

**EFFECT OF PORTFOLIO MIX ON FINANCIAL PERFORMANCE OF  
UNIT TRUST INVESTMENTS IN KENYA**

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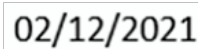
## DECLARATION

I declare that this research project is my original academic work and has not been presented for examination in any academic institution

Signed.....

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This research project has been presented for examination with my approval as the university supervisor

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## **DEDICATION**

I dedicate this research project to my mentor and parent Mrs Beatrice Mwangi, my wife Sarah Wangari, brother Alex Wainaina and sons Mark Cyril and Lenny Wacira. I appreciate their support and the understanding which they extended to me throughout the study. I will forever remain grateful.

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## **ABBREVIATIONS/ACRONYMS**

<b>AMEX</b>	American Stock Exchange
<b>APT</b>	Arbitrage Pricing Theory
<b>BSE</b>	Bombay Stock Exchange
<b>CAPM</b>	Capital Asset Pricing Model
<b>CI</b>	Collective Investments
<b>EMH</b>	Efficient Market Theory
<b>NAV</b>	Net Assets Value
<b>NSE</b>	Nairobi Securities Exchange
<b>NYSE</b>	New York Stock Exchange
<b>ROE</b>	Return on Equity
<b>UTF</b>	Unit Trust Investments

## ABSTRACT

Unit trust investments are separate, independent legal trusts set up to meet some stated investment objectives. They are collective investment schemes that pool money together from many investors to form a portfolio and are managed by professional fund managers who invest the funds in equity securities to achieve objectives of the trust. There are 26 fund managers, licensed by the Capital Markets Authority in Kenya. It is estimated that investment funds stand at Kshs 500 billion of which Kshs 50 billion are in unit trust funds. Currently the fund managers alone manage an average Kshs 140 billion worth of assets in Kenya. This study set out to determine the effect of portfolio mix on the financial performance of unit trust fund in Kenya. Six determinants of the financial performance were tested. Secondary data collected from 16 unit trust holders was analysed. Descriptive correlational analysis was conducted using SPSS v23. Fund size, expense ratio, market timing and return attribution were found to significantly influence performance of the unit trust funds. Management style and investment policy had no significant effect on the financial performance. From the inferential analyses, four variables were significant at p-values less than 0.05. This shows that they significantly affect performance of unit trust fund at different intensities. All the Beta values were positive, implying that the influence is positive. The significant variables were: Fund Size ( $p=0.03$ ), expense ratio ( $p=0.00$ ), market timing ( $p=0.00$ ) and return attribution ( $p=0.01$ ). The beta values for each of the variables were 3.250, 0.195, 0.021, 0.444 for fund size, expense ratio, market timing and security selection respectively. From the research findings portfolio mix significantly affects the financial performance of a unit trust funds in Kenya. Based on these findings there is need for both investors and unit trust fund managers need to acquire some financial management knowledge in order to properly oversee the management of the of the unit trust funds. Investors need to bear in mind that knowledgeable asset managers are able to predict future expected returns and use their market timing abilities to sound investment decisions for maximum returns. The study recommends investor education in order for them to acquire some financial management knowledge and properly oversee the management of the of the unit trust funds. There is also need for a push for fair tax systems to the investors in order to promote an investment culture in the capital markets. There is need for the regulator and industry players to introduce different investment options to encourage low and middle income earners to benefit from the investment opportunities presented by unit trust.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the study

A unit trust is a separate, independent legal trust set up to meet a stated investment objective. They are collective investment schemes that pool money together from many investors and are managed by professional Fund Managers, who invest the pooled funds in a portfolio of securities to achieve objectives of the trust. Unit Trust Investments are among the most popular investment options in the Kenyan market. A number of investment models can be applied to the concept of portfolio mix and performance of unit trust investments (Kevin, 2016). Due to the growth of unit trust investments, there is need for methodologically sound principles decision making. Restrictions are therefore put in place to ensure that fund managers invest in particular, assets to limit the dispersion of outcomes. As a result, the investors develop investments mandate, which guides the fund manager in the investment decision (Steven, 2014).

A number of investment models can be applied to the concept of portfolio mix and performance of unit trust investments. This study is based on three investment models; capital asset pricing imodel (CAPM), Arbitrage Pricing theory, modern portfolio theory and Black Litterman theory. The model CAPM explains the connection between risk and expected return. Arbitrage pricing theory hold that normal return of a budgetary asset can be displayed as a direct capacity of different largescale financial elements. Modern portfolio theory states that it is possible to create unit trust invesments of perfect portfolios, offering the most outrageous possible expected return for a given component of risk, (Reilly & Brown, 2015). Being a relatively new concept in Kenya, investment in unit trust requires in-depth academic inquest to determine the influence of portfolio mix on its financial performance. Like any

other investments, unit trust investments can make profits or incur losses hence the need to combine different asset classes and diversify risks. In Kenya, different asset classes yield different results for unit trust investors. Some have reaped big while others have sunk in losses (Njeri 2016). The most cited reasons for success or failure of unit trust investments include: timing, skills and expertise of the portfolio manager as well as economic factors (Njeri, 2016).

### **1.1.1 Portfolio Mix**

Reilly & Brown (2011) define portfolio mix as the combination of different asset investments for maximum returns. A portfolio is an association of cash related assets, for instance, stocks, securities and cash reciprocals. Portfolios are head by investors and additionally regulated by asset managers as chosen by the investors. Portfolio mix/asset dissemination is the technique of isolating the endeavor portfolio transversely over various asset classes like stocks, securities and other financial as well as capital market securities. Portfolio mix is highly regarded as an effective and organized technique in diversification of investments (Brinson, Hood & Beebower, 2016).

The two kinds of asset allocation procedures are: key and strategic asset allotment. Strategic asset allocation alludes to how portfolio finances will be isolated given the portfolio administrator's long-haul gauges of expected returns, difference and covariance, (Sharpe, 1966). It involves the asset managers deciding on the asset classes as well as the specific securities with superior performance to invest in. Tactical asset allocation on the other hand alludes to how the assets are to be separated at a specific period given the financial indicators of momentary measures (Lofthouse, 2011). Reilly & Brown (2011) further explain that in this strategy, a fund manager tries to create meaningful returns full of value addition

exclusively through allocation decisions. In particular, rather than attempting to pick prevalent individual securities, strategic asset portion managers alter their asset class exposures dependent on current changes in the overall valuations of those classes (Lofthouse, 2011).

Stux (2015) observes that the procedure of asset allocation takes into consideration the scheme of an effective set and this enables the investments manager to put assets into those securities that represent the ideal portfolio (Reilly & Brown, 2011). Unit trust investments are fund committed to a given reserve based on some asset's allocation guidelines. The investments are regulated by the Capital Markets Authority and controlled by a set of guidelines. There are minimum amounts that can be invested in a portfolio of unit trust investments (Shikuku, 2012). Othoro (2019) measured portfolio mix by the fund size and expense ratio. Mwangi (2020) focused on Investment policy and market timing as the ideal indicators of portfolio mix. In this study both market timing and investment policy were considered for measuring portfolio mix.

### **1.1.2 Financial Performance**

Unit trust fund performance is measured using its aggregate return, which is the entirety of the adjustment in reserve's net assets value (NAV), its profits and its capital increases dispersals over a given period (Bhalla, 2013). The purpose of measuring portfolio performance of unit trust investments is to determine whether the fund managers are adding value and whether the investment strategy adopted is increasing or reducing the value of the funds. The rationale for calculating the performance of a portfolio is to be able to establish the value added either knowingly or unknowingly by the portfolio managers during their

allocation decisions. The success of portfolio performance is achieved when portfolio managers add value through prudent asset allocation techniques.

Under the assumptions of Efficient Market Theory (EMH), it is difficult for managers to include value, so it ought not to be astounding to find that the diverse unit trust investments have had performance like their benchmarks (Walker and Iglesias, 2010). Performance of the Unit Trust Investments therefore can be measured by considering the degree to which the fund manager has been able to deliver investment's return's that are set by the investment committees and in comparison with the industry at large. Performance of the funds is dependent with the kind of investment backing up the assets of the fund as well as the strategy taken up by the fund managers. Risky investments have higher returns and hence where the investors are risk taker, the fund shall definitely record higher returns as compared with the fund whose investors are risk averse (Brinson, Hood & Beebower, 2016).

Different indicators have previously been used to predict financial performance of unit trust. Muhidin (2017) used rate of return as the best indicator of financial performance. Gonze (2018) used total yield as the ideal unit of measuring financial performance of unit trust investments. In this study, the unit of measurement of financial performance were rate of return.

### **1.1.3 Portfolio Mix and Financial Performance**

Portfolio mix is critical in determined the rate of return of unit trust investments. (World Bank, 2015). In evaluating unit trusts the fund manager chose actions and decisions which positively affect the performance of the fund. The charges paid by investors for the management of the fund have to be well justified by the managers results. The success of

active fund manager is primarily a function of their stock selection and timing ability. During the period in which the market risk premium is positive a manager that has market timing ability increases (decrease) their exposure to equity market (fixed income market). Conversely over periods when the market premium is negative a manager that has market timing ability decreases (increases) their exposure to the equity market or fixed income market (Holmes & Faff, 2014).

Pooled funds above anything else are credited with being able to diversify risk to a big extent. The Unit trust funds are therefore expected to either outperform the market or to do as well as the market. Sharpe (1999) evaluated the overall performance of mutual funds in the US and the results bowed that only 32% of the fund outperformed the index. In the equity market the supply of new equities is thin, and privatization has accounted for the bulk of the issue. The major factor mentioned include the reluctance of the many small family-owned business to dilute owner hoped tedious and costly process of making public offers and the generally underdeveloped state of the private sector.

#### **1.1.4 Unit Trusts in Kenya**

The Fund management Industry in Kenya is at its formative stage and is thus underdeveloped. There are 26 fund manager, licensed by the Capital Markets Authority in Kenya. It is estimated that investment funds stand at Kshs 500 billion of which Kshs 50 billion are in unit trust funds. Currently the fund managers alone manage an average Kshs 140 billion worth of assets in Kenya (CMA 2018). Unit Trusts offers investors more choice beside enhancing returns to investor of between 8-10% or more compared to 3-4% return gained from traditional investments such as bank deposits. (The standard Newspaper Business feature February 2019). The registration of Africa Alliance Kenya Ltd Unit trust



scheme in 2002 marked the beginning of unit trust investments in Kenya. The launch of Unit trusts was expected to increase investments savings among Kenyans which stands at 10.8 % of GDP as at December 2005. The low level of per capita income of Ksh 35 045 was also suitable for this type of investment. (Monthly Economic Review 2006). The Government of Kenya has given tax incentive to promote the unit trust investments which include tax exemption on unit trust income (Income Tax Act 2002).

There are two types of Unit trust funds in Kenya: Open ended (Mutual) funds and closed ended funds. The number of units that back the portfolio of securities held in the closed ended fund is fixed. The number of shares outstanding can be altered only through a new formal issue of the fund's securities just like shares of a company listed on a stock exchange (Jacob & Pettit 2011) Open ended funds are generally referred to as the mutual funds. They differ from the closed ended in that the fund continuous issue and redeem shares at a price that reflects the net asset value of the portfolio held by the fund. The net asset value is the funds net worth and is computed by having the portfolio liabilities divided by the number of units (Trennepol 2013). However, the equity unit trusts offered in Kenya are mainly load funds and the selling price has a sales charge factored in it. The selling price is always higher than the buying price.

## **1.2 Research Problem**

Management of unit trust requires informed decision and ability to forecast future trends in individual components. These depends on the expertise of the fund managers and the anticipated performance of the underlying assets or securities. Garret and Rex (2016) examined the effect of a combination of assest classes on the performance of UK Equity unit Trusts that existed in the period 2008 and 2017. The result shows that the UK money managers are unable to outperform the market when exposure to market, value and size risk is

taken into account. They also found out that only poor performance persists. Oulo (2019) concluded that portfolio mix improves financial performance of Pension Fund Investments by up to 17 percent. On the contrary Bingi (2018) observed that portfolio mix creates an unnecessary risk which reduces performance of equity investments at Johannesburg securities exchange. He concluded that single unit investments in equity yields higher returns than a mix of portfolios. While most study findings have shown that portfolio mix leads to improved returns (Gareth & Rex, 2018; Oulo, 2019) a few have revealed the contrary (Bingi, 2020).

Available evidence indicates that most of the studies on portfolio mix have been from more developed economies with proper regulation and advanced investment policies. Droms and Walker (2015) studied the relationships between mutual funds risk and asset size in Canada. Their study found out that portfolios of funds with higher risk earned higher returns as predicted by CAPM. Additionally, the analysis revealed that portfolios of smaller funds are riskier, as it is hypothesized that larger funds carry less risk due to increased diversification. Holmes and Faff (2015) carried out a study to assess the explanatory power of various fund characteristics in determining fund performance of Australian Unit Trusts. They established that the most aggressive portfolios attain the highest fund risk as opposed to the property trust with the lowest level of risk. McDonald (2017) examined the relationship between objectives and performance of mutual funds in America and found out that a positive relationship exists between stated objectives and measures of risk with risk increasing as objectives become more aggressive.

Khan (2017) examined whether mutual funds outperform the market persistence of the fund performances and effect the volatility of the fund performances. He used panel administrative data of 47 mutual funds in 4 different countries. Bimish (2016) investigated whether bonds

funds outperform the market persistence of 32 equity investments in Singapore. His findings show that in an efficient market unit trust funds or any other form of pooled funds do not outperform the market.

The equity market in Kenya is illiquid as evidenced by turnover ratio of less than 5% only about 15 out of 53 listed companies actively trade and only 35% of the market capitalization is available for trading (Kagunga, 2017). In Kenya, the evaluation of the performance of the unit trusts is a good measure of the general performance of the investments sector. It is projected that the size and growth of pooled funds world over is higher than the underlying assets (Massa 2013). Kogi (2003) in her study of the future of Collective Investments schemes in Kenya observed that the potential in the Kenyan capital market is yet to be fully utilized. Appollo (2018) studied the effect of portfolio mix on the performamnce of treasury bonds in Kenya. He found found a positive relationship between the combination of different Coupon rate and Yield of the treasury bonds. Okuku (2016) in his study of alternative investment options in the capital markets in Kenya observed that to date access to the new investment outlets in the capital markets has been limited to the informed large institutional investor.

Much of the research done on the performance of unit trusts funds has been carried out in the developed economies where these pooled fund are at very advanced stages (Holmes & Faff, 2015; Chen et al., 2014; Mcdonald, 2017) other studies have revealed contradictory results in finding (Garret and Rex 2016; Droms and Walker 2015; Oulo, 2019; Bingi, 2018). Others have used different methods to arrive at similar findings (Khan 2017; Bimish 2016). The studies by Khan (2017) and Bimish (2016) mainly examined funds across investment objectives in which case the results obtained may not be applicable to any particular fund

category. Most of the research work, carried out has been on whether the funds outperform the market persistence of the fund performances. A number of studies show that in an efficient market unit trust funds or any other form of pooled funds do not outperform the market (Garret & Rex 2016; Holmes & Faff 2014). This research set out to measure the effect of portfolio mix on the financial performance of Unit trust investments in Kenya.

### **1.3 Research Objective**

The objective of the study was to determine the effect of portfolio mix on financial performance of Unit Trust Investments in Kenya.

### **1.4 Value of the Study**

This study is of importance to the Capital Markets Authority because the regulator is able to assess performance of unit trust investments. The regulator gets supportive evidence for portfolio mix and management of different asset classes. From this study, financial advisors have a basis and supportive evidence for portfolio mix and management of different asset classes

The study provides resourceful material to fund managers which guides them on profitable asset allocation practices. Through this study, fund managers are able to understand the importance of diversification of risks. The concept of risk and return allows fund managers to invest in a combination of asset classes in order to spread the investments risks. From this study, financial analysts find a useful material for reporting unit trust data backed by academic evidence.

It is of great benefits to scholars and academicians interested in unit trust investments. They are able to carry out further research on other non-financial factors that affect performance of unit trust funds. Further research emanating from the findings of this study was carried out with the view of enhancing academic reports about the effect of portfolio management.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter describes the review of relevant literature used in the study. It begins with the theoretical review followed by empirical literature review.

#### **2.2 Theoretical Review**

This study is guided by four theories: Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT), Modern Portfolio Theory and Black Litterman Theory.

##### **2.2.1 Capital Asset Pricing Model**

Sharpe (1966) and Lintner (1965) developed CAPM by making improvement to the Black Litterman Theory by Black (1972) which is an advancement of Markowitz (1952) theory. It analyses the relationships between risk and return. This model depicts the relationship between risk and expected return and that is used in estimating of risky securities. This model helps in deciding hypothetically the required rate of return of a unit trust, and aids in settling on decisions of unit trusts in a mixed portfolio.

The reasoning behind CAPM is that investors should be remunerated in the two different ways, by time value which is addressed by the risk-free rate and repaid the fund managers for putting cash in any investments over some undefined time frame and risk. This includes the Risk (beta) which defines the returns on asset for the market over some period of time and the market premium (Capital Markets Authority 2017). This model is relevant to this study in that it helps in building up the link between portfolio mix and performance of unit trust investments.

Capital Asset Pricing enables fund managers to determine the optimum prices of different asset classes. These asset classes include; Equity, derivatives and bonds. Each asset price is regulated by CMA through a standard pricing model. The pricing model is a percentage that can either be subtracted or added to the original value. The pricing model prevent fraud or money laundering activities and protects investors from exploitation.

### **2.2.2 Arbitrage Pricing Theory**

Ross (1976a, 1976b) developed Arbitrage Pricing Theory (APT) theory of asset valuing that holds that the normal return of a financial asset can be demonstrated as a straight capacity of different classes of financial portfolios. It is a time activity in which each financial manager trusts that the stochastic properties of profits of capital assets are reliable with a factor structure. Ross contends that if balance costs offer no exchange openings over static scheme, at that point the normal profits for the unit trust funds are approximated through factor additions.

APT is closely related to CAPM in that both state a direct connection between assets expected returns and their covariance with other irregular factors. Like CAPM APT contends that interest rates depend on the efficient risk introduction of the security, instead of the aggregate risk. Dissimilar to CAPM, it doesn't require all speculators act alike, nor does it guarantee that other capital – weighted market portfolio meaning it is the main unsafe asset that will be held. This theory is relevant to the study because it is aligned to the time value of money and helps fund managers understand and stick to the rules of time travel.

Arbitrage pricing enables fund managers to determine the value of each asset class and the total amount that should be invested for maximum returns. Each value of investments in a given portfolio is guided by a set of rules, regulations, total funds available and the judgement of the fund manager regarding future expectations of return.

### **2.2.3 Modern Portfolio Theory**

Modern Portfolio Theory (MPT) was developed by Harry Markowitz (1952). It is an endeavor speculation subject to the likelihood that risk-averse cash related experts can build portfolios to improve or develop expected advantage based for a given segment of market dynamics. MPT is sometimes called portfolio Theory or Portfolio of the managers. MPT prescribes that it is conceivable to amass and helpful wild of impeccable portfolios, offering the most ideal expected return for a given segment of hazard. It proposes that it isn't satisfactory to take a gander at the run of the mill hazard and return of one express stock. By setting resources into in excess of one stock, a speculator can get the prizes of expansion, otherwise called not gambling everything on one undertaking.

Accordingly, Harry Markowitz (1952), built up a model which considered the collaborations between various investments portfolios, and the relationship between them, to advance the proportion among risk and return consequently showing that a mix of a few arrangements of unit trust may reduce the chance, given that the financial manager picks kinds of securities which move as freely of one another as would be prudent.

This theory helps in expansion and spreading of risks in various asset classes to defend speculations. It is relevant to the study because it explains the relationship between risk and



return. It explains that the higher the risks, the higher the returns and therefore asset manager ought to diversify their investments into different portfolios in order to spread the risks.

### **2.3 Determinants of Performance of Unit Trust Investments**

A number of factors determine the performance of unit trusts. This study reviewed five variables that might determine the unit trusts' performance: growth in fund size, expense ratio, portfolio management, market timing, return attribution/security selection and investment policy.

#### **2.3.1 Fund Size**

Fund size is determined by net assets under management, which is the total value of all individual investments. The total value of assets needs to be at optimum and therefore can affect performance, as funds need to attain a minimum size to achieve returns net of research expenses and other costs. However, large funds incur excessive costs, resulting in diminishing or even negative marginal returns. On the same note, brokerage costs are lower for larger transactions, while growth in fund size provides cost advantages, as research expenses increase less in proportion to the fund size. After exceeding an optimal size, a very large fund can lead to deviation from original targets by investing in some low-quality assets, as well as increased administrative costs for additional coordination among staff (Indro et al. 1999).

Indro et al. (1999) concluded that the funds must reach a minimum size in order to achieve a reasonable return. They also note that marginal returns will become negative once the fund exceeds its optimal size. In a study of mutual fund size and performance, Perold and Salomon (1991) believe that a large mutual fund's asset base has disrupted the fund's performance due to trading costs associated with the impact of liquidity or price, while a small fund can easily put

all its money in its best ideas. Sawicki (2000) designed young funds, which were small abandoned failed strategies for more successful, to persuade investors not to withdraw. In a later study, Sawicki and Finn (2000) found that small funds were disproportionately represented among the best, but under-represented among the worst, suggesting that fund size may affect performance.

### **2.3.2 Expense Ratio**

Passively managed funds had lower costs and outperformed actively managed funds, Indoro et al. (1999). Actively managed funds incur various costs, including operating and research costs, which are measured by the cost ratio. Indro et al. defined cost ratio as the ratio of assets paid to operating costs and management fees, including management fees and other costs, but excluding intermediation costs. Although various costs are involved in the ratio, most of the costs can be associated with financial market research, as reported by Indro et al. considered to be explicit research costs that are reflected in proportion, which is the price paid by uninformed investors to be informed.

The first Sharpe (1966) study found that lower-spending funds tend to perform better. However, the extensive work of Friend et al. published in the book, it does not state any significant relationship between the power-to-cost ratio and only a slight positive relationship with the turnover ratio. Ippolito finds that the risk-adjusted returns, net of fees and expenses of active portfolios, are comparable to the returns of index funds and that the fund's performance is not related to portfolio turnover and management fees. Grinblatt and Titman (1989, 1992) also state that mutual funds are able to generate sufficient returns to offset the costs incurred. The findings of these studies contradict the so-called original version of efficient market theory, which means that spending money on research and trading is wasted in a market where

securities prices already contain all available information. Ippolito (1989), found that the fund's performance is not linked to sales, management fees and expense ratio are consistent with the idea that the size of mutual funds. Fortin and Michelson (2005), in their study of international mutual funds, also did not find a relationship between performance and expense ratio, but did show a positive relationship between performance and turnover.

### **2.3.3 Management Style**

Portfolio management is considered to be a complex process consisting of various avenues namely; portfolio selection, diversification and investments style (Chandra, 2014). Based on objectives and constraints, their asset allocation needs to be determined by deciding how much of the portfolio must be invested in each of the asset categories: cash, bonds, stocks, real estate, precious metals and derivatives. When comparing investments, it is essential to take into account the impact of taxes.

Diversification is a strategy that involves spreading funds among different investments in the hope that if one investment loses money, other investments will more than compensate. Investors' have well-diversified portfolios instead of investing all of their wealth in one or more assets. As more and more securities are included in the portfolio, the risk of the individual securities in the portfolio decreases, which requires portfolio management, which is the professional management of various securities. This is very important due to the chance that the actual return is greater than the expected return. An undiversified example is holding only one stock.

### **2.3.4 Market Timing**

Market timing affects the performance of portfolio mix. The rule is “Buy at Low prices and sell at high prices. However, it is sometimes difficult to effectively determine low and high prices. Market timing increases returns on performance making suitable for growth of investments. Just like any other venture, investments in unit trust has seasons. There high seasons and low seasons. The greatest challenge is usually how to time the right season for investment.

Urthur (2019) concluded that timing of unit trust investment season creates an opportunity for the fund manager to target low investment opportunities that are promising. Hustings (2020) observed that the unit trust investment market is very volatile and requires proper timing in order to achieve optimum returns.

### **2.3.5 Return Attribution/Security Selection**

Return Attribution is the process of attributing actual portfolio return to those investment management activities that contribute to the return—investment policy, active asset allocation and security selection. There are various categories of securities under unit trust investment options. Some securities are more promising than others. Similarly, there are lots of uncertainties surrounding future values of capital assets. This therefore implies that the fund manager needs to be informed and skilled when selecting the asset classes and categories.

Each security is linked to some attribution which is the rate of return expected out of the investments. Based on historical data, some securities yield high returns while others lead to losses. The higher the return attribution, the most suitable the security for investment. The concept of expected future returns is the primary role of the fund manager. The fund manager

must therefore have financial analysis skills in order to predict future price trends and expected returns from anticipated investments in unit trust.

### **2.3.6 Investment Policy**

This is the specification of the plan sponsor's objectives, constraints and requirements, including identification of the normal asset allocation mix. Investment policy is one of the factors that might have a positive or negative impact to one's investment. Investors' must first define his investment style and objectives before their investment policy. Objectives should be defined in terms of risk and return. The investment style should have specific objectives regarding the investment return requirements and the risk tolerance of the investor (Chandra, 2014)

Since there is a positive relationship between risk and return, it is not appropriate for an investor to set their goals solely on returns. Investment objectives should be stated in terms of risk and return (Aburine 2008b). The rate of return required for the investment depends on how much can be invested today and how much investors should have at the end of the investment horizon (Nofsinger, 2008).

### **2.4 Review of Empirical Studies**

There are few studies on performance of unit trust most of which were conducted mainly in the USA, Great Britain, Australia and Japan. Very few studies outside of these countries are given that mutual funds and mutual funds are relatively new investments in many parts of the world. Mutual funds have been operating in Kenya since 2001. Kirkegaard (2019) analyzed the application of MPT with an objective of investigating if an investor can apply MPT to achieve higher returns than investing in an index portfolio. Combining a strong portfolio that

beats the market in the long run would be the ultimate goal for most investors. He used historical data based on the Stockholm Stock Exchange (OMX) 30 index share. The index reflected the market as a whole and the portfolio was reweighted at a preplanned schedule, each to constantly obtain an optimal risky portfolio. The results indicated that the actively managed portfolio outperforms the passive benchmark during the selected time frame.

Abdi-Karim (2015) in his study on the characteristics and performance of Islamic funds in Malaysia concluded that Islamic funds. Performance is significantly affected by the specific investment skills of fund managers, as it allows fund managers to outperform in any market condition. Abd-Karim (2015) noted that equity funds, which are the most aggressive of the funds, have a high risk commensurate with the high returns. These funds are also popular with mutual fund investors, as they account for more than 50% of all mutual funds held.

Roll and Ross (2018) studied the daily returns on NYSE and American Stock Exchange (AMEX) stocks between 1962 and 1972. They found that the total variance of returns does not add explanatory power of the APT model. They however concluded that the APT model should not be rejected. Cauchie, Hoesli and Isakov (2015) studied the determinants of stock returns in a small open economy in an APT framework. The analysis was carried out using monthly data from the Swiss stock exchange over the period 1986-2000. They used index data from the industrial sector, as well as macro-economic data. They found that the returns of Swiss stocks are influenced by both global and local economic conditions. The results also show that statistically determined factors can give a better representation of the determinants of stock returns than macroeconomic variables.

Omonyo (2017) observed that holder's of units in Kenya have an aversion to risk, which suggests that risk increases with increasing returns. The money market fund, which represents less aggressive investments, had low returns and low risk. Compared to the reference values, the study showed that equity funds were performed in the NSE-20 stock index, while the money market fund, on the other hand, exceeded the 91-day treasury exchange rates. He further observed that risk and return are the key considerations in investment practices of Unit Trust Fund Managers in Kenya.

Research conducted by Buster (2017) on the relationship between asset allocation and financial performance in Kenya, found that there is a difference between the performance of unit trusts and market expectations. This was demonstrated in 2011, when the stock market declined in efficiency while unit credit improved with a return rate of 18% compared to the previous years. However, in 2010 and 2011, both stock market returns and unit credit tended to increase while in 2010, both were affected by external factors, namely, post-election force to record a downward trend in performance. The findings show that the trustee has performed well over the study period.

Kasanga (2018) investigated the performance of unit trust in Kenya from January 2008 to December 2010. Kasanga (2018) assessed the relationship between Unit Trusts performance and the asset allocation in Kenya for a selected sample of the Companies licensed by the Capital Markets Authority under the Collective Investment Schemes. The study further looked at the operations of Unit Trusts in Kenya and analyzed the performance of those Unit Trusts that trades on Equity funds. The performance was regressed against the asset allocation and analyzed. The analysis revealed that there was a positive correlation between the reported Equity Unit Trust performance and the asset selection that Fund Managers have

identified or preferred to invest in the Nairobi Securities Exchange. He found out that forecasting ability and market timing ability techniques employed by fund managers in managing both equity and money market portfolios were important determinants of performance.

Said (2016) carried out a survey to determine whether the application of the MPT theory in the Nairobi Securities Exchange (NSE) can allow an investor to achieve a higher risk-adjusted return than the market portfolio (i. e. the NSE 20 share index). The study was carried out on all firms listed in the NSE 20 share index between 1<sup>st</sup> January 2007 and 31<sup>st</sup> December 2011. The study used secondary data to construct a portfolio consisting of 8 high performing securities with optimal portfolio. The portfolio was compared to the NSE 20 share index. The data collected to measure performance included share prices at the beginning of every month ( $P_0$ ), the share prices at the end of every month ( $P_1$ ), and the amount of dividend issued ( $D_1$ ). The return on the portfolio was computed and the standard deviation was used as the risk measure. The result was that the optimal portfolio was seen to outperform the market portfolio.

## **2.5 Summary of Empirical Review**

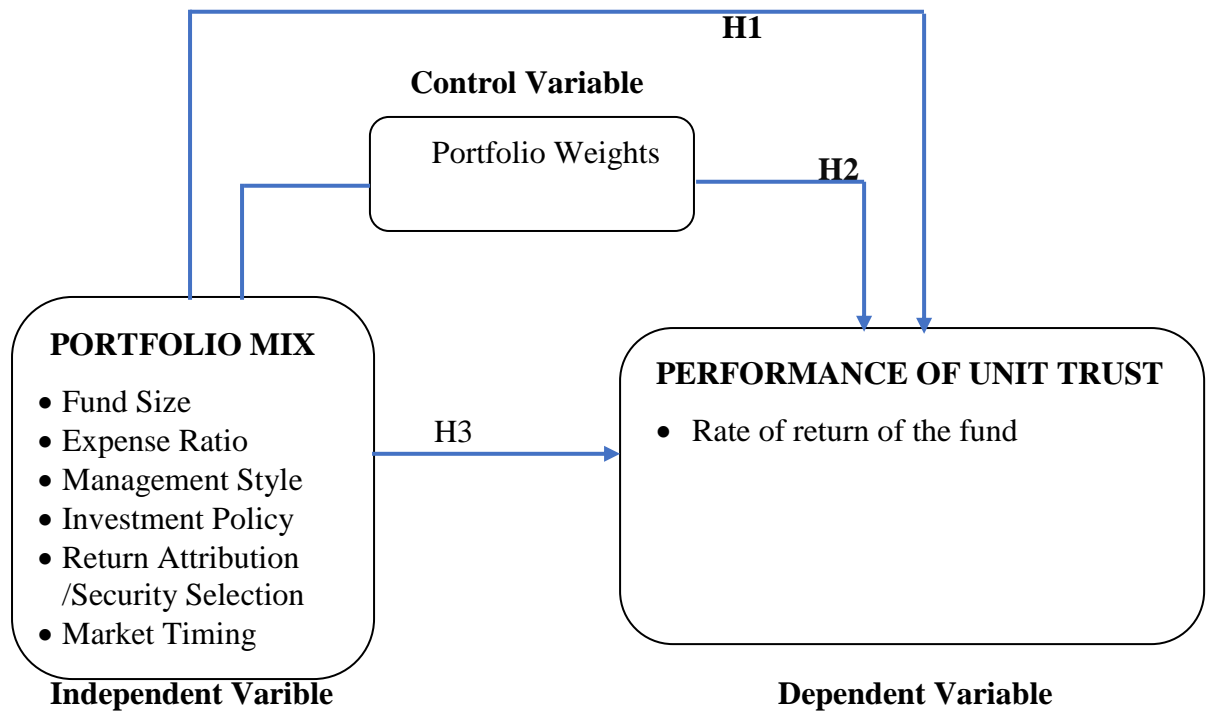
In summary, unit trust investments are a relatively new in Kenya, having been launched by CMA in the early 2000s. Consequently, most of the studies carried out on portfolio mix and performance of unit trust funds have been in developed countries. From the above review of literature, it's evident that determinants of performance of unit trusts might include: expense ratio, fund size, investment style and portfolio diversification. It is also evident that there are limited empirical studies on effects of portfolio mix on performance of unit trusts in Kenya.



**Table 2.1: Empirical studies and Research Gaps**

<b>Author(s)</b>	<b>Topic and Objective</b>	<b>Methodology</b>	<b>Findings</b>	<b>Research Gap (s)</b>
Kirkegaard (2019)	The application of MPT with an objective of investigating if an investor can apply MPT to achieve higher returns than investing in an index portfolio.	Used historical data from Stockholm Stock Exchange. The index reflected the market as a whole and the portfolio was reweighted at a preplanned schedule, each to obtain an optimal risky portfolio.	The results indicated that the actively managed portfolio outperforms the passive benchmark during the selected time frame. Performance is significantly affected by the specific investment skills of fund managers, as it allows fund managers to outperform in any market condition.	This study was conducted in a developed country whose economic conditions differ from Kenya
Roll and Ross (2012)	The daily returns on NYSE and American Stock Exchange (AMEX) stocks between 1962 and 1972.	The analysis use monthly data from the Swiss stock exchange over the period 1986-2000. They used index data from the industrial sector, as well as macro-economic data.	They found that the returns of Swiss stocks are influenced by both global and local economic conditions. Statistically determined factors can give a better representation of the determinants of stock returns than macroeconomic variables.	The study used monthly data over the period 1986-2000 which is quite a long time ago.
Buster (2017)	The relationship between asset allocation and financial performance in Kenya.	Primary qualitative data used. Content analysis method	Found that there is a difference between the performance of unit trusts and market expectations.	This was a comparative analysis between expectation of fund managers and actual output
Omony (2017)	The effects of risk aversion on unit trust holders in Kenya	Quantitative data of unit trust holder. Regression analysis used	Equity funds were out-performed in the NSE-20 stock index, while the money market fund, on the other hand, exceeded the 91-day treasury exchange rates. Risk and return are the key considerations in investment practices	The focus of this study was behavior aspects of risk aversion and not portfolio mix
Were (2014)	To test weekly returns at the NSE. The objective was to test the validity of the capital asset pricing model on the NSE.	Historical data of weekly return, of the 20 NSE listed firms, for 2005 to June 2012 was used. Firms grouped into 4 portfolios of 5 and returns analyzed using descriptive analysis. Quantitative analysis techniques applied	The portfolio with the highest beta also had the highest return and the portfolio with the lowest beta had the lowest return and higher risks are associated with higher returns. The conclusion of the test was that investors and market regulators should take risk-return tradeoffs into account when making investment decisions.	Focus was on testing CAPM using weekly returns at NSE but not the other investment options

**Figure 2.1 Conceptual Framework**



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the research methodology to be used in the study. It begins with a research design, followed by the population and sample size, then the data collection and finally data analysis.

#### **3.2 Research Design**

The research design used in this study was a descriptive survey. Satchel and Scowcroft (2010) explains that a research design is a profile of persons, events or situations, while Mugenda & Mugenda (1999) states that surveys are conducted to establish the nature of the existing condition. This design provided a means to gather, analyze and interpret the effect of portfolio mix on the performance of unit trust investments in Kenya.

#### **3.3 Population and Sample**

Target population of this study comprises of 16-unit trusts registered under the Capital Markets Authority Cap. 485A. The 16 approved unit trusts also formed the study sample hence a census survey was conducted in this study. The research examined the Statement of Comprehensive Position (SOFP) of all the 16 registered unit trusts. For sampling purposes, the research used trusts that were in existence for at least 10 years for the purposes of accessing consistent data from the NSE database. The law regulating investment of unit trust in Kenya was enacted 10 years ago, hence the choice of ten year period.

### **3.4 Data Collection**

Secondary data was collected and used for the study. Financial reports and analytical data was collected, reviewed for consistency and analyzed. Data on performance of unit trusts includes net asset value, average yield and total fund, equity fund allocations, initial investment amount by unit trusts was collected from the respective unit trusts firms for the annual period from year 2009 to year 2019. Data on estimate of dividend received on the market portfolio and the NSE 20 share index was collected from the Nairobi Securities iexchange (NSE). The NSE 20 share index was used, as it is more representative of the information required.

### **3.5 Diagnostic Tests**

The data was coded in Microsoft excel and cleaned for consistency before being uploaded on to SPSS. Multi-collinearity tests were done to ascertain the quality and suitability of the data for regression analysis. Tests of normality were also conducted. The study variables were also exposed to the following diagnostic tests, including homogeneity, homoscedasticity, autocorrelation and multicollinearity so as to make it possible apply correlational and multiple regression techniques as data analysis tools and methods.

### **3.6 Data Analysis**

The data collected from each one of the registered unit trusts was quantitative in nature. A comparable model was used by both Nguthu (2009) and Omondi (2013). In this study, the data was analyzed using Statistical Package for Social Sciences (SPSS). Proportions were numerically determined and classified during the analysis. Both correlation and descriptive statistics analyses were conducted followed by regression analysis. The study employed the most widely used Jensen's model to calculate the risk-adjusted returns with the following regression model:

### 3.6.1 Analytical model

$$R_{ut} = \alpha_i + \beta_1 (FS) + \beta_2 (ER) + \beta_3 (MS) + \beta_3 (IP) + \beta_3 (SS) + \beta_3 (MT) + \varepsilon_{it} \dots \text{I}$$

The control effect of portfolio weights were tested using the equation below

$$P_w = \alpha_i + \beta_1 (FS) + \beta_2 (ER) + (FS \times ER) + \varepsilon_{it} \dots \text{II}$$

Where:  $R_{ut}$  = Rate of return of the trust  $i$  at time  $t$  (dependent variable),  $P_w$  = Portfolio Weight,  $FS$  = Fund Size,  $ER$  = Expense Ratio,  $MS$  = Management Style,  $IP$  = Investment Policy,  $SS$  = Security Selection,  $MT$  = Market Timing,  $\beta_i$  = Coefficient of systematic risk of fund  $i$ /Portfolio beta,  $\alpha_j$  = (Jensen's alpha) reflects the risk-adjusted performance of fund  $i$ ,  $\varepsilon_{it}$  = Random error.

### 3.6.2 Operationalization of Variables

The dependent variable Performance of Portfolio mix was operationalised as  $R_u$ . The independent variable portfolio mix was operationalized to include the following indicators: Fund Size (FS), Expense Ratio (ER), Management Style (MS), Investment Policy (IP), Security Selection (SS) and Market Timing (MT). The table below summarises the operational terms of the study.

**Table 3.1: Operationalization of variables**

	Variable	Indicator	Operational Term
Dependent	Financial Performance	Rate of Return	$R_{ut}$
Independent	Portfolio mix	Fund Size	FS
		Expense Ratio	ER
		Management Style	MS
		Investment Policy	IP
		Security Selection	SS
		Market Timing	MT

### **3.6.3 Test of significance**

Two tailed Chi-Square itests were performed to measure the levels of statistical significance of the variables. Stepwise regression analysis was then carried out to determine the correlation and overall effect of each of the independent variables on the dependent variable.

## **CHAPTER FOUR**

### **ANALYSIS PRESENTATION AND DISCUSSION OF FINDINGS**

#### **4.1 Introduction**

This chapter presents the findings of the study. It covers the analysis of data and a discussion of the results. The study focused on how portfolio mix affects the financial performance of unit trust funds. Secondary data was collected and analyzed in this study. This chapter is categorized into four sections. Section one is this section which contains the introduction. Section two presents the general characteristics of the data collected. The general characteristics section comes before other sections because it affirms whether the information was adequate and satisfactory. Section three presents the analysis of the data. The area incorporates how the analysis of data was conducted. SPSS Version 23 was used to analyse the data. Reliability analysis was conducted to check for any inconsistencies and ensure normality, balance of variances and linearity. The information collected satisfied each of the assumptions and requirements for data analysis.

The initial phase of the analysis was through descriptive measures. This was accomplished using SPSS where mean, maximum, minimum and standard deviation were tabulated. Secondary data was acquired from reports and material from different unit trust asset managers. The unit trust asset managers submitted data of 16 unit trust fund managers. The data was compiled and data for all the 16 Unit trust funds were found to be valid. The data was in five main categories of determinants of portfolio performance, growth in fund size, expense ratio, portfolio management, market timing, return attribution/security selection and investment policy. The researcher classified the returns into four equal periods of a financial year (quarterly). This is because the unit trust funds managers' report quarterly to the investors. Therefore the researcher found it important to capture the performance of the portfolio mix at

the reporting periods. Descriptive statistics, regression and inferential statistics were used to interpret the data. The asset value ranged from Kshs. 1 million to 2 billion.

The secondary data collected was examined for trends and special characteristics. The data was later classified based on specific features. According to Rogelberg and Stanton (2017) classification of secondary data into groups makes it easy to carry out analysis on the data. Ibid (2018) furthermore argue that secondary data has more meaning when categorized into groupings based on the objectives of the analysis. The secondary data collected in this research was appropriate for drawing conclusions on the study objectives.

Before conducting descriptives, the researcher proceeded to test for reliability. Reliability is a proportion of how much research instruments yield predictable outcomes after rehashed preliminaries. Reliability is impacted by irregular error with the end goal that as arbitrary mistake expands, unwavering quality declines. Reliability of the examination instrument was resolved utilizing the size of Cronbach's coefficient alpha. Cronbach Alphas in our examination for all of the variables were as exhibited in Table 4.1.

**Table 4.1: Reliability Tests**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.936	.935	16

The estimation of Cronbach's alpha for autonomous factors is above 0.936, which implies that the constructs were solid for predicting financial performance of the different asset classes. Additionally, the Cronbach's Alpha qualities for portfolio size and the dependent variable, Performance (Return on Investment), were 0.935. This implies that individual constructs were reliable for measuring the parameters of 16.



## 4.2 Descriptive Statistics

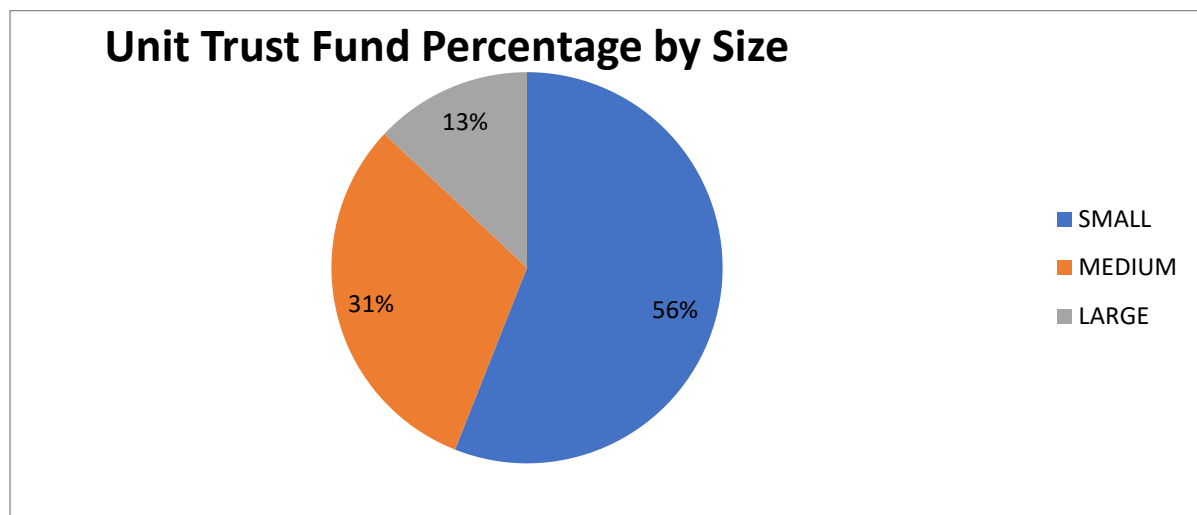
For confidentiality reasons the fund managers could not reveal the names of the unit trust asset classes. The researcher therefore coded the unit trust asset classes from U.T<sub>1</sub> to U.T<sub>x</sub>. Cross tabulation results indicate that all theselected unit trust fund manager (firms) had an asset value more than Kshs. 1 billion. Unit Trust funds with asset value above 1 billion are categorized as large unit trust funds and therefore all were large.

**Table 4.2: Size Categorization of Participating Unit Trusts**

Size of the Unit Trust fund	Market Value (Kshs. M)	Number of Unit Trust funds	Unit Trust fund percentage	Asset percentage	AUM in(Kshs. M)
<b>SMALL</b>	≤ 100	0	0%	0%	-
<b>MEDIUM</b>	100 - 999	0	0%	0%	-
<b>LARGE</b>	≥ 1,000	16	100%	100%	40,678
<b>TOTAL</b>		16	100		40,678

Source: Author (2021)

**Figure 4.1: Unit Trust Fund Percentages by Size**



Source: Author (2021)

Six determinants of performance of unit trust fund were analysed different indices, logs and industry standards were used. The minimum, maximum, mean and standard deviation scores

were generated from SPSS outputs and transferred to this word document. Table 4.3 below shows the results for the descriptive statistics.

**Table 4.3: Descriptives**

	N	Minimum	Maximum	Mean	Std. Deviation
FUND SIZE	16	6.5551	7.3374	7.0825	.20141
EXPENSE RATIO	16	.001	.200	.06994	.060975
MANAGEMENTSTYLE	16	6.5551	7.3373	7.0379	.2602
TIMING	16	42.0	53.0	47.750	3.0876
RETURN ATTRIBUTION	16	.1215	.6545	.3122	.1530
INVESTMENT POLICY	16	.10	.83	.3663	.17977
FINANCIALPERFORMAN CE OF UNIT TRUST FUNDS (LOG ROI)	16	2.084	8.084	5.4114	2.162530
Valid N (listwise)	16				

The first determinant of unit trust performance is Fund size. It refers to the total monetary value of fund invested in different assets classes in unit trust. Table 4.3 shows the fund size for all the selected unit trust asset managers (Firms). Natural log of fund sizes were used the analyses descriptive for fund size. The results in table 4.3 above show that the mean size of the portfolios of all the unit trust fund managers (firms) was 7.0825. The maximum size in the list of unit trust fund managers (firms) was 7.3374. This implies that majority of the unit trust fund managers (firms) were more established and had good financial strength owing to the high mean fund size. Fund size is an important aspect in the management and investment of unit trust funds in the capital market. It promotes diversification of risks.

According to Dasgupta et al, (2019) argue that fund size improves the cash outlay of unit trust investments thus allowing the funds to invest with positive return on investments. Markowitz (2016) indicated that the weighing of individual unit fund asset classes inside the portfolio is fundamental. The weight that a portfolio manager dispenses to a given unit trust asset class in a portfolio makes commitment to refunds that is similarly as critical as the investment decision and speculations timing decisions.

Bigger fund sizes enjoy economies of scale they can spread risks across a wider membership base allowing them to give members a bigger return. It is the major concern of all financial institutions to minimize cases of non performing investments. This will reduce cases of such investments affecting financial performance. A lower rate of nonperforming investments to total investments shows that the unit trust is performing well. The manner (style) at which unit trust managers allocate finances among investment channels matters most on total performance, (Stamati, 2013).

The second indicator of performance under investigation was the expense ratio. The lower the expense ratio, the better the performance of the asset class. The recommended ratio of expense to total value of assets for unit trust funds is 0.5. Results in table 4.3 above show that the mean expense ratio in the unit trust funds was 0.69, 0.19 units above the ideal ratio of 0.5. The maximum ratio was 0.20 and the lowest was 0.01. This implies a low expense risk in the unit trust funds. According to Kipkoech (2020), the expense ratio of unit trust funds is exceptionally important in deciding performance.

The third independent variable under investigation is management style. Management styles differ from one asset manager to another. Results in Table 4.3 show that the mean management style value was 7.03. The maximum value was 7.33 whereas the minimum value was 6.55. This implies that the management style have different variations that largely depend on the investment objectives of the fund manager. Most of the unit trust funds had high returns indicating that returns from the asset classes were relatively stable. Murgor (2021) observed that risk factors demonstrated through the fund managers' styles of management determine the rate of return. The more risk averse the unit trust portfolio is the the higher the rate of return and vice versa.

Market timing was the fourth variable to be investigated. Market timing enables fund managers to invest at low season with expectation of high returns at high seasons. The value for market timing greater than one shows the high opportunities for future returns through speculations. A value that is too high may indicate that the fund manager is not efficiently using his/her predictive ability and market knowledge to project expected future returns from a given asset class. The results in Table 4.3 above show that value of market timing is 47.75. The maximum score was 53 while the minimum score was 42. The mean is neither high nor low. It is moderate and therefore an indication that that the predictive power of the fund mnagers is fair.

The fifth independent variable under investigation was return attribution. Return attribution are simple security measures to caution investors against unprecedented losses. The ratios of return attribution to total value of all asset classes have to be 1:1 for good performance. The results in table 4.3 above show that the mean value of attribution of return for the unit trust funds is 0.3122. The maximum is 0.6545 whereas the minimum attribution is 0.1215. This implies that unit trust investments have high mitigation and security against unexpected risk factors. This can be riskous for the unit trust fund managers (firms) as they may resort to borrowing in order to top up when carrying out capital intensive projects. According to Payet, (2011), the higher the the return attribution, the more reliable the unit trust fund manager (firm) is.

The sixth and final predictor of performance was investment policy. Investment policies are the rules and regulations affecting investment decisions of an asset manager in the capital markets. Every unit trust asset manager operates within some policy framework. The investment policies are rated by regulators ranging from 0 to 1. The higher the industry rating, the better the investmet policy. From the table 4.3 above, the mean score for investment policy was 0.36. The

maximum score was 0.83 while the minimum score was 0.1. The mean score is on the lower end of the half implying that the investment policies of the unit trust firms are not so good.

Fund performance was measured using natural log of Return on investments. The results indicate the mean performance was 5.41 and the standard deviation was 2.16. This shows that the performance of Unit Trust funds was above average especially given that the maximum performance score was 8.0840 and the minimum performance score was 2.0840.

### **4.3 Diagnostic Tests**

This study used multiple linear regression equation to test the impact of the independent variable on the predictor variable. Nonetheless, conducting the analysis, it was important to conduct diagnostic tests to meet the fundamental presumptions of the study variables. Assumptions of normality, homogeneity of variance, linearity and multi-collinearity were considered before settling on the decision to use multiple linear regression. Diagnostic indicative tests included tests for normality, linearity, homoscedasticity and multi-collinearity. The tests and results are therefore discussed below.

#### **4.3.1 Normality Test**

The study tested for normal allocation by using the Shapiro-Wilk test. A data is normally distributed when the test is non-significant ( $p > 0.05$ ) (Razali & Wah, 2017). Table 4.4 shows the result of normality test as were tested.

**Table 4.4: Shapiro- WilkTest**

	Category	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Performance of Unit Trust Funds (Log ROI)	Large	.142	12	.200*	.897	12	.143
	Medium	.171	16	.200*	.955	16	.572
	Small	.340	5	.060	.781	5	.057

This is a lower bound of the true significance.

Lilliefors Significance Correction

Source: Author (2021)

Results in table 4.4 shows that the exploration factors had Shapiro-Wilk Test insights going from 0.781 to 0.955. Additionally, the relating p-values for every factor were all more than .05. Consequently, the investigation reasoned that the information was typically normal.

### 4.3.2 Linearity Test

Linearity tests included making a presumption that there exists a linear connection between the dependent variable and the indicator factors. To meet this assumption, linearity test was tried as prescribed by Greene (2018) and Cohen, West and Aiken (2016). The linearity estimates included testing for the degree of the deviation from linearity. Testing for the importance of deviation from linearity proposed testing the null hypothesis that deviation from linearity isn't enormous. The decision is to dismiss the null hypothesis at the point where point p-value is under .05. The last strategy was utilized and the outcomes were tabulated as shown in table 4.5.

**Table 4.5: Linearity Test**

N	Significance of deviation from Linearity (p-values)	Observation	Conclusion
Fund Size	.985	Deviation from Linearity not significant	Linear
Expense Ratio	1.178	Deviation from Linearity not significant	Linear
Management Style	.993	Deviation from Linearity not significant	Linear
Market Timing	1.355	Deviation from Linearity not significant	Linear
Return Attribution	0.995	Deviation from Linearity not significant	Linear
Investment Policy	1.007	Deviation from Linearity not significant	Linear

Source: Author (2021)

Table 4.5 demonstrates that all the predictor factors, deviation from linearity was not tremendous since all the p-values were more perceptible than .05. This proposed there is a straight relationship between the dependent and predictor.

### 4.3.3 Homoscedasticity Test

Homoscedasticity or homogeneity of instability recognize that the distinction in the dependent variable is simply the corresponding at all segments of the independent variable. This test performed utilizing Levene's test. This measurement estimates regardless of whether the variance between the reliant variable and free factors are the equivalent. In the event that the test isn't huge (determined likelihood  $\geq 0.5$ ), the two variances are not fundamentally extraordinary and along these lines roughly equivalent (Gastwirth, Gel and Miao, 2020). Results are as shown in table 4.6.

**Table 4.6: Homoscedasticity Test Based on Category as a factor**

	Levene Statistic	df1	df2	Sig.	
Performance Of Unit Trust Funds (Log ROI)	Based on Mean	.025	2	30	.975
	Based on Median	.086	2	30	.918
	Based on Median and with adjusted df	.086	2	22.49 7	.918
	Based on trimmed mean	.019	2	30	.981
	Based on Mean	.025	2	30	.975
	Based on Mean	.025	2	30	.975

Source: Author (2021)

Tables 4.6 shows that the factors have Levene's measurement whose p-values are more than .05. This means the differences of the dependent variable over all dimensions of the factors were equivalent. Warner (2015) suggests that the likelihood for the Levene's measurement ought to be greater than .05 to meet the variance homogeneity requirement. Thus, the homoscedasticity assumption is fulfilled. Based on these findings the data collected is appropriate for the study.

#### **4.3.4 Multicollinearity**

Multicollinearity included deciding if there is connection between the investigation factors separated from the dependent variable. Multicollinearity expands the standard mistakes of the coefficients. Subsequently, it makes a few factors measurably inconsequential while they ought to be generally huge. The effect of multicollinearity was built up utilizing Tolerance values and Variance Inflation factors (VIF). As illuminated by Field (2016), a little obstruction regard exhibits that the variable under idea is practically a perfect straight mix of the free factors starting at now in the condition and that it should not be added to the backslide condition. Regardless, an opposition estimation of under 0.1 indicates proximity of multicollinearity. VIF measures how much changes of the independent variables are



correlated with the dependent variable. From SPSS analysis, if no two independent factors are connected, all the VIFs are 1. If the VIF for one of the variables is greater than or equal to 5, there is multicollinearity related with that variable and, in this manner, the variable must be removed from regression model (Field, 2019).

**Table 4.7: Collinearity**

Model	Collinearity Statistics	
	Tolerance	VIF
Fund Size	.878	1.142
Expense Ratio	.735	1.360
Management Style	.674	1.483
Market timing	.946	1.139
Return Attribution	.851	1.128
Investment Policy	.894	1.057

a. Dependent Variable: Fund Size

Source: Author (2021)

Table 4.7 shows that all the VIFs of the factors are below 10 and all the tolerance values are more than 0.1 separately. As per Landau and Everitt (2015), VIFs values that are between 1 and 10, and tolerance values that lie above 1 indicate the absence of multicollinearity. A high VIF was seen in Fund Size (VIF = 1.483) while a small value of VIF was seen in Investment policy (VIF = 1.057). Management style had the minimum tolerance value at 0.674 and market timing had the highest tolerance value at 0.946. This infers that there was no multicollinearity and along these lines all the indicator factors were retained in the regression equation, as this is predictable the edge suggested by Everitt (2014).

#### **4.4 Regression Model Analysis**

Regression analysis was done on the dependent and independent variables to establish the relationship between performance and the independent variables of: fund size, expense ratio,

management style, market timing, return attribution and investments policy. The regression model summary, coefficients and ANOVA tables are shown below:

**Table 4.8: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.990 <sup>a</sup>	.980	.967	.391104

a. Predictors: (Constant), INVESTMENT POLICY, TIMING, MANAGEMENT STYLE, EXPENSE RATIO, RETURN ATTRIBUTION, FUND SIZE  
Source: Author (2021)

**Table 4.9: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.771	6	11.462	74.933	.000 <sup>b</sup>
	Residual	1.377	9	.153		
	Total	70.148	15			

a. Dependent Variable: FINANCIALPERFORMANCE OF UNIT TRUST FUNDS  
b. Predictors: (Constant), INVESTMENT POLICY, TIMING, MANAGEMENT STYLE, EXPENSE RATIO, RETURN ATTRIBUTION, FUND SIZE

According to Table 4.9, the variation between the groups sum of squares was 81.408; with degree of freedom df (5);  $F(5, 27) = 33.201$ ;  $P < 0.00 < 0.05$ ; therefore there was significant relationship between the dependent and independent variables.

**Table 4.10: Model Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.548	12.470		.044	.000
	FUND SIZE	3.250E-7	.000	.943	4.029	.003
	MANAGEMENT STYLE	.299	1.949	.036	.153	.060
	TIMING	.021	.041	-.030	-.522	.000
	EXPENSE RATIO	.643	1.739	.018	.370	.000
	RETURN ATTRIBUTION	.444	1.005	-.102	-1.436	.001
	INVESTMENT POLICY	.195	.758	.016	.257	.315

a. Dependent Variable: FINANCIALPERFORMANCE OF UNIT TRUST FUNDS  
Source: Author (2021)

From table 4.10, 98% of the performance of Unit Trust funds is explained by fund size, expense ratio, market timing and return attribution. Management style and investment policy ( $p > 0.05$ ) are insignificant and therefore omitted in the resultant model. The other 2% is explained by factors not investigated in this study. From table 4.10 above, it is clear as the coefficient indicates that fund size contribute significantly to the returns on investment (ROI). Management style and investment policy with p-values greater than 0.05 are therefore insignificant should be omitted from the regression model. The resultant regression model is as shown below.

Model 1:

$$R_{ut} = \alpha_i + 3.250(FS) + 0.643(ER) + 0.021(MT) + 0.444(SS) + 0.548$$

The control effect of portfolio weights were tested using the equation below

Model 2

$$P_w = \alpha_i + 3.250(FS) + 0.643(ER) + (FS \times ER) + 0.548$$

#### **4.5 Discussion of Findings**

Financial performance of unit trust funds in Kenya is greatly influenced by the fund size, expense ratio, market timing and return attribution. Based on the analysis conducted on the data collected and analysed fund size, expense ratio, market timing and return attribution significantly affect performance of unit trust funds. The influence is positive. This supports the capital market theory that the financial performance of an investment portfolio depends on its size, timing, selection and the level of risk (expense). Bodie et al (2015) indicates that on the basis of average returns appears to favour investor with a reasonably large capital outlays (fund size). This has been confirmed by the analysis with fund size having a significant p-value of 0.00.

Similarly the findings concur with those of Marshall (2020) that timing and selection of the right security determines the return attributed to a portfolio mix. Marshall studied the effect of macro-economic factors on performance of individual securities at the Johannesburg Stock Exchange. The findings showed that timing enables stock brokers and investors to buy when prices are low and sell when prices are high. Timing also enables the asset managers to dispose when prices are likely to be affected by macro-economic uncertainties.

Expense ratio was found to be significant at  $p < 0.05$ . This implies that expense ratio affects performance of unit trust funds. With the beta value of 0.025, there exists a significant positive relationship between expense ratio and financial performance of unit trust funds. The findings confirm Onyango (2019) statement that the lower the expense ratio, the higher the rate of return and vice versa. Karanja (2011) study found out that most unit trust portfolios had low expense ratios because of the different classes of assets involved. From the analysis, this may have been an attempt to ensure they achieve higher returns from the pressure by the investors of the unit trust funds.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents the summary of findings, conclusions and recommendations. It also presents the limitations of the study and suggestions for further research. Section 5.2 presents the summary of findings, section 5.3 presents the conclusions, section 5.4 presents the limitation and finally the suggestions for further research is presented in section 5.5

#### 5.2 Summary of Findings

This study sought to find out the effect of portfolio mix on the financial performance of unit trust funds in Kenya. The study further examined how the different factors (determinants) affect the performance of unit trust funds in Kenya. Six unit trust investment factors were identified and studied: fund size, expense ratio, portfolio performance, timing, return attribution and investment policy.

Some studies that have been reviewed in this paper suggest that indeed the fund sizes held by unit trust investors in Kenya have an effect on their financial performance. The objective of this study was to present logical and empirical evidence on evaluation of financial performance of unit trust funds in Kenya.

From the inferential analyses, four variables were significant at p-values less than 0.05. This shows that they significantly affect performance of unit trust fund at different intensities. All the Beta values were positive, implying that the influence is positive. The significant variables were: Fund Size ( $p=0.03$ ), expense ratio ( $p=0.00$ ), market timing ( $p=0.00$ ) and return attribution ( $p=0.01$ ). The beta values for each of the variables were 3.250, 0.195, 0.021, 0.444

for fund size, expense ratio, market timing and security selection respectively. Management style and investment policy were insignificant and therefore omitted from the resultant regression equation. This implies that policy and style of management do not determine the returns on unit trust investments.

Based on the data metrics used, the mean scores for each of the significant variables were 7.0825, .06994, 47.750, .3122, for for fund size, expense ratio, market timing and security selection respectively. The mean score for management style and investment policy were 7.0379 and .3663 respectively. This implies that all the variables had mean scores higher than the ideal mean for each of the metrics used.

### **5.3 Conclusion**

The study focused on possibility of enhancing the proficiency of unit trust investments to accomplish their definitive goal of profit (Return) maximization by considering the correct components that will increase income to unit trust investors. This is done in light of the dynamic unit trust investment requirements and risk factors.

From the study findings, Investment policy and management style are less significant on performance of Unit trust investments. Market timing was most significant (p-0.00) followed by return attribution (p-0.01). Expense ratio and Fund size both with p-values of 0.02 were also found to significantly affect financial performance of unit trust funds.

From the research findings portfolio mix significantly affects the financial performance of a unit trust funds in Kenya. Hence it is extremely basic for unit trust investors to consider the asset mix in the funds during their investment decisions.

## **5.4 Recommendations**

Based on this study, it is clear that both investors and unit trust fund managers need to acquire some financial management knowledge in order to properly oversee the management of the of the unit trust funds. Investors need to bear in mind that knowlagable asset managers are able to predict future expected returns and use their market timing abilities to sound investment decisions for maximum returns. Investors may need to ensure that unit trust fund managers need to have integrity and proper governance skills. The unit trust holder (Firms) must also invest in their clients by conducting regular investor education, seminars and trainings. An educated investor will put the fund managers/asset manager to task on the performance of theunit trust fund. Through education, investors will know how they can improve performance through diversification of the investments in order to spread risks.

The unit trust holders (Firms) must lobby for fair tax systems to the investors in order to promote an investment culture in the capital markets. These include introducing tax exemptions especially for special investors such as the youth and college students. Unfavaurable tax systems are the greatest impediment to the growth of the unit trust sector. The introduction of capital gains tax amidst small gains discouraged investors from investing in unit trust.

There is need for the regulator and industry palyers to introduce different investment options to encourage low and middle income earners to benefit from the investment opportunities presented by unit trust. Unit trust investments require huge capital outlays and therefore not affordable to low and middle income earners. Most investors in the unit trust schemes are elites with considerable ammounts of capital, hence no level playing field for all leading to denial of equal opportunities for low and middle income earners.

## **5.5 Limitations of the Study**

As with any research, this study had a range of challenges. The data used was secondary data availed by unit trust holders (Firms). Some of the data received were not complete; some had the overall return missing, the total asset value not indicated or one period return not included. The researcher therefore had to discontinue analyzing the data of the unit trust records that had some of the data missing.

It would have been much better to consider data over a long period of time say 10 years, bearing in mind that unit trustfund are considered long term investments. The researcher had limited time and funds to collect the information. Most of the unit trust holder firms lacked proper records of archived data therefore making it very difficult to retrieve the historical data. Due to confidentiality, it was difficult to get more information on the decision of the performance records to use. It was also difficult to gather specific asset managers' views. Due to the sensitive nature of the research topic some schemes were reluctant to provide the required data and even those that gave the information concealed some facts. This delayed the response. There was some impression of fear among the sources of secondar data due to the unknown.

## **5.6 Suggestions for Further Research**

There is need for further research on the impact on mandates to the unit trust fund managers by the investors, asset management styles, asset classes and approaches. The researchers should look at the effects of the discretionary and non-discretionary investment mandates to the unit trust fund managers. That is the level of freedom (discretion) given to a fund manager by the investor to invest the funds in accordance with the fund managers best investment view. In many instances broad parameters were set by the investors but the fund managers had complete



autonomy in the investment decision making. Significant volatility was noted on Leverage for large unit trust funds. This was unusual. There may be need to investigate the reason for the big range in returns on Leverage for large unit trust funds.

It would also be interesting to find out the relationship between level of education and investments in Unit trust. There is a general notion that those who invest in unit trust are only those who have gone to school to a certain level and are therefore well informed of how unit trust investments work. It is a preserve of the educated few.

One may also want to research on the financial performance of segregated unit trust funds compared to guarantee or self-administered unit trust funds. It will also be interesting to find out the effect of the recently introduced capital gains tax (CGT) on the financial performance of unit trust funds.

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## **APPENDICES**

### **Appendix 1: Registered Unit Trusts In Kenya**

1. African Alliance Kenya Unit Trust
2. Alpha Africa Asset Managers
3. Amana Unit Trust Funds Scheme
4. Apollo Asset Managers
5. British-American Unit Trust
6. CFC Unit Trust Fund
7. CIC Unit Trust Scheme
8. Commercial Bank of Africa Unit
9. Co-operative Trust Investment Services Limited
10. Cytonn Asset Managers
11. Diaspora Unit Trust Scheme
12. Dry Associates
13. Dyer and Blair Unit Trust Scheme
14. Equity Investment Bank
15. First Ethical Opportunities Fund
16. Genghis Capital

17. ICEA Unit Trust Funds
18. Madison Asset Unit Trust Funds
19. Nabo Capital (Centum)
20. Old Mutual Unit Trust
21. Sanlam
22. Stalib
23. Stanbic Unit Trust
24. Standard Investment Trust Funds
25. Suntra Unit Trust Scheme
26. Zimele Unit Trust Scheme

**Appendix 2: Data Analysed**

<b>INDIVIDUAL SCHEME</b>	<b>CATEGORY</b>	<b>FUND SIZE</b>	<b>PORTFOLIO MANAGEMEMENT (LOG/INDEX)</b>	<b>TIMING (INDEX)</b>	<b>EXPENSE RATIO</b>	<b>RETURN ATTRIBUTION (INDEX)</b>	<b>INVESTMENT POLICY (INDUSTRY RATING)</b>	<b>FINANCIAL PERFORMANCE</b>	<b>FINANCIAL PERFORMANCE OF UNIT TRUST FUNDS (LOG ROI)</b>
African Alliance Kenya Unit Trust	LARGE	20,944,613	7.32107234	47	0.011	0.311	0.41	134647	8.084
Alpha Africa Asset Managers	LARGE	18,949,175	7.277590307	44	0.111	0.211	0.38	154647	7.884
Amana Unit Trust Funds Scheme	LARGE	21,746,374	7.337386853	51	0.072	0.472	0.51	234647	8.084
British-American Unit Trust	LARGE	17,784,520	7.250042148	45	0.101	0.201	0.41	104647	7.084
CFC Unit Trust Fund	LARGE	16,995,948	7.230345394	45	0.009	0.199	0.42	184647	7.011
CIC Unit Trust Scheme	LARGE	16,207,376	7.209712708	46	0.004	0.199	0.23	194647	7.596
Commercial Bank of Africa Unit	LARGE	15,418,804	7.188050688	45	0.003	0.189	0.18	204647	6.084
Dyer and Blair Unit Trust Scheme	LARGE	11,475,944	7.05978842	53	0.121	0.1215	0.28	254647	5.084
First Ethical Opportunities Fund	LARGE	9,898,005	6.995547669	50	0.04	0.6545	0.83	124647	4.084

ICEA Unit Trust Funds	LARGE	8,321,656	6.920209759	50	0.001	0.1818	0.1	154647	4.084
Madison Asset Unit Trust Funds	LARGE	7,533,084	6.87697281	48	0.111	0.4345	0.21	84647	3.084
Old Mutual Unit Trust	LARGE	5,955,940	6.774950314	48	0.1	0.4727	0.61	94647	3.084
Sanlam	LARGE	5,167,368	6.713269391	49	0.2	0.3636	0.31	174647	3.084
Stalib	LARGE	4,378,796	6.641354713	42	0.138	0.174	0.41	124647	3.084
Stanbic Unit Trust	LARGE	3,590,224	6.555121546	49	0.005	0.3284	0.35	164647	2.084
Standard Investment Trust Funds	LARGE	18,016,525	7.255671029	52	0.092	0.4827	0.22	134647	7.084