. The secondary data was acquired by the help of the data collection tool.

### 3.4 Data Analysis

Data analysis was carried out with the aid of Stata software version 15. The Panel data regression model was embraced since it took precaution of heterogeneity connected with mutual funds in Kenya by allowing for individual specific variables. The relationship between the financial performance of mutual funds as a dependent variable and overconfidence as an independent variable was examined using a fixed and random effect regression analysis model.

The relationship was established using the model as follows:

$$Y_t = \beta_0 + \beta_1 OC_t + \varepsilon \text{ where;}$$

$Y_t$  = Mutual fund financial performance at time t.  $\beta_0$  = Intercept term which is the mutual fund financial performance when all other factors remain constant i.e.  $t=0$

$OC$  = Overconfidence at time t and  $\varepsilon$  = Statistical error term.

The moderating effect of fund size on the effect of overconfidence on the mutual funds financial performance of in Kenya was also examined by introducing fund size in the regression equation and its influence considered. The correlation was established as follows:

$$Y = \beta_0 + \beta_1 OCFS + \varepsilon \text{ where FS= Fund size as a moderating variable.}$$

The study also considered taking natural logarithms in order to avoid effects of multi collinearity.

### 3.5 Measurement of Study Variables

Portfolio performance was measured by market capitalization which was measured using Oluwatoyin and Gbadebo (2009) model which is characterized as:

$MKTCAP = \beta_0 + \beta_1 TNO + \beta_2 PAT + \beta_3 DIV + e$ . Where,  $\beta_0 > 0$ ,  $\beta_1 > 0$ ,  $\beta_2 > 0$ ,  $\beta_3 > 0$ , and  $e$  = error term Where: PAT: Profit after Tax, TNO: Turnover, DIV: Dividends and MKTCAP: Market Capitalization.

#### 3.4.1 Overconfidence

Overconfidence was measured by computing monthly average volume of trade of mutual Funds for the period under study. The quantity of overconfidence was obtained using Parkinson procedure which is quantified below:

$$\sigma_{i,t} = \sqrt{12} \frac{\sqrt{\ln\left(\frac{H_{i,t}}{L_{i,t}}\right)^2}}{4 \ln(2)}$$

Where:

$H$ = Maximum volume traded during the year under study,  $L$ = Bottommost volume traded during the year under study,  $\sigma_{i,t}$  =the overconfidence bias measure.  $12$ = number of months in a year under study,  $i$ = low or high capacity that Mutual Funds may gain subsequently one month in the study time t,  $\ln$ = natural logarithm,  $t$  = the number of survey.

## IV. DATA ANALYSIS & DISCUSSION

This section grants outcomes and their subsequent discussion owing to the research design described earlier.

### 4.1 Pilot Study

This study made use of secondary data that had been collected utilizing the pre-made data collection instrument. The data gathering tool was created with the help of financial experts, including academics in the field of finance and research field marshals at the Capital Markets Authority and Nairobi Securities Exchange. The data collection instrument was deliberated upon by the experts preceding data gathering and the essential review done in order to guarantee that the data collection instrument seized entirely all the basic information to govern the requisite

historical data from CMA. No additional piloting was accompanied on the data collection instrument preceding data collection having settled on the appropriateness of the data collection instrument.

#### 4.2 Descriptive Statistics

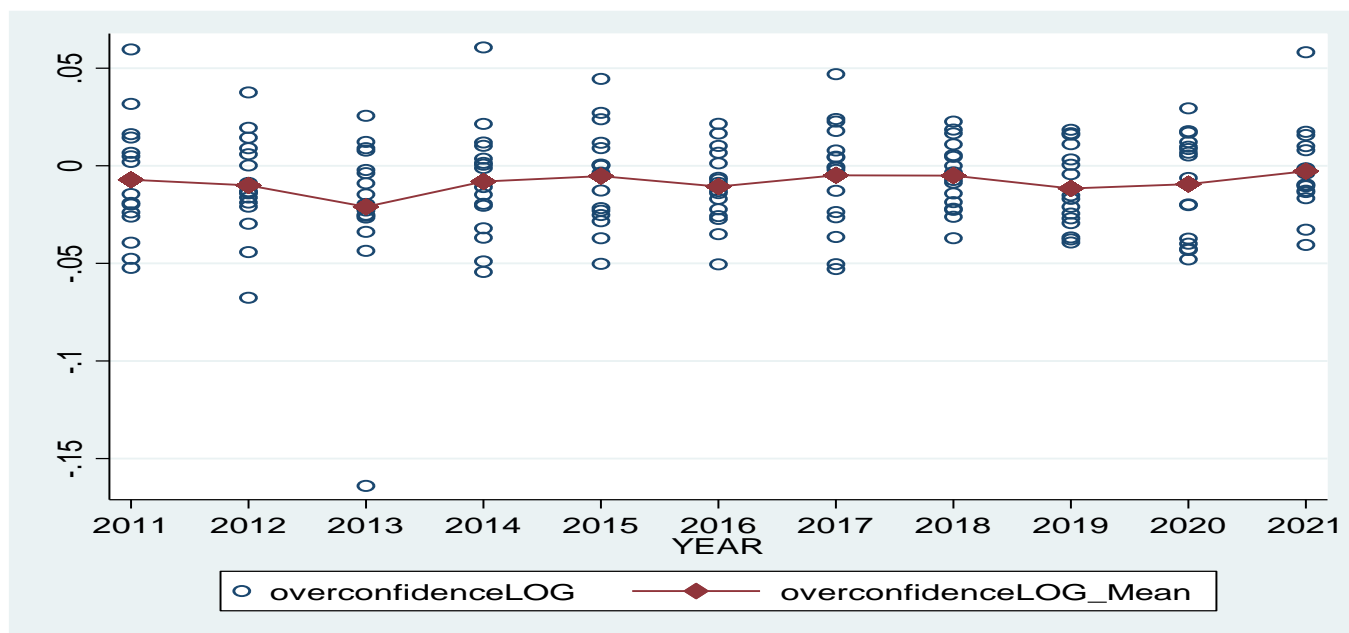
The section includes descriptive data for each parameter used in the study. The improvement of several important statistical indices or measures that are used to summarize data, such as measures of spread, measures of location, measures of correlation, statistical averages, and measures of skewness, as well as additional raw data measures, is the focus of descriptive statistics (Kothari, 2004). The summary of descriptive statistics for all parameters used in the study, including market capitalization as the dependent variable and overconfidence as the independent variable, was provided in Table 1 below.

**Table 1**  
*Descriptive Statistics*

Statistic	Market Capitalization	Fund Size	Overconfidence
Mean	20.50923	20.50923	-0.0087145
Se(Mean)	0.060926	0.192289	0.0019833
Maximum	22.38728	25.70594	0.0606437
Minimum	18.23680	16.24238	-0.1639964
Std Dev	0.808280	2.551005	0.0263266
CV	0.039410	0.124383	-3.021004
Obs(N)	176	176	176

The Market capitalization, Fund size, Overconfidence log and statistics: (Mean, Se (mean), Max, Min, Std Dev, CV, Obs (N) by categories of year summary.

From Table 1 above, the overconfidence mean stood at -0.0087145. The maximum for overconfidence was recorded at 0.0606437; the lowest for overconfidence was -0.1639964 and the spread or standard error of the mean stood at 0.0263266. The explanation of this was that data for the variables was normal distributed. The deduction was that the variable for overconfidence had no substantial nonconformities from the probable mean. Descriptive Statistics for overconfidence was presented in Figure 2.



**Figure 2**  
*Descriptive Statistics Analysis –Overconfidence*



### 4.3 Normal Distribution Analysis

**Table 2**

*Normal Distribution Analysis*

Statistic	Market Capitalization	Fund Size	Overconfidence
Skewness	0.319224	0.638237	-0.9620693
Kurtosis	2.836192	2.210537	8.964203
Jarque-Bera	3.186000	16.52	288
Probability	0.000000	0.000000	0.000000
CV	0.039410	0.124383	-3.021004
Observations	176	176	176

In this research, the homogeneous skewness as well as kurtosis moments was established. The Jarque–Bera test that was derived from the kurtosis and skewness estimations was additionally amplified in this study. From Table 4.2 above, the skewness value computed for market capitalization which is the dependent variable was 0.319224. The skewness value for fund size which is the moderating variable was recorded as 0.638237. The skewness values for overconfidence as the independent variables was recorded as -0.9620693.

The documented statistics for kurtosis as of market capitalization, fund size, overconfidence were 2.836192, 2.210537 and 8.964203 correspondingly. In inference, the probability values attained as of the Jarque-Bera test statistic outcomes recommended that at five percent significance level, entirely the variables approved the normality test. The study rejected the null hypothesis that the data for this investigation were not evenly distributed in its interpretation of this information.

### 4.4 Model Specification Tests

Several model specification tests were conducted alongside the panel data in order to determine whether they were suitable for mathematical research.

#### 4.4.1 Pearson Correlation Test

**Table 3**

*Pearson correlation Test for Market capitalization, fund size, Overconfidence log Observations.*

Variable	Market Capitalization	Fund size	Overconfidence log
Market Capitalization	1.0000 176		
Fund size	0.3168 0.000 176	1.0000 176	
Overconfidence log	0.1501 0.0468 176	0.1484 0.0493 176	1.0000 176

The Table 3 above displays the background of the pair wise association of mutually independent and dependent variables. The relationship in this occasion was carried out to pretest any impending multicollinearity in the course of additional investigation. Multicollinearity was the problematic issue which transpired when the descriptive variables were precisely extremely interrelated with one another. If multicollinearity was not present, then addition or elimination of a parameter from a multiple regression equation would not alter the constant value on the other parameters (Brooks, 2002). Accordingly, independent variables altogether were reserved for additional investigation.



#### 4.4.2 Unit Root Test

**Table 4**

*Unit Root Test at 5% Significance Level*

Market Capitalization	Method	Statistic	Prob.	Interpretation
Null:Unit root(assumes common unit root process)				
	Levin,Lin& Chut*	-11.6234	0.0000*	Stationary
	Hadriz-stat	11.7875	0.0000*	Stationary
Null:Unit root(assumes individual unit root process)				
	Im,Pesaran& ShinW-stat	-3.7078	0.0001*	Stationary
	ADF–Fisher Chi-squared pm	8.9956	0.0000*	Stationary
	PP – Fisher Chi-squared pm	8.9956	0.0000*	Stationary
Fund size	Method	Statistic	Probability	Interpretation
Null:Unit root(assumes common unit root process)				
	Levin,Lin& Chut*	-2.8548	0.0022*	Stationary
	Hadriz-stat	2.3891	0.0084	Stationary
Null:Unit root(assumes individual unit root process)				
	Im,Pesaran& ShinW-stat	-0.9955	0.0015*	Stationary
	ADF– Fisher Chi-squared pm	3.5095	0.0002*	Stationary
	PP – Fisher Chi-squared pm	3.5095	0.0002*	Stationary
Overconfidence	Method	Statistic	Probability	Interpretation
Null:Unit root(assumes common unit root process)				
	Levin,Lin& Chut*	-1.6873	0.0046*	Stationary
	Hadriz-stat	6.5893	0.0000*	Stationary
Null:Unit root(assumes individual unit root process)				
	Im,Pesaran& ShinW-stat	-1.9802	0.0238*	Stationary
	ADF– Fisher Chi-squared pm	4.2088	0.0000*	Stationary
	PP – Fisher Chi-squared pm	4.2088	0.0000*	Stationary

Panel unit root tests were applied on each and every variable which was utilized in the investigation to determine the stationarity of panel data. The unit root tests 'results for the cross-sections of the parameters altogether including fund size, market capitalization as well as overconfidence were discussed. Table 4 above disclosed that entirely 16 cross sections were stationary. The tests demonstrated that, when measured simultaneously, every single variable displayed stationarity for every cross-section. The unit root problem was also not present, as evidenced by the high probability of 0.0000 and the fact that the null hypothesis  $H_0$  of the unit root was rejected.

#### 4.4.3 Heteroscedasticity Test

**Table 2**

*Heteroscedasticity Test*

**Breusch and Pagan Lagrangian multiplier test for random effects  
MARKET CAPITALIZATION**

**Estimated results:**

Variable	Variance	Std Dev =sqrt(variance)
Market Capitalization	0.6533170	0.8082803
e	0.5050168	0.7106454
u	0.1207800	0.3475342

**Test statistics**

<b>F-Statistic</b> 1.73924	<b>Obs* R-squared</b>	2.976238
<b>ProbabilityF(1, 15)</b> 0.27650	<b>Probability Chi-square</b>	0.146500
<b>Var(u)</b> 0.00000	<b>Chibar2(01)</b>	28.27000
<b>Probability&gt;Chibar2</b>	0.00000	





The results from Table 5 above, points out the heteroscedasticity statistics test. The probability value was recorded at 0.27650 which is greater than 0.05 which is the critical value and the F-statistic was recorded at 1.73924. The test for chi-square was correspondingly statistically inconsequential with probability of 0.146500 and an Obs\*R-squared of 2.976238. This inferred the absence of heteroscedasticity in the analysis ideal. The heteroscedasticity test was intended to evaluate whether the discrepancy was persistent or it was mounting. If the discrepancy was persistent then it means that the coefficients of the protected adjustment as the descriptive parameters ought not to be statistically noteworthy. Results from Table 5 above were apparent showing absence of heteroscedasticity as the chi-square as well as the F-statistic was statistically irrelevant.

#### 4.4.4 Hausman Test

**Table 6**

*Hausman Test*

##### Hausman fixed random Coefficients

Variable	Fixed (b)	Random (B)	Difference (b-B)	S.E Sqrt(dia(gV_b-V-B))
Overconfidence log	1.7158590	2.7295960	-1.0137360	0.4706487

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(4) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 8.81$$

$$\text{Prob} > \chi^2 = 0.0061$$

The results of the Hausman test, which was used to determine whether there had been a change between the fixed effect model and the random effect model, were provided in Table 6 above. Hausman (1978) initially proposed an indigenous test statistic that was founded on a careful evaluation of constant values. The results of the Hausman test were shown in Table 6 above. The random effects model was initially approximated in the Hausman test. The fixed effects model was similarly predicted by the Hausman test. After assessing the fixed effect approximations, the most recent phase led to the deduction of the random effects. The conclusion on this was that if the change was statistically noteworthy, then at that point, the fixed effects model was embraced. Contrary to this, if there was no variance, literature recommended that the random effect model be approved which anticipated that there was no correlation between the unobservable effects and the explanatory variables? From the Table 6 above, the value of 8.81 for chi-square was statistically inconsequential and indicated that there was no variance in the random effect model and the fixed effect model.

#### 4.5 Panel EGLS Random Effect-Model

**Table 7**

*Panel EGLS Random Effect-Model*

Variable	Coefficient	Std. Error	t statistic	probability
overconfidence	2.7295960	0.2297870	2.18	0.0310
Constant	0.9130920	0.0655430	29.18	0.0000

**Dependent Variable: Market Capitalization; Method: Panel EGLS Random Effect Model**

##### Test Statistics

<b>R-squared</b>	0.68900	<b>Adjusted R-squared</b>	0.68610
<b>Mean Dependent variable</b>	0.257156	<b>S.D. Dependent variable</b>	4.067320
<b>S.E. of Regression</b>	0.795340	<b>F-statistic</b>	243.5647
<b>Prob(F-statistic)</b>	0.000100	<b>Sum squared residuals</b>	114.3304

5% level of significance.

Using the linear regression model, the relationship between the dependent variable and the independent variable can be summed up as follows:

$$Y_t = 0.9130920 + 2.729596OC_t + \epsilon$$

Where;



$Y_t$  = Mutual fund financial performance at time t. (0.9130920)  $\beta_0$  = Intercept term which is the mutual fund financial performance when all other factors remain constant i.e. t=0,  $\beta_i$  are the regression coefficients for independent variables at time t.

OC = Overconfidence at time t and  $\epsilon$  = Statistical error term.

#### 4.5.1 Influence of overconfidence on financial performance of mutual funds in Kenya

The results of the multiple linear regressions are displayed in Table 7 above, and the overconfidence variable's regression coefficient was recorded as 2.729596. This constant disclosed that a rise in overconfidence by one unit initiated a rise in the mutual funds' financial performance in Kenya to increase by a value of 2.729596 units when all other factors affecting mutual funds financial performance are held constant. The positive influence displays that there was a positive association between mutual funds financial performance in Kenya and overconfidence. The results of this study conflict with those of Eshraghi (2011), whose research examined how overconfidence affects mutual fund financial performance. The cross sectional deviations established that good previous financial performance enhances overconfidence as measured by all substitutions that is disproportionate levels of confidence, self-reference and conviction which were used in this study.

The findings of this study are in line with a study done by Makokha (2012) on the impact of overconfidence on the security yields of companies listed on the Nairobi Securities Market. The study's findings demonstrated a strong positive correlation between overconfidence and security yields. With a correlation coefficient of 0.634, it was evident that firm size, overconfidence bias, and profitability were all positively correlated.

#### 4.6 Moderating effect of fund size

**Table 8**

*Moderating Effect of Fund Size*

Variable	Coefficient	Std. Error	t statistic	probability
Overconfidence Fund size	-3.023683	0.9650300	-3.13	0.0020
Constant	0.913092	0.0655430	29.18	0.0000

**Dependent Variable: Market Capitalization; Method: Moderation hierarchical-moderating effect of fund size**

<u>Test Statistics</u>			
<b>R-squared</b>	0.583197	<b>Adjusted R-squared</b>	0.582364
<b>Mean Dependent variable</b>	0.653317	<b>S.D. Dependent variable</b>	3.198300
<b>S.E. of Regression</b>	0.743100	<b>F-statistic</b>	456.9547
<b>Prob(F-statistic)</b>	0.000000	<b>Sum squared residuals</b>	114.3304

5% level of significance

From Table 8 above, it was determined that fund size had a moderating effect on the relationship between the financial performance of mutual funds and overconfidence bias. The study found that fund size influences the financial performance of mutual funds in Kenya by negatively mediating overconfidence.

The result in test statistics above displays the general model's goodness of fit statistic. The F-statistic value was then recorded at 456.9547, and the related p-value was reported at 0.000, which was less than the benchmark value of 0.05. The updated R square value was calculated to be 0.582364. This result clearly indicated that there was a large moderation of fund size on the association between overconfidence bias and mutual funds financial performance in Kenya when the degrees of freedom are adjusted.

The correlation between the independent variable and the dependent variable can be summarized by use of the multiple linear regression models as follows:

$$Y_t = 0.913092 - 3.023683OCFS_t + \epsilon$$

where FS= Fund size as a moderating variable;

$Y_t$  = Mutual fund financial performance at time t. (0.9130920)  $\beta_0$  = Intercept term which is the mutual fund financial performance when all other factors remain constant i.e. t=0,  $\beta_i$  are the regression coefficients for independent variables at time t. OC = Overconfidence at time and  $\epsilon$  = Statistical error term.

**Table 9***Hypothesis Rejected Founded on the Implication of Outcomes*

Hypothesis	Sign	Significance	Decision
H <sub>01</sub> : overconfidence does not significantly affect portfolio performance of mutual funds in Kenya.	Positive	Significant	H <sub>01</sub> Rejected
H <sub>02</sub> : Fund size does not significantly moderate the association between overconfidence and portfolio financial performance of Kenyan mutual funds.	Negative	Significant	H <sub>02</sub> Rejected

## V. CONCLUSIONS & RECOMMENDATIONS

### 5.1 Conclusions

The results of this study demonstrate that overconfidence has a favorable but significant impact on the financial performance of mutual funds in Kenya. From the findings obtained from the multiple regression analysis, overconfidence with a regression coefficient of 2.7295960 had a positive but major impact on the Kenyan mutual funds' financial performance.

### 5.2 Recommendations

From the investigation, it is apparent that models of behavioral finance complement the standard simulations of investment investigation largely utilized for making financial investment decisions by mutual funds in Kenya. These standard investment models are not fully empirically reinforced and therefore create room for the effect of behavioral investment biases in the entire investment framework. The study therefore recommends that overconfidence variable with a coefficient of 2.7295960 had a strong influence on the mutual funds' financial performance in Kenya and consequently it should be emphasized during financial investment decision making processes.

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