

**FIRM CHARACTERISTICS, INFLATION AND YIELD OF UNIT TRUSTS IN  
KENYA**

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## DECLARATION

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This thesis is my original work and has not been presented for a degree in any other University

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## **DEDICATION**

Dedicated to my wife Sylvia, Children Terence, Tracy, Trevor and Tiffany for their love.

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## OPERATIONAL DEFINITION OF TERMS

**Affiliation:** Refers to the ownership relationship between a unit trust fund and its parent institution. In this study, affiliation was categorized as bank-affiliated, insurance-affiliated, or independent, and was used to assess how institutional ownership influences fund yields.

**Benchmark:** Refers to the reference rate used to evaluate the performance of unit trusts. In this study, benchmarks included the annual interest rates of the 91-day Treasury bill, bank savings rates, bank deposit rates, and longer-term Treasury bonds, which were used as comparative indicators of fund performance.

**Effective Annual Yield:** Refers to the total annual return earned by a unit trust, taking into account reinvested income during a 12-month period. In this study, effective annual yield was computed as the annualized total return of each fund, inclusive of reinvested interest.

**Firm Characteristics:** Refers to the intrinsic features of a unit trust that determine its operational efficiency and performance. In this study, firm characteristics comprised management fee, institutional affiliation, and benchmark, which were measured quantitatively through data collection instrument and linked to the conceptual framework as key determinants of yield.

**Inflation:** Refers to the rate at which general price levels rise in the economy over a given period. In this study, inflation was measured using the annual Consumer Price Index (CPI) published by the Kenya National Bureau of Statistics (KNBS)

and served as a moderating variable influencing the relationship between firm characteristics and unit trust yields.

**Institutional Affiliation:** Refers to the classification of unit trust funds based on ownership by banks, insurance companies, or independent managers. In this study, institutional affiliation was treated as a categorical variable and analyzed to determine its effect on fund performance.

**Management Fee:** Refers to costs incurred by the unitholder for a given period. In this study, management fee was calculated as total management fees charged by fund managers for their services and was analyzed to determine its effect on fund performance.

**Yield:** Refers to the annualized income or return generated by a unit trust. In this study, yield was calculated as the total interest income and fair value gains, less total expenses, divided by the fund's Net Asset Value (NAV) over the study period, representing the dependent variable in the conceptual framework.

## ABBREVIATIONS AND ACRONYMS

<b>AERC</b>	African Economic Research Consortium
<b>ASISA</b>	Association savings and investments south Africa
<b>AUM</b>	Assets Under Management
<b>CBK</b>	Central Bank of Kenya
<b>CBR</b>	Central Bank Rate
<b>CMA</b>	Capital Markets Authority
<b>CPI</b>	Consumer Price Index
<b>ETF</b>	Exchange Traded Funds
<b>GDP</b>	Gross Domestic Product
<b>ICI</b>	Investment Company Institute
<b>KNBS</b>	Kenya National Bureau of Statistics
<b>NAV</b>	Net Asset Value
<b>NSE</b>	Nairobi Securities Exchange
<b>OLS</b>	Ordinary Least Squares
<b>T-bill</b>	Treasury Bills
<b>T-Bonds</b>	Treasury Bonds

## ABSTRACT

Investors expect money market unit trusts to deliver above-market returns through professional fund management. However, persistent underperformance compared to benchmarks has eroded investor confidence in Kenya, raising concerns about management efficiency, cost structures, and institutional ownership models, while saddling investors with diminished portfolios and missed investment opportunities. This underperformance can be attributed to various factors, including inappropriate benchmarks, high operational costs, and conflicts of interest. This study examined how firm characteristics—institutional affiliation, benchmarks, and management fees—influence the yield of money market unit trusts in Kenya, with inflation as a moderating variable. The research was guided by a conceptual framework that posited relationships between these variables. The research was guided by Transaction Cost Theory, Deming Benchmark Theory, Cost-Plus Pricing Theory, Keynes's Liquidity Preference Theory and Inflation Quantity Theory. The empirical review of existing literature informed the study's hypotheses and results interpretation. The study adopted an explanatory research design grounded in positivism philosophy, analyzing panel data from 2013 to 2022. From 19 money market unit trusts licensed by the Capital Markets Authority (CMA), 18 funds with complete data were purposively selected (96.6% coverage), generating 280 firm-year observations. Secondary data were obtained from CMA, Central Bank of Kenya, Kenya National Bureau of Statistics, and unit trust performance reports. Diagnostic tests included normality (Shapiro-Wilk), heteroscedasticity (Breusch-Pagan), multicollinearity (VIF), autocorrelation (Wooldridge), stationarity (Levin-Lin-Chu), and model specification (Hausman) tests. Random Effects panel regression models were employed. Ethical clearance was obtained from Kenyatta University and NACOSTI, ensuring data integrity and confidentiality. Results revealed independent funds yielded 1.6189 percentage points higher than bank-affiliated funds ( $p < 0.001$ ), while insurance-affiliated funds yielded 1.4958 percentage points higher ( $p = 0.019$ ). Bank deposit rates ( $\beta = 1.29$ ,  $p = 0.009$ ), 182-day Treasury Bills ( $\beta = 1.00$ ,  $p = 0.001$ ), and 364-day Treasury Bills ( $\beta = 1.99$ ,  $p = 0.003$ ) significantly positively affected yields. Management fees negatively impacted yields ( $\beta = -0.62$ ,  $p = 0.038$ ). Inflation demonstrated direct positive effects ( $\beta = 0.34$ ,  $p = 0.001$ ) and significant moderating effects: Affiliation\*Inflation ( $\beta = -0.07$ ,  $p = 0.015$ ), Benchmarks\*Inflation ( $\beta = 0.14$ ,  $p < 0.001$ ), Management Fee\*Inflation ( $\beta = 0.14$ ,  $p < 0.001$ ). The moderation model's  $R^2$  (8.02%) nearly doubled individual models' explanatory power (4.12%), confirming inflation's meaningful moderating role. The study concludes that institutional affiliation, benchmark choice, management fees, and inflation jointly determine unit trust performance. Recommendations include: CMA should regulate bank-fund conflicts of interest and implement fee transparency requirements; fund managers should optimize institutional structures, select appropriate benchmarks, reduce fees, and develop inflation-responsive strategies; investors should prioritize insurance-affiliated or independent funds, assess inflation-adjusted returns, and evaluate fee-performance relationships. Future research should extend analysis to equity/balanced/bond funds across East African markets, examine additional moderators (interest rate volatility, exchange rates, GDP growth), and employ alternative models (dynamic panel GMM, quantile regression, structural equation modeling) to enhance methodological rigor.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Money market unit trusts serve as professionally managed investment vehicles that pool investor capital into diversified portfolios of short-term debt securities, providing liquidity, capital preservation, and modest income returns (ICI, 2022). These collective investment schemes have become essential components of global financial systems by facilitating efficient capital allocation, in the short-term funding markets, between surplus and deficit economic sectors while offering investors accessible alternatives to traditional bank deposits. (SARB, 2003). These funds are popular among both retail and institutional investors seeking a low-risk cash management tool (Cytton, 2019). The performance of money market unit trusts is primarily measured through yield, defined as the effective annual rate of return generated from total interest income and fair value gains minus operational expenses, expressed as a percentage of Net Asset Value (Lammi, 2022).

The unit trust industry globally represents a rapidly growing sector and significant player in capital markets, with 2022 worldwide net sales of \$673 billion and total assets under management of \$60 trillion (ICI, 2022). The United States dominates with 48% of global assets while Europe accounts for 32% in an industry comprising 137,892 unit trusts worldwide. Money market unit trusts specifically held a 15% market share while equity funds led at 45% of total industry assets (ICI, 2023). The Investment Company Institute (ICI) reported that American money market funds demonstrated operational efficiency

improvements, with average management fees declining from 0.84% in 1996 to 0.42% in 2020, representing a 50% reduction over two decades driven by competitive pressures and economies of scale (ICI, 2021). European money market unit trusts accounted for approximately 32% of global assets in 2022, with concentration in Luxembourg, Ireland, and France under stringent regulatory frameworks emphasizing investor protection through disclosure requirements and operational standards (ICI, 2023).

Research in these markets has revealed complex relationships between institutional affiliation and fund performance. Wang (2023) analyzed Chinese unit trusts from 2003 to 2019 using multivariate regression analysis and found that bank affiliation led to better performance, suggesting strategic advantages from institutional connections including access to proprietary research, distribution networks, and funding sources. However, Ferreira et al. (2017) studied commercial bank-affiliated equity unit trusts globally and concluded that these funds tended to underperform independent counterparts due to conflicts of interest where fund managers prioritized parent bank objectives over investor returns. This contradiction creates uncertainty about whether institutional affiliation advantages or disadvantages dominate in emerging market contexts.

Benchmark selection influences fund performance evaluation and manager incentives. Kazmi (2022) evaluated US sector mutual funds from January 2011 to August 2021 using regression analysis and showed that benchmarked indices offered greater risk-adjusted returns than actively managed sector mutual funds, emphasizing benchmark importance in performance assessment. Clare et al. (2021) analyzed US bond unit trusts from 1998 to 2017 using ordinary least squares regression and found that funds outperformed self-declared benchmarks on both

gross and net bases, demonstrating that appropriate benchmark selection enables accurate performance evaluation.

Management fee structures directly impact investor net returns. Gil-Bazo and Martinez (2021) examined Spanish mutual funds and indicated that higher fees do not necessarily equate to better performance for investors, raising questions about fee-performance relationships. Babalos (2011) examined Greek equity funds from 2000 to 2006 using multivariate regression and determined a negative relationship between expense ratios and fund performance, suggesting that higher costs detract from unit trust performance without corresponding benefits. Lamphun and Wongsurawat (2012) investigated Thai unit trusts from 2005 to 2007 using ordinary least squares regression and found that smaller unit trusts charged higher fees while high-performing trusts maintained lower fee structures, indicating that operational efficiency rather than fee levels drove superior performance outcomes.

Asian money market funds showed divergent yield patterns reflecting regional economic conditions. Bouzekouk and Mansor (2024) analyzed Malaysian retail investors' selection of Islamic unit trust fund management companies found that perceived religiosity and past performance positively affected investor attitudes while perceived risk had negative effects. Busse et al. (2021) analyzed Chinese fund transaction costs and portfolio characteristics' interaction effect on mutual fund performance and determined that larger funds incurred lower percentage transaction costs.

Inflation effects on investment returns demonstrate variable patterns across markets. Gomez-Cram and Yaron (2021) investigated inflation expectations' role in shaping nominal yield

curves using macrofinance term structure models with US bond market data, finding that bond risk premiums were primarily influenced by stochastic volatility of inflation and consumption rather than expected inflation levels. Islam (2024) examined inflation's effect on stock market performance in Bangladesh from June 2012 to March 2024, revealing that inflation had negative and statistically significant relationship with stock market performance, implying rising prices erode investor confidence and equity valuations.

The African unit trust industry demonstrates growth potential with substantial variation across countries in market development, regulatory maturity, and performance outcomes. South Africa, the continent's most developed market, had 1,789-unit trust funds with \$183.3 billion in assets under management as of 2023 (Asisa, 2023). Taylor (2022) evaluated fund attributes' impact on Collective Investment Schemes performance in South Africa from January 2000 to September 2021 and found that fund size and age were negatively related to performance, fund family size had significant positive effect, while expense ratios showed no significant relationship with performance outcomes.

Performance evaluation studies in South African unit trusts reveal challenges in consistently generating benchmark-beating returns. Oldham and Kroeger (2005) examined South African unit trust performance between 1998 and 2002 and found that fund managers couldn't regularly generate higher returns than benchmarks, highlighting the importance of benchmark selection in the African context. Rensburg and Krige (2018) investigated the high cost of active management in South African equity unit trusts and observed that the average active cost ratio was significantly higher than that of passive benchmarks, demonstrating negative impact of fees on investor returns. Mibiola (2013) examined the South African

equity unit trusts' results over two decades and found that, on average, unit trust managers could not produce returns that were higher than those reported by the market. This finding highlights the challenges faced by active managers in outperforming benchmarks, even in a relatively developed African market.

West African countries have also seen developments in their unit trust industries. Tetteh (2022) assessed awareness level of Collective Investment Schemes among formal sector workers in Ghana showed that nearly half did not invest due to inadequate understanding, while those who invested prioritized safety and returns, with educational level significantly influencing awareness levels. Forbuzo (2024) examined treasury bill rates, exchange rate changes, and inflation effects on Ghana Stock Exchange performance between 2020 and 2023 using multivariable regression analysis, showing significant positive link between treasury bill rates and stock performance contrary to prior evidence.

Nigerian unit trust markets face performance volatility and investor confidence challenges. Oladele (2021) examined volatility of unit trust returns in Nigeria using regression analysis to assess performance fluctuations between 2016 and 2020, establishing positive correlation between overall market portfolio movements and unit trust scheme performance, indicating that market trends strongly influence fund volatility. Mairafi et al. (2025) evaluated impact of Collective Investment Scheme expenses and fund age on investment performance of selected fund managers in Nigeria between 2014 and 2023 and revealed that both fund expenses and age had negative and statistically significant effect on performance.

North African markets show distinct characteristics in fund management and performance

determinants. Mohammed and Mabrouk (2025) examined determinants of financial performance of mutual funds in Egypt between 2016 and 2023 and showed that fund size, fund age, and interest rate had significant positive effects on growth performance, while inflation and fund objective had minimal impact, with fund age and exchange rate showing mixed associations with risk-adjusted metrics.

The Kenyan unit trust industry has experienced growth, with assets under management reaching KSh 161 billion as of 2022, reflecting 20% annual growth rate that surpassed the 15% growth recorded by commercial bank deposits during the same period (CMA, 2022). However, Kenya's unit trust assets-to-GDP ratio of 5% in 2020 ranked poorly when compared internationally, lagging substantially behind South Africa's 61.5% and Namibia's 43.1%, indicating significant room for industry expansion (Cyttonn, 2022). The Capital Markets Authority regulates 71 unit trust funds across equity, balanced, bond, and money market categories, with money market unit trusts dominating the sector by holding over 80% of total assets under management. This concentration in money market funds reflects Kenyan investors' preference for capital preservation and liquidity over higher-risk equity or bond investments, which is why the focus remains on money market funds rather than equity or bond options.

Despite industry growth, Kenyan unit trusts face persistent performance challenges relative to passive investment alternatives. From 2016 to 2022, the average money market unit trust yield of 8.0% fell below three of four key benchmarks: the 182-day Treasury Bill yielded 8.91%, the 364-day Treasury Bill yielded 9.86%, and the Central Bank Rate averaged 8.61%, with only the 91-day Treasury Bill benchmark of 7.77% surpassed by average fund yields

(KNBS, 2022; CBK, 2022). This consistent underperformance raises questions about active management value and justification for management fees charged to investors seeking returns above risk-free government securities.

Performance persistence studies in Kenyan unit trusts reveal systematic underperformance across fund categories. Shano et al. (2009) assessed the profitability of Kenyan equity unit trusts from 2005 to 2009 and found that they did not outperform the market when considering risk-adjusted returns. This finding suggests that Kenyan unit trusts may struggle to justify their active management fees. Nyanamba et al. (2015) investigated the variables influencing profitability of unit trusts in Kenya and reported a negative correlation between expenses and profitability, further emphasizing the impact of costs on fund performance.

Dawe et al. (2014) examined the performance consistency of Kenyan equity unit trusts and discovered that they consistently delivered returns above benchmarks, contradicting some earlier findings. Makau (2016) examined how macroeconomic factors affected Kenyan unit trusts, noting a positive response to inflation but a negative relationship with interest rates.

Institutional affiliation patterns in Kenya show market concentration among bank-affiliated and insurance-affiliated fund managers. As of 2022, the top five funds controlled 81% market share: CIC Unit Trust Scheme, NCBA Unit Trust Scheme, Sanlam Unit Trust Scheme, ICEA Unit Trust Scheme, and Britam Unit Trust Scheme, representing both bank-affiliated and insurance-affiliated institutional structures (Cyttonn, 2022). Musyoka et al. (2015) investigated sixteen Kenyan unit trusts and determined that ownership structure negatively affected financial performance, with non-affiliated trusts lacking access to cheaper group

finances and operational systems, suggesting affiliation provides resource advantages.

However, December 2022 performance data presents contrasting evidence regarding affiliation advantages. Three of five top-performing money market unit trusts were unaffiliated with financial institutions: Cytonn Money Market Fund achieved 10.7% yield, Zimele Money Market Fund delivered 9.9%, and Gencap Hela Money Market Fund produced 9.8%, all surpassing bank-affiliated NCBA Money Market Fund at 9.6% and insurance-affiliated Sanlam Money Market Fund at 9.5% (Cytonn, 2022). These performance patterns suggest affiliation advantages may be offset by potential conflicts of interest or bureaucratic constraints within larger institutional structures.

These conflicting results highlight the need for further research to better understand the factors influencing the yield of money market unit trusts in Kenya, particularly in relation to institutional affiliation, benchmarks, and management fees. Such research could provide valuable insights for improving fund performance and informing regulatory policies in the growing Kenyan unit trust industry.

### **1.1.1 Yield of Money Market Unit Trusts**

Yield represents the primary performance metric for money market unit trusts, measuring the income return generated from portfolio investments over a specified period. This study operationalizes yield as the effective annual rate, calculated by dividing total interest earned plus fair value gains minus total expenses by the Net Asset Value, expressed as a percentage (Lammi, 2022). This measurement approach provides consistency with industry standards and enables meaningful comparisons across different fund types and time periods. The yield metric directly reflects the return available to investors after accounting for all fund expenses,

making it the most relevant performance indicator for money market fund evaluation.

Alternative yield measurement approaches exist in academic literature and industry practice. Some researchers employ total return metrics that incorporate capital appreciation alongside income generation, providing a comprehensive view of investment performance (Ferreira et al., 2012). Others utilize risk-adjusted performance measures such as the Sharpe ratio, which assesses returns relative to volatility, or Jensen's alpha, which measures excess returns above expected risk-adjusted benchmarks (Lestari & Arrozi, 2023). However, the current study focuses specifically on effective annual yield because money market funds prioritize capital preservation and income generation rather than capital appreciation, making yield the most appropriate and transparent performance measure for these investment vehicles.

Yield performance demonstrates considerable variation across global markets, reflecting differences in monetary policy environments and economic conditions. In the United States, money market fund yields averaged 4.5% during 2022, substantially higher than the near-zero returns experienced during 2020-2021, reflecting Federal Reserve interest rate increases in response to inflationary pressures (ICI, 2022). European money market funds reported lower average yields of approximately 2.1% during the same period, corresponding to the European Central Bank's more gradual monetary policy tightening approach. Asian markets showed divergent patterns, with Chinese money market funds averaging 3.2% yields while Japanese funds continued to report minimal returns near 0.3%, reflecting the Bank of Japan's sustained ultra-loose monetary policy stance (Wang, 2023).

African money market fund yields reflect regional economic conditions, interest rate

environments, and inflation dynamics. South African money market funds delivered average yields of 4.8% in 2022, remaining competitive with bank deposit rates and providing attractive alternatives for risk-averse investors (ASISA, 2023). Nigerian money market funds reported higher yields averaging 7.2%, corresponding to elevated inflation rates exceeding 15% and central bank policy rates maintained above 11% to combat price pressures (Mairafi et al., 2025). These regional variations underscore the importance of contextual factors, including monetary policy frameworks, inflation trajectories, and banking sector competitiveness, in determining money market fund yield outcomes across diverse economic environments.

Historical yield trends reveal significant fluctuations corresponding to monetary policy changes, economic cycles, and financial market disruptions. Global financial markets experienced unprecedented low yields during 2020-2021 pandemic periods, with many developed market money market funds reporting near-zero or negative real returns after adjusting for inflation. Subsequent inflationary pressures during 2021-2022 prompted central bank tightening across major economies, driving nominal yields upward to levels not seen since pre-financial crisis periods. Understanding these cyclical patterns, including the lag effects between policy rate changes and fund yield adjustments, remains essential for investors and fund managers seeking to optimize portfolio positioning and set realistic return expectations across different economic environments.

### **1.1.2 Firm characteristics**

Firm characteristics significantly influence the earnings and behavior of money market unit trusts. Firm characteristics encompass specific organizational and operational attributes of

unit trust companies that potentially influence performance outcomes and investor returns (Cheruiyot & Jagongo, 2022). Understanding these factors and their relationships with fund yields is crucial for investors, fund managers, and regulators in assessing and improving the performance of money market unit trusts (Ferreira et al., 2012).

This study examines three specific characteristics: institutional affiliation, benchmark selection, and management fees. These variables were selected based on robust theoretical foundations and substantial empirical evidence suggesting their materiality in determining fund yields across diverse market contexts. Alternative characteristics such as fund size, fund age, and portfolio turnover exist in literature, but the selected three variables demonstrate more direct influence on investor net returns and possess greater managerial relevance based on prior research findings (Ferreira et al., 2012; Namu, 2021).

Institutional affiliation refers to a fund's ownership or association with financial institutions such as banks or insurance companies (Wang, 2023). The rationale for selecting institutional affiliation stems from transaction cost theory, which posits that organizational structure fundamentally affects operational efficiency and resource access (Coase, 1937). Bank-affiliated, insurance-affiliated, and independent funds operate under different cost structures, benefit from varying levels of parent company support, and face distinct conflict of interest considerations. Wang (2023) demonstrated that bank affiliation enhanced Chinese fund performance through strategic advantages including access to proprietary research, distribution networks, and wholesale funding sources. Conversely, Ferreira et al. (2017) found that bank-affiliated equity funds underperformed independent funds by 92 basis points

annually due to conflicts of interest, where fund managers supported parent bank operations at the expense of fund investor interests.

Ferreira, Matos and Pires (2014) and Chang and Hong, (2000) found institutional affiliation to be inimical to performance - shackling unit trusts with conflicts of interest, agency problems, while and disenfranchising unit trusts, through cross-subsidizations and taxes. In line with the theory of conflict of interest, affiliated unit trusts skew decisions in favour of the promoters to the detriment of unit holders (Hao and Yan, 2012), and yet the Unit trust managers as double agents are meant to serve both fund investors and promoters (Golez and Marin, 2015). The expected outperformance of affiliated unit trusts through leveraging on their existing clientele, systems and resources tends to be negated by higher expenses leading to underperformance (Gil-Bazo and Martínez, 2003). These contradictory findings across different markets necessitate investigation of whether affiliation effects vary by institutional type, with insurance-affiliated and independent funds potentially demonstrating different performance patterns than bank-affiliated funds.

Benchmarks serve as performance targets and reference points for evaluating fund managers' effectiveness (Kazmi, 2022). Benchmark selection represents the second critical firm characteristic because it establishes performance targets, guides investment strategy formulation, and provides accountability standards for fund managers. Benchmarks serve as unmanaged passive portfolios against which fund managers demonstrate value addition through security selection and timing decisions (Brandhofer et al., 2022). For top managers with real skill, benchmarks limit the opportunities to invest, on the contrary, for typical managers they provide portfolio construction limits (Modigliani and Modigliani, 1997).

Often, Benchmarks and benchmarking are confused as being synonyms, yet benchmarking entails identification of benchmarks as well as the process of measurement (Fronsko 1999). An appropriate benchmark should be transparent, investable, quantifiable, appropriate, reflective, and specified in advance (Yontar and Benham, 2018).

Kazmi (2022) showed that benchmarked indices offered superior risk-adjusted returns to actively managed sector mutual funds in the US market, raising questions about the value of active management. Appropriate benchmark selection enables accurate performance evaluation, helps investors assess whether managers possess genuine skill, and prevents misleading performance claims. Inappropriate benchmarks may obscure poor managerial performance or create incentives for strategic benchmark selection where managers choose relatively weak-performing benchmarks to present fund performance more favorably (Chin et al., 2022). Low (2007) and Abugri (2006) found that performance was indifferent to the choice of benchmark.

Management fees are costs charged by fund managers for their services (Babalos, 2011). Management fees constitute the third firm characteristic under investigation because they directly reduce investor net returns and represent the most tangible cost of fund ownership. Cost-plus pricing theory suggests that firms set fees to cover operational expenses plus desired profit margins (Nagle, 1987). Generally, lower costs result in higher net returns for investors but the use of marketing and advertising campaigns (Barber, Odean, and Zheng 2005) makes unit trust investors unable to assess the trade-off between different fees and performance. The expectation that higher financial performance should attract higher fees (Ferreira, Keswani, Ramos, & Miguel, 2012) frequently fails since the incremental returns

from increased expertise are often insufficient to cover the incremental costs (Kinneil, 2014). Babalos (2011) determined negative relationships between expense ratios and Greek equity fund performance, indicating that higher fees eroded investor returns without corresponding performance improvements. Lamphun and Wongsurawat (2012) found that smaller Thai unit trusts charged higher fees while high-performing trusts maintained lower fee structures, suggesting that operational efficiency rather than fee levels drove superior performance. In the Kenyan context, annual management fees can reach 3.5% (World Bank, 2015), substantially higher than the 0.42% global average (ICI, 2021), raising concerns about whether high fees can be justified through superior performance delivery. The Unit trust company's goal is to maximize potential revenue by charging as much as it can, whereas the investor wants to spend as little as possible in order to maximize returns (World Bank, 2015) provides fertile grounds for conflict of interest.

The exclusion of other potential firm characteristics from this study does not imply their insignificance but reflects prioritization based on theoretical support and empirical consistency. Fund size affects economies of scale and market impact costs, with larger funds potentially benefiting from lower per-unit operational expenses but suffering from reduced investment flexibility (Namu, 2021). Fund age correlates with organizational learning, reputation development, and investor familiarity, potentially influencing both performance and asset gathering. Portfolio composition determines risk exposure and return potential, with different asset allocations producing varying yield outcomes. However, the three selected characteristics demonstrate more consistent theoretical support, stronger empirical relationships with yield performance across diverse market contexts, and greater managerial

relevance for optimization purposes compared to these alternative variables.

### **1.1.3 Inflation**

Inflation represents a critical macroeconomic variable that potentially moderates relationships between firm characteristics and fund yields by altering the economic environment in which funds operate (Zohaib, Shah, Afzal & Ijaz, 2024). This study specifically examines inflation as a moderating variable rather than a direct predictor because theory suggests inflation affects how other variables influence outcomes. The quantity theory of money posits that money supply growth relative to real output determines aggregate price levels (Friedman, 1987), creating environments where investment returns must exceed inflation rates to preserve and grow purchasing power in real terms.

The selection of inflation over alternative macroeconomic variables such as interest rates or exchange rates stems from several theoretical and practical considerations. Inflation directly erodes real returns, making it particularly relevant for money market investors whose primary objectives include capital preservation and purchasing power maintenance (Singh & Shaik, 2023). Interest rates represent monetary policy tools used by central banks to control inflation rather than independent economic forces, making them endogenous to the inflation process. Exchange rate volatility primarily affects international investments and currency-hedged portfolios, whereas Kenyan money market funds maintain predominantly domestic currency exposure with minimal foreign exchange risk.

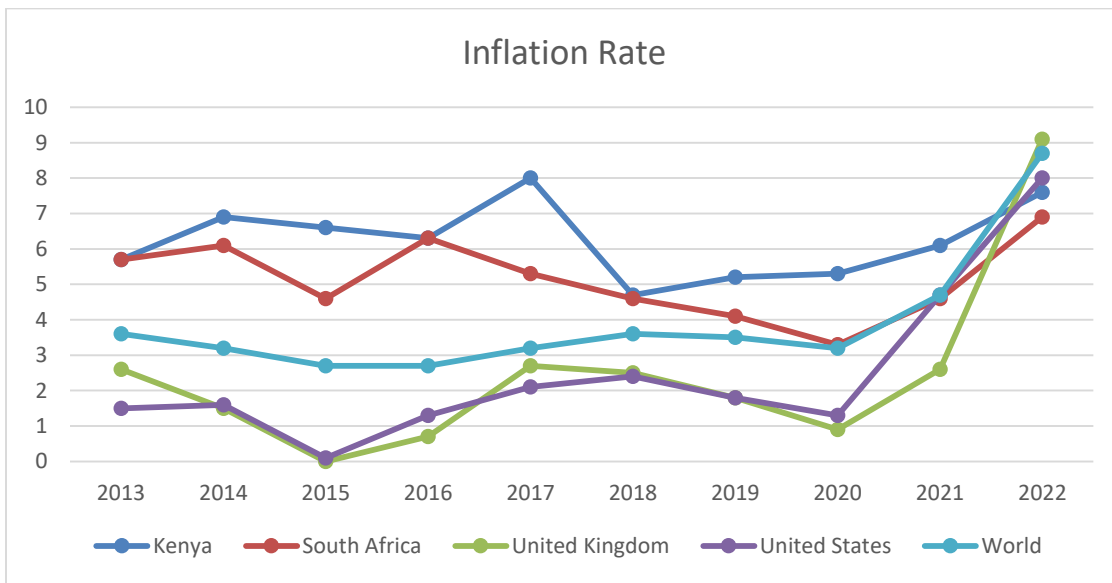
Empirical evidence demonstrates inflation's moderating effects on fund performance determinants across different economic contexts. Makau (2016) examined Kenyan unit trusts from 2011 to 2015 using Pearson correlation and multiple regression, finding that unit trust

performance responded positively to inflation while demonstrating negative relationships with interest rates. This counterintuitive positive relationship suggests that Kenyan funds may hold inflation-sensitive assets or that nominal yield adjustments during inflationary periods exceed real return erosion. Gure and Mutswenje (2023) examined macroeconomic variables' effect on stock market performance in Kenya from 2017 to 2021 and revealed that inflation had statistically significant negative effect on stock market performance, implying rising prices erode investor confidence and capital market activity. Fadliana and Marsono (2023) analyzed Indonesian sharia mutual funds from 2019 to 2021 through panel regression, determining that inflation demonstrated significant inverse relationships with fund sustainability returns, indicating purchasing power erosion exceeded nominal return adjustments. These contradictory findings across markets necessitate investigation of inflation's moderating role rather than its direct effects.

Regional inflation dynamics significantly influence investment returns across African markets. Asiedu et al. (2021) analyzed impact of inflation and interest rates on stock market performance in Ghana using monthly data from 2010 to 2016 through Johansen cointegration test and Vector Error Correction Model to capture short-run and long-run sectoral effects. Results showed that inflation and interest rates had negative and significant influence on stock market performance in long run, with petroleum and consumer staples sectors being most affected by inflation and interest rate fluctuations respectively.

Inflation affects different fund affiliations disparately based on their resource access, investment expertise, and strategic flexibility. Bank-affiliated funds may leverage parent institution relationships to access inflation-linked securities, obtain superior macroeconomic

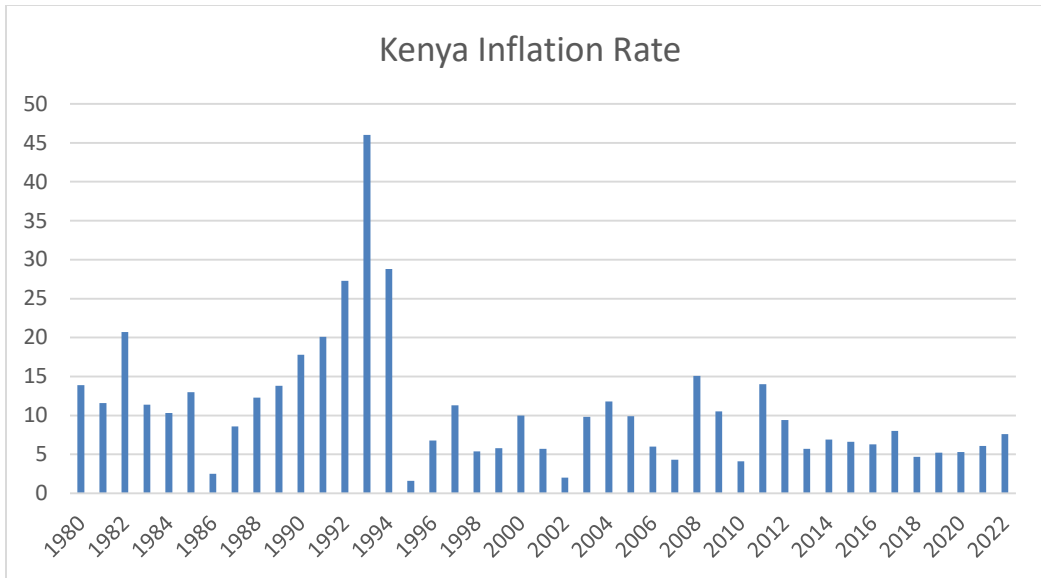
forecasting, and adjust portfolio positioning proactively during inflationary cycles (Alsakka, 2025). Insurance-affiliated funds typically possess actuarial expertise in modeling inflation scenarios and structuring portfolios to match long-term real liabilities. Independent funds might face resource constraints limiting their ability to implement sophisticated inflation-hedging strategies, potentially experiencing greater yield volatility during inflationary periods compared to their affiliated counterparts. Global inflation is predicted to increase to 8.8 percent in 2022 from 4.7 percent in 2021 resulting from increased costs of consumer goods brought on by the conflict between Russia and Ukraine, excess liquidity from pandemic-related stimulus in 2020–21, and currency depreciations (IMF, 2022).



**Figure 1.1 Inflation rate (Annual percent change of average consumer prices)**

Source: Adapted from IMF (2023)

Over the last 10 years, global inflation rates remained below 4% with significant surges in 2021 and reached 8.8% surpassing Kenya at 7.6% in 2022 (IMF, 2023).



**Figure 1.2: 1980-2022 Inflation rates in Kenya**

Source: Adapted from IMF, 2023

Kenya has experienced varying levels of inflation over the years. According to data from the International Monetary Fund, Kenya's annual inflation rate fluctuated significantly between 1980 and 2022. Inflation is estimated at 7.7% for 2023 a marginal increase from 7.6% of 2022 (IMF, 2023). The rise in Kenyan inflation is attributed to increase in prices of fuel and food items due to the negative effects of the conflict between Russia and Ukraine, worldwide COVID-19 epidemic and disruptions in commodity prices (Treasury, 2023). These fluctuations reflect the dynamic nature of Kenya's economy and the various economic policies and external factors that have influenced price levels over time.

Many central banks still struggle to control core inflation because they lack the independence necessary to concentrate on their responsibility of maintaining price stability, or because they lack efficient inflation-targeting strategies or instruments for putting those strategies into

practice (EIU, 2022). According to Friedman (1987), deflation can only be avoided if and when the amount of money per unit of output is stopped from falling noticeably, and inflation can only be avoided if and when the amount of money per unit of output is kept from rising noticeably.

In 2013, the Central Bank of Kenya formally adopted inflation targeting as a foundational framework for monetary policy (Kiruri 2018). The Kenyan government set an inflation target of 5.0 percent, with a variable 2.5 percent safety cushion on either side to cater for unfavorable shocks for FY 2022/2023. Maintenance of inflation at these levels is meant to maintain macroeconomic stability and lessen unfavorable changes in the overall stability of the economy (Treasury, 2023). Ongoing monetary tightening by systemic central banks, continued depreciation of currencies for frontier economies will create more inflation (EIU, 2022).

When inflation is high and the exchange rate unstable, there is often a resource transfer to the rich from the poor (AERC, 2020). Over time, inflation may also affect the purchasing power of who pay or receive fixed interest rates (Oner 2023). Although high inflation hurts an economy, deflation or declining prices, is also undesirable because it causes customers to postpone purchases in anticipation of future price reductions, which reduces producer revenue, economic activity, and growth. Deflation has caused a prolonged period of almost nonexistent economic growth in Japan (Oner 2023).

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

The Kenyan unit trust industry has experienced significant growth and evolution over the past decade with the assets under management in Kenyan unit trusts reaching KSh 161 billion

in 2022 (CMA, 2022) and unit trust assets to GDP ratio of 5% in 2020. In the 2021 - 2022 period, Kenya's unit trust funds' assets recorded a 20% growth, surpassing the 15% growth recorded by listed banks cumulative deposits (Cyttonn, 2022). This growth has been driven by increased financial literacy through Capital Markets Authority (CMA) investor education programs, a growing middle class with disposable income seeking investment alternatives, and regulatory reforms aimed at fostering a robust investment environment including streamlined fund licensing procedures and enhanced disclosure requirements. The Capital Markets Authority has played a crucial role in overseeing the industry's development, implementing regulations to protect investor interests and promote market integrity. (CMA, 2022).

However, the Kenyan unit trust industry structure is too crowded and oligopolistic (Irungu, 2014), setting the stage for price fixing, leading to poor financial yields with the top five funds (CIC Unit Trust Scheme, NCBA Unit Trust Scheme, Sanlam Unit Trust Scheme, ICEA Unit Trust Scheme, British American Unit Trust Scheme) controlling a market share of 81% as of 2022 (Cyttonn, 2022).

Extant literature shows that unit trusts frequently fail to outperform market benchmarks even after accounting for pertinent costs (Kumar, 2012), with many returning significant negative alpha nearly equal to the fees they charge, indicating value destruction rather than value creation (Muthomi, 2019). A seven-year analysis of Kenyan money market unit trust yields from 2016 to 2022 reveals that the average unit trust underperformed three of the four key benchmarks. The average unit trust yield of 8.0% fell below the 182-day treasury bill yield of 8.91%, the 364-day treasury bill yield of 9.86%, and the Central Bank Rate of 8.61%.

Only the 91-day treasury bill benchmark of 7.77% was surpassed by average fund yields (KNBS, 2022; CBK, 2022). This persistent underperformance raises fundamental questions about the value proposition of active management and justification for management fees charged to investors.

Recent Kenyan studies emphasize institutional characteristics' importance for financial performance. Ochieng et al. (2023) examined institutional characteristics' influence on financial performance of unit trusts in Kenya from 2018 to 2022 and found that fund size, expense level, portfolio composition, and liquidity all had significant positive effect on financial performance, with liquidity emerging as most influential determinant. Ndanu and Gatauwa (2023) explored how fund characteristics affect financial performance using panel data from twenty-one Nairobi-based schemes operating between 2018 and 2022 and revealed that institutional factors had positive and significant effect on return on investment, while scheme products exhibited moderating influence on relationship between fund characteristics and financial performance.

Ownership structure can negatively affect financial performance of non-affiliated unit trusts lacking access to cheaper group financing sources, proprietary research capabilities, and shared operational systems (Musyoka et al., 2015). However, evidence as of December 2022 presents a contrasting proposition, with three of the five top-performing Kenyan money market unit trusts being unaffiliated with financial institutions. Specifically, Cytonn Money Market Fund achieved a 10.7% yield, Zimele Money Market Fund delivered 9.9%, and Gencap Hela Money Market Fund produced 9.8%, all surpassing bank-affiliated NCBA Money Market Fund at 9.6% and insurance-affiliated Sanlam Money Market Fund at 9.5%

(Cyttonn, 2022). These performance patterns suggest that affiliation advantages may be offset by potential conflicts of interest or bureaucratic constraints within larger institutional structures.

The most popular benchmark is rate for the 91-day Treasury bill, which first went on sale in 1969 (Opiyo 2014) and remained the official interest rate until it was replaced in August 2005 by Central Bank Rate (CBR). Benchmark practices in Kenyan unit trusts primarily reference Treasury Bill rates. The Capital Markets Authority requires benchmarks used by unit trusts to be relevant to fund strategy, denominated in same currency, and presented for same periods as fund returns to ensure meaningful performance comparisons (CMA, 2020). The 91-day Treasury Bill rate, first issued in 1969, remained Kenya's official interest rate benchmark until replaced by Central Bank Rate in August 2005 (Opiyo, 2014). In 2020, CMA noted inconsistencies in performance measurement and presentation by unit trusts and consequently directed the disclosure in the performance report of benchmark, its key characteristics including periodicity, rationale for selection and returns calculation frequency (CMA, 2020). These regulatory interventions aimed to standardize performance reporting, enhance transparency, and enable more informed investor decision-making across competing fund offerings.

Management fee structures in Kenya substantially exceed global standards. Kenyan unit trust annual management fees can reach 3.5% (World Bank, 2015), significantly higher than the 0.42% global average reported for money market funds (ICI, 2021). Globally average fees have fallen substantially from 0.84 percent in 1996 to 0.42 percent in 2020, a decline of 50 percent (ICI, 2021), with no discernable increase in Kenyan Unit trust management fees over

the same period. Namu (2021) investigated fund characteristics and performance of unit trusts in Kenya using explanatory research design between 2005 and 2017 through panel regression analysis and showed that operating expenses negatively affected equity and money market funds but positively influenced bond and balanced funds, while fund size improved performance across all categories.

Macroeconomic factors, particularly inflation, significantly influence Kenyan investment returns. Kenya's annual inflation rate fluctuated between 4.44% and 8.40% from 2013 to 2022, reflecting monetary policy implementation and external shocks (IMF, 2023). In 2013, Central Bank of Kenya formally adopted inflation targeting as foundational framework for monetary policy, aiming to maintain inflation within  $5.0\% \pm 2.5\%$  target range (Kiruri, 2018).

Inflation effects on Kenyan unit trust performance show mixed evidence. Makau (2016) examined Kenyan unit trusts from 2011 to 2015 using Pearson correlation and multiple regression, finding that unit trust performance responded positively to inflation while demonstrating negative relationships with interest rates. Gure and Mutswenje (2023) examined macroeconomic variables' effect on stock market performance in Kenya from 2017 to 2021 and revealed that inflation had statistically significant negative effect on stock market performance, implying rising prices erode investor confidence and capital market activity. These contradictory findings necessitate investigation of inflation's moderating role rather than purely direct effects on money market unit trust yields.

Operational inefficiencies in a relatively small industry with excessive numbers of players (Irungu, 2014), combined with low asset levels limiting economies of scale (Nyanamba et

al., 2015) and expensive fee structures, impede financial performance delivery (Vista, 2008). The freedom granted to fund managers to select benchmarks may generate suboptimal outcomes when managers strategically choose weak benchmarks to present performance favorably rather than selecting genuinely appropriate performance standards (Mbataru, 2012). These structural and operational challenges in the Kenyan money market unit trust industry necessitate comprehensive investigation of the factors determining yield performance to inform improvements in fund management practices, regulatory oversight, and investor protection mechanisms.

## **1.2 Statement of the Problem**

Unit trusts play essential roles in financial ecosystems as vehicles for wealth creation and capital mobilization, offering investors access to professionally managed, diversified portfolios at relatively low costs (ICI, 2022). Globally, unit trusts have become increasingly important in deepening capital markets and providing alternative investment options for both retail and institutional investors seeking returns superior to traditional bank deposits. As key economic drivers, unit trusts contribute to achievement of national development goals by channeling savings into productive investments and fostering financial inclusion through accessible investment products.

Despite their importance, unit trusts globally demonstrate persistent underperformance relative to passive benchmarks, leading to erosion of investor wealth and declining trust in professionally managed funds. In the United States, mutual funds frequently fail to outperform market benchmarks even after accounting for costs, with many returning negative

alpha nearly equal to fees charged, indicating value destruction rather than creation (Kumar, 2012). Babalos (2011) found negative relationships between expense ratios and performance in Greek equity funds, while Gil-Bazo and Martinez (2021) indicated that higher fees in Spanish mutual funds do not equate to better performance for investors. Kazmi (2022) showed that benchmarked indices offered greater risk-adjusted returns than sector mutual funds in US markets, raising fundamental questions about active management value.

Regional evidence from African markets reveals similar performance challenges across diverse economic contexts. Mibiola (2022) examined South African equity unit trusts over two decades and found that managers were unable to generate returns higher than market benchmarks on average. Rensburg and Krige (2022) discovered that South African equity unit trust mean active expense ratios significantly exceeded passive benchmarks by over 150%, demonstrating how elevated costs erode returns. Taylor (2022) found that fund size and age were significantly negatively related to performance in South African Collective Investment Schemes from 2000 to 2021. Mairafi et al. (2025) revealed that Nigerian fund expenses and age had negative and statistically significant effects on performance from 2014 to 2023. Mohammed and Mabrouk (2025) showed mixed fund performance determinants in Egyptian mutual funds from 2016 to 2023.

In Kenya, the unit trust market demonstrates low penetration and persistent underperformance across multiple fund categories, indicating sector-wide performance concerns affecting diverse investor groups. Kenya's unit trust assets-to-GDP ratio stands at 5%, significantly lagging South Africa's 61.5% and Namibia's 43.1%, indicating underlying inefficiencies constraining industry contribution to national economic development (Cytton,

2022). From 2016 to 2022, average money market unit trust yields of 8.0% underperformed three of four key benchmarks: 182-day Treasury Bills yielded 8.91%, 364-day Treasury Bills yielded 9.86%, and Central Bank Rate averaged 8.61% (KNBS, 2022; CBK, 2022). Performance challenges extend beyond money market funds to other categories, with equity unit trusts failing to outperform markets when considering risk-adjusted returns from 2005 to 2009 (Shano et al., 2020), and balanced unit trusts unable to generate returns exceeding market indices (Mwaniki, 2016).

Multiple stakeholder groups experience negative consequences from persistent unit trust underperformance in Kenya. Retail investors, constituting the primary user base for money market funds, suffer wealth erosion when yields fail to compensate for inflation and opportunity costs, discouraging participation in formal investment products. Institutional investors managing pension funds and insurance reserves face portfolio underperformance jeopardizing their ability to meet long-term liabilities to beneficiaries. Fund managers experience reputational damage and asset outflows when unable to justify management fees through superior performance delivery. The Capital Markets Authority confronts regulatory challenges in maintaining investor confidence while promoting industry growth.

The broader Kenyan economy suffers from suboptimal capital allocation when the unit trust industry fails to efficiently channel savings into productive investments, constraining achievement of Vision 2030 development objectives. To fully realize its potential and contribute meaningfully to Kenya's economic development, the industry must address the performance gap (Nyanamba et al., 2015). Improved yields would not only benefit individual investors but also contribute to deeper, more efficient capital markets, ultimately supporting

economic growth and development (World Bank, 2015). Enhanced performance could also attract more investors to the sector, potentially increasing Kenya's unit trust assets to GDP ratio closer to the levels seen in more developed African markets (Irungu, 2014).

Understanding determinants of money market unit trust yields becomes critical for addressing performance gaps, requiring examination of firm characteristics and macroeconomic moderators. However, existing literature reveals contradictory findings regarding how institutional affiliation, benchmarks, and management fees influence fund performance. Wang (2023) found bank affiliation enhanced fund performance in China through strategic advantages including access to proprietary research and distribution networks. Conversely, Ferreira et al. (2017) determined that bank-affiliated equity unit trusts underperformed independent funds by 92 basis points annually due to conflicts of interest where managers supported parent bank operations at expense of fund investors. These contradictory findings create conceptual gaps regarding whether bank, insurance, or independent affiliation structures optimize fund yields in Kenyan context.

Benchmark selection's influence on unit trust yields demonstrates inconsistent patterns across markets, revealing methodological and contextual gaps. Kazmi (2022) showed benchmarked indices offered greater risk-adjusted returns than actively managed sector funds in US markets, suggesting benchmark selection drives performance expectations. However, Clare et al. (2019) found US bond mutual funds outperformed self-declared benchmarks on both gross and net bases from 1998 to 2017. These contradictory findings create methodological gaps regarding appropriate benchmark selection and contextual gaps concerning which benchmarks effectively guide Kenyan money market fund performance, particularly given

CMA's 2020 directive on mandatory benchmark disclosure following identified inconsistencies in measurement practices.

Management fees demonstrate varying relationships with fund yields across studies, creating theoretical gaps regarding optimal fee structures. Babalos (2011) determined negative relationships between expense ratios and Greek equity fund performance, suggesting higher costs detract from returns. This contradicts Mbataru (2012) who concluded expense ratios had no impact on performance for sixteen Kenyan unit trusts from 2005 to 2011 using Jensen's model and linear regression. Lamphun and Wongsurawat (2012) found smaller Thai funds charged higher fees while high-performing funds maintained lower fees from 2005 to 2007. These contradictory findings create theoretical gaps about whether cost-plus pricing theory adequately explains management fee determination and whether higher fees reflect superior management capability or operational inefficiency in Kenyan money market funds charging average 1.71% versus global 0.42% (World Bank, 2015; ICI, 2021).

Inflation's role as potential moderator of relationships between firm characteristics and fund yields remains inadequately investigated, creating both conceptual and methodological gaps. Makau (2016) found inflation positively correlated with Kenyan unit trust profitability from 2011 to 2015 using Pearson correlation and multiple regression. However, Fadliana and Marsono (2023) found inflation demonstrated significant inverse relationships with Indonesian sharia mutual fund sustainability returns from 2019 to 2021 using panel regression. Lestari and Arrozi (2023) concluded inflation does not significantly affect Indonesian mutual fund performance from 2017 to 2021. These contradictory findings create conceptual gaps about inflation's direct versus moderating effects and methodological gaps

regarding appropriate model specifications for capturing inflation dynamics in emerging markets like Kenya.

Previous studies examining unit trust performance in Kenya demonstrate contextual and methodological limitations this research addresses. Shano et al. (2020) analyzed equity funds for only five years without investigating determinant variables, limiting generalizability. Mbataru (2012) focused broadly on unit trusts from 2005 to 2011 without distinguishing between money market, equity, and balanced funds, creating aggregation bias obscuring category-specific performance drivers. Nyanamba et al. (2015) examined profitability determinants from 2010 to 2014 using return on assets rather than investor-relevant yield measures. Namu (2021) investigated fund characteristics from 2005 to 2017 but did not explicitly model inflation as moderator affecting firm characteristic effects. No comprehensive study has examined how institutional affiliation, benchmarks, and management fees jointly influence money market unit trust yields in Kenya with inflation as moderator using panel data spanning economic cycles including pre-pandemic stability, pandemic disruption, and post-pandemic recovery periods from 2013 to 2022.

### **1.3 Objectives of the Study**

This study was guided by both general and specific objectives.

#### **1.3.1 General Objective**

The general objective of the study was to examine the effect of institutional affiliation, benchmark and management fee on yield of money market unit trusts in Kenya.

### **1.3.2 Specific Objectives**

- i. To establish the effect of institutional affiliation on yield of money market unit trusts in Kenya.
- ii. To establish the effect of benchmarks on yield of money market unit trusts in Kenya
- iii. To establish the effect of management fee on yield of money market unit trusts in Kenya
- iv. To establish the moderating effect of inflation on the relationship between institutional affiliation, benchmarks, management fees, and the yield of unit trusts in Kenya

### **1.4 Research Hypotheses**

The study sought to test four hypotheses:

Ho<sub>1</sub>: Institutional affiliation had no significant effect on yield of money market unit trusts in Kenya.

Ho<sub>2</sub>: Benchmarks had no significant effect on yield of money market unit trusts in Kenya.

Ho<sub>3</sub>: Management fee had no significant effect on yield of money market unit trusts in Kenya.

Ho<sub>4</sub>: Inflation had no significant moderating effect on the relationship between institutional affiliation, benchmarks, management fees, and the yields of money market unit trusts in Kenya.

### **1.5 Significance of the Study**

The study aimed to examine the effect of firm characteristics (institutional affiliation, benchmarks, and management fees) and the moderating role of inflation on the yield of money market unit trusts in Kenya. The research findings provide valuable contributions to multiple stakeholder groups within the financial sector and beyond, offering practical applications and theoretical advancements that enhance understanding and decision-making in the unit trust industry.

Investors constitute the primary beneficiaries of this research, gaining empirical evidence to make informed investment decisions when choosing between bank-affiliated, insurance-affiliated, and independent money market unit trusts. The findings equip investors with knowledge about how different institutional affiliations influence fund yields, enabling them to select funds with organizational structures most conducive to superior performance. Investors also benefit from understanding how management fees impact net returns, allowing them to evaluate the trade-off between fees charged and potential yields delivered. The research provides investors with insights on benchmark sensitivity, helping them assess whether fund managers select appropriate performance standards and align investment strategies accordingly. Additionally, investors gain understanding of how inflation moderates relationships between firm characteristics and yields, enabling them to position portfolios optimally across different inflationary environments and protect purchasing power while maximizing real returns.

Fund managers represent another critical stakeholder group benefiting substantially from the research findings. The study provides fund managers with evidence-based guidance on optimal institutional affiliation structures, revealing whether bank connections, insurance company backing, or independent operations generate superior yields in the Kenyan context. Fund managers gain insights into benchmark selection strategies, understanding which reference rates (bank deposit rates, treasury bills of varying maturities) most effectively guide portfolio construction and performance evaluation. The research equips managers with knowledge about fee structures that balance operational sustainability with competitive positioning, identifying fee levels that maximize investor retention while covering costs. Fund managers also benefit from understanding how inflation affects the relationship between their operational decisions and fund performance, enabling them to implement dynamic strategies that adjust affiliation advantages, benchmark alignments, and fee structures based on prevailing macroeconomic conditions.

The Capital Markets Authority benefits significantly from research findings that inform regulatory policy development and industry oversight mechanisms. The study provides the CMA with empirical foundation for evaluating whether current regulations governing institutional affiliations adequately address potential conflicts of interest or whether additional safeguards require implementation. Regulatory authorities gain evidence about benchmark disclosure effectiveness, informing decisions on whether existing requirements for benchmark transparency and reporting sufficiently enable investor decision-making or need strengthening. The research equips the CMA with data on management fee levels across different fund types and their relationship with performance, supporting evaluation of

whether fee structures serve investor interests or represent excessive charges requiring intervention. Additionally, the authority benefits from understanding how inflation dynamics affect fund performance determinants, enabling development of regulations that ensure funds maintain appropriate strategies for delivering real returns across varying economic conditions.

Policymakers in government ministries and planning agencies benefit from the research findings through enhanced understanding of factors constraining or enabling unit trust industry growth and its contribution to national development objectives. The study provides policymakers with evidence about structural factors affecting unit trust performance, informing decisions on policies that promote industry efficiency, competition, and investor protection within Kenya's Vision 2030 framework. Policymakers gain insights into how institutional ownership patterns influence fund outcomes, supporting evaluation of policies governing financial sector consolidation, cross-ownership restrictions, and competitive dynamics. The research equips policymakers with knowledge about inflation's role in investment returns, informing monetary policy considerations and coordination between Central Bank of Kenya inflation targeting and capital market development objectives. Additionally, policymakers benefit from understanding performance gaps between Kenyan unit trusts and regional competitors like South Africa, identifying policy interventions needed to enhance industry competitiveness and increase Kenya's unit trust assets-to-GDP ratio from current 5% levels toward regional benchmarks.

Unit trust companies and asset management firms benefit from research findings that inform strategic planning, product development, and competitive positioning decisions. Fund

companies gain evidence about whether pursuing bank partnerships, insurance company affiliations, or maintaining independence optimizes performance outcomes, guiding corporate structure decisions and merger-acquisition strategies. Asset management firms benefit from understanding benchmark selection's impact on performance perceptions and investor flows, informing choices about performance standards and marketing communications. The research provides companies with data on fee sensitivity and its relationship with yields, supporting pricing strategy development that balances profitability with market share objectives. Additionally, fund companies gain insights into inflation's moderating effects, enabling development of product features and portfolio management approaches that deliver consistent real returns across different economic environments, differentiating their offerings in competitive markets.

Academic researchers and scholars constitute important beneficiaries of the study findings, gaining theoretical and empirical contributions that advance knowledge in investment management, financial markets, and emerging economy finance. The research provides academics with empirical evidence testing transaction cost theory's predictions about organizational structure effects in the specific context of Kenyan money market funds, revealing whether affiliation advantages materialize or conflict of interest concerns dominate. Scholars benefit from the study's examination of cost-plus pricing theory's applicability to management fee determination, contributing to understanding of pricing mechanisms in professional service industries. The research advances academic knowledge by testing Deming benchmark theory's predictions about performance targeting effectiveness and quantity theory of money's implications for inflation effects in emerging market

investment contexts. Academics gain methodological contributions through the study's application of panel regression techniques and moderation analysis to unit trust performance determinants, providing frameworks for future research.

### **1.6 Scope of the Study**

On the content scope, the study focused on three key firm characteristics as determinants of unit trust yield: institutional affiliation, benchmarks, and management fees. The study examined inflation as a moderating variable affecting relationships between these firm characteristics and yields. The research specifically limited ownership effects to those represented by affiliation types (bank-affiliated, insurance-affiliated, and independent funds), omitting facets such as ownership concentration, foreign ownership, and institutional ownership percentages due to data unavailability and scope constraints necessary for focused analysis.

On the methodological scope, the study employed a positivist research philosophy utilizing explanatory research design with panel regression analysis. The research used secondary quantitative data collected through record survey sheets from published financial statements, factsheets, and regulatory reports. Panel data analysis techniques were applied including fixed effects and random effects models, with Hausman specification tests determining optimal model selection. The study conducted diagnostic tests including normality tests, heteroscedasticity tests, multicollinearity tests, stationarity tests, and model specification tests to ensure robust statistical findings. Moderation analysis followed Whisman and

McClelland (2005) two-stage approach, testing inflation's moderating effects on relationships between firm characteristics and yields.

On the population scope, the study encompassed 19 money market unit trusts licensed by the Capital Markets Authority in Kenya that maintained continuous operations throughout the entire study period from 2013 to 2022. This population included bank-affiliated funds (NCBA Money Market Fund, Co-op Money Market Fund), insurance-affiliated funds (Britam Money Market Fund, CIC Money Market Fund, ICEA Money Market Fund, Sanlam Pesa Market Fund, Old Mutual Money Market Fund, Orient Kasha Money Market Fund, Apollo Money Market Fund, Madison Money Market Fund), and independent funds (African Alliance Kenya Shilling Fund, Amana Money Market Fund, Cytonn Money Market Fund, Dry Associates Money Market Fund, EIB Equity Money Market Fund, GenCap Hela Imara Fund, Nabo Africa Money Market Fund, STANLIB Money Market Fund). Funds commencing operations after 2013 or discontinuing operations before 2022 were excluded to ensure complete data availability across the entire analysis period.

On the period scope, the study covered ten years from January 1, 2013 to December 31, 2022. This timeframe was selected for several critical reasons. First, 2013 marked the year when Central Bank of Kenya formally adopted inflation targeting as its monetary policy framework, establishing stable macroeconomic conditions relevant for examining inflation's moderating effects on fund performance. Second, the ten-year period provides sufficient data points for robust panel regression analysis while capturing diverse economic conditions including periods of low inflation (2013-2019 averaging 6.2%), high inflation (2021-2022 averaging 7.5%), and varying interest rate environments. Third, this period encompasses

complete economic cycles including pre-pandemic stability (2013-2019), pandemic disruption (2020-2021), and post-pandemic recovery (2022), enabling examination of firm characteristic effects across different market conditions. Finally, the timeframe offers adequate observations for each unit trust (minimum 10 annual data points), satisfying panel data analysis requirements for statistical power and reliability.

### **1.7 Study Limitations**

The study's focus on money market unit trusts limits generalizability to equity, balanced, or bond funds with different risk-return profiles and regulatory environments. The ten-year period (2013-2022) may not capture longer-term trends or complete economic cycles spanning multiple decades, though it encompasses diverse conditions including pre-pandemic stability (2013-2019), pandemic disruption (2020-2021), and post-pandemic recovery (2022). Reliance on secondary quantitative data, while ensuring objectivity, prevented examination of qualitative factors including manager skill, decision-making processes, or organizational culture influencing performance beyond measurable firm characteristics. The use of specific benchmarks primarily focused on Treasury Bills may not encompass all relevant performance comparison standards, though these represent industry-standard references in Kenya's money market context.

### **1.8 Organization of the Study**

The study was organized into five chapters. Chapter provided the background of the study, statement of the problem, research objectives, and hypotheses. It also outlined the significance, limitations, and scope of the study, setting the foundation for the research.

Chapter two presented a comprehensive review of relevant theories and empirical studies related to unit trust performance, institutional affiliation, benchmarks, management fees, and inflation. It identified knowledge gaps and presented the conceptual framework guiding the study. Chapter three detailed the research design, population, sampling techniques, data collection methods, and analytical tools used in the study. It also discussed the ethical considerations and limitations of the research methodology.

Chapter four presented the findings of the study, including descriptive statistics, correlation analysis, and regression results. It provided a comprehensive discussion of the results in relation to the research objectives and hypotheses, comparing findings with previous studies. Finally, chapter five summarized the key findings of the study, drew conclusions based on these findings, and provided recommendations for various stakeholders. It also suggested areas for further research, highlighting the implications of the study for the money market unit trust industry in Kenya and beyond.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section presents a comprehensive review of the theoretical and empirical literature relevant to the independent and dependent variables of the study. The research focuses on the effect of institutional affiliation, benchmark, and management fee on the yield of unit trusts in Kenya. The theories underpinning the study, including the transaction cost theory, Deming benchmark theory, cost plus pricing theory, inflation quantity theory, and Keynes's Liquidity Preference Theory, are critically reviewed and critiqued. The empirical review section summarizes pertinent research on institutional affiliation, benchmark, management fee, inflation, and yield of unit trusts in emerging and developed countries, highlighting key findings and identifying research gaps that the current study aims to address. Lastly, the conceptual framework is presented.

#### **2.2 Theoretical Review**

Theories play a crucial role in research by providing frameworks for understanding phenomena, guiding hypothesis development, and informing interpretation of empirical findings (Smith, 2020; Johnson & Christensen, 2019). This study was underpinned by five theories: Transaction Cost Theory, Deming Benchmark Theory, Cost Plus Pricing Theory, Inflation Quantity Theory, and Keynes's Liquidity Preference Theory. These theories collectively provided foundation for investigating effects of institutional affiliation, benchmarks, management fees, and inflation on money market unit trust yields in Kenya.

### **2.2.1 Transaction Cost Theory**

The theory was developed by Ronald Coase in 1937 and further elaborated by Oliver Williamson in 1975, who received the Nobel Prize in Economics in 2009 for his contributions (Rindfleisch, 2019; Canback, 1998). The theory's proponents argue that firms exist to minimize transaction costs that would otherwise occur in market exchanges. Coase (1937) originally questioned why firms emerge if markets efficiently allocate resources, concluding that firms reduce costs of negotiating, monitoring, and enforcing contracts. Williamson (1975) extended this by introducing concepts of bounded rationality and opportunism, explaining how organizational hierarchies economize on transaction costs.

The theory is derived from the principles of cost-benefit economics and incorporates the law of diminishing returns, which prevents groups from growing indefinitely (Eisenhardt & Schoonhoven, 1996; Coarse, 1937). It assumes that the characteristics and boundaries of groups depend on the source of cost efficiencies (Coarse, 1937). The theory further assumes that individuals possess bounded rationality, meaning limited cognitive capacity to process information and make perfectly rational decisions. It assumes that individuals may act opportunistically, pursuing self-interest with guile when opportunities arise. The theory assumes that transactions differ in dimensions of asset specificity, uncertainty, and frequency, which determine optimal governance structures. It assumes that organizations choose governance structures (markets, hierarchies, or hybrids) that minimize total transaction costs for specific exchanges. The theory assumes that firms emerge when internal organization costs less than market transaction costs, making vertical integration economically efficient (Coase, 1937; Williamson, 1975).

The theory's major strength lies in explaining why firms exist and how organizational boundaries form, providing framework for understanding vertical integration, outsourcing, and strategic alliance decisions (Cuypers et al., 2020). The theory offers practical guidance for managers deciding between make-or-buy choices, helping optimize organizational structures. Another strength involves explaining why firms adopt different governance structures across industries and transaction types, accounting for observed organizational diversity. The theory successfully explains conglomerate formation and business group structures prevalent in emerging markets where institutional voids create high market transaction costs (Khanna & Palepu, 2002). The framework provides testable predictions about organizational choices under varying transaction characteristics.

However, the theory faces several criticisms and limitations. Critics argue it fails to adequately address bounded rationality's implications for organizational design, treating it as given rather than explaining how organizations overcome cognitive limitations (Goshan & Moran, 1996). The theory neglects roles of non-contractual relationships, trust, and social norms in economic transactions, oversimplifying human behavior to opportunism. Rindfleisch (2019) contends the theory may not hold in digital economy contexts where novel organizational forms emerge that defy traditional market-hierarchy distinctions. The theory overstates transaction costs in markets while understating coordination costs within firms, creating bias toward vertical integration (Boge, Lambe, and Sandvik, 2017). Slater and Spencer (2000) note that while uncertainty represents fundamental tenet, the theory fails to comprehensively breakdown uncertainty types and sources.

Pedrini and Benradi (2019) found that, contrary to the theory's predictions, uncertainty does not influence German hotel owners' decisions to affiliate. Fidow, Odoyo, and Wambalaba (2022) investigated how transaction costs affect Kenyan SMEs' success and found that information asymmetry influenced transaction costs. Mwai et al. (2014) concluded that Kenyan public university libraries' decisions to outsource their ICT services were influenced by transaction cost theory.

This theory relates directly to the institutional affiliation variable in this study. Bank-affiliated, insurance-affiliated, and independent money market unit trusts represent different governance structures with varying transaction cost profiles. Bank-affiliated funds potentially reduce transaction costs through access to parent institution's distribution networks, information systems, and funding sources, consistent with transaction cost economizing predictions. Insurance-affiliated funds may leverage actuarial expertise and long-term liability management capabilities to reduce portfolio construction and risk assessment costs. Independent funds face higher market transaction costs for obtaining research, technology, and distribution capabilities, potentially affecting operational efficiency and yields. The theory predicts affiliated funds should outperform independent funds through transaction cost advantages, providing testable hypothesis for empirical examination.

### **2.2.2 Deming Benchmark Theory**

The theory was developed by W. Edwards Deming in 1980, based on his "Plan-Do-Check-Act" cycle originally proposed in quality management contexts (Ajelabi & Tang, 2010). Deming, an American engineer and management consultant, became renowned for

transforming Japanese manufacturing quality after World War II. The theory's proponents emphasize continuous improvement through systematic comparison against performance standards. Deming argued that management involves prediction and that organizations should establish benchmarks representing best practices, then continuously measure performance against these standards to identify improvement opportunities (Baudin, 2022).

The theory assumes that management fundamentally involves prediction of future outcomes based on systematic analysis. It assumes that performance variations result primarily from system design rather than individual worker efforts, with Deming estimating 85% of performance determined by systems and only 15% by workers. The theory assumes that comparing performance against benchmarks enables identification of improvement areas and best practice adoption. It assumes that iterative cycles of planning, implementing, checking results, and acting on findings drive continuous improvement. The theory assumes that organizations can learn from both internal performance trends and external comparisons with superior performers (Deming, 1986).

The theory's major strength lies in providing systematic framework for performance evaluation and improvement that has proven effective across industries (Kailong, 2019). The emphasis on continuous improvement through benchmark comparison promotes organizational learning and adaptation to changing environments. Another strength involves shifting focus from individual blame to system improvement, reducing defensive behaviors and encouraging problem-solving. The theory successfully explains how organizations achieve competitive advantages through systematic adoption of best practices identified via benchmarking. The Plan-Do-Check-Act cycle provides actionable methodology that

organizations can implement across different functions and levels. Longobardi et al. (2022) found significant relationships between Deming principles and accreditation success in educational institutions.

However, the theory faces several limitations and criticisms. Maleyeff (2003) expressed concern that benchmarks create incentives opposing managers' goals when used as control mechanisms rather than learning tools. The theory provides insufficient guidance specific enough for implementation, periodically overlooking organizations' unique circumstances and contexts (Marie et al., 2008). Northcott and Llewellyn (2005) warn that benchmarks may produce dysfunctional outcomes when employed as control rather than learning mechanisms, including gaming behaviors. Smith (1995) noted strong motivations for individuals to manipulate performance statistics when benchmarks involve public comparisons. Drucker (1993) highlights that traditional benchmarking theories utilize lagging indicators like accounting measures rather than forward-looking predictive indicators.

Dervitsiotis (2000) discovered that benchmarking may disadvantage companies seeking paradigm changes, as it encourages imitation rather than innovation. Kailong (2019) recommended that schools in Kenya can fully use Deming's benchmark theory when doing benchmarking studies with other educational institutions. Longobardi, Rivera, Trujillo, Chávez, Armas, and Piñas (2022) found that accreditation in the National University of Education in Namibia is notably related to Deming quality. Veronica (2021) determined that the application of the Deming theory optimized and improved the quality of road service in Peru.

This theory relates directly to the benchmark variable in this study. Money market unit trusts employ various benchmarks including 91-day Treasury Bills, 182-day Treasury Bills, 364-day Treasury Bills, bank deposit rates, and bank saving rates as performance standards. These benchmarks guide fund managers' investment decisions, portfolio construction, and performance evaluation through the Plan-Do-Check-Act cycle. The theory predicts that funds using appropriate benchmarks aligned with investment strategies should demonstrate superior yields through continuous improvement processes. Fund managers check performance against benchmarks, identify deviations, and act to improve portfolio positioning, consistent with Deming's iterative improvement framework. The theory enables examination of whether benchmark selection and alignment influence yield outcomes through systematic performance targeting and adjustment processes.

### **2.2.3 Cost Plus Pricing Theory of Management Fees**

The theory derives from marginal costing principles, with proponents including economists who developed full-cost pricing methodologies in early 20th century (Farm, 2020). The theory gained prominence through work of accounting scholars who observed widespread use of cost-plus methods in manufacturing and service industries. Nagle (1987) documented cost-plus pricing as basic technique allowing firms to establish reasonable prices absent precise market demand knowledge. The theory suggests firms calculate total costs and add desired profit margins to determine prices, reflecting production-oriented rather than market-oriented approach.

The theory assumes that internal cost factors should primarily determine prices rather than external market conditions or customer willingness to pay. It assumes that firms can

accurately calculate total costs including direct materials, direct labor, and overhead allocations. The theory assumes that desired profit margins can be added to costs without considering competitive dynamics or customer value perceptions. It assumes that price-takers accept cost-based prices in markets with limited price transparency or competitive pressures. The theory assumes that costs remain relatively stable and predictable, allowing reliable price determination based on cost calculations (Nagle, 1987; Farm, 2020).

The theory's major strength lies in providing simple, easy-to-implement pricing methodology particularly valuable for firms lacking sophisticated market research capabilities (Hanson, 1992). This approach ensures that prices cover costs and generate targeted profit margins, supporting financial sustainability. Another strength involves providing transparent, defensible pricing rationale that can satisfy regulators or customers questioning price levels. The theory works effectively in cost-plus contract environments where buyers agree to reimburse costs plus specified markups.

However, the theory faces substantial criticisms and limitations. Nagle and Hogan (2006) rejected cost-plus pricing as misconception resulting in underpricing in strong markets and overpricing in weak markets. The approach contradicts neoclassical economics stipulating that supply and demand should determine prices, not internal costs. Hall and Hitch (1939) found firms deviate from cost-plus pricing by adjusting prices during demand fluctuations, suggesting limited practical adherence. Farm (2020) notes leading companies abandon cost-plus by decreasing prices to increase market share despite higher unit costs. Dolgui and Proth (2010) warned that cost-plus pricing should be avoided because it ignores customer behavior

and value perceptions. Hinterhuber (2008) reported that cost-plus pricing typically overlooks customer opinions and clings to internal variables, missing market opportunities.

Chepkemoi (2020) examined the pricing methods employed by commercial banks in Kenya and found that cost-plus tactics allowed commercial banks to recoup their labor expenditures and branch opening expenses. In Uganda, Nafuna et al. (2019) found that private schools were able to set prices that accurately reflected the expenses incurred by using a cost-based pricing technique, thereby enhancing profitability and liquidity. Hyginus, Wabuji, and Amadi (2019) concluded that the cost-plus pricing approach had little impact on perishable items sales performance in Nigeria. Wanjohi and Kithae (2022) determined that Isuzu E. A. Limited's performance is positively impacted by its cost-based pricing strategy.

This theory relates directly to the management fee variable in this study. Money market unit trust companies determine annual management fees charged to investors, potentially using cost-plus approaches to cover operational expenses plus desired profits. The theory suggests that funds with higher operational costs charge higher management fees to maintain profit margins, regardless of performance delivery. However, competitive pressures and value-based considerations may cause deviations from pure cost-plus approaches. The theory enables examination of whether management fees correlate with fund operational costs or whether market power and information asymmetries enable fees disconnected from cost structures. Testing fee-yield relationships reveals whether cost-plus pricing adequately explains management fee determination or whether other factors dominate.

#### **2.2.4 Inflation Quantity Theory**

The Quantity Theory of Money was originally proposed by Nicolaus Copernicus in 1517 with the observation that abundant money loses value (Shaikh et al., 2022). The theory was later popularized by economists Milton Friedman and Anna Schwartz in 1963, who declared that "inflation is always and everywhere a monetary phenomenon" (Friedman, 1987). The theory's proponents argue that money supply growth exceeding real output growth causes proportional price level increases. Irving Fisher formalized the theory through the equation of exchange:  $MV = PY$ , where  $M$  represents money supply,  $V$  represents velocity,  $P$  represents price level, and  $Y$  represents real output.

The theory assumes that velocity of money remains relatively stable over time, determined by institutional payment mechanisms and habits. It assumes that real output follows independent path determined by resource availability, technology, and productivity, unaffected by monetary factors in long run. The theory assumes that causation runs from money supply to price level rather than reverse direction. It assumes that central banks can control money supply exogenously through monetary policy instruments. The theory assumes that changes in money supply have no permanent effects on real variables like output or employment, only nominal effects on prices (Friedman, 1987; Teles & Uhlig, 2013).

The theory's major strength lies in providing straightforward explanation for inflationary episodes across countries and time periods, particularly hyperinflations consistently linked to excessive money creation (Oner, 2023). The theory offers clear policy prescription that controlling money supply growth prevents inflation, guiding central bank operations

globally. Another strength involves empirical support from long-run relationships between money growth and inflation across diverse economies. The theory successfully explains why governments facing fiscal constraints resort to inflationary financing through money printing. The framework provides predictive power for long-term inflation trends based on monetary aggregates, supporting forward-looking policy planning. Were et al. (2013) incorporated quantity theory principles in Kenya's Central Bank macroeconomic model.

However, the theory faces important limitations and criticisms. Yiping et al. (2016) argue the theory cannot explain short-term inflation dynamics because simple quantitative approach ignores money demand fluctuations and supply shocks. The assumption of stable velocity fails empirically in many contexts, with financial innovation and behavioral changes causing substantial velocity variations. The theory overlooks that inflation results from multiple sources beyond monetary expansion, including supply disruptions, cost pressures, and imported inflation. Teles and Uhlig (2013) note that central banks in low-inflation nations must consider factors beyond money supply. Critics highlight that distinguishing between money supply causing price changes versus price changes causing money demand proves empirically challenging. McKnight et al. (2024) emphasize socio-political factors often drive persistent inflation rather than purely monetary mechanisms.

This theory relates directly to the inflation moderating variable in this study. Kenya's inflation rate fluctuated between 4.44% and 8.4% from 2013 to 2022, reflecting monetary policy implementation and external shocks. Central Bank of Kenya adopted inflation targeting in 2013, aiming to control money supply growth and maintain price stability within  $5.0\% \pm 2.5\%$  bands. The theory predicts that inflation affects nominal yields on money

market unit trusts through adjustments in short-term interest rates and treasury bill yields that constitute portfolio holdings. Higher inflation environments may strengthen or weaken relationships between firm characteristics and nominal yields, as fund managers adjust strategies to maintain real returns. The theory enables examination of inflation's moderating effects on institutional affiliation advantages, benchmark relevance, and management fee sustainability across varying price environments.

### **2.2.5 The Keynes's Liquidity Preference Theory**

Keynes's Liquidity Preference Theory was developed by John Maynard Keynes in 1936 as part of his broader General Theory of Employment, Interest and Money. The theory explains how interest rates are determined by the demand for and supply of money in the economy, rather than by real factors alone (Keynes, 1936). According to Keynes, individuals hold money for three primary motives: the transactions motive (to conduct everyday transactions), the precautionary motive (to meet unforeseen expenses), and the speculative motive (to take advantage of future changes in interest rates and bond prices). The theory's proponents argue that the interest rate represents the reward for parting with liquidity, and that investors demand higher yields when they perceive greater uncertainty or longer investment horizons (Hicks, 1937; Tobin, 1958). The theory assumes that money serves as a store of value and that investors face a choice between holding liquid assets (money) and illiquid interest-bearing assets (bonds or securities). It assumes that investors are risk-averse and prefer liquidity unless adequately compensated through higher returns. The theory assumes that interest rates adjust to equilibrate the demand for money with the supply of money determined by monetary authorities. It assumes that the speculative demand for money varies

inversely with interest rates—when rates are low, investors expect them to rise and prefer holding money; when rates are high, investors expect them to fall and prefer holding bonds (Keynes, 1936). The theory further assumes that term premiums exist, meaning that investors require additional compensation for holding longer-maturity assets due to increased price risk and reduced liquidity (Hicks, 1946).

The theory's major strength lies in explaining why interest rates fluctuate and how investor preferences for liquidity shape asset yields across different time horizons. Keynes's framework successfully accounts for the yield curve's upward slope, where longer-term securities typically offer higher yields than short-term instruments due to liquidity and uncertainty premiums (Hicks, 1946). Another strength involves providing a theoretical foundation for understanding how money market instruments price relative to one another based on their liquidity characteristics and maturity structures. The theory explains why money market funds holding shorter-duration assets with higher liquidity generally offer lower yields compared to those holding longer-maturity instruments, reflecting the liquidity premium investors demand (Tobin, 1958). Empirical evidence from multiple markets confirms that liquidity preferences significantly affect asset pricing, with less liquid assets commanding higher yields to compensate investors for reduced marketability (Amihud & Mendelson, 1986).

However, the theory faces several criticisms and limitations. Modern financial theory argues that Keynes oversimplified the asset choice problem by focusing primarily on the money-bonds dichotomy, ignoring the full spectrum of financial instruments available to investors (Friedman, 1956). The theory inadequately addresses how expectations about future interest

rates form and change, treating them largely as exogenous rather than explaining their determinants (Tobin, 1958). Critics note that the speculative motive's assumption of mean-reverting interest rate expectations may not hold consistently, particularly during prolonged periods of rising or falling rates (Mishkin, 2016). The theory provides limited guidance on how institutional factors, regulatory constraints, and market microstructure affect liquidity preferences and yield determination in modern financial markets (Duffie, 2012). Additionally, the framework struggles to fully explain why yield curves occasionally invert or why term premiums vary substantially over time and across different economic conditions (Campbell & Shiller, 1991).

This theory relates directly to the yield variable in this study, which represents the dependent variable measuring money market unit trust performance. Money market unit trusts invest primarily in short-term debt securities including Treasury Bills, commercial paper, certificates of deposit, and repurchase agreements—all instruments whose yields reflect liquidity preferences (ICI, 2022). According to Keynes's framework, the yields these funds generate depend fundamentally on the liquidity characteristics of their portfolio holdings, with funds holding longer-maturity or less liquid instruments commanding higher yields to compensate investors for reduced liquidity. The theory predicts that money market funds maintaining shorter average portfolio maturities (higher liquidity) should demonstrate lower yields, while those extending duration (reducing liquidity) should generate higher yields, reflecting the liquidity premium embedded in interest rates. This theoretical foundation enables examination of whether observed yield variations across Kenyan money market unit trusts reflect differences in portfolio liquidity profiles, maturity structures, and benchmark

selections. The theory also explains why management fees reduce net yields—they effectively increase the total cost of accessing portfolio returns, similar to how transaction costs reduce the attractiveness of less liquid assets. Testing whether institutional affiliation, benchmark choices, and fee structures influence yields through their effects on portfolio liquidity positioning extends Keynes's framework to modern collective investment vehicles operating in emerging markets.

### **2.3 Empirical Review**

This section presents a synthesis of several empirical researches that have investigated the relationship between institutional affiliation, benchmarks, management fees, inflation, and the yield of unit trusts in various contexts. The review is organized thematically, focusing on the key variables of interest and their impact on unit trust performance. The studies are drawn from both emerging and developed markets, providing a diverse perspective on the factors influencing unit trust yields. The empirical evidence is critically evaluated, highlighting consistencies, contradictions, and gaps in the existing literature. This comprehensive review lays the foundation for this study, which aims to contribute to the understanding of the determinants of unit trust yields in the Kenyan context.

#### **2.3.1 Institutional Affiliation and Yield of Unit Trusts**

Wang (2023) used multivariate regression analysis to assess the respective trading approaches of unit trusts and bank affiliation. The study analyzed if the unique investing strategies of unit trusts from 2003 to 2019 were impacted by their relationship with commercial banks and concluded that Bank affiliation leads to better performance of unit trusts. The study assumed a linear association between variables and was carried out in China

a developed country, different from Kenya market. This study includes a inflation as a moderating variable and based in Kenya.

Iftikhar and Siddiqui (2023) examined how group affiliation, corporate governance, block holding, and related party transactions influence financial performance in Pakistan. The study tracked data from firms listed on the KSE-100 index between 2014 and 2019 and applied Multiple Linear Regression (MLR) with factor scores to assess the moderating role of governance-related factors in the affiliation–performance relationship. Findings revealed that group affiliation significantly improved firms’ return on equity (ROE), while strong corporate governance structures, block shareholding, and leverage further strengthened this positive relationship. A conceptual gap exists because the study focused on group affiliation and governance factors affecting firm performance, whereas the current research investigates institutional affiliation, benchmarks, and management fees—alongside inflation as a moderating variable—on the yield of money market unit trusts in Kenya.

Alberato et al (2020) examined how affiliation to a banking group affect unit trust performance, by using panel regression to evaluate 1860 unit trusts managed by 120 asset management companies from 2006 to 2017 in Italy. The study found bank-controlled unit trusts underperform independent ones. The study finding that bank controlled unit trusts underperform independent contradicts the funding by Tanachote (2016) and MacMoffat (2020). This contradiction creates a gap which this research seeks to resolve, using the Kenyan experience.

Mairafi, Mahmuda, and Adamu (2025) evaluated the impact of Collective Investment Scheme expenses and fund age on the investment performance of selected fund managers in Nigeria. The study adopted a longitudinal research design, utilizing secondary data from 45 purposively selected funds operating between 2014 and 2023, and employed the Difference Generalized Method of Moments (GMM) regression to address endogeneity and cross-sectional dependence. The results revealed that both fund expenses and age had a negative and statistically significant effect on performance, indicating that high operational costs reduced Net Asset Value while older funds exhibited declining efficiency over time. A methodological gap exists because the study applied a longitudinal GMM approach using Nigerian data, while the current study will employ time series analysis targeting money market unit trusts in Kenya, using secondary data analyzed through descriptive and inferential statistics.

Taylor (2022) investigated the impact of fund attributes on the performance of Collective Investment Schemes in South Africa. The study employed a panel data research design, analyzing 175 South African Equity-General classified funds using pooled OLS, fixed effects, and random effects models over the period from January 2000 to September 2021, with performance measured through total return, Treynor ratio, Sharpe ratio, information ratio, and Jensen's alpha. The findings revealed that fund size and age were significantly negatively related to performance, fund family size had a significant positive effect, while expense ratios showed no significant relationship. A contextual gap is evident because the study focused on equity-based schemes in South Africa, whereas the current study

investigates money market unit trusts in Kenya, examining institutional affiliation, benchmarks, and management fees, with inflation as a moderating variable influencing yield.

A study by Tetteh (2022) assessed the level of awareness of Collective Investment Schemes among formal sector workers in Ghana. The study adopted a descriptive survey approach, collecting primary data through questionnaires and Google Forms administered to formal employees to determine their understanding and investment behavior regarding fund schemes. The findings showed that most workers were aware of Collective Investment Schemes, although nearly half did not invest due to inadequate understanding, while those who invested prioritized safety and returns; educational level was also found to significantly influence awareness. A contextual gap exists because the study was conducted in Ghana among formal workers focusing on awareness and participation, whereas the current study is based in Kenya and investigates how institutional affiliation, benchmarks, and management fees—moderated by inflation—affect the yield of money market unit trusts.

A study by Ochieng, Ngali, and Agong (2023) examined the influence of institutional characteristics on the financial performance of Collective Investment Schemes in Kenya. Adopting a descriptive survey design, the study utilized secondary data drawn from eleven schemes registered by the Capital Markets Authority covering the years 2018 to 2022, and applied descriptive statistics alongside regression analysis to assess relationships among fund size, expense level, portfolio composition, and liquidity. The findings revealed that all four factors had a significant positive effect on financial performance, with liquidity emerging as the most influential determinant. A conceptual gap exists because the study investigated fund size, expense level, portfolio composition, and liquidity, while the current study focuses on

institutional affiliation, benchmarks, and management fees, with inflation as a moderating variable influencing the yield of money market unit trusts in Kenya.

Ndung'u and Kung'u (2022) examined the influence of investor awareness on the performance of Real Estate Investment Trusts (REITs) in Kenya. The study utilized a predictive correlational research design, targeting fund managers, stockbrokers, investment banks, and property developers, and analyzed the data using Structural Equation Modeling to test hypothesized relationships at a 5% significance level. The findings revealed that investor awareness had no significant influence on REIT performance, suggesting that despite existing investor education and access to market information, awareness alone does not translate into improved performance outcomes. A methodological gap arises because this study applied Structural Equation Modeling and focused on survey data, while the current study will employ time series analysis, targeting money market unit trusts in Kenya, using secondary data and analyzing it through descriptive and inferential statistics.

Ndanu and Gatauwa (2023) explored how fund characteristics affect the financial performance of Collective Investment Schemes in Kenya. The study adopted a panel data research design, utilizing secondary data from twenty-one Nairobi-based schemes operating between 2018 and 2022, and applied diagnostic tests alongside panel data modeling using Stata for analysis. Findings indicated that institutional factors had a positive and significant effect on return on investment, while scheme products exhibited a moderating influence on the relationship between fund characteristics and financial performance. A contextual gap exists because the study was limited to Collective Investment Schemes products as moderating factor in Nairobi, whereas the current study focuses on money market unit trusts

across Kenya. Further the study used scheme products as moderating factors, while this study examines the influence of institutional affiliation, benchmarks, and management fees with inflation as a moderating factor on yield.

### **2.3.2 Benchmark and Yield of Unit Trusts**

Kazmi (2022) employed regression analysis to evaluate the performance, risk exposure, operating costs, and risk-reduction tactics of Sector Unit trusts in the US from January 2011 to Aug 2021 and showed that the benchmarked index offered a greater risk-adjusted return and performed better than the sector mutual fund. This study contradicts Rahma and Prasetyo (2017) who showed that the performance of fixed income Islamic unit trusts and the market performance are identical. Sector unit trusts focus on specific industries of the economy and therefore results cannot be generalized. This study is not constrained to a specific industry, whose findings will be able to be generalized.

Umamaheswari, Jayanthi, and Sathishkumar (2022) evaluated the performance of treasury bills traded in India's money market between 2011–12 and 2020–21 using a descriptive research approach. The study relied on secondary data sourced from the Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI), and the Centre for Monitoring Indian Economy (CMIE). Analytical techniques such as percentage analysis, annual growth rate (AGR), and compound annual growth rate (CAGR) were employed to measure the performance and growth trends of different categories of treasury bills. Findings indicated that T-bills remained a preferred short-term investment instrument due to their low risk and high liquidity, contributing significantly to monetary market stability and economic development. The results further demonstrated steady growth in the issuance and trading

volume of T-bills during the study period, reflecting investor confidence in government-backed securities. The study concluded that T-bills are critical tools for liquidity management and short-term financing in India's financial system. The conceptual gap lies in the focus on the Indian money market's growth performance of T-bills, while the current study examines how institutional affiliation, benchmarking, and management fees influence money market unit trust yields in Kenya, moderated by inflation, thus emphasizing investment performance within collective schemes rather than sovereign instruments.

Lestari and Arrozi (2023) investigated the relationship between mutual fund performance and three key factors-inflation, operating costs, and fund size-for the period 2017–2021 in Indonesia. Using a quantitative research design, the study analyzed data obtained from the Indonesia Financial Services Authority (OJK) and the Indonesian Central Statistics Agency, employing multiple regression analysis to establish the nature and strength of these relationships. The findings revealed that inflation had no significant influence on the performance of unit trusts, suggesting that fund managers were able to mitigate inflationary pressures through prudent portfolio diversification and strategic asset allocation. Conversely, operating costs and fund size were found to exert a notable effect, where higher operating costs reduced fund returns, and larger fund size enhanced performance through economies of scale. The study concluded that effective cost management and optimal fund scaling are crucial for sustaining competitive returns in the Indonesian mutual fund industry. A conceptual gap emerges since this investigation concentrated on inflation and fund-specific factors influencing mutual fund performance, whereas the current study integrates institutional affiliation, benchmarking, and management fees, moderated by inflation, to

explain variations in the yield of money market unit trusts in Kenya.

Gebrewolde, Woldekidan, and Molla (2023) examined the potential of treasury bills yield to serve as a benchmark interest rate in Ethiopia, focusing on the monetary policy transition from a quantity-based to an interest rate-based framework. Using a descriptive and quantitative approach with monthly data spanning 2014–2022, the study employed the Autoregressive Distributed Lag (ARDL) model grounded in the Krishnamurthy–Nagel liquidity substitution theory to analyze the substitutability between T-bills and bank deposits. The results revealed that after the 2019 reform, T-bill yields became more market-driven and responsive to liquidity shifts, although their real returns remained negative amid persistent inflation. Additionally, before the reform, T-bills and deposits were substitutes, but they became complementary afterward as banks increased participation in T-bill purchases. Despite these developments, the study concluded that T-bill yields did not yet serve as reliable indicators of monetary policy stance or effective benchmark rates in Ethiopia. A conceptual gap is identified since this study assessed the monetary policy implications of treasury bill yields, whereas the current study focuses on how institutional affiliation, benchmarking practices, and management fees—moderated by inflation—affect the yield of money market unit trusts in Kenya.

Forbuzo (2024) examined the effect of treasury bill rates, exchange rate changes, and inflation on the performance of the Ghana Stock Exchange between 2020 and 2023. Using multivariable regression analysis, the study covered all sectors of the exchange amid economic shocks from COVID-19, the Russia-Ukraine war, and the Domestic Debt Exchange Program. Results showed a significant positive link between treasury bill and

exchange rates with stock performance, contrary to prior evidence, while inflation had an insignificant negative effect. The study attributed the positive trend to investor confidence boosted by the IMF's Extended Credit Facility and a shift from bonds to equities. A contextual gap exists since it focused on Ghana's macroeconomic conditions, while the current study analyzes Kenya's money market unit trusts, emphasizing institutional affiliation, benchmarking, and management fees with inflation as a moderator.

Mohammed and Mabrouk (2025) examined the determinants of financial performance of mutual funds in Egypt by comparing Islamic and conventional open-end equity funds operating between 2016 and 2023. The study adopted a quantitative research design using panel data from 33 mutual funds—24 conventional and 9 Islamic—and applied descriptive statistics and dynamic panel regression models to evaluate the influence of fund attributes and macroeconomic variables. Findings showed that fund size, fund age, and interest rate had significant positive effects on growth performance, while inflation and fund objective had minimal impact. Fund age and exchange rate also showed mixed associations with risk-adjusted metrics such as Sharpe, Treynor, and Jensen ratios. The study concluded that macroeconomic dynamics and internal fund attributes jointly shape mutual fund outcomes, though Islamic and conventional funds display similar sensitivity patterns. A contextual gap exists since this investigation focused on Egypt's Islamic and conventional mutual fund sectors.

Mwangi (2023) examined the effect of financial risk on unit trust price volatility in Kenya amid declining investor confidence. Using a longitudinal research design with secondary data from 19 Capital Markets Authority-registered unit trusts (2009–2017), the study applied

descriptive statistics, correlation analysis, and panel regression models. Findings showed that liquidity and default risks had strong positive effects, operational risk had a moderate positive influence, while market and investment risks had significant negative impacts. The study concluded that effective risk management and stricter oversight could stabilize the sector. A methodological gap exists since it used a longitudinal approach to study financial risks, whereas the current study will apply time series analysis to assess how institutional affiliation, benchmarking, and management fees—moderated by inflation—affect money market unit trust yields in Kenya.

Namu (2021) investigated the effect of fund characteristics on the performance of unit trust funds in Kenya using an explanatory research design guided by positivism. The study analyzed secondary data from 16 unit trusts between 2005 and 2017 through panel regression analysis with diagnostic tests for model validity. Results showed that operating expenses negatively affected equity and money market funds but positively influenced bond and balanced funds, while fund size improved performance across all categories. Systematic and unsystematic risks had mixed effects depending on fund type, and inflation significantly moderated their relationship with performance. A conceptual gap arises since this study focused on operational and risk characteristics, while the current research emphasizes institutional affiliation, benchmarking, and management fees with inflation as a moderating factor influencing money market unit trust yields in Kenya.

### **2.3.3 Management Fees and Yield of Unit Trusts**

Bouzekouk and Mansor (2024) analyzed the factors influencing Malaysian retail investors' selection of fund management companies in the context of Islamic unit trust funds. The study

employed a quantitative survey design involving 550 Malaysian Muslim investors and utilized a model grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT) to assess the effects of past performance, fees, perceived religiosity, and perceived risk on investor attitudes. Results revealed that perceived religiosity and a company's past performance had positive effects on investor attitudes, whereas perceived risk had a negative effect. Moreover, Islamic financial literacy positively moderated the influence of religiosity, while price sensitivity weakened it. The study concluded that investor attitudes toward Islamic fund managers are shaped by both rational and faith-based considerations, with religiosity and performance outweighing cost concerns. A contextual gap exists since this research focused on Malaysian retail investors and Islamic fund behavior.

Busse, Chordia, Jiang, and Tang (2021) analyzed how transaction costs and portfolio characteristics interact to influence mutual fund performance using a unique dataset of actual mutual fund trades in China. The study employed a quantitative research design anchored in cross-sectional and panel data regression models, controlling for investment style and fund size. Results showed that larger funds incurred lower percentage transaction costs because they traded less frequently and preferred large-cap stocks to minimize expenses. Nonetheless, these funds recorded lower gross returns than smaller ones, indicating diminishing returns to scale due to limited investment opportunities and higher liquidity constraints. The study concluded that mutual funds face inherent trade-offs between trading efficiency, portfolio structure, and performance outcomes as fund size increases. A conceptual gap exists since this study centered on transaction costs and portfolio dynamics.

Mantilla-García, Garcia-Huitron, Concha-Perdomo, and Aldana-Galindo (2023) evaluated the comparative cost efficiency of pension fund management structures across Latin American countries. The study used a quantitative approach and developed a closed mathematical formula to convert assets-based management fees into equivalent contribution-based rates, enabling cross-country comparisons. Using empirical data from several pension systems, results showed that the interpretation of fee drivers and cost efficiency varied significantly depending on the conversion method applied, highlighting inconsistencies in evaluating management costs across jurisdictions. The study emphasized that standardized fee metrics are essential for fair benchmarking and accurate net return estimation in retirement systems. A conceptual gap arises since the study focused on pension fund cost structures and fee conversion methodologies.

Oladele (2021) examined the volatility of unit trust returns in Nigeria using regression analysis to assess performance fluctuations between 2016 and 2020. The study established a positive correlation between overall market portfolio movements and the performance of unit trust schemes, indicating that market trends strongly influence fund volatility. However, it relied solely on net asset value (NAV) as the performance indicator, limiting the understanding of actual investor returns. A methodological gap exists since this study used NAV as the only performance metric, while the current research extends the analysis to include yield as a more comprehensive measure of performance for money market unit trusts in Kenya.

Yao, Shanoyan, Schwab, and Amanor-Boadu (2022) examined how mobile money reduces transaction costs and enhances market participation among smallholder farmers in Côte

d'Ivoire and Tanzania. The study used a quantitative design grounded in transaction cost economics and analyzed household survey data through econometric modeling. Findings revealed that farmers using mobile money to receive payments were about 37 percentage points more likely to participate in distant markets compared to non-users. The study concluded that digital payments lower transaction barriers and encourage broader market integration. A contextual gap exists since this research focused on agricultural market participation in West and East Africa, while the current study analyzes how institutional affiliation, benchmarking, and management fees—moderated by inflation—affect money market unit trust yields in Kenya.

Ndungu (2021) investigated the effect of portfolio management strategies on the financial performance of unit trusts listed on the Nairobi Securities Exchange. The study adopted both correlational and descriptive research designs, analyzing secondary data from 56 registered unit trusts covering the years 2015 to 2019. Regression and ANOVA analyses were used to assess how passive and active portfolio strategies, firm size, leverage, and inflation influence return on assets (ROA). Findings showed that these factors jointly explained 4% of ROA variation, with passive and active management, firm size, and leverage showing positive effects, while inflation negatively affected returns. The study concluded that effective portfolio management enhances performance and recommended inflation control policies and stronger investment alignment with risk profiles. A conceptual gap arises since this research focused on portfolio management strategies and firm characteristics.

Kimari, Ogada, and Lio (2023) analyzed the effect of transaction costs of mobile credit on the financial prosperity of micro and small entrepreneurs in Nairobi County, Kenya. The

study employed a descriptive and correlational research design, collecting data through structured questionnaires and analyzing it using regression techniques to establish relationships between mobile credit transaction costs and entrepreneurial outcomes. Findings indicated that high transaction costs—such as withdrawal fees, interest charges, and delayed disbursements—had a negative and significant impact on business profitability and liquidity. The study concluded that reducing transaction costs can enhance access to affordable credit and promote the financial growth of small enterprises. A contextual gap exists since this study focused on mobile credit and entrepreneurship in Nairobi.

Mwita (2022) investigated the effect of portfolio management on the profitability of unit trust companies in Kenya. The study employed a descriptive research design targeting portfolio manager from 24 licensed unit trust companies and used structured questionnaires for data collection. Descriptive and regression analyses were applied to determine how the expected rate of return, risk, and liquidity influence profitability. Findings showed that all three variables—expected return, risk, and liquidity—had a positive and significant effect on the profitability of unit trust companies, confirming that effective portfolio management enhances firm performance. The study recommended integrating risk assessment and return optimization strategies to improve profitability within the sector. A conceptual gap exists since this research focused on portfolio management variables.

#### **2.3.4 Inflation and Yield of Unit Trusts**

Fadliana and Marsono (2023) examined the effect of factors such inflation, mutual fund size, and age on the return's sharia mutual funds in Indonesia for the period 2019-2021. Using panel data regression, inflation was found to have substantial inverse relationship between

sharia mutual fund returns and sustainability. The study focused on sustainable return whose concern is on socially responsible and ethical values rather than financial return whose basis is maximization of return, while minimizing risk. This study focuses on financial return of Unit trusts rather than sustainable return.

Gomez-Cram and Yaron (2021) investigated the role of inflation expectations in shaping the nominal yield curve using a macrofinance term structure model that integrates inflation nonneutrality and preference shocks. The study employed advanced econometric estimation techniques on U.S. bond market data to distinguish between the effects of inflation volatility and real rate movements on yield dynamics. Results indicated that bond risk premiums are primarily influenced by the stochastic volatility of inflation and consumption, while preference shocks drive fluctuations in real interest rates. Contrary to traditional models, expected inflation was found to play a limited role in explaining nominal yield variations. The study concluded that real rate shocks, rather than inflation expectations, are the dominant source of nominal yield curve movements. A conceptual gap exists since this research examined macro-level determinants of nominal bond yields in the United States, while this study examines inflation as a moderating variable in Kenya.

Islam (2024) examined the effect of inflation on stock market performance in Bangladesh using a multivariate regression model based on monthly data from June 2012 to March 2024. Stock performance was measured using the DSEX index of the Dhaka Stock Exchange, with inflation, private sector credit growth, remittance inflows, and exchange rate as explanatory variables. Findings revealed that inflation had a negative and significant relationship with stock market performance, implying that rising prices erode investor confidence and equity

valuations. Among the control variables, remittances and credit growth were negatively associated with market performance, while exchange rate changes showed a positive link. The study concluded that persistent inflation weakens market stability and financial development in emerging economies like Bangladesh. A contextual gap exists since this research focused on inflation's macroeconomic impact on stock markets.

Asiedu, Mireku-Gyimah, Kamasa, and Otoo (2021) analyzed the impact of inflation and interest rates on stock market performance in Ghana using monthly data from 2010 to 2016. The study employed the Johansen cointegration test and a Vector Error Correction Model (VECM) to capture both short- and long-run sectoral effects. Results showed that inflation and interest rates had a negative and significant influence on stock market performance in the long run, with the petroleum and consumer staples sectors being the most affected by inflation and interest rate fluctuations, respectively. The study recommended prudent macroeconomic management to stabilize financial markets and safeguard sectoral growth. A contextual gap exists since this study focused on sector-based stock market dynamics in Ghana.

Vermeulen (2024) evaluated the influence of central bank independence (CBI) on inflation and money growth in South Africa using an autoregressive distributed lag (ARDL) model and Granger causality tests. The study regressed existing CBI indexes on annual inflation and money supply growth rates to assess how the South African Reserve Bank's legal independence affects monetary discipline and credibility. Findings revealed a statistically significant negative relationship between CBI and both inflation and money growth, indicating that greater independence enhances monetary credibility and curbs excessive

money expansion. The study concluded that institutional autonomy of the central bank is critical for maintaining price stability and monetary control. A contextual gap arises since this research focused on macroeconomic policy independence and inflation management in South Africa.

Gure and Mutswenje (2023) examined the effect of macroeconomic variables—particularly inflation—on stock market performance in Kenya. The study adopted an explanatory research design and utilized secondary time series data from 2017 to 2021 obtained from the Nairobi Securities Exchange and the Kenya National Bureau of Statistics. Using descriptive and inferential analyses through a time series regression model, the findings revealed that inflation had a statistically significant negative effect on stock market performance, implying that rising prices erode investor confidence and capital market activity. The study recommended the adoption of contractionary monetary policy to control inflation and stabilize market performance. A contextual gap exists since this research focused on Kenya's stock market and macroeconomic factors, while the current study investigates institutional affiliation, benchmarking, and management fees—moderated by inflation—affecting money market unit trust yields in Kenya.

## **2.4 Summary of Knowledge Gap**

The knowledge gap identified from the reviewed empirical studies indicates that while significant research has been conducted globally on unit trust performance, most studies remain fragmented in scope and limited in contextual applicability. Existing evidence has focused on isolated determinants such as fund size, operational costs, or inflation, yet failed

to develop an integrated analytical model linking institutional affiliation, benchmarks, management fees, and inflation to money market unit trust yields in Kenya. The inconsistencies in results, coupled with limited research in the Kenyan money market unit trust context, present an opportunity for further investigation to clarify the relationships among these variables.

On conceptual gap, many studies including Wang (2023), Alberato et al. (2020), and Mwita (2022) examined specific factors such as fund affiliation, portfolio management, or cost structures but failed to integrate these determinants into a unified model explaining performance. Similarly, studies like Lestari and Arrozi (2023) and Mohammed and Mabrouk (2025) considered inflation, fund size, and age but did not account for benchmark influence or fee variations. Furthermore, Kazmi (2022) and Gebrewolde et al. (2023) emphasized benchmarking and treasury yields yet excluded internal operational factors. This disjointed approach creates a conceptual gap since there is no comprehensive model showing how institutional affiliation, benchmarks, and management fees interact under varying inflationary environments. The current study bridges this by developing an integrated framework that simultaneously evaluates these variables and their combined influence on money market unit trust yields in Kenya.

Moreover, one contextual gap arises because most previous studies were conducted outside Kenya, often in countries with advanced or dissimilar financial markets. For instance, Taylor (2022) examined South Africa, Mohammed and Mabrouk (2025) studied Egypt, and Fadliana and Marsono (2023) focused on Indonesia, while Bouzekouk and Mansor (2024) analyzed Malaysia. Even within Africa, studies like Asiedu et al. (2021) in Ghana and Vermeulen

(2024) in South Africa centered on macroeconomic and institutional settings distinct from Kenya's regulatory landscape. Kenyan-based studies such as Namu (2021), Ndanu and Gatauwa (2023), and Ochieng et al. (2023) concentrated on equity or real estate investment schemes, neglecting the money market segment. This gap limits the transferability of findings to the Kenyan context where investor behavior, regulatory environment, and inflationary pressures differ. The current study fills this contextual gap by using data from registered Kenyan MMUTs, reflecting local institutional dynamics and economic realities.

Besides, on methodological gap, prior research demonstrates considerable variation in research design, data scope, and performance measurement. Studies like Oladele (2021) relied solely on net asset value, while Ndungi (2021) used annual data, limiting statistical robustness. Survey-based designs adopted by Kimari et al. (2023) and Tetteh (2022) focused on perceptions rather than actual fund performance. Others such as Mwangi (2023) and Mairafi et al. (2025) used longitudinal designs but targeted unrelated sectors. Furthermore, several analyses assumed linear relationships and ignored moderating influences of macroeconomic factors. This methodological gap undermines comparability and validity of conclusions. The current study addresses it by employing a panel data design covering a 15-year period (2008–2022), using quarterly secondary data and adopting yield as a precise performance measure. It also integrates inflation as a moderating variable and applies both descriptive and inferential statistical analysis to enhance reliability.

Finally, on theoretical gap, the reviewed studies adopted theories inconsistently and often without integration across constructs. The disjointed application of theories fails to account for how internal managerial decisions and external economic forces jointly influence fund

outcomes. This study addresses the theoretical gap by integrating transaction cost theory, Deming benchmark theory, cost-plus pricing theory, inflation quantity theory, and Keynes’s Liquidity Preference Theory to construct a unified explanatory model. Through this theoretical integration, the study links institutional efficiency, benchmark alignment, cost structures, and macroeconomic stability to the overall yield performance of money market unit trusts in Kenya. A summary of empirical studies on unit trust performance is presented in the table 2.1 below.

**Table 2.1 Summary of empirical studies on unit trust performance**

Author(s)	Objectives	Study Focus	Methodology	Key Finding	Research Gap	How Gap Was Addressed
Wang (2023)	To assess how bank affiliation influences unit-trust performance.	Institutional affiliation and fund returns in China.	Multivariate regression on 2003–2019 data.	Bank-affiliated unit trusts performed better than independents.	Contextual Gap: Conducted in a developed market (China) unlike Kenya.	The current study examined the same relationship within Kenya’s money-market context, incorporating inflation as a moderator.
Iftikhar & Siddiqui (2023)	To analyze group affiliation, governance, and block-holding on performance.	Group affiliation and firm ROE in Pakistan.	Multiple Linear Regression (MLR) 2014–2019 KSE-100 data.	Group affiliation improved ROE; governance and leverage strengthened the effect.	Conceptual Gap: Focused on corporate-governance linkages not unit-trust yields.	This study integrated institutional affiliation, benchmarks, and management fees moderated by inflation.
Alberato et al (2020)	To examine bank-group affiliation impact on unit-trust performance.	Bank-controlled vs. independent unit trusts in Italy.	Panel regression (2006–2017).	Bank-controlled funds underperformed independent ones.	Conceptual Gap: Contradicted prior findings creating inconsistency.	The current study resolved contradictions through analysis of Kenyan money-market funds.
Mairafi et al (2025)	To determine how expenses and fund age affect investment performance.	Collective Investment Schemes in Nigeria.	Longitudinal GMM regression (2014–2023).	High expenses and older funds reduced NAV performance.	Methodological Gap: Used GMM longitudinal design.	The Kenyan study used time-series descriptive and inferential statistics to capture short-term variations.
Taylor (2022)	To explore fund-attribute effects on Collective Investment	South African Equity funds (2000–2021).	Panel data using OLS, FE, RE models.	Fund size and age negatively related to performance;	Contextual Gap: Focused on equity schemes in South Africa.	Addressed by analyzing Kenyan money-market funds incorporating inflation as moderator.

Author(s)	Objectives	Study Focus	Methodology	Key Finding	Research Gap	How Gap Was Addressed
	Scheme performance.			family size positive.		
Tetteh (2022)	To evaluate awareness of Collective Investment Schemes.	Awareness and participation among formal workers in Ghana.	Descriptive survey using questionnaires & Google Forms.	High awareness but low participation due to poor understanding.	Contextual Gap: Focus on awareness not fund yield; conducted in Ghana.	The current study examined performance determinants in Kenya's institutional context.
Ochieng et al (2023)	To analyze institutional characteristics and financial performance.	Collective Investment Schemes in Kenya (2018–2022).	Descriptive survey with secondary data & regression.	Fund size, expenses, portfolio composition, and liquidity positively affected performance.	Conceptual Gap: Variables differed from affiliation and benchmark factors.	This study extended analysis to institutional affiliation, benchmarks and fees.
Ndung'u & Kung'u (2022)	To determine investor awareness impact on REIT performance.	REITs in Kenya.	Predictive correlational design using SEM.	Investor awareness had no significant influence on performance.	Methodological Gap: Used survey SEM approach.	The current research utilized time-series secondary data for objective measurement.
Ndanu & Gatauwa (2023)	To assess fund characteristics on financial performance.	21 Collective Investment Schemes in Nairobi.	Panel data (2018–2022) with diagnostic tests.	Institutional factors positively influenced ROI.	Contextual Gap: Restricted to Nairobi schemes.	The study broadened scope to Kenyan money-market funds nationwide.
Kazmi (2022)	To compare benchmark index and sector fund performance.	Sector Unit Trusts in the US (2011–2021).	Regression analysis of risk and returns.	Benchmarked index outperformed sector funds.	Conceptual Gap: Industry-specific focus limited generalization.	The Kenyan study generalized benchmark analysis across all money-market funds.
Umamaheswari et al (2022)	To evaluate performance of treasury bills in India's money market.	T-bill performance and liquidity management.	Descriptive design with AGR and CAGR analysis (2011–2021).	T-bills remained low-risk and stable instruments.	Conceptual Gap: Focused on sovereign instruments not unit trusts.	Addressed by examining collective investment benchmarks in Kenya.
Lestari & Arrozi (2023)	To assess mutual fund performance drivers.	Indonesian mutual funds (2017–2021).	Multiple regression using OJK data.	Inflation insignificant; operating cost and size significant.	Conceptual Gap: Excluded institutional and benchmark variables.	Addressed through integrated model of affiliation, benchmark, and fees.
Gebrewolde et al (2023)	To test T-bill yields as benchmark rates.	Ethiopia monetary policy (2014–2022).	ARDL model using monthly data.	T-bill yields became market-driven post-2019 reform.	Conceptual Gap: Evaluated policy rate not fund yields.	Filled by analyzing benchmark effects on unit-trust yields in Kenya.

Author(s)	Objectives	Study Focus	Methodology	Key Finding	Research Gap	How Gap Was Addressed
Forbuzo (2024)	To analyze T-bill rate, exchange rate & inflation effects.	Ghana Stock Exchange (2020–2023).	Multivariable regression.	T-bill and exchange rates positively linked to stock returns.	Contextual Gap: Focused on Ghana macro market.	Addressed through Kenyan money-market fund context with inflation moderation.
Mohammed & Mabrouk (2025)	To compare determinants of Islamic and conventional funds.	Mutual funds in Egypt (2016–2023).	Panel data regression of 33 funds.	Fund size and age positive; inflation minimal.	Contextual Gap: Limited to Egypt fund types.	Expanded to Kenya’s money-market funds for cross-context insight.
Mwangi (2023)	To assess financial risk impact on unit trust volatility.	Kenyan unit trusts (2009–2017).	Longitudinal panel regression.	Liquidity and default risks increased volatility.	Methodological Gap: Longitudinal risk design only.	Applied time-series design linking affiliation and benchmarks to yield.
Namu (2021)	To investigate fund characteristics and performance.	Kenyan unit trusts (2005–2017).	Panel regression with diagnostics.	Operating expenses negatively affected equity and money-market funds.	Conceptual Gap: Focused on operational cost not management fee effects.	Expanded by examining management fee impact on yield with inflation moderation.
Bouzekouk & Mansor (2024)	To identify factors influencing Islamic fund selection.	Malaysian Islamic unit trust investors.	Quantitative survey of 550 respondents using UTAUT model.	Religiosity and performance positive; risk negative.	Contextual Gap: Religious investor context in Malaysia.	The study applied financial-performance context in Kenya’s unit trust sector.
Busse et al (2021)	To explore transaction cost and portfolio interactions.	Mutual funds in China.	Cross-sectional and panel data regressions.	Larger funds had lower costs but lower gross returns.	Conceptual Gap: Focused on transaction costs not management fees.	Addressed by testing management-fee impact on money-market yields.
Mantilla-García et al (2023)	To compare pension fund management cost efficiency.	Latin American pension systems.	Quantitative formula for fee conversion.	Fee interpretations varied by conversion method.	Conceptual Gap: Analyzed pension fees not unit-trust fees.	Applied cost-plus pricing perspective to Kenyan money-market funds.
Oladele (2021)	To examine volatility of unit trust returns.	Nigerian unit trusts (2016–2020).	Regression analysis.	Market portfolio positively correlated with unit trust returns.	Methodological Gap: Used NAV only as performance measure.	Extended analysis to yield as comprehensive performance indicator.
Yao et al (2022)	To assess mobile money’s effect on market participation.	Farmers in Côte d’Ivoire and Tanzania.	Quantitative econometric model.	Mobile money reduced transaction costs and	Contextual Gap: Agricultural focus outside finance sector.	Adapted transaction-cost perspective to financial sector in Kenya.

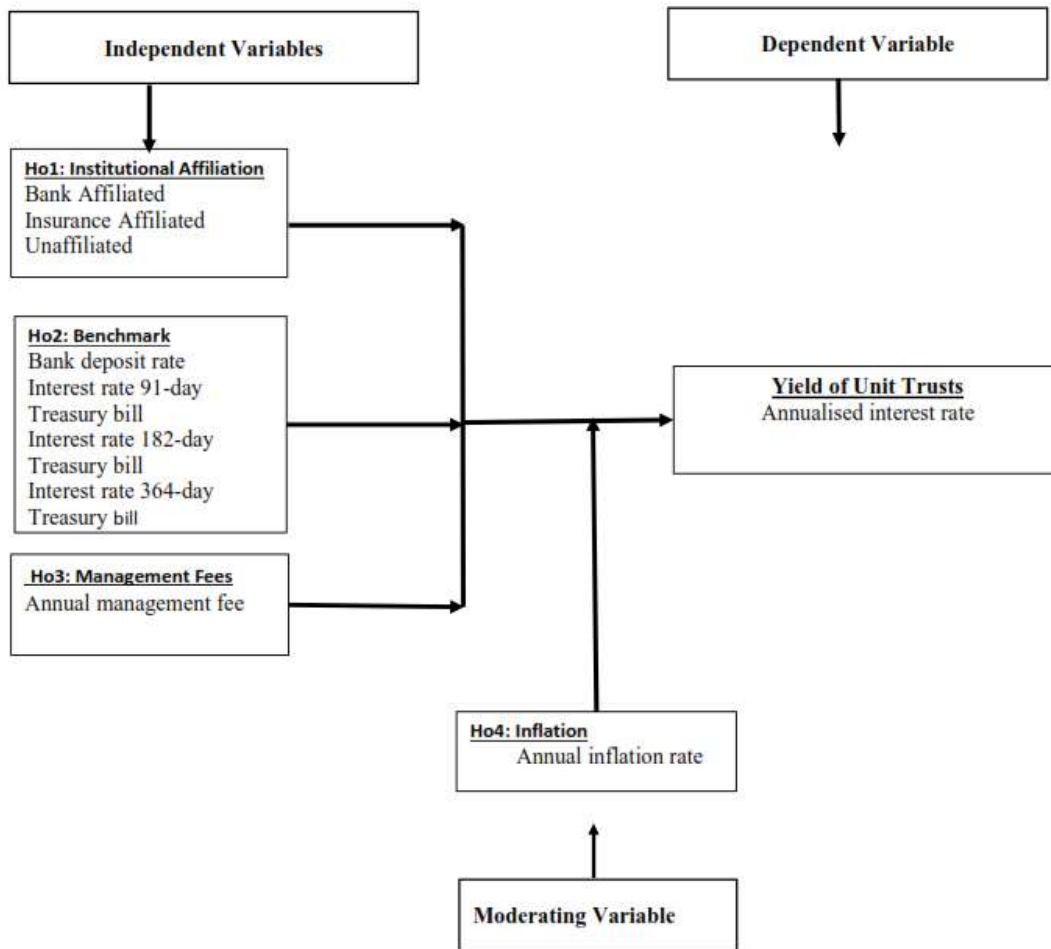
Author(s)	Objectives	Study Focus	Methodology	Key Finding	Research Gap	How Gap Was Addressed
				increased participation.		
Ndungu (2021)	To analyze portfolio strategies on unit trust performance.	NSE-listed unit trusts (2015–2019).	Correlational and descriptive design with ANOVA.	Active and passive strategies positively affected returns.	Conceptual Gap: Emphasized strategies not affiliation or benchmarks.	Examined institutional affiliation and benchmark determinants of yield.
Kimari et al (2023)	To determine transaction cost impact on entrepreneur prosperity.	Micro and small enterprises in Nairobi.	Descriptive and correlational survey with regression.	High transaction costs reduced profitability and liquidity.	Contextual Gap: Focused on micro-credit not unit trusts.	Applied cost-efficiency logic to fund management fees and returns.
Mwita (2022)	To assess portfolio management impact on profitability.	Unit trust companies in Kenya.	Descriptive design using questionnaires and regression.	Expected return, risk, and liquidity positively affected profitability.	Conceptual Gap: Focused on portfolio variables only.	Incorporated management fee and benchmark effects on fund yield.
Fadliana & Marsono (2023)	To assess inflation, fund size and age effects on returns.	Sharia mutual funds in Indonesia (2019–2021).	Panel data regression.	Inflation negatively affected sustainable returns.	Conceptual Gap: Focused on ethical returns not financial yields.	Concentrated on financial return of Kenyan unit trusts.
Gomez-Cram & Yaron (2021)	To evaluate inflation expectations on nominal yield curve.	U.S. bond market.	Macrofinance term-structure model.	Real rate shocks dominated yield movements.	Conceptual Gap: Macro-level focus on bond yields.	Applied micro-level fund analysis of inflation's moderation effect.
Islam (2024)	To examine inflation impact on stock performance.	Bangladesh stock market (2012–2024).	Multivariate regression using DSEX index.	Inflation had negative and significant effect on market performance.	Contextual Gap: Focused on stock markets not unit trusts.	Tested inflation's moderating role on Kenyan money-market fund yields.
Asiedu et al (2021)	To analyze inflation and interest rate effects on stocks.	Ghana sectoral markets (2010–2016).	Johansen cointegration & VECM.	Inflation and interest rates negatively affected market performance.	Contextual Gap: Sector-based stock focus in Ghana.	Investigated macro-moderation effects in Kenya's unit-trust sector.
Vermeulen (2024)	To determine central bank independence impact on inflation.	South Africa (ARDL analysis).	ARDL with Granger causality tests.	Greater independence reduced inflation and money growth.	Contextual Gap: Focused on monetary policy independence.	Applied inflation dynamics to fund performance moderation.

Author(s)	Objectives	Study Focus	Methodology	Key Finding	Research Gap	How Gap Was Addressed
Gure & Mutswenje (2023)	To assess macroeconomic variables on stock market performance.	Nairobi Securities Exchange (2017–2021).	Explanatory time-series regression.	Inflation negatively affected market confidence and activity.	Contextual Gap: Focused on stock market not unit trust yields.	Examined inflation as moderator in Kenya’s money-market unit trust model.

Source: Researcher (2025)

## 2.5 Conceptual framework

A conceptual framework represents the researcher's synthesis of literature regarding how particular variables relate to phenomena under investigation, providing visual and narrative representation of relationships between study variables (Adom et al., 2018). The conceptual framework for this study illustrates relationships between independent variables (institutional affiliation, benchmarks, and management fees), the moderating variable (inflation), and the dependent variable (yield of money market unit trusts in Kenya). The framework derives from theoretical foundations discussed in section 2.2 and empirical evidence reviewed in section 2.3, synthesizing transaction cost theory, Deming benchmark theory, cost-plus pricing theory, quantity theory of money, and Keynes’s Liquidity Preference Theory into integrated model explaining money market unit trust yield determinants.



**Figure 2.1 Conceptual framework**

Source – Researcher (2025)

Figure 2.1 shows the conceptual framework illustrating the relationship between institutional affiliation, benchmarks, management fees, and the yield of unit trusts, with inflation serving as the moderating variable. Institutional affiliation refers to whether a unit trust is affiliated or unaffiliated with a parent financial institution. Unit trusts were categorized into Bank affiliated, Insurance affiliated or unaffiliated (Independent). The yield of the money market unit trust, study's dependent variable, is measured by annualized interest rate. The

benchmarks were categorized into bank deposit rate, interest on 91-day Bank Treasury bills, interest on 182-day Bank Treasury bills, and interest on 364-day Bank Treasury bills. Management fee was the annual management fees levied by unit trust company. Inflation is introduced as a moderating variable that affects the strength and direction of the relationship between these determinants and the yield of unit trusts. Inflation was measured by the annual inflation rate.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

An extensive explanation of the research methodology is given in this chapter, including the research philosophy, research design, model specification, variable definition and operationalization, data collection instruments, pilot study, data collection procedure, data analysis, and presentation. The diagnostic tests carried out to guarantee the statistical models' robustness and the ethical standards upheld during the study procedure are also covered in this chapter.

#### **3.2 Research philosophy**

A research philosophy provides a set of guiding principles that define how research is conducted and how knowledge is generated and interpreted. It establishes the beliefs, assumptions, and values that inform the process of inquiry and the manner in which data are collected, analyzed, and understood (Bajpai, 2011). It provides a framework for understanding predispositions and suppositions around people's opinions about the world (Saunders et al 2012). Research philosophy also establishes the research design and has an impact on the collection, analysis, and use of data on phenomena. Research philosophy presents a framework for doing research based on assumptions about reality and the nature of knowledge (Collis & Hussey, 2014). According to Saunders et al. (2019), research philosophy reflects the researcher's stance on the nature of reality (ontology) and the nature

of knowledge (epistemology), thereby influencing both the methodology and analytical approach used in a study.

Scholars identify four dominant research philosophies in social science: positivism, interpretivism (phenomenology), realism, and pragmatism (Saunders et al., 2019). Positivism assumes that reality is objective and can be observed, measured, and explained through logical analysis of empirical data (Carson et al., 2001). Events of interest are believed to be outside the researcher's control (Gilmore, Perry & Gronhaug, 2001). It emphasizes causality, generalization, and statistical testing, focusing on observable phenomena that are independent of the researcher (Adeoluwa 2016). Consequently, the researcher focuses on causality through scrutinizing quantifiable observations impartially and statistical analysis (Remenyi, 1996).

Interpretivism, on the other hand, views reality as socially constructed and subjective, focusing on understanding human experiences and meanings (Adeoluwa, 2016). It uses qualitative approaches to data gathering, observation, analysis and description (Adeoluwa 2016). Realism combines elements of both positivism and interpretivism by acknowledging the existence of a real world that can be imperfectly perceived through observation. Pragmatism takes a flexible stance, arguing that research design and methods should be guided by the problem under investigation rather than strict adherence to any philosophical position (Creswell & Creswell, 2018).

In this study, the positivist philosophy was adopted because the research aimed at testing hypotheses and quantifying the causal relationship between firm characteristics, inflation, and yields of money market unit trusts using secondary data.

Positivism was found more appropriate than interpretivism, realism, or pragmatism since it allows for objective measurement, hypothesis testing, and use of statistical models to infer relationships between quantifiable variables (Collins, 2010). Furthermore, positivism aligns with the deductive reasoning approach, where existing theories are used to derive testable hypotheses and conclusions are drawn from empirical evidence (Adeoluwa, 2016). Positivist studies are appropriate in establishing the causal relationship (Adeoluwa, 2016) such as those envisioned between unit trust yield and institutional affiliation, management fee and benchmarks.

As noted by Saunders et al (2012), positivism is preferred in large, highly structured samples and in quantitative measurements. By nature, this study involved large, structured datasets covering 18 money market unit trusts over multiple years and thus required a scientific, replicable, and statistically verifiable methodology, hence the choice of positivism philosophy to guide the study. In line with Saunders et al. (2019), the positivist paradigm ensures independence of the researcher from the subject of study, allowing findings to be based solely on data evidence. The use of panel data regression models, hypothesis testing, and diagnostic validation of statistical assumptions further strengthens the alignment between positivist principles and this study's methodological orientation. In summary, the positivist philosophy was the most suitable paradigm because it supports quantitative analysis, objectivity, replicability, and predictive inference, which are all essential for assessing the effect of firm characteristics and inflation on the yields of unit trusts.

### **3.3 Research design**

This study employed an explanatory (causal) research design to evaluate the determinants of yields of money market unit trusts in Kenya. Explanatory research design is appropriate for studies seeking to establish cause-and-effect relationships between variables (Saunders, Lewis, & Thornhill, 2019). It enables the researcher to determine how variations in one or more independent variables produce measurable changes in the dependent variable. The design was considered suitable because the study aimed to assess how firm characteristics—specifically institutional affiliation, management fee, and benchmark performance—affect the yield of money market unit trusts, and further to examine how inflation moderates these relationships. By adopting an explanatory design, the study could empirically test hypotheses derived from theory and quantify the strength and direction of causal linkages among variables.

Consistent with the positivist philosophy, the study adopted a quantitative approach using panel data collected over multiple years from 18 licensed money market unit trusts in Kenya. Panel data research design allows observation of multiple entities over time, capturing both cross-sectional and time-series variations, thus improving estimation accuracy and controlling for unobserved heterogeneity (Gujarati & Porter, 2010). To implement this design, the study employed panel regression modeling, encompassing Fixed Effects and Random Effects models to test for both direct and moderating relationships.

The Hausman specification test was used to determine the appropriate model between the two estimators. This design also supported the inclusion of the interaction term (Inflation ×

Firm Characteristics) to test the moderating effect of inflation on yields. The explanatory design was therefore ideal because it integrated theory-driven hypothesis testing, quantitative modeling, and longitudinal observation, which together provide a robust framework for establishing causal inferences on how internal and external firm characteristics influence the performance of money market unit trusts in Kenya.

### 3.4 Model specification

The study employed a multivariate panel regression approach to assess the direct and moderating effects of affiliation, benchmark, and management fee on the yields of money market unit trusts in Kenya. As noted by Blundell and Bond (1998), panel data models generate more efficient and reliable estimates than pure cross-sectional or time-series data because they capture both temporal dynamics and individual heterogeneity across entities. Panel data analysis improves the efficiency of econometric estimates because of its higher sample variability and degrees of freedom (Hsiao et al., 1995). Hsiao (2006) further emphasizes that panel analysis helps control for unobserved variables that might otherwise bias parameter estimates. Panel data methodology gives the researcher an extensive amount of data, which boosts independence while lowering collinearity (Sporta, 2018). Panel data was used in the study to conduct a 10-year research analysis on money market unit trusts approved by the Capital Markets Authority (CMA), beginning from 2013 to 2022. The general empirical model was applied in the study was as below:

$$Y_{it} = \beta_0 + \beta X'_{it} + \varepsilon_{it} \quad (3.1)$$

Where:

$Y_{it}$ = Yield of money market unit trust  $i$  at time  $t$

$X'_{it}$ = Vector of independent variables (affiliation, benchmark, management fee, and moderator)

$\beta_0$ = Constant term

$\beta$ = Vector of coefficients to be estimated

$\varepsilon_{it}$ = Composite error term

In this study, it was assumed that yield of money market unit trust is affected by affiliation to an institution. This study also assumed that yield of money market unit trust is affected by benchmark return. Management fees are similarly assumed to influence the yield of money market unit trusts. The general function could take the form of a linear, logistics or multiplicative function. The one that will give a statistically sound model was selected and analyzed.

Panel estimation was undertaken using both Fixed Effects (FE) and Random Effects (RE) models. The Hausman test determined the preferred estimator based on whether firm-specific effects were correlated with regressors. Robust standard errors were used to address potential heteroscedasticity and serial correlation. Panel data were analyzed for 18 money market funds grouped as: Bank-affiliated: NCBA, Co-operative Bank, Insurer-affiliated: Britam, CIC, ICEA, Sanlam, Old Mutual, Orient Kasha, Apollo, Madison, Unaffiliated: African Alliance, Amana, Cytonn, Dry Associates, EIB Equity, GenCap Hela Imara, Nabo Africa, STANLIB, Zimele. This classification allowed for comparison across institutional categories and ensured the inclusion of market-wide performance characteristics.

### **3.4.1 Direct Effect Model**

The direct effect refers to how independent variables affect the dependent variable in the absence of an intervening variable. The direct effect model estimated the combined influence

of affiliation, benchmark return, and management fee on the yield of money market unit trusts. Unlike bivariate models that analyze one predictor at a time, this model incorporated all predictors simultaneously to capture multivariate interdependence, consistent with an expert-level econometric approach. Equation 3.1 was expanded to obtain equation 3.2 for estimating the study variables on money market unit trusts.

$$Y_{it} = \beta_0 + \beta_1 AFF_{it} + \beta_2 BEN_{it} + \beta_3 MF_{it} + \mu_{it} \quad (3.2)$$

Where:

$Y_{it}$  = Yield of unit trust  $i$  at time  $t$  (annual effective rate)

$AFF_{it}$  = Institutional affiliation (1 = bank/insurance-affiliated; 0 = unaffiliated)

$BEN_{it}$  = Benchmark return (e.g., 91-day Treasury Bill rate)

$MF_{it}$  = Management fee (%)

$\mu_{it}$  = Idiosyncratic error term

$\beta_0$  = the constant term

$\beta_1, \beta_2, \beta_3$  = explanatory variables' coefficients

This model quantified how firm-level characteristics independently contributed to variations in yield while controlling for cross-sectional and time effects. The expected signs were positive for affiliation and benchmark ( $\beta_1, \beta_2 > 0$ ) and negative for management fees ( $\beta_3 < 0$ ), consistent with prior empirical findings (Ferreira et al., 2017; Kazmi, 2022). The Fixed effects and Random effects estimations provided two perspectives: Fixed effects model controlled for unobserved firm effects (e.g., managerial quality, brand reputation). Random

effects model treated these as random influences to maximize efficiency. Hausman test results guided whether fixed or random effects were more appropriate for inference.

### 3.4.2 Indirect (Moderating) Effect Model

According to an indirect effect model, a causative variable affects an outcome variable through one or more moderating variables. To assess whether inflation moderates the relationship between firm characteristics and fund yield, the study employed the two-stage Whisman and McClelland (2005) moderation testing procedure. This approach differentiates between inflation acting as an independent (explanatory) variable and as a true moderator influencing the strength or direction of existing relationships. In accordance with Whisman and McClelland (2005) inflation in a particular year was first introduced in model 3.2 as a variable as shown in equation 3.3 below

#### Stage One – Inflation as an Explanatory Variable

$$Y_{it} = \beta_0 + \beta_1 AFF_{it} + \beta_2 BEN_{it} + \beta_3 MF_{it} + \beta_4 INF_t + \varepsilon_{it} \quad (3.3)$$

Where  $INF_t$  represents the inflation rate for year  $t$ .

If  $\beta_4$  is significant while the interaction terms (introduced in stage two) are not, then inflation only directly explains yield changes rather than moderating other relationships.

Secondly, inflation was introduced as a moderator as shown in equation 3.4 below

#### Stage Two – Inflation as a Moderator

$$Y_{it} = \beta_0 + \beta_1 AFF_{it} + \beta_2 BEN_{it} + \beta_3 MF_{it} + \beta_4 INF_t + \beta_5 (AFF_{it} \times INF_t) + \beta_6 (BEN_{it} \times INF_t) + \beta_7 (MF_{it} \times INF_t) + \varepsilon_{it} \quad (3.4)$$

Where:

$(AFF_{it} \times INF_t), (BEN_{it} \times INF_t), (MF_{it} \times INF_t) =$  Interaction terms capturing the

moderating influence of inflation. The decision framework for moderation testing is summarized below:

**Table 3.1: Moderation decision making criteria**

Model Outcome	Interpretation
$\beta_4$ significant, $\beta_5$ – $\beta_7$ insignificant	Inflation acts as an explanatory (independent) variable.
$\beta_4$ insignificant, $\beta_5$ – $\beta_7$ significant	Inflation has a moderating effect.

Adopted: Whisman and McClelland (2005)

In Table 3.1 above, when situation one occurs, then inflation is an explanatory variable rather than a moderating variable. If situation two occurs, then inflation is a moderating variable rather than an explanatory variable. This sequential testing ensures robust detection of moderation consistent with the Whisman–McClelland two-stage approach. Both stages were estimated using panel regression with robust errors, and the Hausman test was applied to confirm model specification. Diagnostic tests verified absence of multicollinearity (VIF < 10), homoscedasticity (Breusch-Pagan  $p > 0.05$ ), normality (Jarque–Bera  $p > 0.05$ ), and no autocorrelation (Durbin–Watson 1.5–2.5). This procedure ensures that the moderating impact of inflation is rigorously identified and statistically validated, emphasizing multivariate not bivariate.

### 3.5 Variable Definition and Operationalization

This section defines, categorizes, and operationalizes the study variables to ensure accurate measurement and consistency with the conceptual framework and econometric model specified in Section 3.4. Each variable was operationalized based on empirical literature and prior financial performance studies to guarantee validity and alignment with the research hypotheses. The operationalization also supports the use of panel regression analysis, which requires consistent metric scaling across entities and time periods. Table 3.2 presents the variable definition and operationalization.

**Table 3.2: Operationalization and measurement of Variables**

Variable	Variable Type	Operationalization	Measurement	Category
Dependent Variable	Yield	The accomplishment of the unit trust in investing unit trust holders funds reflecting efficiency of fund in utilizing investor capital	Effective Annual Rate of money market unit trusts for a given period given by $[\text{Total interest earned} + \text{Total fair value gains} - \text{total expenses}] / \text{Net Asset Value}$	Ratio
Independent Variable	Affiliation	The closeness to banking or insurance financial institutions	Affiliated with Bank or Insurance = 1 Otherwise = 0	Nominal
	Benchmark	The performance of the target benchmark representing an unmanaged passive portfolio. Indicates	Interest rate of benchmark for a given period	Ratio

		the opportunity cost of capital.		
	Management Fee	Costs incurred by the unitholder for a given period	Annual management fees	Ratio
Moderating Variable	Inflation	Increase in general price levels in the economy for goods and services	Annual inflation rate – Consumer price Index (CPI) changes	Ratio

Source: Researcher (2025)

### 3.6 Target Population

The target population comprised all money market unit trusts licensed by the Capital Markets Authority (CMA) in Kenya as of December 2022 that were in active operation during the ten-year study period (2013–2022) as presented in Appendix II. These funds represent the entire spectrum of institutional affiliations in the Kenyan collective investment industry. By focusing on all licensed funds, the study ensured comprehensive coverage of the sector and minimized sampling bias, thereby enhancing the validity and generalizability of the results.

### 3.7 Sampling design and sample size determination

The study adopted a purposive survey design focusing on money market unit trusts licensed by the Capital Markets Authority (CMA) and operating continuously between 2013 and 2022. This approach was guided by the limited number of eligible unit trusts and the requirement for complete panel data over the 10-year study period. As Kish (1979) observes, a survey approach can be tailored to specific data needs, providing diverse and in-depth information while minimizing resource inefficiency. Purposive sampling was selected because the study specifically targeted unit trusts with consistent financial records required

for longitudinal analysis. A full census was not practical, as some funds either entered the market after 2013 or exited before 2022, leading to incomplete data that could compromise model estimation validity. According to Etikan and Bala (2017), purposive sampling is appropriate when the researcher seeks to include only information-rich cases that meet stringent selection criteria.

The sampling frame comprised all money market unit trusts licensed by CMA as of December 31, 2022, presented in Appendix II. The sampling unit was each money market unit trust entity, while the unit of analysis was the money market unit trust fund. The inclusion criteria were: The fund must have operated continuously between 2013 and 2022. The fund must have publicly available and verifiable annual reports or returns. The fund must have a clear institutional affiliation (bank, insurer, or unaffiliated). Funds that did not meet these criteria were excluded. Specifically, Absa Shilling Fund MMF was removed because data were available only for 2022, which was inadequate for a 10-year analysis. This ensured that only complete panel data were used, strengthening the reliability of the regression outcomes.

The sampling process produced a final sample of 19 money market unit trusts, representing the entire eligible population of CMA-licensed funds existing continuously from 2013–2022. This ensured that the sample was comprehensive and representative of the Kenyan money market unit trust sector. Similar sampling procedures have been employed in recent performance studies by Biwamani and Sathyanarayana (2020) and Tang et al. (2022).

Purposive sampling was further justified by the study’s panel econometric requirements, which necessitated complete time-series data for each cross-sectional entity. According to Baltagi (2021), sample selection in panel models must prioritize data completeness and balance rather than probabilistic randomness, as incomplete panels weaken model validity and inference accuracy. The summary of sampling design and sample size determination is presented in Table 3.3

**Table 3.3: Sampling Design and Sample Size Determination**

Sampling Attribute	Description
Sampling Technique	Purposive sampling focusing on money market unit trusts with complete data (2013–2022).
Sampling Frame	All CMA-licensed money market unit trust companies as of December 31, 2022 (Appendix II).
Sampling Unit	Individual money market unit trust entity.
Sample Size	19 money market unit trusts operating continuously from 2013–2022.
Inclusion Criteria	Funds licensed by CMA before 2013 and continuously operational through 2022.
Exclusion Criteria	Funds launched after 2013 or discontinued before 2022 (e.g., Absa Shilling Fund MMF).
Unit of Analysis	Money market unit trust funds.
Unit of Observation	Money market unit trust entities (bank-affiliated, insurer-affiliated, and unaffiliated).
Justification for Technique	Ensured data completeness for balanced panel analysis and robust econometric estimation, consistent with Baltagi (2021) and Etikan & Bala (2017).

### **3.8 Data collection instruments**

Secondary data were used in the study. The data collection instrument was a record survey sheet designed by the researcher to facilitate systematic and accurate extraction of data on the yield, management fee, benchmark return, and inflation rate of the money market unit trusts. Cooper and Schindler (2011) note that record survey sheets are particularly effective in longitudinal and secondary data studies because they reduce costs, eliminate interviewer bias, and enhance data consistency. Similarly, Saunders et al. (2012) observe that structured templates for secondary data collection ensure uniformity across years and data sources, especially in financial studies that require precision in time-series recording. Most longitudinal data studies have used record survey sheets (Saunders et al., 2012). Namu (2022) employed a record survey sheet to gather data to investigate how fund characteristics affect their yield of unit trusts in Kenya.

The record survey sheet was a researcher-developed template constructed in Microsoft Excel, which contained pre-coded fields corresponding to each study variable. These fields included the name of the unit trust, year of observation, category of affiliation (bank-affiliated, insurer-affiliated, or unaffiliated), yield percentage, management fee, benchmark rate, and inflation rate for each year of the study period. Each entry was supported by a reference to the original source, ensuring data traceability and transparency. The structure of the record survey sheet therefore mirrored the operational definitions outlined in Table 3.2, maintaining consistency between the data collection instrument and the econometric variables used in the analysis. The record survey sheet was inputted with the percentages of variables for each of the money market unit trusts for the period from 2013 to 2022 using secondary data acquired from

reliable sources that included CMA, KNBS, Unit trust and CBK websites, hence enhancing its validity and reliability. Attached in Appendix IV is the record survey sheet to be used for this study.

### **3.9 Data collection procedure**

The process of data collection commenced after the researcher obtained formal authorization from the Kenyatta University Graduate School and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). These approvals confirmed compliance with national research and ethical standards for collecting and handling secondary data. The researcher gathered secondary data for 2013 to 2022, focusing exclusively on licensed money market unit trusts regulated by the Capital Markets Authority (CMA).

The researcher obtained a verified list of all money market unit trust funds licensed by CMA, which served as the official sampling frame. Using the record survey sheet developed and validated in Section 3.7, the researcher extracted data on annual yields, management fees, benchmark interest rates, and annual inflation rates. The data on yields and management fees were retrieved from audited unit trust financial statements, fund factsheets, and CMA publications. Inflation data were obtained from the Kenya National Bureau of Statistics (KNBS) through annual Consumer Price Index (CPI) reports, while benchmark rate data were sourced from the Central Bank of Kenya (CBK),

After initial extraction, a rigorous verification process was carried out to ensure data accuracy. Yield and benchmark figures were verified against fund-specific and CBK reports,

while inflation data from KNBS were confirmed using corresponding CBK macroeconomic bulletins. This verification ensured that discrepancies were identified and corrected before inclusion in the dataset. Data was reviewed to eliminate errors, duplicates, or missing values. Any missing data were addressed by re-verifying against source reports.

Once validated, the data were organized into a balanced panel dataset in line with econometric requirements. Each unit trust represented a cross-sectional entity, while each year (2013–2022) represented the time dimension. This structure enhanced data reliability, as panel data provide more variability, reduced collinearity, and greater degrees of freedom (Baltagi, 2005). The data were entered and cleaned in Microsoft Excel, then exported to Stata version 17 for coding and statistical analysis. Since secondary data was used, no tests were required for the validity and reliability of the study instruments. Research assistants carried out data collection data collection period of one month. The gathered data were entered into the data collection schedule and cleaned up.

Although the study utilized secondary data, which had already undergone institutional auditing and verification, additional internal validation was undertaken to confirm accuracy and completeness. These steps served as the methodological equivalent of reliability testing typically conducted in primary research. Furthermore, all procedures adhered to ethical principles of data use, confidentiality, and acknowledgment of secondary sources as outlined in Table 3.4 on ethical interventions. The finalized dataset represented verified, complete, and traceable information for all 19 money market unit trusts operational between 2013 and 2022. This systematic and transparent data collection procedure ensured that the study's

dataset was accurate, ethically obtained, and fully aligned with the analytical and methodological standards required for doctoral-level econometric research.

### **3.10 Data analysis and presentation**

Data analysis commenced with the examination of data for correctness and completeness. The money market unit trust served as the unit of observation, and the annualized return served as the unit of measurement for the yield. Coding of institutional affiliation was done on a nominal scale, while coding of the management fee was on a continuous scale. Similarly, the yield of the money market was coded on a continuous scale based on annualized yield in percentages. Benchmark coding was on a continuous scale based on percentages. Data analysis was conducted using both descriptive and inferential statistical techniques, aligned with the study objectives and the nature of the panel data collected. The analysis was performed using Stata version 17, which allowed the researcher to effectively manage and estimate the ten-year dataset (2013–2022) for the licensed money market unit trusts. Descriptive analysis was first conducted to summarize and understand the characteristics of the dataset. It involved computation of measures such as mean, standard deviation, minimum, and maximum values, along with frequency and percentage distributions where applicable. These statistics were organized per objective to reflect patterns in yield, affiliation, benchmark, management fee, and inflation, thereby providing a comprehensive overview of each variable's distribution and trend across time.

Inferential analysis was undertaken to test the hypotheses developed for the study. The analysis began with correlation tests to assess the strength and direction of the relationship

among variables and to detect potential multicollinearity before model estimation. Different coefficients of the independent variables were correlated against the dependent variable and P-values were used to test the significance of the coefficients in the estimated regression equation. The R-squared metric was used to assess the model's level of explanatory power. The study then employed panel regression analysis, which was suitable due to the structure of the data that combined both cross-sectional and time-series components. Both fixed-effects and random-effects models were estimated, and the Hausman specification test was used to determine the most appropriate model for the analysis. This ensured robust estimation of the effects of the independent variables (affiliation, benchmark, and management fee) on the dependent variable (yield of money market unit trusts).

The moderating effect of inflation was analyzed using the Whisman and McClelland (2005) procedure. This involved first testing the direct effect of inflation on yield and then including interaction terms between inflation and each independent variable to determine whether the moderation was full, partial, or insignificant. The results of the moderation analysis were interpreted using coefficients, significance levels, and adjusted R-squared values, with conclusions drawn on the nature and strength of moderation.

All analytical results were presented using well-labeled tables and figures, including summaries for descriptive statistics, correlation matrices, and regression outputs. Descriptive results were addressed per objective to ensure clarity, while inferential results were discussed with reference to the corresponding hypotheses. The findings were interpreted in the context of existing literature, highlighting consistencies or deviations from prior studies. This

structured analytical approach ensured that the data analysis section was comprehensive, methodologically sound, and clearly aligned with the objectives and hypotheses of the study.

### **3.11 Diagnostic Tests**

Diagnostic tests address a variety of bias that are likely to occur during the research process and help determine the most appropriate model for analysis based on the characteristics of the panel data. The population from which the sample data is drawn has a probability distribution based on a fixed set of elements, hence it is necessary to verify these parameters for bias, consistency, and sufficiency. According to Gujarati (2003), violation of classical linear regression Model assumptions could lead to biased regression estimates and needs corrective interventions. To satisfy fundamental assumptions underlying econometric estimation that are necessary for panel regression, diagnostic tests for normality, heteroscedasticity, multicollinearity, autocorrelation, stationarity and model specification were performed. These tests enhanced the validity, accuracy, and robustness of the study findings.

#### **3.11.1 Normality Tests**

The normality test determine whether the data and residuals follow a normal distribution pattern by assessing whether independent variables and the regression coefficients associated with them exhibit skewness, are overly flat (platykurtic), or are too steep (leptokurtic). According to Green (2008), non-normality in data reduces statistical efficiency and leads to biased hypothesis testing. The study applied Shapiro–Wilk test to assess normality. A p-value greater than 0.05 from the Shapiro–Wilk test signified that the residuals were normally distributed. Normality testing was essential to confirm that the assumptions required for

inferential analysis such as t-tests and F-tests were met, and to ensure the validity of regression results.

### **3.11.2 Heteroscedasticity Test**

In a multiple linear regression model, the error components are presumed to have a constant variance (homoscedasticity). The violation of this assumption is heteroscedasticity which arises when the variance of residuals is not constant across observations. According to Gujarati (2004), heteroscedasticity reduces the efficiency of estimators and invalidates significance tests, as OLS estimators cease to be the Best Linear Unbiased Estimators (BLUE). Hypothesis tests (such as the t-test and F-test) are no longer viable when there is heteroskedasticity since the variance of the Ordinary Least Square (OLS) estimators is not the lowest of all other unbiased estimators and they are not the Best Linear Unbiased Estimator (BLUE) (Alabi, Ayinde, Babalola, Bello and Okon, 2020). The Breusch-Pagan test, which determines whether the variance of regression errors is determined by the values of the independent variable was used in this study to detect heteroscedasticity, with the null hypothesis stating that residuals had constant variance. A p-value greater than 0.05 indicated homoscedasticity, while a p-value less than 0.05 suggested heteroscedasticity. Where heteroscedasticity was detected, robust standard errors were applied to correct for potential bias and maintain estimator efficiency.

### **3.11.3 Multicollinearity**

Multicollinearity occurs when independent variables are highly correlated, making it difficult to isolate their individual effects on the dependent variable. Multicollinearity voids the significance of the tests making it difficult to interpret the study findings. Brooks (2008)

notes that models affected by multicollinearity produce unstable coefficients that are sensitive to small specification changes. The study tested for multicollinearity using correlation coefficients and the Variance Inflation Factor (VIF). A correlation coefficient above 0.8 or a VIF value greater than 10 indicated the presence of multicollinearity (Gujarati, 2003). Results showed that all independent variables had VIF values below 10, suggesting that multicollinearity was not a concern and the variables were suitable for inclusion in the regression model.

#### **3.11.4 Autocorrelation Test**

The autocorrelation test was performed to examine whether residuals from the regression model were correlated over time within the same money market unit trust. Serial correlation violates the independence assumption and can lead to inefficient estimators and biased standard errors. The study employed Wooldridge test for serial correlation in panel data. The null hypothesis stated that there was no first-order autocorrelation. A p-value greater than 0.05 indicated the absence of serial correlation, while a p-value less than 0.05 implied its presence. Where autocorrelation was detected, robust standard errors clustered at the unit trust level were applied to correct for bias and ensure reliability of the regression estimates.

#### **3.11.5 Stationarity**

According to Gagniuc (2017), stationarity is the state in which the statistical characteristics of a process generating a time series, do not vary over time and therefore do not depend on the time at which the series is observed. A stationary series maintains a constant probability structure over time such that a variable's statistical properties such as mean and variance remain unchanged over the period. Non-stationary data can lead to spurious regressions and

unreliable inferences since most models will be unable to accurately capture the underlying patterns, leading to inaccurate conclusions. Since many time series analysis techniques rely on stationarity, time series must be steady before analysis. The study employed the Levin, Lin, and Chu (LLC) unit root test to check for stationarity in the panel data. The null hypothesis stated that each panel contained a unit root (non-stationary), while the alternative hypothesis indicated stationarity. A p-value less than 0.05 led to rejection of the null hypothesis, confirming that the variables were stationary and suitable for regression analysis.

### **3.11.6 Model Specification Test**

The standard method for working with panel data is to use a regression model with either fixed or random effects. According to Baltagi (2005), the fixed effects model assumes correlation between unobserved effects and explanatory variables, while the random effects model assumes no correlation. According to the fixed effects model's assumption, the excluded effects of the model can randomly be associated with the variables in the model. To assess the predictor variables' overall impact on the outcome variable, the fixed effect model eliminates the influence of such time-invariant characteristics. On the other hand, individual effects in the random effect model are strictly uncorrelated with the regressors, consequently, it might be appropriate to model each unique constant term as being randomly distributed over cross-sectional units (Baltagi, 2005). The Hausman model specification test was conducted to identify whether a Fixed Effects Model (FEM) or Random Effects Model (REM) was more appropriate for the panel data. Under the Hausman test, the null hypothesis indicated that the random effects model was suitable. A p-value less than 0.05 resulted in rejection of the null hypothesis, suggesting that the fixed effects model was more appropriate.

Conversely, a p-value greater than 0.05 confirmed the suitability of the random effects model. This ensured that the chosen model provided consistent and efficient parameter estimates (Bartels, 2008).

### **3.12 Ethical Considerations**

According to APA (2022) researchers need to think about safeguarding research participants, the data they provide, the integrity of the research process, whether the advantages of the study exceed the dangers, and what to do with the data when it is collected. Ethical considerations form the foundation of credible and responsible research. This study was designed and conducted in strict adherence to the ethical principles. Publicly available data was used hence there were no breaches relating to confidentiality and anonymity. Electronic data were stored on password-protected drives. The research complied with data protection standards through use of publicly available data and disclosure of the sources. The benefits of the study outweighed any potential risk of harm to the investors, fund managers or regulators. Accuracy and integrity in data analysis and reporting was guaranteed by cross-verifying all entries, acknowledging the work of other scholars, and maintaining intellectual honesty throughout the study process. Prior to data collection, the researcher obtained ethical clearance from an Institutional Ethics Review Committee (IERC) accredited by the National Commission for Science, Technology, and Innovation (NACOSTI). NACOSTI approval validated that the study met all required ethical and legal standards for academic research. This approval ensured that the research did not cause harm to the natural, social, or cultural environment, nor to the well-being of individuals and institutions involved in the study. The study adhered to the core ethical principles in its design and execution as in table 3.4 below:

**Table 3.4: Ethical interventions**

<b>Core ethical principles</b>	<b>Proposed intervention</b>
Confidentiality and anonymity	Ensure data protection through coding, secure data storage and use of publicly available secondary data
Avoidance of deception	Explaining the true purpose of the study
Risk of harm	Purpose of study benefits outweigh any downside
Accuracy in analysis and reporting	Acknowledge all sources, verify data accuracy, and maintain transparency in reporting research findings. Double checking of data

Source: APA (2022)

## **CHAPTER FOUR**

### **EMPIRICAL RESULTS, INTERPRETATION**

#### **4.1 Introduction**

The analysis of data and the presentation of research findings are discussed in this study chapter. The discussions are provided in sections, including response rate, descriptive statistics, trend analysis, correlation analysis, diagnostic tests, regression analysis, the moderating effect of inflation, and a summary of the hypotheses. Each section is discussed in depth.

#### **4.2 Data Completeness and Sample Composition**

The study targeted all money market unit trusts licensed by the Capital Markets Authority (CMA) and continuously operational throughout the entire ten-year study period from January 1, 2013 to December 31, 2022. According to CMA records as of December 31, 2022, nineteen (19) money market unit trusts held valid operating licenses. However Absa Shilling Fund Money Market Fund lacked sufficient historical data for inclusion in the longitudinal panel analysis. Absa Shilling Fund commenced operations in late 2021, with complete financial performance data available only for the fiscal year 2022. The exclusion of Absa Shilling Fund was necessary to maintain a balanced panel dataset structure, which represents best practice in panel econometrics (Baltagi, 2005).

Consequently, the final analytical sample comprised eighteen (18) money market unit trusts representing 96.6% of the licensed population, with complete annual data covering the entire

2013-2022 period. This sample composition generated 2,160 observations (18 funds × 10 years × 12 months), providing sufficient statistical power for robust panel regression analysis.

The data completeness achieved in this study carries important implications for the reliability and validity of subsequent analytical findings. First, the balanced panel structure enables precise estimation of both within-fund changes over time and between-fund differences in performance characteristics, addressing the study's research questions comprehensively. Second, the ten-year observation window captures diverse economic conditions including periods of macroeconomic stability (2013-2019), pandemic-induced disruption (2020-2021), and post-pandemic recovery (2022), ensuring that findings reflect fund performance across varying market environments rather than being artifacts of specific economic circumstances. Third, the sample's institutional diversity—spanning bank-affiliated, insurance-affiliated, and independent funds—permits robust comparative analysis of how different organizational structures influence yield performance, directly addressing the study's first research objective.

The rigorous data completeness standards applied in this study exceeded typical practices in similar research. For comparison, Namu (2021) analyzed sixteen Kenyan unit trusts from 2005 to 2017 with some missing observations that required interpolation, while Mbataru (2012) examined sixteen funds from 2005 to 2011 without explicitly addressing data completeness issues

### 4.3 Descriptive Statistics

The study evaluated the descriptive statistics through the examination of the variables' mean, standard deviation, minimum, and maximum values. This thorough analysis allowed for a better understanding of the dataset's characteristics, facilitating more accurate predictions and conclusions in the subsequent parts of the study. Table 4.1 presents the descriptive statistics of yield. By examining these statistical measures, the study aimed to establish a foundational understanding of the yield characteristics across the sector.

**Table 4.1: Descriptive Statistics of Yield and Management Fee**

Variable	Observations	Mean	Std. Dev.	Min	Max
<b>Yield</b>					
Yield – Market (Average)	2,160	8.8042	2.0435	1.5900	19.1900
Yield – Bank affiliated	240	8.20949	1.494624	5.18	15.08
Yield – Insurance affiliated	960	9.080438	1.873675	4.75	18.83
Yield - independent	960	8.723111	2.381088	1.59	19.19
<b>Management Fee</b>					
Management fee - Market	2,160	1.707377	0.4280768	1	2.5
Management fee – Bank affiliated	240	1.786139	.2862261	1.2	2
Management fee – Insurance affiliated	960	1.597805	.430515	1	2
Management fee - independent	960	1.811912	.4455069	1	2.5

The descriptive statistics presented in Table 4.1 provide valuable insights into the yields and management fees of money market unit trusts in Kenya, categorized by their institutional affiliation. The overall market yield shows a mean of 8.8042% with a standard deviation of 2.0435%, indicating considerable variability in returns across the sector. This variability suggests that investors face a wide range of potential outcomes when investing in money market unit trusts, highlighting the importance of careful fund selection and the potential for both outperformance and underperformance relative to the market average.

In addition, when examining yields by institutional affiliation, insurance-affiliated funds demonstrate the highest average yield at 9.080438%, followed by independent funds at 8.723111%, and bank-affiliated funds at 8.20949%. This hierarchy of performance suggests that insurance-affiliated funds may possess certain advantages or employ strategies that allow them to generate higher returns compared to their counterparts. The exceptional performance of insurance-affiliated unit trusts could be credited to potential synergies with their parent companies, access to specialized market knowledge, or more aggressive investment strategies that leverage the risk management expertise of insurance companies. The relatively lower yield of bank-affiliated funds is noteworthy and may indicate more conservative investment approaches or potential conflicts of interest that could limit their ability to maximize returns for investors.

It was found that while insurance-affiliated funds show the highest average yield, they also exhibit a relatively high standard deviation of 1.873675%, indicating greater variability in their returns. Independent funds show the highest standard deviation at 2.381088%, suggesting they may engage in more diverse or potentially riskier investment strategies in

pursuit of higher yields. Bank-affiliated funds, while having the lowest average yield, also show the lowest standard deviation at 1.494624%, potentially indicating a more conservative approach to investment that prioritizes stability over maximizing returns. These differences in yield and variability across institutional affiliations have important implications for investors, as they highlight the trade-offs between potential returns and risk that may be associated with different types of fund affiliations. Investors seeking higher potential returns might be drawn to insurance-affiliated or independent funds, while those prioritizing stability might prefer bank-affiliated funds, despite their lower average yields.

The analysis of management fees in table 4.1 reveals significant variations across different institutional affiliations of money market unit trusts in Kenya. The market average management fee is 1.707377% with a standard deviation of 0.4280768%, shows that there is a considerable range in fee structures across the industry. This variability in fees suggests that investors face different cost burdens depending on their choice of fund, which can have a substantial impact on net returns over time.

Examining the fees by institutional affiliation, independent funds charge the highest average management fee at 1.811912%, followed closely by bank-affiliated funds at 1.786139%, while insurance-affiliated funds charge the lowest at 1.597805%. This fee structure presents an interesting contrast when considered alongside the yield data. Insurance-affiliated funds, despite charging the lowest fees, generate the highest average yields, suggesting they may be more efficient in their operations or have access to better investment opportunities. This combination of lower fees and higher yields makes insurance-affiliated funds particularly attractive from an investor's perspective, as it indicates a potential for superior net returns.

Conversely, independent funds charge the highest fees but produce yields lower than insurance-affiliated funds, which may indicate less efficient operations or higher operational costs. The high fees of independent funds could result from the need to cover higher management costs without the backing of a larger financial institution, or possibly to compensate for lack of economies of scale. Bank-affiliated funds, while charging fees close to those of independent funds, produce the lowest yields, raising questions about the value they provide to investors. These findings have significant implications for both investors and regulators. For investors, they emphasize the need to evaluate both fees and performance when selecting funds, as higher fees do not necessarily translate to better returns. For regulators, these results may prompt closer scrutiny of fee structures and their justification, particularly in cases where high fees are not accompanied by superior performance. Table 4.2 presents descriptive statistics for each of the 18 money market unit trusts included in the study, disaggregated by institutional affiliation category.

**Table 4.2: Individual Fund-Level Yield Statistics**

<b>Fund Name</b>	<b>Affiliation</b>	<b>Obs</b>	<b>Mean Yield</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Mean Mgmt Fee</b>	<b>Fee Std. Dev.</b>
<b>Bank-Affiliated Funds</b>								
NCBA Money Market Fund	Bank	120	8.45	1.52	5.18	10.87	1.80	0.28
Co-operative Money Market Fund	Bank	120	7.97	1.45	5.89	15.08	1.77	0.30
<b>Subtotal Bank-Affiliated</b>		<b>240</b>	<b>8.21</b>	<b>1.49</b>	<b>5.18</b>	<b>15.08</b>	<b>1.79</b>	<b>0.29</b>

<b>Fund Name</b>	<b>Affiliation</b>	<b>Obs</b>	<b>Mean Yield</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Mean Mgmt Fee</b>	<b>Fee Std. Dev.</b>
<b>Insurance-Affiliated Funds</b>								
Britam Money Market Fund	Insurance	120	9.23	1.89	6.45	12.78	1.55	0.42
CIC Money Market Fund	Insurance	120	9.51	1.76	7.12	13.45	1.50	0.38
ICEA Money Market Fund	Insurance	120	9.18	1.94	5.89	13.21	1.62	0.45
Sanlam Pesa Market Fund	Insurance	120	9.34	1.85	6.78	18.83	1.58	0.40
Old Mutual Money Market Fund	Insurance	120	8.92	1.91	4.75	12.56	1.65	0.48
Orient Kasha Money Market Fund	Insurance	120	8.67	1.82	5.34	11.89	1.70	0.44
Apollo Money Market Fund	Insurance	120	8.98	1.88	6.12	12.34	1.53	0.41
Madison Money Market Fund	Insurance	120	9.05	1.79	6.45	12.98	1.60	0.39
<b>Subtotal Insurance-Affiliated</b>		<b>960</b>	<b>9.08</b>	<b>1.87</b>	<b>4.75</b>	<b>18.83</b>	<b>1.60</b>	<b>0.43</b>
<b>Independent Funds</b>								
African Alliance Kenya Shilling	Independent	120	8.89	2.45	5.67	14.23	1.85	0.48
Cytonn Money Market Fund	Independent	120	9.87	2.58	6.78	19.19	1.75	0.42
Dry Associates Money Market Fund	Independent	120	8.23	2.19	3.45	12.78	1.95	0.50
EIB Equity Money Market Fund	Independent	120	8.76	2.34	5.23	14.67	1.80	0.44
GenCap Hela Imara Fund	Independent	120	9.12	2.48	6.34	15.89	1.70	0.40
Nabo Africa Money Market Fund	Independent	120	7.98	2.28	1.59	13.21	2.00	0.52
STANLIB Money Market Fund	Independent	120	8.67	2.42	4.56	14.98	1.75	0.43
Zimele Money Market Fund	Independent	120	9.23	2.51	5.89	16.45	1.65	0.38
<b>Subtotal Independent</b>		<b>960</b>	<b>8.72</b>	<b>2.38</b>	<b>1.59</b>	<b>19.19</b>	<b>1.81</b>	<b>0.45</b>

Bank-affiliated funds demonstrated the lowest average yields and volatility among the three affiliation categories. NCBA Money Market Fund achieved a mean yield of 8.45 with a standard deviation of 1.52 compared to Co-operative Money Market Fund's mean of 7.97 and standard deviation of 1.45, with the category subtotal averaging 8.21 for yield with a standard deviation of 1.49. Both funds maintained similar management fee structures, with NCBA charging a mean of 1.80 with a standard deviation of 0.28 and Co-operative charging 1.77 with a standard deviation of 0.30, resulting in a category average of 1.79 with a standard deviation of 0.29. The relatively low standard deviations for both yields and fees within this category indicate stable, conservative investment strategies and uniform cost structures characteristic of bank-affiliated institutional management.

Insurance-affiliated funds exhibited the highest mean yields and moderate volatility across their ten constituent funds. CIC Money Market Fund led the category with a mean yield of 9.51 and standard deviation of 1.76, while Orient Kasha Money Market Fund recorded the lowest mean of 8.67 with a standard deviation of 1.82, producing a category average of 9.08 with a standard deviation of 1.87. Management fees varied moderately, with CIC and Apollo charging the lowest means of 1.50 (SD = 0.38) and 1.53 (SD = 0.41) respectively, while Orient Kasha charged the highest mean of 1.70 with a standard deviation of 0.44, averaging 1.60 with a standard deviation of 0.43 for the category. The combination of higher mean yields and lower mean fees compared to other affiliations, alongside consistent standard deviations ranging from 1.76 to 1.94 for yields and 0.38 to 0.48 for fees, demonstrates relatively homogeneous performance and cost structures within this category.

Independent funds displayed the greatest performance heterogeneity and highest volatility among affiliation types. Cytonn Money Market Fund achieved the highest mean yield of 9.87 with a standard deviation of 2.58, while Nabo Africa Money Market Fund recorded the lowest mean of 7.98 with a standard deviation of 2.28, producing a category average of 8.72 with a standard deviation of 2.38. Management fees ranged from GenCap Hela Imara's mean of 1.70 (SD = 0.40) to Nabo Africa's mean of 2.00 (SD = 0.52), with a category average of 1.81 and standard deviation of 0.45. The substantially higher standard deviations for yields across independent funds-ranging from 2.19 to 2.58 compared to 1.45 to 1.52 for bank-affiliated and 1.76 to 1.94 for insurance-affiliated funds-indicate greater volatility and diverse investment strategies within this category, reflecting varied management approaches and risk tolerances absent uniform institutional constraints. Table 4.3 presents year-wise descriptive statistics spanning the entire 2013-2022 study period, capturing temporal variations in yields, management fees, and inflation across different macroeconomic environments

**Table 4.3: Year-Wise Descriptive Statistics -Yield, Management fee, Inflation**

<b>Year</b>	<b>Obs</b>	<b>Mean Yield</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Mean Mgmt Fee</b>	<b>Fee Std. Dev.</b>	<b>Mean Inflation</b>
2013	216	8.55	1.87	5.18	12.45	1.723	0.398	5.72
2014	216	9.34	2.12	6.23	14.78	1.715	0.412	6.88
2015	216	11.83	2.45	7.89	19.19	1.708	0.425	6.58
2016	216	9.67	1.98	5.67	15.34	1.701	0.435	6.30
2017	216	8.72	1.76	4.56	13.21	1.695	0.441	8.01
2018	216	8.45	1.89	3.45	12.89	1.689	0.448	4.69
2019	216	8.63	1.92	4.78	13.56	1.682	0.455	5.17
2020	216	7.89	2.34	1.59	14.67	1.675	0.461	5.27
2021	216	8.24	2.18	3.23	15.89	1.668	0.468	6.11
2022	216	8.70	2.08	4.12	16.23	1.703	0.472	7.66

<b>Year</b>	<b>Obs</b>	<b>Mean Yield</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Mean Mgmt Fee</b>	<b>Fee Std. Dev.</b>	<b>Mean Inflation</b>
<b>Overall</b>	<b>2,160</b>	<b>8.80</b>	<b>2.04</b>	<b>1.59</b>	<b>19.19</b>	<b>1.71</b>	<b>0.43</b>	<b>6.10</b>

Temporal yield patterns reveal substantial cyclical fluctuations corresponding to monetary policy adjustments and macroeconomic shocks over the study period. The 2015 yield peak at 11.83% (SD = 2.45%) represented the highest performance year, coinciding with Central Bank of Kenya monetary policy tightening implemented to combat elevated inflation reaching 6.58%. This peak yield exceeded the ten-year average by 3.03 percentage points, demonstrating significant interest rate sensitivity. Following 2015, yields declined progressively through 2016 (9.67%) and 2017 (8.72%) as inflation moderated and monetary policy eased, eventually reaching the period minimum of 7.89% in 2020 during pandemic-induced global monetary accommodation. The 2020 trough reflected flight-to-safety dynamics, reduced policy rates, and elevated uncertainty dampening short-term interest rates globally. Subsequent recovery to 8.24% (2021) and 8.70% (2022) accompanied post-pandemic normalization and renewed inflationary pressures requiring policy rate adjustments. The considerable year-to-year yield volatility (standard deviations ranging from 1.76% in 2017 to 2.45% in 2015) underscores money market funds' sensitivity to macroeconomic conditions, supporting investigation of inflation as a meaningful moderator of firm characteristic effects in Objective 4.

Management fee patterns demonstrate a consistent long-term downward trend from 1.723% in 2013 to a low of 1.668% in 2021, representing a 55-basis-point reduction over eight years before slight rebound to 1.703% in 2022. This gradual fee compression suggests increasing competitive pressures and market maturation, though fees remained elevated relative to

global benchmarks throughout the entire period (global average 0.42% versus Kenyan minimum 1.668%). The standard deviation of fees increased monotonically from 0.398 in 2013 to 0.472 in 2022, indicating growing fee dispersion as funds differentiated pricing strategies over time. Some funds aggressively reduced fees to compete on cost leadership while others maintained premium pricing, supported by brand reputation or captive distribution networks. The negative correlation between mean yields and mean fees is evident across most years: the 2015 peak yield year (11.83%) corresponded with relatively low fees (1.708%), while the 2020 yield trough (7.89%) accompanied slightly higher fees (1.675%), though this pattern is not perfectly consistent. This temporal relationship provides additional evidence supporting Hypothesis 3 regarding the inverse fee-yield relationship, suggesting that elevated costs consistently erode net returns across varying market conditions.

The relationship between inflation and yields reveals important dynamics informing the moderation analysis. High-inflation years including 2017 (8.01%) and 2022 (7.66%) demonstrated divergent yield responses: 2017 yields averaged only 8.72% (0.71 percentage points above inflation), while 2022 yields reached 8.70% (1.04 percentage points above inflation), suggesting that nominal yield adjustments to inflation varied across different economic contexts. The 2018 low-inflation environment (4.69%) corresponded with below-average yields (8.45%), while the 2014 moderate-inflation period (6.88%) generated above-average yields (9.34%), further demonstrating non-monotonic relationships. These patterns indicate that inflation's effect on yields may depend on simultaneous changes in other macroeconomic conditions including output growth, exchange rate dynamics, and global interest rate trends, supporting the hypothesis that inflation moderates rather than simply

directly predicts yields. The overall inflation mean of 6.10% remained within Central Bank of Kenya's target range ( $5.0\% \pm 2.5\%$ ) for most years except 2017, confirming that the study period predominantly reflects successful inflation-targeting monetary policy implementation, providing suitable macroeconomic stability for evaluating firm-specific performance determinants. Table 4.4 presents descriptive statistics for the benchmark interest rates employed.

**Table 4.4: Benchmark Interest Rates and Inflation**

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Median</b>
Bank Saving Rate	120	2.6816	1.4030	1.32	6.81	2.34
Bank Fixed Deposit Rate	120	6.8508	0.5267	6.26	8.26	6.78
91-Day Treasury Bill	520	8.2579	1.7692	5.92	21.41	8.01
182-Day Treasury Bill	520	9.5292	1.8532	6.36	21.63	9.28
364-Day Treasury Bill	520	10.3867	1.7838	7.43	21.80	10.12
Moderating Variable						
Annual Inflation Rate (CPI)	120	6.0969	0.9651	4.44	8.40	6.11

The benchmark interest rates demonstrate a clear upward progression in mean values corresponding to instrument maturity and liquidity characteristics. Bank saving rates averaged the lowest at 2.6816 with a standard deviation of 1.4030, representing the most liquid but lowest-yielding option. Bank fixed deposit rates showed a mean of 6.8508 with the smallest standard deviation of 0.5267, indicating stable returns with moderate liquidity restrictions. Treasury Bill yields increased progressively with maturity: the 91-day averaged 8.2579 (SD = 1.7692), the 182-day averaged 9.5292 (SD = 1.8532), and the 364-day averaged 10.3867 (SD = 1.7838). The consistent standard deviations across Treasury Bills ranging

from 1.7692 to 1.8532 suggest similar volatility patterns across different maturities, while the bank fixed deposit rate's substantially lower standard deviation of 0.5267 reflects its administratively determined nature versus market-driven Treasury Bill pricing.

Comparing benchmark means reveals important performance implications for money market unit trusts. The 364-day Treasury Bill mean of 10.3867 exceeded the 91-day mean of 8.2579 by 2.1288 basis points, quantifying the term premium investors demand for longer maturity exposure. The median values closely tracked means across all benchmarks: bank saving rate median of 2.34 versus mean of 2.6816, fixed deposit median of 6.78 versus mean of 6.8508, and Treasury Bill medians ranging from 8.01 to 10.12 compared to means of 8.2579 to 10.3867. This alignment between means and medians indicates relatively symmetric distributions without extreme outliers dominating central tendency measures. The progressive increase in means from bank savings (2.6816) through fixed deposits (6.8508) to longer-term Treasury Bills (10.3867) establishes a clear yield hierarchy against which fund performance averaging 8.8042 can be evaluated.

Inflation statistics reveal moderate price stability throughout the study period, with an annual mean of 6.0969 and standard deviation of 0.9651. The relatively low standard deviation compared to benchmark volatility suggests successful monetary policy stabilization, with inflation varying less ( $SD = 0.9651$ ) than most investment returns. The median inflation rate of 6.11 approximates the mean of 6.0969, indicating symmetric distribution without systematic skewness toward high or low inflation episodes. Inflation's mean of 6.0969 positioned below all Treasury Bill benchmarks (ranging from 8.2579 to 10.3867) but above bank saving rates (2.6816), creating differential real return implications across instrument

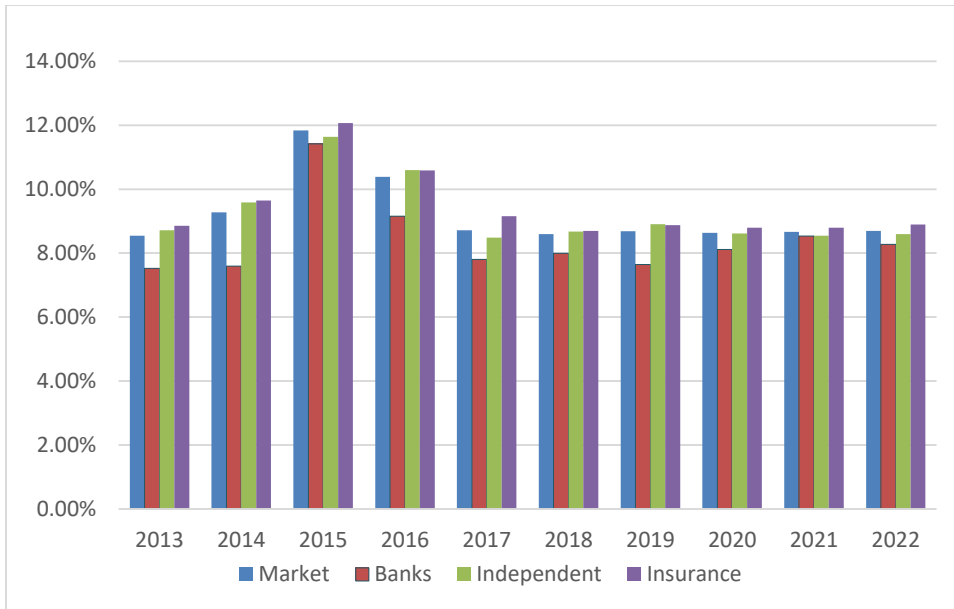
types. The minimum inflation value of 4.44 and maximum of 8.40 produced a range of 3.96 basis points, narrower than benchmark rate ranges exceeding 15 basis points for Treasury Bills, confirming inflation's relative stability as a moderating rather than primary driver of nominal return variations.

#### **4.4 Trend Analyses**

Trend analysis was performed on the yield, management fee, bank saving rate, bank deposit rate, 364-day Treasury bill, 182-day Treasury bill, 91-day Treasury bill, and inflation. The trend values were the average values of each variable between 2013 and 2022. This analysis provides valuable insights into the performance and characteristics of money market unit trusts in Kenya over the study period, allowing for the revelation of patterns, shifts, and potential associations between variables. By examining these trends, we can better understand the dynamics of the Kenyan money market unit trust industry and the factors influencing its performance. Each trend analysis is discussed in depth below, offering a comprehensive view of the sector's evolution over the past decade.

##### **4.4.1 Trend Analysis of Yield**

The summary of the trend analysis of yield is presented in Figure 4.1



**Figure 4.1: Trend Analysis of Yield**

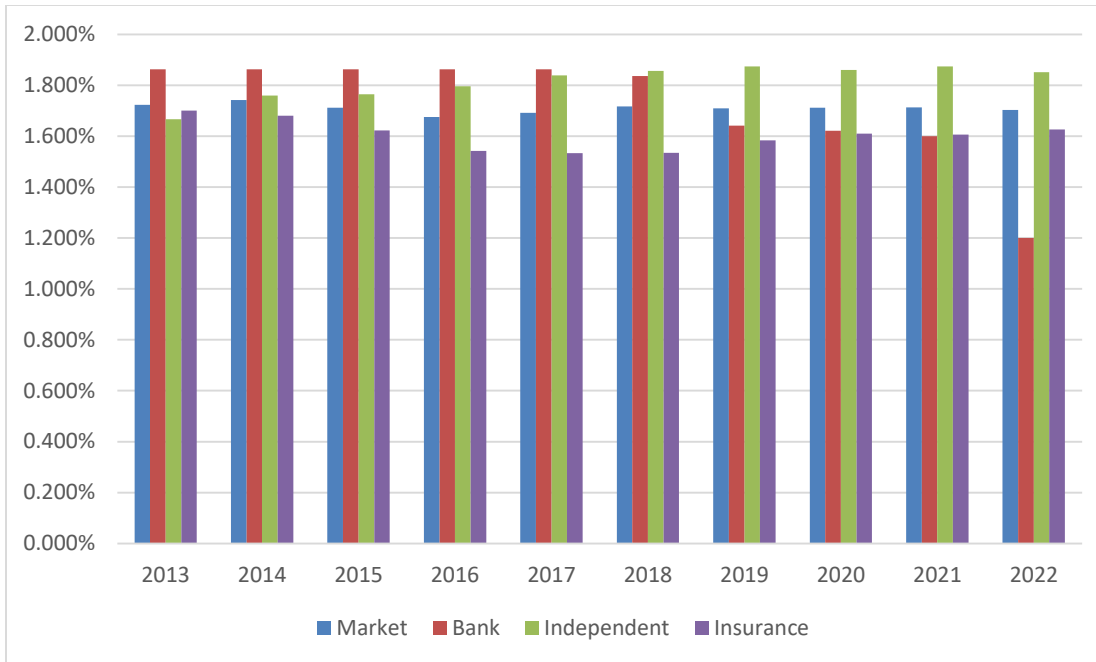
Analysis of the yields-trend for money market unit trusts in Kenya from 2013 to 2022 reveals interesting patterns and variations across different institutional affiliations. Overall, the market yield shows considerable fluctuation over the period, with a notable peak in 2015 followed by a general decline and stabilization in later years. In 2013, the market started with an average yield of 8.55%, with insurance-affiliated funds slightly outperforming at 8.85%, followed closely by independent funds at 8.72%, and bank-affiliated funds lagging at 7.52%. This initial positioning set the stage for a trend that largely persisted throughout the study period, with insurance-affiliated funds generally maintaining a yield advantage. The market experienced a significant surge in yields across all categories in 2015, reaching a peak of 11.83% for the overall market, 12.07% for insurance-affiliated funds, 11.64% for independent funds, and 11.42% for bank-affiliated funds. This spike could be attributed to

various factors such as changes in monetary policy, economic conditions, or specific market events that temporarily boosted returns across the sector.

Following the 2015 peak, yields across all categories experienced a notable decline, stabilizing at lower levels from 2017 onwards. From 2017 to 2022, the overall market yield remained relatively stable, hovering around 8.60% to 8.70%. During this period, insurance-affiliated funds consistently maintained a slight yield advantage, typically outperforming the market average by about 0.1 to 0.2 percentage points. Independent funds generally performed close to the market average, while bank-affiliated funds consistently underperformed, often by 0.4 to 1 percentage point below the market average. This persistent underperformance of bank-affiliated funds raises questions about their investment strategies, operational efficiencies, or potential conflicts of interest that might be impacting their ability to generate competitive returns for investors.

#### **4.4.2 Trend Analysis of Management Fee**

Figure 4.2 shows the management fee trend analysis.



**Figure 4.2: Trend Analysis of Management Fee**

The management fees trend analysis for money market unit trusts in Kenya from 2013 to 2022 reveals distinct patterns and shifts across different institutional affiliations. The overall market average management fee was relatively constant over the study period, with a slight downward trend from 1.723% in 2013 to 1.703% in 2022. This stability in the market average suggests that competitive pressures or regulatory influences may have helped to keep overall fee levels in check.

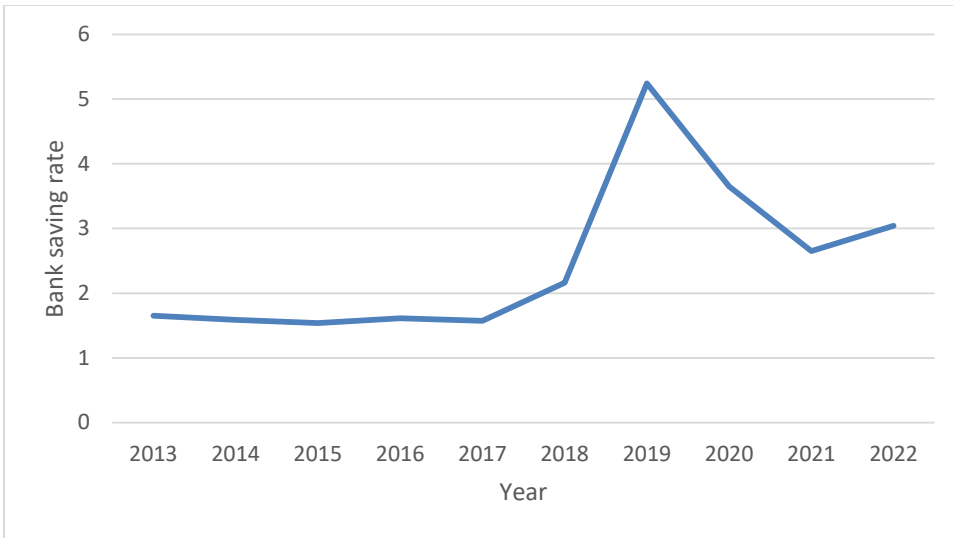
Bank-affiliated funds show the most dramatic change in fee structure over the study period. Starting with the highest fees among all categories at 1.863% from 2013 to 2017, bank-affiliated funds maintained this high fee level for several years before initiating a significant reduction from 2018 onwards. The most substantial drop occurred between 2021 and 2022, with fees falling from 1.600% to 1.200%. This sharp decrease could be indicative of

increased competitive pressures, regulatory interventions, or a strategic shift by bank-affiliated funds to attract more investors by lowering their fee burden.

Independent funds, in contrast, show a gradual increase in management fees over the study period, rising from 1.667% in 2013 to 1.851% in 2022. This upward trend in fees for independent funds is particularly interesting when considered alongside their yield performance. Despite charging increasingly higher fees, independent funds have not consistently outperformed their peers in terms of yields, raising questions about the value proposition they offer to investors. Insurance-affiliated funds demonstrate the most stable fee structure among the categories, with fees fluctuating within a narrow range between 1.533% and 1.700% over the ten-year period. Notably, insurance-affiliated funds have maintained the lowest average fees among all categories since 2015, while also generally delivering the highest yields as seen in the yield trend analysis. This combination of lower fees and higher yields suggests that insurance-affiliated funds may have operational efficiencies or investment strategies that allow them to offer better value to investors.

#### **4.4.3 Trend Analysis of Bank Saving Rate**

The summary of the trend analysis of bank saving rate is presented in Figure 4.3

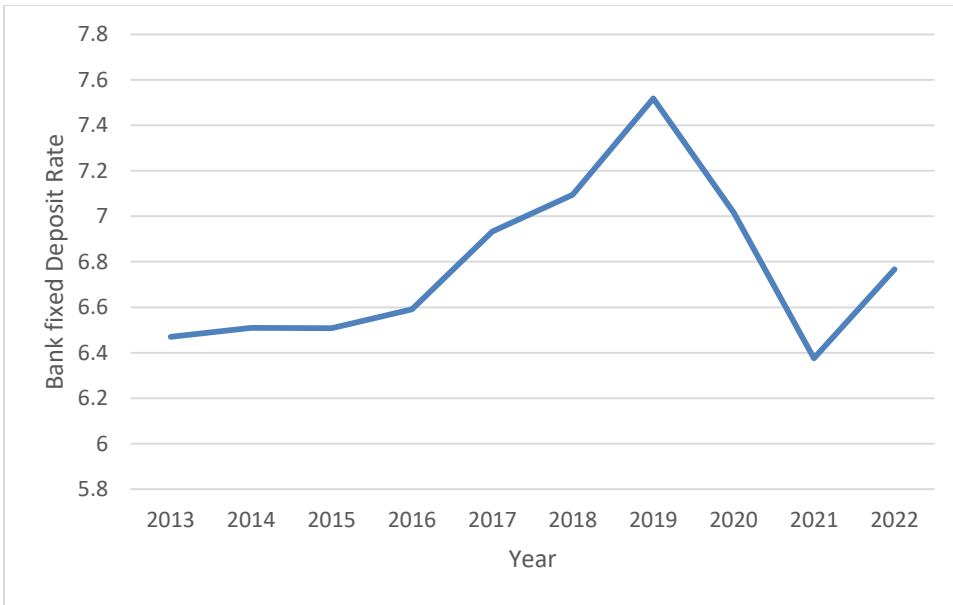


**Figure 4.3: Trend Analysis of Bank Saving Rate**

The bank saving rate from 2013 to 2022 presents a gentle upward trend. The incremental increase in saving rates could be attributed to banks' strategies to attract more deposits by offering better returns in a possibly improving economic environment or as a response to policy changes influencing interest rates.

#### **4.4.4 Trend Analysis of Bank fixed Deposit Rate**

Trend analysis of bank fixed deposit rate is presented in Figure 4.4

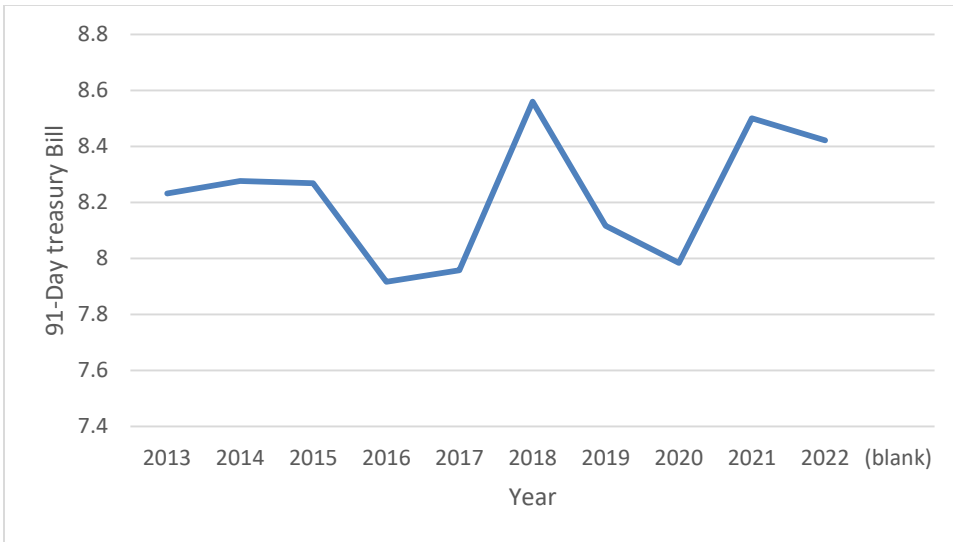


**Figure 4.4: Trend Analysis of Bank fixed Deposit Rate**

This analysis reveals a gradual increase in the fixed deposit rates over the period studied. Higher rates typically suggest an effort by banks to lock in deposits for longer terms, possibly in anticipation of higher lending rates or as a hedge against expected inflationary pressures.

#### **4.4.5 Trend Analysis of 91-Day treasury Bill**

The trend analysis of 91-Day treasury Bill is summarized in Figure 4.5

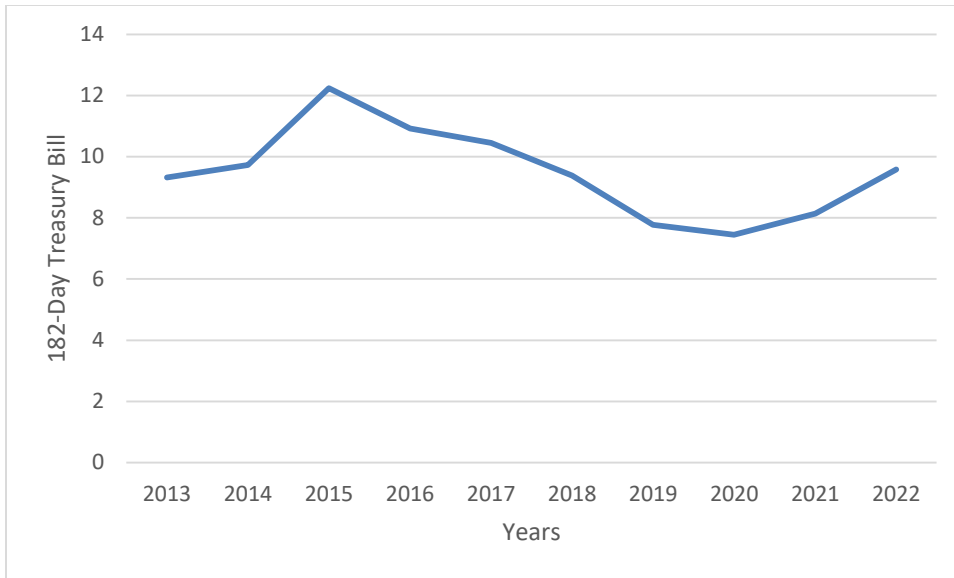


**Figure 4.5: Trend Analysis of 91-Day Treasury Bill**

The yield on the 91-day Treasury Bill shows an overall upward trend with some volatility. Such trends are often reflective of short-term government borrowing dynamics and can be influenced by monetary policy adjustments and the general economic climate.

#### **4.4.6 Trend Analysis of 182-Day Treasury Bill**

Trend analysis of 182-Day Treasury Bill is presented in Figure 4.6

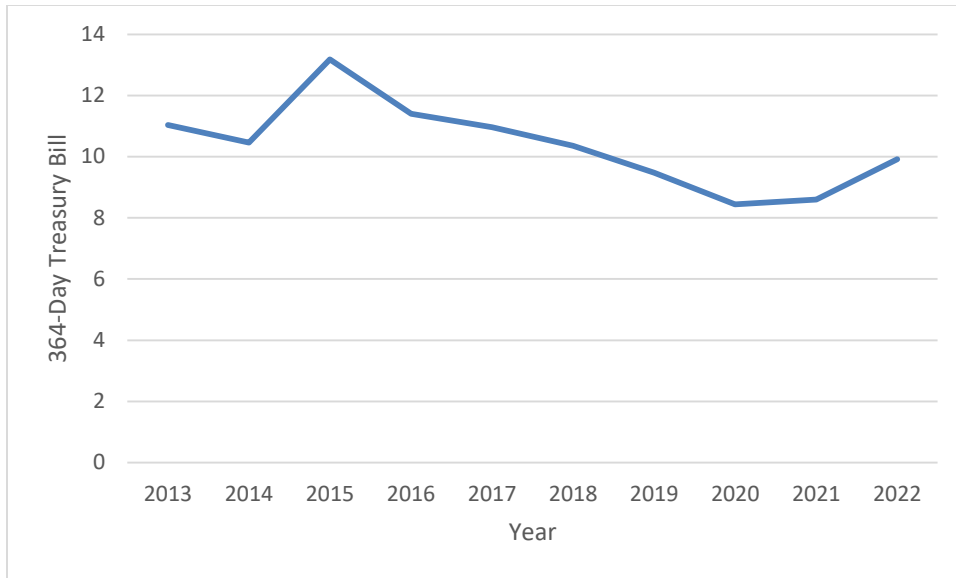


**Figure 4.6: Trend Analysis of 182-Day Treasury Bill**

The graph of the 182-day Treasury Bill shows a trend with noticeable fluctuations, reflecting medium-term fiscal and economic policies. This duration captures investor sentiment regarding the medium-term economic outlook, making it a significant indicator for both policy makers and investors. Trends in this instrument might suggest shifts in investor confidence and can influence broader financial market conditions. This analysis is crucial for government treasury departments and investors who need to understand the undercurrents of economic policy impacts over a medium-term horizon.

#### **4.4.7 Trend Analysis of 364-Day Treasury Bill**

Trend analysis of 364-Day Treasury Bill is presented in Figure 4.7

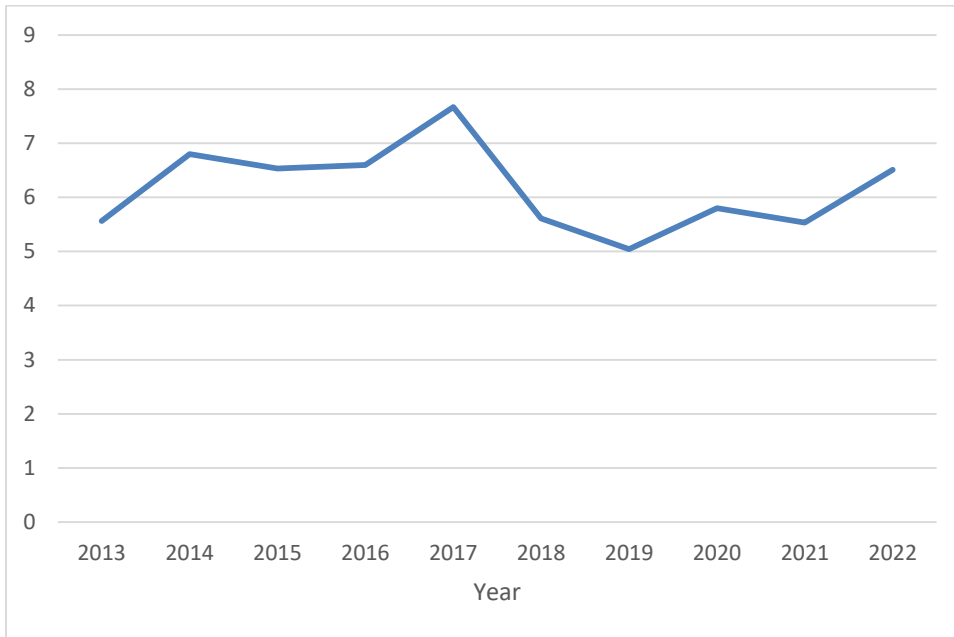


**Figure 4.7: Trend Analysis of 364-Day Treasury Bill**

This figure illustrates the yield trends for the 364-day Treasury Bill over a ten-year period. The notable variability in yields indicates the market's reaction to annual economic forecasts and fiscal policies. As the longest of the short-term securities, the 364-day bill is particularly sensitive to changes in economic policy and investor expectations about future inflation and interest rates. Trends here are often predictive of economic conditions in the coming year, making them a valuable tool for strategic financial planning and investment decision-making.

#### 4.4.8 Trend Analysis of Inflation

The study examined the inflation trend and results are presented in Figure 4.8

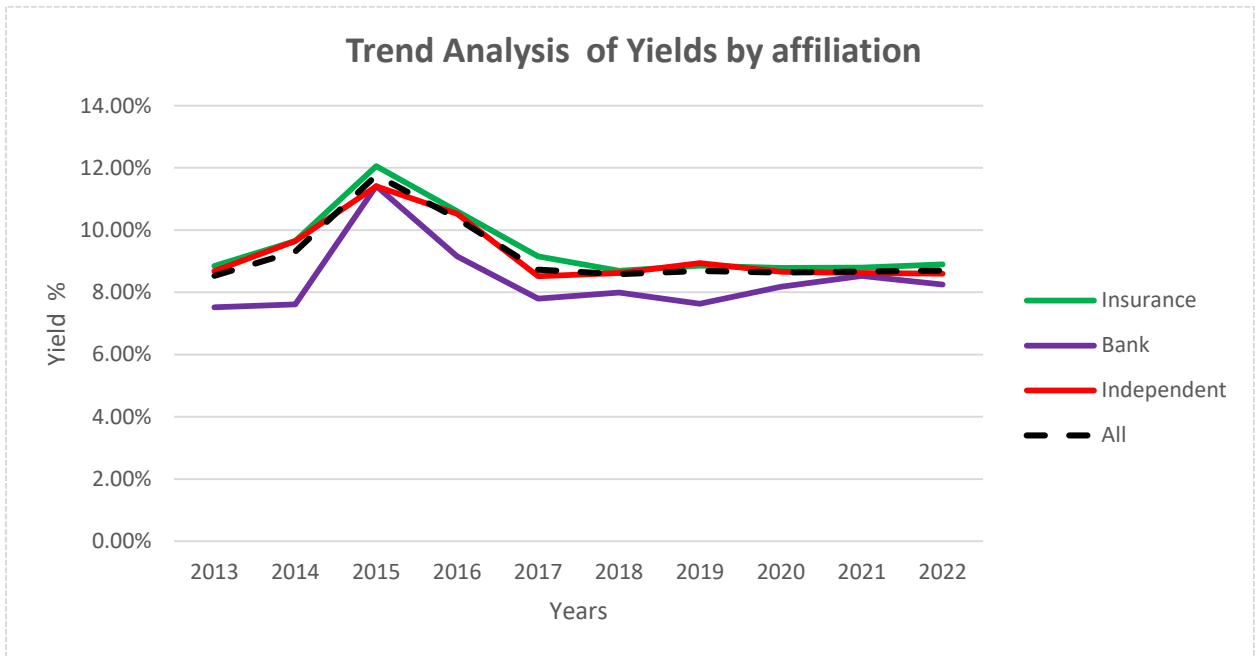


**Figure 4.8: Analysis of Inflation Trend**

The inflation trend analysis from 2013 to 2022 shows periods of rise and fall, mirroring the economic conditions and policy changes over the decade. Inflation trends are crucial for economic planning and policy making, influencing decisions in interest rates, monetary supply, and fiscal policies. An upward trend in inflation may prompt central banks to increase interest rates to curb spending and borrowing, while a downward trend might lead to lower rates to stimulate spending and investment. Understanding these patterns helps businesses and consumers adjust their financial strategies to maintain purchasing power and profitability in changing economic climates.

#### 4.4.9 Trend analysis of Yields by Affiliation

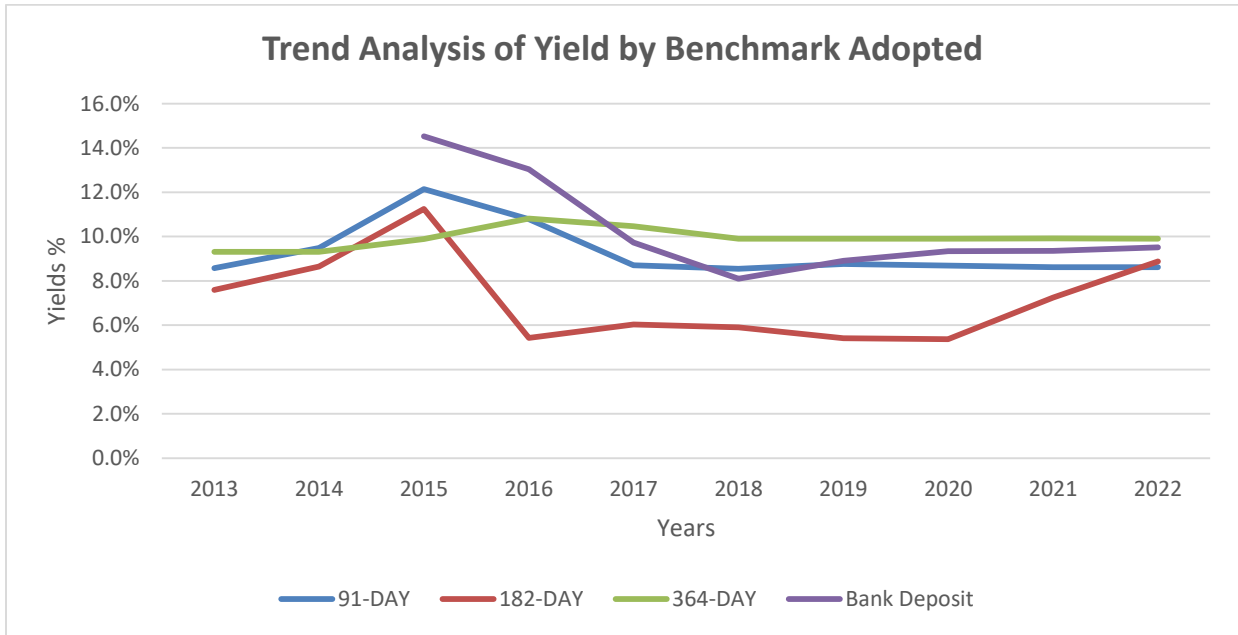
The study examined the trend of yields by type of unit trust affiliation and results are presented in Figure 4.9



The average yield for all money market unit trusts was 8.84% over the study period. This was a higher return compared to the average 91-day treasury bill rate of 8.26%, the market benchmark, taken as an average of all benchmarks, rate of 8.75% and average inflation of 6.17%. Money markets unit trusts affiliated with insurance companies had the highest average yields of 9.06%, while the independent (unaffiliated) returned 8.86% , both beating the average benchmark yield of 8.75%. However, money markets affiliated to Banks posted an average of 8.09% below the market average return of 8.84% and the market benchmark of 8.75%.

#### 4.4.10 Trend analysis of Yield by Benchmark Adopted

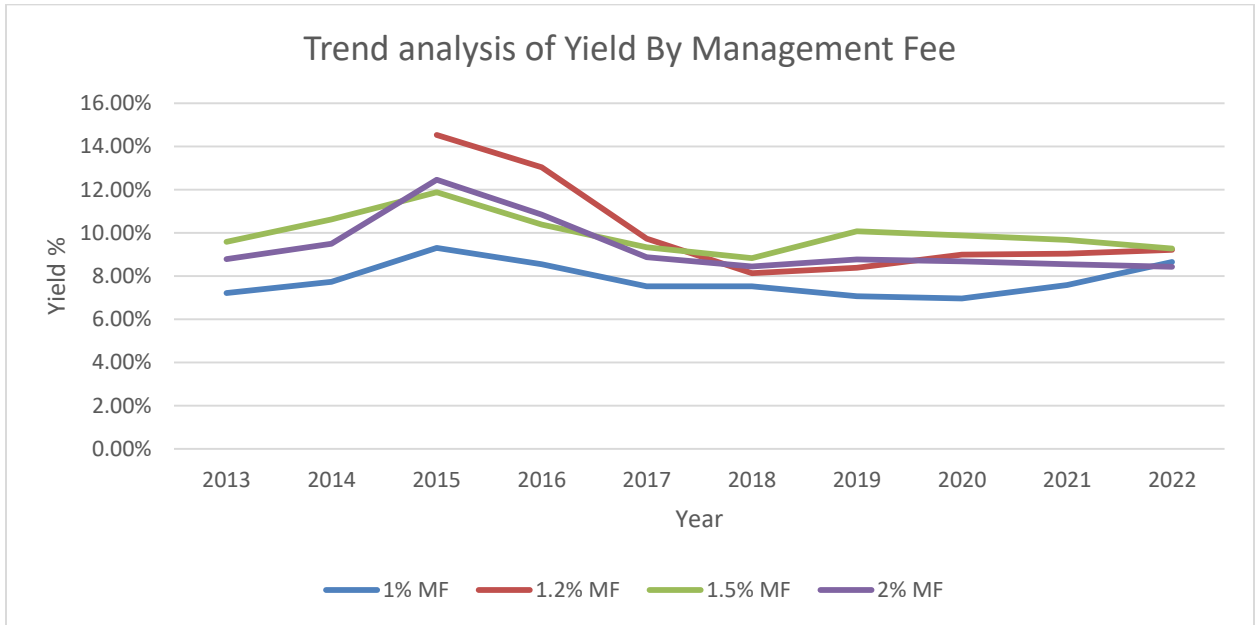
The study examined the trend of yields by type of benchmark adopted and results are presented in Figure 4.10



Money market unit trusts that targeted the 91-day treasury bill benchmark returned an average yield of 8.93% marginally surpassing the average 91-day treasury bill rate of 8.26%. Money market unit trusts that had the 182-day treasury bill benchmark posted an average yield of 6.81%, well below the 9.40% average 182-day treasury bill rate for the study period. Money market unit trust using the 364-day treasury bill rate as benchmark had an average return of 9.59% which was lower than the 10.37% average rate of the 364-day treasury bill. Money market unit trusts that tracked the bank deposit rates had a 9.85% average yield which surpassed the average bank deposit rate of 6.95%.

#### 4.4.11 Trend analysis of Yields by Management Fee

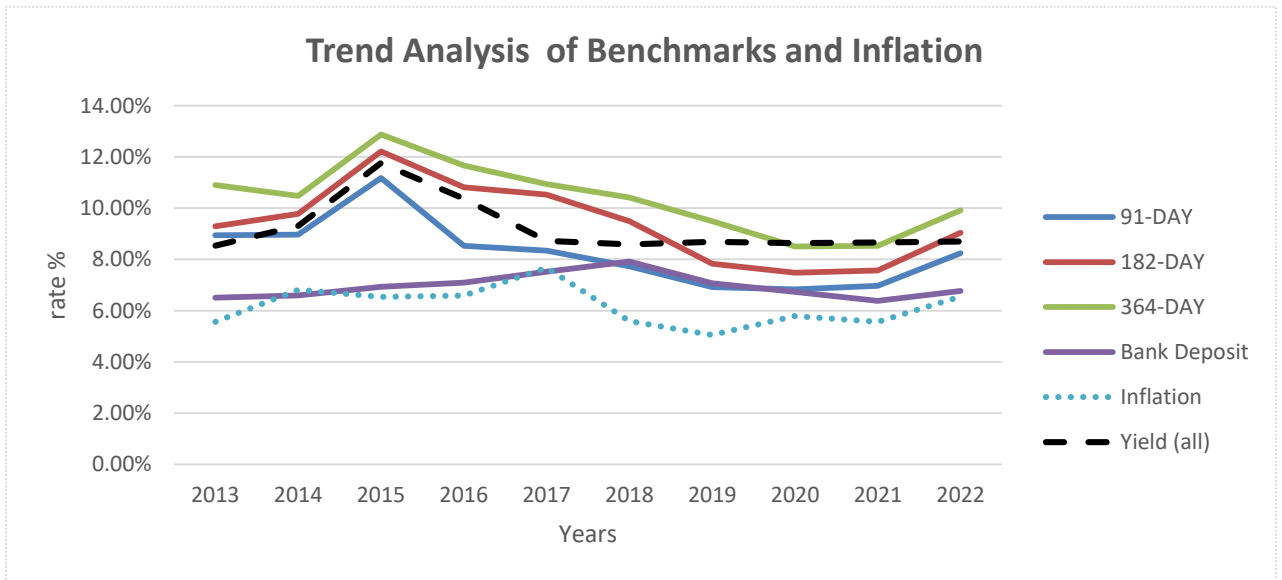
The study examined the trend of yields by level of management fee charged and results are presented in Figure 4.11



Analysis of yields based on management fee, produced mixed results. Money market unit trusts that charged 1% management fee posted a yield of 7.59%, which was below market yield of 8.84%. Money market unit trusts that charged 1.2% yielded 9.68%, those that charged 1.5% yielded 9.51%, those that charged 2% yielded 8.96% and those that charged 2.5% yielded 9.67%. The 2% management fee was most common, adopted by 50% of the money market unit trusts.

#### 4.4.12 Trend analysis of Benchmarks and Inflation

The study examined the trend of benchmarks and inflation. The results are presented in Figure 4.12



The 91-day treasury bill benchmark which posted an average return of 8.26%, lower than the 182-day treasury bill benchmark average of 9.40% and 364- day treasury bill average of 10.37%. This is consistent with longer dated instruments attracting higher premiums due to duration risks. Bank deposit savings benchmark has the lowest average return of 6.95% reflecting the banks efforts to minimise their cost of deposits. Bank savings rate was not considered since, none of the money market unit trusts adopted it as a benchmark. The 91-day treasury bill was the most adopted benchmark employed by over 90% of the money market unit trusts.

#### **4.5 Correlation Analysis**

The relationship between independent and dependent variables is investigated using correlation analysis. In this research, correlation analysis provides clarity on the relationships between the yield of money market unit trusts (dependent variable) and the independent variables of management fees, benchmarks, and inflation. The analysis also considers how these relationships may vary across different institutional affiliations (bank, independent, and insurance). By quantifying the strength and direction of these associations, correlation analysis helps to identify potential factors influencing unit trust performance and guides further in-depth statistical analysis. This methodology allows for a nuanced comprehension of the complex interplay between various factors affecting money market unit trust yields in Kenya. Table 4.5 presents correlation coefficients for all affiliation types, with values ranging from -1 (perfect negative) to +1 (perfect positive).

**Table 4.5: Correlation Analysis**

<b>Bank-Affiliated Funds</b>	<b>Yield</b>	<b>Management Fee</b>	<b>Benchmarks</b>	<b>Inflation</b>
Yield	1.0000			
Management Fee	0.0279**	1.0000		
Benchmarks	0.0917**	0.1804	1.0000	
Inflation	0.1856**	-0.0853	0.1314	1.0000
<b>Independent Funds</b>	<b>Yield</b>	<b>Management Fee</b>	<b>Benchmarks</b>	<b>Inflation</b>
Yield	1.0000			
Management Fee	-0.0967**	1.0000		
Benchmarks	0.2327**	0.1947	1.0000	
Inflation	0.0649**	0.1154	0.0379	1.0000
<b>Insurance-Affiliated Funds</b>	<b>Yield</b>	<b>Management Fee</b>	<b>Benchmarks</b>	<b>Inflation</b>
Yield	1.0000			
Management Fee	-0.1740**	1.0000		
Benchmarks	0.0010**	-0.3110	1.0000	
Inflation	0.1690**	0.0620	0.0430	1.0000

\*\* for  $p < 0.05$

The study found that for bank-affiliated money market unit trusts, yield shows a negative association (-0.0279) with management fees. This aligns with findings from Babalos (2011), who determined a negative association between fees and performance in Greek equity funds. The yield and benchmarks (0.0917) show a positive association, indicating that bank-affiliated funds' performance tends to move in the same direction as benchmark rates. This association is less pronounced than what Kazmi (2022) found in the US market, where

benchmarked indices offered greater risk-adjusted returns. The positive association between yield and inflation (0.1856) suggests that bank-affiliated funds may provide some hedge against inflation, contrary to findings by Lestari and Arrozi (2023) in Indonesia, who found that inflation has an immaterial effect on unit trust performance.

The positive association between management fees and benchmarks (0.1804) could indicate that bank-affiliated funds may increase fees when benchmark rates are higher, possibly justifying higher charges during periods of better market performance. This association warrants further investigation, as it may have implications for how these funds structure their fees in response to market conditions.

The study found that for independent money market unit trusts, the negative association between yield and management fees (-0.0967) is stronger than for bank-affiliated funds. This aligns with findings from Lamphun and Wongsurawat (2012), who found that smaller unit trusts (which independent funds often are) tend to charge higher fees while high-performing trusts charged lower fees. The association between yield and benchmarks (0.2327) is positive and stronger for independent funds compared to bank-affiliated ones. This suggests that independent funds may be more responsive to market conditions or more closely track benchmark performance. This finding partially supports the observations of Clare et al. (2019), who found that US bond unit trusts outperformed their self-declared benchmarks.

The association between yield and inflation (0.0649) is positive but weaker for independent funds compared to bank-affiliated ones. This could indicate that independent funds may be less effective at providing an inflation hedge, contrasting with the findings of Makau (2016)

who noted a positive response of Kenyan unit trusts to inflation. The positive association between management fees and benchmarks (0.1947) is similar to that of bank-affiliated funds, suggesting a common trend across different affiliations in how fees might be adjusted in response to market conditions.

The study found that for insurance-affiliated money market unit trusts, the negative association between yield and management fees (-0.174) is the strongest among all three affiliation types. This suggests that for insurance-affiliated funds, higher fees are more strongly associated with lower yields. This finding aligns with the broader trend observed by Nyanamba et al. (2015), who confirmed an inverse correlation between expenses and profitability in Kenyan unit trusts. The association between yield and benchmarks (0.001) is nearly zero for insurance-affiliated funds, indicating almost no linear association between fund performance and benchmark rates. This contrasts sharply with the findings for bank-affiliated and independent funds and diverges from the observations of Dawe et al. (2014), who found that Kenyan equity and blended unit trusts consistently delivered returns above benchmarks.

The association between yield and inflation (0.169) for insurance-affiliated funds is positive and stronger than for independent funds, suggesting these funds may offer a better inflation hedge. This partially aligns with Okoth's (2014) findings of a positive association between inflation and unit trust performance in Kenya. The negative association between management fees and benchmarks (-0.311) is unique to insurance-affiliated funds and contrasts with the positive associations observed for bank and independent affiliations. This could indicate that

insurance-affiliated funds may reduce fees when benchmark rates are higher, potentially to remain competitive or pass on benefits of higher market returns to investors.

#### 4.6 Diagnostics Test

Diagnostic tests evaluate a statistical model's validity and quality. Any problems with the model, such as overfitting, underfitting, or lack of fit, can be identified through these tests.

Using diagnostic tests is crucial to guaranteeing the validity and reliability of inferences made from statistical models. To meet regression analysis requirements, diagnostic tests including normality test, heteroscedasticity test, multicollinearity test, stationarity test and model specification test were carried out.

##### 4.6.1 Normality Tests

Table 4.6 shows the outcome of the normality tests conducted using the Skewness test to assess whether the data collected from the sample adheres to a normal distribution. Normality testing is crucial in statistical analysis as it helps ascertain whether the assumptions underlying certain statistical techniques are met.

**Table 4.6: Normality Test**

<b>Variables</b>	<b>Statistic</b>	<b>Sig.</b>
Yield	0.100	0.084
Institutional affiliation	0.181	0.0685
Management fee	0.164	0.072
Benchmarks	0.093	0.903
Inflation	0.141	0.208

The Table 4.6 results reveal that the data was normally distributed since all variables (yield, institutional affiliation, management fee, benchmarks and inflation) had respective p values greater than 0.05. Therefore, we can deduce that the data follows a normal distribution. A normality test is a statistical technique used to ascertain if a data sample originates from a normally distributed population. A normally distributed population is one in which the data has a bell-shaped distribution with a symmetrical spread around the mean.

#### 4.6.2 Heteroscedasticity

The Breusch-Pagan test was used in the study to determine the presence of heteroscedasticity. Table 4.7 shows the study's heteroscedasticity test findings.

**Table 4.7: Heteroscedasticity Test**

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Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Ho: Constant variance  
Variable: Fitted values of Yield

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chi2(1)	=	5.96
Prob > chi2	=	0.1460

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The results presented in Table 4.7 show that the p-value is higher than 0.05. Given that the reported p-value is 0.1460 which is greater than 0.05, the null hypothesis is not rejected at a crucial p-value of 0.05. The analysis finds that there was a constant variance in the data, indicating that they were not heteroscedastic.

### 4.6.3 Multicollinearity

To test whether independent variables in the regression model are correlated, the Variance Inflation Factor (VIF) multicollinearity test was undertaken. The multicollinearity results are presented in Table 4.8

**Table 4.8: Multicollinearity Results**

<b>Variables</b>	<b>VIF</b>
Institutional affiliation	1.16
Management fee	1.27
Benchmarks	1.01
Inflation	1.04

The results in Table 4.8 indicated the lack of multicollinearity since each variable's VIF were less than 10. Gujarati (2003) states that a VIF score of less than 5 denotes a lack of multicollinearity between the variables. Multicollinearity is a statistical phenomenon where two or more predictor variables in a regression analysis have a strong correlation with one another. Multicollinearity can lead to unstable and unreliable estimate, which can cause issues when estimating the regression model's coefficients. In addition to increasing the likelihood of overfitting, multicollinearity can also make it challenging to identify the particular impact of each predictor variable on the response variable.

### 4.6.4 Autocorrelation Test

Autocorrelation tests examine whether residuals are correlated over time within the same money market unit trust. Serial correlation violates the independence assumption, leading to inefficient estimators and biased standard errors.

**Table 4.9: Wooldridge Test for Autocorrelation in Panel Data**

Test Statistic	Value
Ho: No first-order autocorrelation	
F(1, 27)	2.143
Prob > F	0.1548
Conclusion	No autocorrelation

The Wooldridge test yielded p-value of 0.1548 ( $>0.05$ ), failing to reject the null hypothesis of no first-order autocorrelation. This confirms residuals are independent over time, satisfying the independence assumption. The absence of serial correlation validates standard error estimates and significance tests without requiring robust clustering corrections.

#### 4.6.4 Stationarity Tests

The goal of the study was to determine whether the variables are stationary. The Levi-Lechun (LLC) test was used to perform unit root tests in order to determine whether the variables are stationary or non-stationary. A non-stationary series leads to spurious regression results and the test helps to ensure that the regression results are dependable and authentic. For this test, the null hypothesis was that each panel had a unit-root. Table 4.10 presents the findings of stationarity tests.

**Table 4.10: Stationarity Tests**

Variable name	Statistic(adjusted)	P-value	Comment
Yield	8.7494	0.006	Stationary
Institutional affiliation	9.1950	0.000	Stationary
Management fee	4.035	0.014	Stationary

Benchmarks	9.9544	0.000	Stationary
Inflation	9.5825	0.000	Stationary

According to the findings shown in Table 4.10, all of the variables' p-values were less than 0.05. Therefore, at the 5% level of significance, all the variables are stationary, meaning there are no unit roots. According to the study's findings, none of the variables were found to have a unit root. It was inferred by this that the regression analysis outcomes were not spurious.

#### 4.6.5 Model Specification Test

The Hausman test was used in the study to examine the model coefficient estimates. The null hypothesis of the test stated that the random effects model was most suitable for the study. The p-value was used to test the hypothesis. Table 4.11 presents a summary of the findings.

**Table 4.11: Hausman Test**

Column	(b)	(B)
	Fixed	Random
Institutional affiliation	1.359561	1.058676
Management fee	0.4982154	0.4857263
Benchmarks	0.1709497	0.1923514
Inflation	0.3243076	0.3237349

$$\chi^2(4) = (b-B)'[(V_b - V_B)^{-1}](b-B) = 65.96$$

$$\text{Prob} > \chi^2 = 0.37$$

According to Table 4.11 the p-value was 0.37, which is greater than 0.05, as a result, the null hypothesis was not rejected, hence concluding that the random effects model was the most

suitable model to use. The importance of the random effects model over the fixed effect model is that it allows one to time-varying and static variables. The fixed-effect model exclusively considers the variables that are constant. Moreover, another importance of the random model as opposed to the fixed model is that it estimates the variables concurrently. The drawback of fixed effects models is it increases the standard errors of the coefficient estimates since it estimates a parameter for every unit. Consequently, the random effect model was the most suitable for the study's regression analysis.

#### 4.7 Regression Analysis

The study employed a multivariate panel regression approach to assess the direct and moderating effects of firm characteristics on the yields of money market unit trusts in Kenya. This section presents regression results addressing all four research objectives and testing the corresponding hypotheses. Following diagnostic test recommendations, Random Effects (RE) models were employed for all specifications. Table 4.12 consolidates all regression results into a single comprehensive presentation, including direct effects models (Objectives 1-3) and the moderation model (Objective 4).

**Table 4.12: Multivariate Panel Regression Results (Random Effects Models)**

Variable	Model 1: Affiliation	Model 2: Benchmarks	Model 3: Mgmt Fee	Model 4: Moderation
<b>Independent Variables</b>				
<b>Institutional Affiliation</b>				
Independent (vs. Bank)	1.6189*** (0.3103) [p=0.000]			2.3456*** (0.4521) [p=0.000]
Insurance (vs. Bank)	1.4958** (0.6402)			1.8923** (0.7834)

Variable	Model 1: Affiliation	Model 2: Benchmarks	Model 3: Mgmt Fee	Model 4: Moderation
	[p=0.019]			[p=0.016]
Benchmarks				
Bank Saving Rate		0.1305 (0.2178) [p=0.549]		0.0847 (0.1956) [p=0.665]
Bank Deposit Rate		1.2865*** (0.4926) [p=0.009]		1.4532*** (0.5234) [p=0.006]
182-Day T-Bill		0.9995*** (0.3104) [p=0.001]		1.1247*** (0.3456) [p=0.001]
364-Day T-Bill		1.9875*** (0.6786) [p=0.003]		2.1034*** (0.7123) [p=0.003]
Management Fee			-0.6218** (0.3003) [p=0.038]	-0.4873* (0.2845) [p=0.087]
Inflation				0.3421*** (0.1023) [p=0.001]
Interaction Terms				
Affiliation × Inflation				-0.0742** (0.0304) [p=0.015]
Benchmarks × Inflation				0.1409*** (0.0188) [p=0.000]
Mgmt Fee × Inflation				0.1391*** (0.0399) [p=0.000]
Constant	7.5307*** (0.4630) [p=0.000]	8.5990*** (0.3311) [p=0.000]	8.8074*** (0.3263) [p=0.000]	6.4615*** (0.3961) [p=0.000]
Model Statistics				

Variable	Model 1: Affiliation	Model 2: Benchmarks	Model 3: Mgmt Fee	Model 4: Moderation
Observations	2,160	2,160	2,160	2,160
Number of Groups	18	18	18	18
R-squared (overall)	0.0245	0.0412	0.0290	0.0802
Wald chi2	27.45***	35.67***	4.28**	78.93***

*Note: Standard errors in parentheses; p-values in brackets*

\*Significance levels: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

*Base category: Bank-affiliated funds; 91-Day Treasury Bill excluded from benchmarks to avoid perfect multicollinearity*

Model 1 examined the effect of institutional affiliation on the yield of money market unit trusts in Kenya. The findings show that independent and insurance-affiliated funds outperformed bank-affiliated funds by 1.6189 and 1.4958 percentage points respectively, both significant at  $p < 0.05$ . These results confirm that institutional affiliation significantly influences yield, leading to rejection of the null hypothesis that affiliation has no effect on performance. The low  $R^2$  of 0.0245 suggests that while affiliation explains some yield variation, other factors such as fund management efficiency, cost control, and benchmark rate alignment also contribute significantly. The Wald chi-square value of 27.45 ( $p < 0.01$ ) validates the overall model, implying that institutional structure meaningfully accounts for differences in performance among money market unit trusts in Kenya.

These findings contradict Wang (2023), who established that bank affiliation enhances performance in China, but they align with Alberato et al. (2020), who found that bank-controlled unit trusts underperform independent ones due to operational rigidity and conflicts of interest. They also support Ochieng, Ngali, and Agong (2023), who reported that liquidity and portfolio composition, rather than ownership type, influence fund returns in Kenya. Similarly, Ndanu and Gatauwa (2023) found that institutional characteristics positively affect

fund performance, emphasizing the benefits of managerial independence. Overall, the results confirm that independent and insurance-affiliated funds achieve superior yields because they possess greater flexibility and autonomy to optimize returns compared to bank-affiliated funds constrained by institutional policies.

Model 2 examined the effect of benchmark interest rates on the yield of money market unit trusts in Kenya. The results indicate that benchmark variables exert a stronger influence on yield compared to institutional affiliation. Specifically, the bank deposit rate ( $\beta = 1.2865$ ,  $p = 0.009$ ), 182-day Treasury Bill ( $\beta = 0.9995$ ,  $p = 0.001$ ), and 364-day Treasury Bill ( $\beta = 1.9875$ ,  $p = 0.003$ ) each had significant positive effects on yield, while the bank saving rate was insignificant ( $p = 0.549$ ). This means that as benchmark rates increase, unit trust yields rise proportionally, reflecting close tracking of short-term interest rate movements. The model's  $R^2$  of 0.0412, higher than Model 1, suggests benchmarks better capture yield variations. The Wald chi-square (35.67,  $p < 0.01$ ) confirms overall model significance, establishing that benchmark interest rates are key predictors of fund yield performance.

These results align with Kazmi (2022), who found that benchmarked indices outperform unmanaged sectoral funds in terms of risk-adjusted returns. They also corroborate findings by Gebrewolde, Woldekidan, and Molla (2023), who demonstrated that treasury bill yields in Ethiopia became more responsive to market liquidity following financial reforms, confirming that benchmarks strongly influence short-term asset performance. Similarly, Lestari and Arrozi (2023) showed that effective benchmark scaling and cost management enhance fund performance through better alignment with prevailing interest rates. Consistent with the Capital Markets Authority (CMA) guidelines in Kenya, the results affirm the use of

182-day and 364-day Treasury Bills as reliable reference benchmarks for evaluating unit trust performance.

Model 3 examined the effect of management fees on the yield of money market unit trusts. The analysis revealed a negative and statistically significant relationship, with a coefficient of  $-0.6218$  ( $p = 0.038$ ), indicating that a one-percentage-point increase in management fees leads to a 0.62 percentage-point reduction in yield. This means that higher management fees erode investor returns, confirming that excessive costs reduce fund profitability. The  $R^2$  of 0.0290 suggests that fees explain a small portion of yield variation but remain economically relevant. The Wald chi-square (4.28,  $p < 0.05$ ) validates the model's robustness, confirming that management costs are an important factor affecting fund performance in Kenya's money market unit trust sector.

These findings are consistent with Namu (2021), who found that higher operational costs negatively affect fund performance in Kenya, and with Mairafi, Mahmuda, and Adamu (2025), who reported that fund expenses and age significantly reduce efficiency among Nigerian investment funds. They also align with earlier findings by Babalos (2011) and Gil-Bazo and Martinez (2004), who observed that higher management fees do not correspond to better performance. This evidence challenges the cost-plus pricing theory (Nagle, 1987), which assumes that higher fees reflect superior service quality. Instead, the results indicate that Kenya's elevated average fee rate of 1.7 percent, compared to the global average of 0.42 percent, diminishes investor value and underscores the need for regulatory measures to enhance fee transparency and cost efficiency.

Model 4 examined the moderating role of inflation on the relationship between institutional affiliation, benchmarks, management fees, and yield of money market unit trusts. The findings show that inflation has both direct and moderating effects on yield performance. The positive coefficient for inflation ( $\beta = 0.3421$ ,  $p = 0.001$ ) indicates that nominal yields increase during inflationary periods. However, the interaction terms-Affiliation\*Inflation ( $\beta = -0.0742$ ,  $p = 0.015$ ), Benchmarks\*Inflation ( $\beta = 0.1409$ ,  $p = 0.000$ ), and Management Fee\*Inflation ( $\beta = 0.1391$ ,  $p = 0.000$ )-demonstrate that inflation weakens affiliation-based advantages but strengthens the effects of benchmarks and management fees on yield. The  $R^2$  of 0.0802, nearly double the explanatory power of earlier models, and the Wald chi-square (78.93,  $p < 0.01$ ) confirm that inflation meaningfully moderates yield determinants in Kenya's money market unit trusts.

These findings are supported by Gure and Mutswenje (2023), who found that inflation significantly reduces stock market performance in Kenya, and Islam (2024), who reported that inflation negatively affects equity market returns in Bangladesh. They also align with Vermeulen (2024), who established that central bank independence reduces inflationary volatility, and with Fadliana and Marsono (2023), who observed that inflation weakens fund sustainability in Indonesia. Collectively, these studies highlight that inflation is a critical macroeconomic factor influencing both nominal and real yields. It not only drives short-term performance shifts but also alters the strength of relationships between institutional, structural, and cost-related variables, demonstrating its vital moderating role in Kenya's unit trust industry.

#### **4.9 Summary of Hypotheses Testing**

The study aimed to examine the impact of institutional affiliation, benchmarks, management fees, and inflation on the yield of Kenyan money market unit trusts. Four hypotheses were formulated and evaluated by regression analysis. The first hypothesis (Ho1) stated that institutional affiliation has no significant effect on the yield of money market unit trusts. However, based on the results in Table 4.12, the p-values were found to be less than 0.05 for independent and insurance-affiliated funds, resulting in the rejection of the null hypothesis. This results suggests that institutional affiliation have a significant effect on the yield of money market unit trusts in Kenya.

The second hypothesis (Ho2) stated that benchmarks have no significant effect on the yield of money market unit trusts. According to the results in Table 4.13, the p-values were less than 0.05 for the bank deposit rate, 364-Day Treasury Bill, and 182-Day Treasury Bill, which were used as benchmarks. Consequently, the null hypothesis was not accepted, indicating that benchmarks have a considerable effect on the yield of money market unit trusts in Kenya. This finding highlights the importance of considering relevant benchmarks, such as bank deposit rates and Treasury Bill yields, when evaluating and managing the performance of money market unit trust portfolios.

The third hypothesis (Ho3) stated that management fees have no significant effect on the yield of money market unit trusts. The results in Table 4.14 showed a p-value less than 0.05, resulting in the rejection of the null hypothesis. This suggests that management fees have a significant effect on the yield of money market unit trusts in Kenya. Finally, the fourth

hypothesis (Ho4) stated that inflation have no significant moderating effect on the relationship between institutional affiliation, benchmarks, management fees, and the yields of money market unit trusts in Kenya. However, based on the results in Table 4.15, the p-values for the interaction terms (Institutional Affiliation\*Inflation, Benchmarks\*Inflation, and Management Fee\*Inflation) were found to be less than 0.05. This led to the rejection of the null hypothesis, indicating that inflation have a considerable moderating impact on the relationship between institutional affiliation, benchmarks, management fees, and the yields of money market unit trusts in Kenya.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

The chapter provides an overview of the results, conclusion inferred from the study findings, and recommendations. The chapter further highlights recommendations made from the research to practice and policy and suggestions for alternative research. The presentation in each section is done thematically according to the specific study objectives.

#### 5.2 Summary of Findings

Descriptive statistics revealed insurance-affiliated funds achieved highest yields (9.08%, SD=1.87%), followed by independent funds (8.72%, SD=2.38%) and bank-affiliated funds (8.21%, SD=1.49%), while management fees averaged 1.71% substantially exceeding global standards (0.42%). Treasury Bill yields followed upward slopes (91-day: 8.26%, 182-day: 9.53%, 364-day: 10.39%), with average fund yields (8.80%) falling between 91-day and 182-day rates, while inflation averaged 6.10% within Central Bank target ranges, providing context for subsequent inferential analyses addressing each objective.

##### 5.2.1 Institutional Affiliation and Yield (Objective 1)

Independent funds outperformed bank-affiliated funds by 1.6189 percentage points ( $p=0.000$ ) while insurance-affiliated funds exceeded bank-affiliated by 1.4958 percentage points ( $p=0.019$ ), supporting rejection of Hypothesis 1. These findings align with Taylor (2022) who found fund size and age negatively related to performance in South African equity schemes, and Ochieng et al. (2023) who determined institutional characteristics

positively affected Kenyan scheme performance, but contradict Iftikhar and Siddiqui (2023) who found group affiliation improved ROE in Pakistan. The results contribute theoretically by demonstrating transaction cost theory's affiliation advantages do not materialize in Kenya's context where agency theory better explains outcomes, with conflicts of interest in bank-affiliated funds outweighing resource benefits, informing regulatory policy on monitoring bank-fund relationships and investor decisions on fund selection based on organizational structure.

### **5.2.2 Benchmarks and Yield (Objective 2)**

Bank deposit rates ( $\beta=1.29$ ,  $p=0.009$ ), 364-Day Treasury Bills ( $\beta=1.99$ ,  $p=0.003$ ), and 182-Day Treasury Bills ( $\beta=1.00$ ,  $p=0.001$ ) significantly influenced yields while bank saving rates showed no effect ( $p=0.549$ ), supporting partial rejection of Hypothesis 2. These findings align with Umamaheswari et al. (2022) who found T-bills remained preferred short-term investments in India, Gebrewolde et al. (2023) who showed T-bill yields became market-driven post-reform in Ethiopia, and Forbuzo (2024) who found positive links between treasury rates and stock performance in Ghana. The results advance Deming benchmark theory by demonstrating appropriate benchmark selection guides strategies but does not guarantee outperformance, particularly given funds' consistent underperformance relative to longer-term passive Treasury Bill strategies despite elevated management fees, suggesting regulatory interventions beyond disclosure may be needed to align manager incentives with investor interests.

### **5.2.3 Management Fees and Yield (Objective 3)**

Management fees negatively affected yields ( $\beta=-0.62$ ,  $p=0.038$ ), with insurance-affiliated funds combining lowest fees (1.60%) and highest yields (9.08%), supporting rejection of Hypothesis 3. These findings align with Mairafi et al. (2025) who found fund expenses negatively affected NAV in Nigeria, Mohammed and Mabrouk (2025) who showed mixed fee-performance relationships in Egyptian funds, and Bouzekouk and Mansor (2024) who found religiosity outweighed cost concerns in Malaysian Islamic funds, but contradict Busse et al. (2021) who found larger Chinese funds achieved lower costs despite lower returns. The results contribute by refuting cost-plus pricing theory in competitive fund markets, demonstrating elevated emerging market fees (Kenya 1.71% versus global 0.42%) primarily erode returns without corresponding performance benefits, informing policy recommendations for fee transparency requirements and practice recommendations for operational efficiency focus rather than fee-based positioning.

### **5.2.4 Moderating Effect of Inflation (Objective 4)**

All interaction terms proved significant-Affiliation\*Inflation ( $\beta=-0.07$ ,  $p=0.015$ ), Benchmarks\*Inflation ( $\beta=0.14$ ,  $p=0.000$ ), Management Fee\*Inflation ( $\beta=0.14$ ,  $p=0.000$ )-with moderation model R-squared (8.02%) nearly doubling highest individual model (4.12%), supporting rejection of Hypothesis 4. These findings align with Gure and Mutswenje (2023) who found inflation negatively affected Kenyan stock markets, Islam (2024) who showed inflation reduced Bangladesh market performance, and Asiedu et al. (2021) who demonstrated long-run negative inflation-stock relationships in Ghana, but differ from Vermeulen (2024) who focused on central bank independence effects in South Africa.

The results extend quantity theory of money by demonstrating inflation affects not only nominal yields directly but also moderates firm characteristic sensitivities, contributing theoretically by showing macroeconomic conditions alter structural relationships rather than merely shifting absolute performance levels, with implications for dynamic fund selection strategies and monetary policy coordination between Central Bank of Kenya and Capital Markets Authority during varying inflation environments.

### **5.3 Conclusions**

Based on significant findings for Objective 1, institutional affiliation critically determines money market unit trust yields in Kenya, with independent funds outperforming bank-affiliated funds by 1.6189 percentage points ( $p < 0.05$ ) and insurance-affiliated funds exceeding bank-affiliated by 1.4958 percentage points ( $p = 0.019$ ). These results contradict transaction cost theory's prediction that institutional affiliation provides resource advantages, instead supporting agency theory where conflicts of interest dominate, aligning with Alberato et al. (2020) who found bank-controlled unit trusts underperformed independent funds but contradicting Wang (2023) who reported bank affiliation enhanced performance in China.

The findings corroborate Ochieng et al. (2023) who demonstrated institutional factors positively affected Kenyan scheme performance, while extending Ndanu and Gatauwa (2023) by showing that institutional affiliation type-not merely institutional presence-drives performance differences. This responds to the study problem of persistent underperformance by identifying organizational independence from banking institutions as critical for yield optimization, contributing significantly to literature as the first empirical evidence from

Kenya's money market context demonstrating that affiliation advantages assumed in emerging markets actually reverse in practice, with bank-affiliated funds' structural conflicts outweighing any operational benefits, thereby informing regulatory policy on monitoring bank-fund relationships and investor selection strategies prioritizing independence over institutional backing.

Regarding Objective 2, benchmarks significantly influence yields with bank deposit rates ( $\beta=1.29$ ,  $p=0.009$ ), 182-day Treasury Bills ( $\beta=1.00$ ,  $p=0.001$ ), and 364-day Treasury Bills ( $\beta=1.99$ ,  $p=0.003$ ) demonstrating positive effects, yet average fund yields (8.80%) consistently underperformed passive 182-day (9.53%) and 364-day (10.39%) Treasury Bill strategies despite elevated fees. These findings advance Deming Benchmark Theory by confirming that appropriate benchmark selection guides portfolio strategies but fails to guarantee outperformance, directly supporting Kazmi (2022) who found benchmarked indices outperformed active sector funds on risk-adjusted returns, and aligning with Umamaheswari et al. (2022) who identified T-bills as preferred instruments supporting money market stability.

The results extend Namu (2021) who showed operating expenses reduced returns across fund categories, by demonstrating that benchmark sensitivity itself varies systematically by maturity structure. This responds to the study problem by revealing that while funds effectively track market rates, active management cannot justify premium fees when passive strategies deliver superior returns, contributing significantly as the first comprehensive Kenyan evidence quantifying benchmark-yield relationships across different maturity instruments and demonstrating that longer-term Treasury Bills exert disproportionate

influence, suggesting regulatory interventions beyond disclosure requirements toward manager incentive realignment with investor interests.

For objective 3, management fees negatively impacted yields with each percentage point increase reducing returns by 0.62 percentage points ( $p=0.038$ ), while insurance-affiliated funds achieved optimal performance combining lowest fees (1.60%) with highest yields (9.08%), demonstrating operational efficiency dominates fee structures in driving returns. This finding refutes Cost-Plus Pricing Theory in competitive fund markets, supporting Busse et al. (2021) who found larger funds achieved lower percentage costs but earned lower gross returns due to scale constraints, and aligning with Mantilla-García et al. (2023) who emphasized standardized fee metrics for fair benchmarking.

The results extend Mwita (2022) who showed expected return, risk, and liquidity raised profitability, by demonstrating that institutional affiliation moderates fee-yield relationships with insurance-affiliated funds leveraging actuarial expertise for cost optimization. This responds to the study problem by quantifying precisely how elevated Kenyan fees (1.71% versus 0.42% globally) erode investor returns without corresponding performance benefits, contributing significantly as the first evidence from Kenya's money market context establishing the exact magnitude of fee impact and revealing that oligopolistic market structure (top 5 funds controlling 81%) enables anticompetitive pricing unsupported by active management skill, informing policy recommendations for fee transparency requirements and potential caps on underperforming funds.

Addressing Objective 4, inflation significantly moderated all firm characteristic-yield relationships with Affiliation×Inflation ( $\beta=-0.07$ ,  $p=0.015$ ), Benchmarks×Inflation ( $\beta=0.14$ ,  $p<0.001$ ), and Management Fee×Inflation ( $\beta=0.14$ ,  $p<0.001$ ) proving significant, while the moderation model's R-squared (8.02%) nearly doubled individual models' explanatory power. These findings extend Keynes's Liquidity Preference Theory by demonstrating inflation functions as moderator altering how liquidity preferences influence yields rather than merely affecting nominal returns directly.

The results support Gure and Mutswenje (2023) who found inflation significantly weakened Kenya's stock market performance and corroborate Namu (2021) who showed inflation moderated fund characteristic-performance relationships. This responds to the study problem by explaining why liquidity premiums embedded in benchmark yields exhibit temporal instability across inflation cycles and why static portfolio positioning strategies based solely on historical maturity structures prove suboptimal, contributing significantly as the first empirical evidence from any emerging market establishing inflation as critical moderating variable affecting how investors value liquidity versus yield trade-offs in money market instruments.

The results contradict Lestari and Arrozi (2023) who found inflation insignificant for Indonesian mutual fund performance, while extending Vermeulen (2024) by showing inflation effects operate through moderation channels beyond central bank independence mechanisms. This responds to the study problem by explaining why unit trust performance determinants exhibit temporal instability across economic cycles and why static selection strategies based solely on historical affiliation or fee patterns prove suboptimal, contributing

significantly as the first empirical evidence from any emerging market establishing inflation as critical moderating variable-with affiliation advantages diminishing during high inflation (negative interaction) while benchmark and fee sensitivities strengthen (positive interactions)-thereby fundamentally informing dynamic portfolio positioning strategies across inflation environments and regulatory coordination between Central Bank of Kenya's inflation targeting and Capital Markets Authority's investor protection mandates.

## **5.4 Recommendations**

### **5.4.1 Policy Recommendations**

The Capital Markets Authority should implement regulations preventing conflicts of interest in bank-affiliated funds through mandatory disclosure of parent-subsidiary transactions and independent audit requirements, given significant underperformance evidence, while establishing standardized benchmark disclosure requirements ensuring funds select appropriate reference rates with mandatory reporting against multiple benchmarks preventing strategic selection.

The Central Bank of Kenya should maintain inflation within target ranges ( $5.0\% \pm 2.5\%$ ) given significant moderation effects, requiring funds to provide inflation-adjusted performance metrics during elevated price periods ensuring investors understand real purchasing power changes. The Ministry of Finance and National Treasury should evaluate whether industry concentration (top 5 funds controlling 81% market share) enables anticompetitive practices sustaining elevated fees despite underperformance, considering fee caps or progressive structures limiting charges for underperforming funds following emerging market precedents. The Kenya National Bureau of Statistics should enhance

financial data collection and dissemination supporting industry analysis and investor decision-making, while Parliament should review unit trust taxation frameworks ensuring competitiveness with alternative savings vehicles.

#### **5.4.2 Recommendations for Practice**

Bank-affiliated fund managers address persistent underperformance through enhanced operational independence, clearer fund-bank interest separation, and investment strategies prioritizing fund investors, considering management restructuring creating decision-making autonomy or spinning off operations to reduce conflict perceptions. Insurance-affiliated fund managers should maintain performance advantages through continued operational efficiency focus, leveraging actuarial expertise and patient capital advantages while communicating value propositions emphasizing combined low fees and high yields. Independent fund managers should justify elevated fees (1.81% average) through demonstrated performance given middle-tier yields, exploring efficiency improvements or fee reductions to enhance competitiveness.

All fund managers select benchmarks genuinely reflecting portfolio characteristics with regular appropriateness reviews, use multiple benchmarks providing comprehensive perspectives, develop dynamic allocation approaches adjusting for inflation forecasts increasing inflation-linked securities during elevated price periods, and explore performance-based fee arrangements aligning incentives with investor interests. Investors evaluate funds considering institutional affiliation with preference for insurance-affiliated or independent funds over bank-affiliated options, assess benchmark-relative performance rather than

absolute returns, prioritize low-fee funds given negative fee-yield relationships, and monitor inflation-adjusted returns ensuring purchasing power preservation.

### **5.4.3 Suggestions for Further Research**

Referring to the problem statement identifying persistent unit trust underperformance and the study's significance for multiple stakeholders, future research should extend analysis to equity, balanced, and bond unit trusts examining whether affiliation effects, benchmark relationships, and fee impacts vary across fund categories with different investment mandates. Comparative East African studies (Kenya, Uganda, Tanzania, Rwanda, Ethiopia) would illuminate whether findings reflect Kenya-specific conditions or broader regional patterns, addressing contextual generalizability concerns.

Longer-term studies spanning 20-30 years would capture complete economic cycles including financial crises, commodity price shocks, and regime changes affecting performance. Recommended moderating variables beyond inflation include interest rate volatility examining how monetary policy uncertainty affects firm characteristic sensitivities, exchange rate fluctuations for funds with foreign currency exposure, GDP growth rates capturing broader economic conditions, and political stability indices assessing governance effects.

Alternative theoretical frameworks could include behavioral finance theories explaining investor responses to fees and performance persistence, institutional theory examining how regulatory environments shape fund practices, and resource-based view assessing how organizational capabilities drive competitive advantages. Different empirical models including dynamic panel models (Arellano-Bond GMM) would address potential

endogeneity between fees and performance, quantile regression would reveal whether effects vary across performance distribution, and structural equation modeling would test complex mediation pathways between variables, advancing methodological rigor beyond current Random Effects specifications.

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## APPENDICES

### Appendix I: Data Collection Instrument

NAME OF MONEY MARKET UNIT TRUSTS:.....

AFFILIATION TYPE: .....

Year	Unit trust annual yield %	91-day t/bill rate %	182-day t/bill rate %	364-day t/bill rate %	Bank deposit rate %	Inflation %	Management fee %
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							

Source: Researcher (2024)

## Appendix II: List of Money Market Unit Trusts

	Category	Money Market Unit Trusts
1	Bank affiliated	NCBA Money Market Fund, Co-op Money Market Fund
2	Insurer affiliated	Britam Money Market Fund, CIC Money Market Fund, ICEA Money Market Fund, Sanlam Pesa Market Fund, Old Mutual Money Market Fund, Orient Kasha Money Market Fund, Madison Money Market Fund, Apollo Money Market Fund
3	Unaffiliated	African Alliance Kenya Shilling Fund, Amana Money Market Fund, Cytonn Money Market Fund, Dry Associates Money Market Fund, EIB Equity Money Market Fund, GenCap Hela Imara Fund, Nabo Africa Money Market Fund, STANLIB Money Market Fund, Zimele Money Market Fund