# BEHAVIOURAL BIASES, RISK TOLERANCE AND INVESTMENT DECISION BY LISTED COMPANIES IN NAIROBI SECURITY EXCHANGE, KENYA

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**A Thesis Submitted to the School of Business in Partial Fulfilment of the Requirement for Doctorate in Business Administration, Masinde Muliro University of Science and Technology**

**OCTOBER, 2025**

## DECLARATION

I declare that the Thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

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## DEDICATION

I dedicate this Thesis to my dear wife Judy and children Alex, Felix and Stacy for the moral and financial support.

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I would like to acknowledge my supervisor Prof. Charles Tibbs and Dr. Reuben Rutto for their continued guidance and support when I carried out my thesis on my document, to my lecturers for the guidance and support, to Mr. Robert Kerich for his encouragement and motivation and to my family for their continuous support.

## ABSTRACT

Investor often makes incorrect decisions often due to and not limited to inadequate technical expertise, overconfidence, herding, disposition effect and desire for faster returns. Researchers have however proved that due to the market inefficiencies, the standard finance models employed by market practitioners have failed to account for the market anomalies. There is a gap in relevant literature in developing markets particularly Kenya which is an emerging security market. The general objective of the study was to establish the effect of behavioral biases, risk tolerance, investment decisions of listed companies at Nairobi security exchange, Kenya. Specific objectives are; to establish the effect of herding bias on investment decisions; to analyze overconfidence biases that affect investor's decisions; to examine regret biases that affect investments decisions; to evaluate conservatism biases that affect investment decisions; to assess mediating effect of risk tolerance on investment decision. The study period covered a 10 years from 2014 to 2023; the study adopted causal research design. This research design was suited because it enabled the researcher to collect data from different investors for the purpose of determining the existence and extent of a phenomenon as well as established the relationship between variables and the cause and effect of variables. The units of study were listed companies trading at Nairobi security exchange. Currently NSE has 62 listed companies. Secondary data collection schedule was utilized to collect data needed for the research. The study entailed descriptive and inferential statistics data and it was collected coded and analyzed using quantitative analysis method. The findings revealed a significant positive effect between herding bias and investment decisions ($p = 0.0404 < 0.05$, $R^2 = 0.0215$), indicating that herding behavior modestly explained 2.15% of variations in investment decisions. A significant positive relationship between overconfidence bias and investment decisions was also found ($p = 0.000 < 0.05$, $R^2 = 0.1209$), suggesting that overconfidence accounted for 12.09% of the variance in investment decisions. Similarly, a significant negative association between regret bias and investment decisions was established ($p = 0.000 < 0.05$, $R^2 = 0.1832$), implying that higher regret tendencies reduced the quality of investment decisions. Furthermore, conservatism bias had a significant positive influence on investment decisions ($p = 0.000 < 0.05$, $R^2 = 0.2808$). The introduction of risk tolerance as a mediating variable resulted in an $R^2$ change of 0.0788, with the overall model explaining 46.14% ($R^2 = 0.4614$) of the variance in investment decisions ($p = 0.000 < 0.05$), confirming the mediating role of risk tolerance in the relationship between behavioral biases and investment decisions. The study concluded that behavioral biases significantly influence investment decisions, and that risk tolerance plays a critical mediating role in this relationship. It recommends that investors at the NSE use average market returns as a benchmark to minimize herd behavior, base confidence on trading volume analysis, and view past investment regrets as learning opportunities rather than deterrents. Additionally, investors should rely on fundamental indicators such as net book value relative to market value when making investment decisions. The study suggests further research on diverse investor categories and other forms of behavioral biases to deepen the understanding of investor psychology in emerging markets.

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## ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| **ANOVA** | - | Analysis of Variance |
| **APT** | - | Asset Pricing Theory |
| **BF** | - | Behavioral Finance |
| **CAPM** | - | Capital Asset pricing model |
| **CDSC** | - | Central Depository &Settlement Corporation |
| **CFA** | - | Certified Financial Analyst |
| **CMA** | - | Capital Market Authority |
| **EMH** | - | Efficient Market Hypothesis |
| **FCB** | - | First Community Bank |
| **FEM** | - | Fixed Effect Model |
| **IPO** | - | Initial Public Offer |
| **ICIFA** | - | Institute of Certified Investment and Financial Analysis |
| **IQ** | - | Intelligent Quotient |
| **KENGEN** | - | Kenya Electrical Generating Company |
| **KNBS** | - | Kenya National Bureau of Statistics |
| **KQ** | - | Kenya Airways |
| **MiFID** | - | Markets in Financial Instruments Directive |
| **MPT** | - | Modern Portfolio Theory |
| **NPV** | - | Net Present Value |
| **NSE** | - | Nairobi Security Exchange |
| **OLS** | - | Ordinary Least Square |
| **REM** | - | Random Effect Model |
| **RT** | - | Risk Tolerance |
| **UK** | - | United Kingdom |

## OPERATIONAL DEFINITION OF TERM

**Behavioral Biases:** Are irrational beliefs or behavior that can unconsciously influence our decision-making process. They are generally classified into emotional and cognitive bias.

**Conservatism Biases:** Refers to the tendency of investors cling to their existing belief or past information while they are slow in updating emerging view, opinion, news or sentiment in response to new evidence.

**Investment Decision:** Refers to financial resource allocation by investors, they put monies for most suitable investment or opportunities based on risk profiles, investment objectives and expected returns.

**Nairobi Security Exchange:** This bourse was established in 1954 as Nairobi stock exchange. It offers world class facilities for both local and foreign investors who want to gain exposure to rising country economy. NSE operates under jurisdiction of CMA and is governed by 11 members' board of directors. In the year 2014, the market raised Ksh. 627 million through IPO and therefore NSE demutualized and become listed on the main board of its own exchange. The market measures performance of the market to enable investors make informed decision through the publication of comprehensive measures of performance of the market.

**Overconfidence Biases:** Is cognitive biases that negatively affect investment return by leading investors to overestimate their skills and knowledge, invest frequently, overspend expenditure, underestimate cost or underrate the controlling activities. All these lead to investors making a poor investment decision.

**Regret Biases:** Is an emotional bias that involves taking action or failing to undertake to avoid a loss or regret. Its premises upon that human do feel pain of a loss more than an equivalent gain.

**Risk Tolerance:** Refers to the degree of risk that investor is willing to endure given the volatility in the value of investment. It determines the value of an investment an investor is willing to undertake therefore it affect the investment decision.

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background of the Study

Investment decision-making involves evaluating trade-offs between returns, risks, and time horizons. Yet, cognitive and behavioral or emotional factors significantly distort how individuals process information and assess probabilities (Azar, 2025). Heuristics, or mental shortcuts, are particularly important in this process. Common heuristics include availability (basing decisions on easily recalled events), representativeness (relying on stereotypes or past trends), and anchoring (fixating on arbitrary reference points). While heuristics simplify complex decisions, they also contribute to biases that lead to irrational outcomes (Letkiewicz, 2018). Therefore, the investors might hold on to poorly performing stocks because of anchoring on their initial purchase price, or they might overreact to recent market news due to the availability heuristic.

Behavioral finance has emerged as a vital field in understanding how investors make decisions in real-world financial markets, particularly when those decisions deviate from the assumptions of rationality embedded in classical finance (Gabhane, Sharma & Mukherjee (2023). Traditional finance theories, such as the Efficient Market Hypothesis (EMH), the Capital Asset Pricing Model (CAPM), and Arbitrage Pricing Theory (APT), assume that investors act rationally, process all available information efficiently, and make decisions aimed at maximizing utility (Fama, 1970). However, evidence from global and local markets demonstrates that investors often deviate from rationality due to psychological and emotional influences (Zahera & Bansal, 2018). This recognition has fueled the growth of behavioral finance, which integrates insights from psychology, sociology, and economics to explain anomalies in investment decisions and market outcomes.

Behavioral biases are systematic deviations from rational judgment caused by cognitive limitations, emotions, and heuristics. These biases often lead to irrational or suboptimal investment decisions, resulting in inefficiencies in financial markets (Weru, 2019; Malik, *et al.,* 2021). Toma (2015) observed that investors frequently fail to respond appropriately to market signals because of mental shortcuts and judgment errors. Similarly, Abreu (2019) found that overconfidence bias where investors overestimate their knowledge and predictive ability often drives excessive trading and speculative behavior, creating market anomalies. Recent studies reaffirm that biases such as overconfidence, herding, conservatism, and regret aversion remain persistent in shaping investor behavior globally (Gurung, et al, 2024; Singh, 2025).

Risk tolerance which is the degree of variability in investment returns that an investor is willing to withstand, is a central factor mediating the impact of behavioral biases on decision-making. Unlike traditional finance, which assumes risk aversion as a stable and universal trait, behavioral finance highlights that risk tolerance is highly dynamic and influenced by psychological, social, and contextual factors (Lippi & Rossi, 2020; Jain & Kesariv 2022). Moreover, investors' moods, recent experiences, and external shocks (political instability or global pandemics) can alter their willingness to accept risk (Hoffmann, Post, & Pennings, 2015).

Market volatility further amplifies the role of risk tolerance. Investors with high risk tolerance are more likely to remain engaged in volatile markets, whereas risk-averse investors withdraw or shift to safe assets, reinforcing cyclical patterns of market participation (Dhiman & Raheja, 2018). Behavioral finance research indicates that risk tolerance interacts with heuristics and biases: for instance, overconfident investors often exhibit artificially inflated risk tolerance, trading aggressively and concentrating their portfolios (Gupta & Garg, 2025). In contrast, regret-averse

investors demonstrate reduced risk tolerance, often avoiding high-return opportunities to minimize potential emotional pain from losses (Jain & Kesari 2020).

Several behavioral biases are particularly salient in modern financial markets. Overconfidence bias leads investors to underestimate risks and overestimate their abilities, often resulting in excessive trading, poor diversification, and lower portfolio returns (Gurung., 2024;). Herding bias reflects the tendency of individuals to imitate the actions of others rather than rely on personal analysis, a behavior that has contributed to speculative bubbles and financial crises worldwide (Masema, 2019). Regret-aversion bias causes investors to avoid necessary risks, often leading to under-diversification and the persistence of underperforming assets in their portfolios (Jain, 2020). Conservatism bias prevents investors from updating beliefs in light of new information, thereby producing missed opportunities and delayed responses to market changes (Ema, 2024). Optimism bias, closely linked to overconfidence, makes investors believe their investments will consistently outperform despite contradictory evidence, encouraging excessive risk-taking (Hoffmann & Post, 2017; Ullah, 2017).

These behavioral tendencies have important implications for emerging markets such as Kenya. Studies indicate that the Nairobi Securities Exchange (NSE) is particularly vulnerable to behavioral distortions due to its relatively small size, concentration of a few dominant firms, and exposure to macroeconomic and political shocks (Capital Markets Authority [CMA], 2020). Investor decisions in the NSE are shaped not only by available financial information but also by cognitive shortcuts, emotions, and social influences. Events such as the Safaricom IPO (2008), the KenGen IPO (2006), and periodic political transitions have demonstrated how biases—particularly herding and overconfidence—contribute to volatility and inefficiencies (Bett, 2024; Shahzard, 2024).

In this context, risk tolerance provides a critical lens through which to examine the interplay between behavioral biases and investment decisions. By understanding how investors perceive, evaluate, and respond to risks in the presence of biases, researchers and practitioners can develop strategies that promote more rational decision-making, improve investor education, and enhance market stability. This study, therefore, seeks to explore the relationship between behavioral biases, risk tolerance, and investment decisions, focusing specifically on investors in the Nairobi Securities Exchange.

### 1.1.1 Behavioural Bias and Investment Decision Making in Developed Economies

Investor behavior in developed economies has long been a focus of behavioral finance research because of the sophisticated financial markets, broad investor participation, and availability of reliable data. Traditional finance theories, such as the Efficient Market Hypothesis (EMH), assumed that investors in developed economies made rational decisions based on complete information and logical analysis of risk and return. However, behavioral finance scholars have increasingly challenged this assumption, showing that investors are prone to heuristics and cognitive biases that shape their investment decisions, particularly under conditions of uncertainty and market volatility (Barberis, 2018; Statman, 2019). These insights suggest that even in highly efficient and technologically advanced markets like those of the United States, the United Kingdom, and the European Union, decision-making is not entirely rational but instead influenced by psychological shortcuts that affect risk tolerance.

Several studies highlight the role of heuristics, mental rules of thumb, in developed market decision-making. For instance, the representativeness heuristic often leads investors to make judgments about future stock performance based on recent patterns, fueling momentum investing and contributing to the formation of bubbles (Tversky &

Kahneman, 1979; De Bondt *et al.,* 2019). Similarly, the availability heuristic affects investor choices, as easily recalled or recent news events disproportionately influence perceived risk and expected returns (Kliger & Kudryavtsev, 2020). The anchoring heuristic also plays a critical role, with investors frequently relying on arbitrary reference points, such as past stock prices or analyst forecasts, to guide their buy-and-sell decisions (Hoffmann & Post, 2017). These heuristics directly impact risk tolerance, as investors relying on such shortcuts may either overestimate potential gains (leading to excessive risk-taking) or exaggerate perceived risks (resulting in underinvestment). In both cases, heuristic-driven behavior deviates from rational portfolio allocation principles, affecting market outcomes.

Empirical evidence from developed economies reinforces the significant influence of heuristics and psychological biases on investor behavior. Lepone, (2016) found that retail investors in the U.S. often exhibit overconfidence bias, leading to excessive trading and suboptimal returns, while more recent studies confirm that technological advances such as algorithmic trading have not eliminated these biases but instead amplified them by providing faster access to information that triggers heuristic-driven reactions (Egan *et al.,* 2019). Similarly, research in European markets shows that herding behavior, driven partly by availability and representativeness heuristics, is prevalent during periods of financial uncertainty, with investors disproportionately following the crowd instead of relying on fundamental analysis (Bikhchandani & Sharma, 2021). This suggests that despite high levels of financial literacy and institutional sophistication, investors in developed economies are not immune to the psychological mechanisms that distort rational decision-making.

The influence of heuristics on risk tolerance in developed economies has also been a subject of policy concern. For instance, after the 2008 global financial crisis,

regulators in the U.S. and Europe introduced investor protection frameworks such as the Dodd-Frank Act and MiFID II, partly acknowledging that individuals often misjudge financial risks due to behavioral biases (European Securities and Markets Authority [ESMA], 2018). Recent studies suggest that these regulations are necessary because risk tolerance is not static but fluctuates with market sentiment, economic cycles, and heuristic-driven perceptions of safety and opportunity (Nguyen *et al.,* 2021). For example, during bull markets, representativeness and optimism biases lower risk aversion, encouraging investors to take on more risk, while in bear markets, availability and loss aversion increase risk sensitivity, leading to risk-averse decisions (Glaser *et al.,* 2022). Thus, heuristics serve as critical mediators between external market conditions and internal risk tolerance, influencing portfolio strategies and long-term wealth accumulation.

Overall, evidence from developed economies underscores that while advanced market infrastructure, financial education, and regulatory frameworks exist, investors continue to rely on heuristics that influence their risk tolerance and decision-making. These findings are particularly important for understanding investor behavior in less mature financial markets, such as Kenya's NSE, where the prevalence of behavioral biases may be even more pronounced due to limited financial literacy, weaker regulatory enforcement, and greater exposure to macroeconomic shocks. The developed economy experience thus provides a foundation for comparative analysis, showing that heuristics are universal in shaping investment behavior but may manifest differently across contexts depending on institutional maturity, cultural factors, and regulatory frameworks.

### 1.1.2 Behavioural Bias and Investment Decision Making in Africa Economies

Investor behavior in African economies has gained increasing attention as financial markets across the continent expand and integrate into global systems. Unlike developed markets where regulatory systems are mature, African stock exchanges often face challenges such as low liquidity, limited investor diversity, and inadequate regulatory oversight, which make behavioral factors even more influential in shaping investment decisions (Afego, 2015; Akosah & Beemsterboer, 2021). Behavioral finance studies in Africa reveal that cognitive biases and heuristics—such as representativeness, availability, and anchoring—play a substantial role in shaping investor risk tolerance and decision-making. Investors frequently rely on shortcuts due to limited access to reliable market information, low levels of financial literacy, and cultural attitudes toward savings and investment (Osei-Assibey & Adu, 2020). These tendencies often create inefficiencies in African markets, resulting in higher volatility and less predictable investor behavior compared to developed economies.

A key feature of African stock markets is their relatively small size and limited number of listed firms, which enhances the visibility of market movements and news events. This context amplifies the availability heuristic, as investors tend to overweight recent events or widely publicized information when making decisions (Chiwira & Muyambiri, 2019). For example, sudden policy changes or political events in countries such as Nigeria, Ghana, and South Africa often trigger disproportionate market reactions, reflecting investors' reliance on easily accessible information rather than long-term fundamentals. Similarly, the representativeness heuristic is commonly observed, with investors assuming that short-term performance patterns of listed firms will continue, leading to speculative bubbles or herding behavior (Ngunjiri, 2017; Abubakar *et al.,* 2021). These heuristics directly influence

risk tolerance, with investors either underestimating risks during bullish runs or exaggerating risks during downturns, resulting in cyclical patterns of excessive optimism and fear.

Another important behavioral dynamic in African markets is herding behavior, often amplified by limited institutional investor participation and the dominance of retail investors. Herding is influenced by both availability and representativeness heuristics, as investors follow the crowd rather than conducting independent analyses (Ndiege, 2020). This tendency has been documented in Nigeria, South Africa, and Kenya, where herd-driven investment decisions contribute to asset mispricing and increased volatility (Mobolaji & Kehinde, 2018; Chukwuogor, 2022). Moreover, anchoring bias is evident, with investors frequently tying expectations to past share prices or dividends, which may not reflect current fundamentals. Such biases distort perceptions of risk and lead to suboptimal portfolio choices, particularly in environments with weak corporate governance and information asymmetries (Mlambo & Biekpe, 2021). Collectively, these heuristic-driven behaviors lower market efficiency and raise the importance of regulatory intervention and financial education programs across African exchanges.

Risk tolerance in African economies is also shaped by broader socio-economic factors. High levels of unemployment, poverty, and limited access to financial services often mean that individual investors are risk-averse by default, preferring safer assets such as real estate, government securities, or informal savings groups (Osei-Assibey & Adu, 2020). However, when investors do participate in stock markets, their risk tolerance is often inconsistent, fluctuating with political stability, macroeconomic conditions, and exposure to heuristics. For instance, during the COVID-19 pandemic, African markets experienced sharp volatility, with investors

displaying high levels of loss aversion and availability bias as they reacted strongly to pandemic-related news and uncertainty (Omondi & Muturi, 2021). This underscores the interplay between external shocks and internal heuristics in shaping investor psychology and tolerance for risk. In such contexts, heuristics serve as coping mechanisms but often reinforce short-termism and speculative tendencies.

Despite these challenges, African economies are gradually adopting reforms to enhance market stability and reduce the impact of behavioral biases. Regulatory bodies in South Africa, Nigeria, and Kenya have strengthened investor protection frameworks, enhanced financial literacy initiatives, and introduced technology-driven trading platforms to improve transparency and access (Akosah & Beemsterboer, 2021). Nonetheless, the persistence of heuristics in investor decision-making highlights that institutional reforms alone cannot eliminate behavioral biases. Instead, understanding how heuristics affect risk tolerance remains critical for policymakers, investors, and researchers. By integrating insights from behavioral finance, African markets can better anticipate investor reactions, design targeted financial education programs, and foster long-term investment strategies that promote stability and growth.

In summary, investor behavior in African economies is strongly shaped by heuristics, with availability, representativeness, and anchoring biases significantly influencing risk tolerance and decision-making. These effects are magnified by structural weaknesses such as low liquidity, limited financial literacy, and political instability. While regulatory and educational reforms are underway, African markets remain vulnerable to behavioral inefficiencies, making behavioral finance a vital lens for understanding and addressing investment challenges. The African experience, therefore, provides an important comparative framework for analyzing investor

behavior in Kenya, where similar structural and behavioral dynamics are present but manifest within the specific context of the Nairobi Securities Exchange (NSE).

### 1.1.3 Behavioural Bias and Investment Decision Making in Kenya Economies

The Kenyan financial market has grown significantly over the past two decades, with the Nairobi Securities Exchange (NSE) evolving into one of the most vibrant exchanges in sub-Saharan Africa. The NSE provides a platform for mobilizing domestic and foreign savings, facilitating capital formation, and offering investment opportunities in equities, bonds, and other securities (CMA, 2022). However, despite increased financial innovations and improved regulation, the market continues to face challenges of low participation, high volatility, and short-term trading patterns. Retail investors dominate the market, and their decisions are often influenced more by psychological and social factors than by rigorous financial analysis (Ngugi & Njenga, 2020). These behavioral tendencies contribute to inefficiencies such as speculative bubbles, overreactions to news, and herd-driven movements, which affect the overall performance of listed firms and investor welfare.

Behavioral biases are particularly evident in Kenya, where investors frequently deviate from the rational expectations assumed in classical finance. Studies reveal that herding behavior is common, as many retail investors tend to imitate the investment strategies of large institutional players or peers in the market (Masema, 2019). This pattern has been observed during rights issues, IPOs, and periods of market turbulence, where investors buy or sell based on prevailing sentiments rather than intrinsic valuations. Similarly, overconfidence bias has been documented among NSE listed companies, especially male traders, who often overestimate their ability to predict price movements and engage in excessive trading (Wangari, 2019). Such

behaviors typically lead to higher transaction costs, concentrated portfolios, and lower returns compared to more diversified and cautious investment strategies.

Another pervasive bias in Kenya is regret aversion, where investors delay selling underperforming stocks for fear of acknowledging losses, or prematurely sell winning stocks to "lock in" gains (Sheikh, 2025). This behavior distorts portfolio performance and undermines long-term wealth accumulation. In addition, conservatism bias has been noted in the NSE, where investors are slow to adjust their beliefs or strategies even in the face of new and reliable information (Ema, 2024). A notable example was the Eveready IPO in 2006, where many investors ignored warnings about declining battery demand, leading to heavy losses when the company underperformed and was later delisted. Such biases highlight the persistence of traditional perceptions and the reluctance of many investors to embrace evidence-based decision-making, especially in a market where rumors and speculative news spread quickly.

Risk tolerance plays a critical role in mediating these biases within the Kenyan market. Investors are often categorized as risk-averse or risk-seeking depending on their socio-economic characteristics such as age, gender, income level, and financial literacy (Mugo & Ngugi, 2020). For instance, younger investors and those with higher disposable incomes have been found to exhibit greater risk tolerance compared to older or low-income groups, who prefer safer assets like government securities or real estate. However, risk tolerance in Kenya is highly fluid, shifting with political events, economic shocks, and external market conditions. During the 2022 general elections, for example, political uncertainty reduced investor risk appetite, with many avoiding equities until after the elections (Omondi & Muturi, 2021). Similarly, global events such as the COVID-19 pandemic heightened loss aversion and availability bias, causing sharp sell-offs and a reduction in trading volumes at the NSE. These patterns

underscore how external shocks interact with internal biases to shape investment decisions.

The NSE's performance itself demonstrates the implications of behavioral biases and inconsistent risk tolerance. Between 2014 and 2017, the NSE 20 Share Index lost more than 40% of its value, partly attributed to speculative exits and herd-driven responses to both domestic and international news (Bloomberg, 2017). Despite efforts by the Capital Markets Authority (CMA) and NSE to enhance investor education, the dominance of cognitive and emotional biases in decision-making remains a significant challenge. Listed investment companies, which manage pooled funds for both institutional and retail investors, are especially exposed to these dynamics since their performance depends on investor confidence, participation levels, and rational portfolio allocations. Thus, understanding how biases such as herding, overconfidence, regret aversion, and conservatism influence investment decisions and how risk tolerance mediates these effects is vital in strengthening the stability and competitiveness of the NSE.

In summary, the Kenyan context illustrates the importance of behavioral finance in explaining market outcomes that cannot be fully accounted for by traditional financial theories. The NSE's volatility, concentration of a few dominant stocks, and sensitivity to political and economic events make it particularly vulnerable to investor biases and fluctuating risk tolerance. By analyzing these behavioral dynamics, this study seeks to fill a critical gap in understanding the drivers of investment decisions among listed investment companies in Kenya. The findings are expected to contribute to investor education, financial policy formulation, and the development of behavioral models tailored to the realities of emerging markets like Kenya.

### 1.1.4 Nairobi Security Exchange in Kenya

The Nairobi Securities Exchange (NSE), Kenya's principal securities market, plays a pivotal role in mobilizing savings, enhancing capital formation, and providing liquidity for both corporate and government securities. Despite its central role in the economy, the NSE has faced persistent challenges relating to investor participation, volatility, and efficiency. One major explanation for these challenges lies in behavioral finance dynamics, where investor decisions are shaped less by rational analysis and more by cognitive and emotional biases. As such, investment patterns at the NSE cannot be fully understood without analyzing behavioral factors such as herding, regret aversion, overconfidence, and conservatism, as well as their interaction with investor risk tolerance (Ngugi & Njenga, 2020; CMA, 2022).

Herding bias has been widely observed at the NSE, particularly in initial public offerings (IPOs). A notable case was the Safaricom IPO in 2008, which recorded an oversubscription of 532%. The enthusiasm was largely driven by prior investor experiences during the KenGen IPO in 2006, which delivered high initial returns (Wamae, 2013). However, the outcome was disappointing, with Safaricom shares trading below par for several years, eroding investor confidence. This pattern reflected irrational imitation behavior rather than sound financial analysis. Herding has also been observed during market downturns, such as the 2015–2017 bearish period when the NSE 20 Share Index lost more than 40% of its value, largely due to panic selling triggered by political uncertainty and external shocks (Bloomberg, 2017). These episodes underscore how collective action, rather than fundamentals, drives market dynamics.

Overconfidence bias also plays a significant role among NSE listed companies. Studies show that many retail and institutional investors in Kenya tend to overestimate their ability to predict price movements, often resulting in excessive trading and under-diversification of portfolios (Wangari, 2019). Male investors, in particular, have been found to exhibit higher levels of overconfidence, leading them to ignore diversification strategies and instead concentrate investments in a few "blue-chip" firms such as Safaricom, Equity Bank, and KCB (Saivasan, 2022). This behavior amplifies systemic risk, as the over-concentration in a few stocks exacerbates market volatility when these firms underperform. Indeed, between 2017 and 2022, blue-chip stocks recorded steep declines, contributing to a reduction in overall NSE investor wealth, with listed companies' profits dropping from KSh 15.8 billion in 2017 to KSh 5.1 billion in 2022 (KNBS, 2022).

Another challenge is regret aversion bias, which is evident when investors hold on to underperforming stocks in the hope of recovery, rather than realizing losses. For instance, many investors in Eveready and Mumias Sugar retained their holdings long after evidence of declining fundamentals, leading to massive wealth erosion when these firms were eventually delisted or suspended (Jain & Kesari 2020). Regret bias also explains the tendency of some retail investors to avoid re-entering the market after experiencing losses, reducing long-term participation in the NSE. Conversely, the same bias may cause premature selling of profitable shares, as investors seek to secure gains and avoid the "regret" of seeing paper profits vanish. Such patterns distort market efficiency by misallocating resources away from optimal portfolios.

Conservatism bias is also widespread among Kenyan investors, manifesting in the reluctance to revise beliefs in light of new and credible information. During the Eveready IPO in 2006, for instance, investors ignored repeated warnings about

declining demand for dry-cell batteries, choosing instead to rely on outdated assumptions about brand dominance. As a result, the share price collapsed shortly after listing, and the company was eventually delisted due to persistent losses (Ema, 2024). This reluctance to adapt to changing information also contributes to poor responses to regulatory advisories and economic indicators, which in turn hampers market responsiveness to emerging risks.

Together, these behavioral biases amplify the impact of risk tolerance on investment behavior at the NSE. Investors' willingness to engage with risky assets is often influenced by psychological tendencies rather than objective risk-return assessments. Political cycles, such as the 2017 and 2022 general elections, triggered significant capital flight and reduced trading volumes as investors adopted a "wait-and-see" approach, reflecting heightened risk aversion (Omondi & Muturi, 2021). Similarly, global events such as the COVID-19 pandemic led to sharp selloffs at the NSE, demonstrating how availability bias and heightened loss aversion suppress investor confidence. Such patterns illustrate that market inefficiencies at the NSE are not solely structural but are significantly shaped by investor psychology and fluctuating risk tolerance.

In conclusion, the Nairobi Securities Exchange embodies the tensions between rational finance theory and behavioral finance realities. Despite ongoing reforms and investor education initiatives, behavioral biases continue to undermine efficient capital allocation and market stability. Evidence from IPO oversubscriptions, speculative bubbles, blue-chip stock declines, and delisting demonstrates that investor decisions at the NSE are frequently inconsistent with rational expectations. These issues highlight the urgency of examining how specific behavioral biases—herding, overconfidence, regret aversion, and conservatism—interact with risk tolerance to

shape investment decisions. This understanding is essential in bridging the gap between investor behavior and market efficiency, and it directly informs the problem this study seeks to address.

### 1.2 Statement of the Problem

Investment decisions among listed companies at the Nairobi Securities Exchange (NSE) are expected to be rational, guided by firm fundamentals, and aimed at ensuring efficient allocation of capital. However, in reality, these decisions are often influenced by behavioral biases and varying levels of risk tolerance, leading to suboptimal investment outcomes. These behavioral tendencies not only distort individual investor choices but also affect aggregate capital flows and firm-level investment decisions, undermining firm stability and sustainability.

Over the past decade, several NSE-listed companies have recorded declining profitability and weakened investor confidence despite increased market participation. For instance, the combined net profits of listed banking and manufacturing firms fell from KSh 15.8 billion in 2017 to KSh 5.1 billion in 2022, while market capitalization dropped by 28% between 2019 and 2022 (Capital Markets Authority, 2022; KNBS, 2022). High-profile delistings such as ARM Cement and KenolKobil further demonstrate how irrational investment behavior and mismatched risk preferences destabilize firms. The paradox of IPO oversubscriptions such as Safaricom (532%) and NSE Group (764%) followed by capital flight underscores that many investment decisions are driven more by psychological biases than by firm fundamentals.

Empirical studies on behavioral finance within the NSE remain limited, fragmented, and outdated. Global studies across India, Pakistan, and Tunisia (Lakshman, 2013; Ullah, 2020; Rekik & Boujelbene, 2013) confirm that herding influences market

volatility, they rely mainly on secondary data, failing to capture investor-level behavioral mechanisms. Locally, studies such as Nyamute, Lishenga, and Oloko (2015) and Chelangat, Kiprop, and Tanui (2018) explored behavioral finance but did not integrate the mediating role of risk tolerance. Similarly, while international research identifies overconfidence (Bashir *et al.,* 2013; Shrestha, 2019) and regret aversion (Qadri & Shabbir, 2014) as major drivers of investment behavior, contextual factors such as culture, financial literacy, and market uncertainty highly relevant in Kenya remain underexplored.

Furthermore, research on conservatism bias (Francis & Martin, 2010; Giri & Adhikari, 2023) is largely limited to Asian contexts, with minimal evidence on how it affects retail investor decisions in African markets. Even though studies like Anbar and Eker (2013) and Dickason & Ferreira (2018) confirm that psychological traits shape risk tolerance, their applicability to Kenya's volatile market remains untested.

Therefore, a critical research gap exists in understanding how behavioral biases specifically herding, overconfidence, regret aversion, and conservatism interact with risk tolerance to influence investment decisions among NSE-listed companies. This study seeks to fill this gap by providing context-specific evidence that deepens understanding of investor behavior and supports more rational, sustainable investment decision-making in Kenya's capital market.

### 1.3 Objective of the study

The general objective of the study was to establish the effect of behavioral biases, investment decision and mediating role of risk tolerance of listed investment companies in Nairobi security exchange, Kenya.

### 1.3.1 Specific objectives

i) To establish the effect of herding biases on investment decisions at NSE in Kenya.

ii) To analyze the effect of overconfidence biases on investment decisions at NSE in Kenya.

iii) To examine the effect of regret biases on investment decisions at NSE in Kenya.

iv) To evaluate the effect of conservatism biases on investment decisions at NSE in Kenya.

v) To assess the mediating effect of risk tolerance on investment decision at NSE in Kenya.

## 1.4 Research hypothesis

The study was guided by the following hypothesis.

$Ho_1$: There is no significant effect of herding bias on investment decision of investors at NSE, Kenya.

$Ho_2$: There is no significant effect of overconfidence bias on investment decision of investors at NSE, Kenya.

$Ho_3$: There is no significant effect of regret bias on investment decision of investors at NSE, Kenya.

$Ho_4$: There is no significant effect of conservatism bias on investment decision of investors at NSE, Kenya.

$Ho_5$: There is no mediating effect of risk tolerance on investment decision of investor at NSE, Kenya.

## 1.5 Significance of the study

This study may be useful to the policy makers and professional practitioners as it may aid in formulation of better policies which spurs investments amongst investors in Kenya. The study would add to the body of knowledge in the field of behavioral finance by enriching the existing literature on behavioral biases and risk effect on individual investment decisions.

Participants in the securities exchange may identify biases that shape the decisions of individual investors and the preferences for certain types of investments over others. This can aid in enlightening investors on strategies to navigate and mitigate losses experienced during investment endeavours, thereby addressing the advantages of leveraging these biases to achieve enhanced returns (Arbitrage gains). The capital market has experienced significant growth in recent years, now representing approximately 50 percent of the GDP. Nonetheless, significant opportunities for additional advancement remain. The capital markets present an opportunity to harness resources for financing long-term investments in essential infrastructure, including roads, water systems, and energy projects. In order to foster sustained investments, especially in the realm of infrastructure, the Government intends to advocate for long-term marketable securities that will be made available on the Nairobi Stock Exchange (NSE). This will promote the secondary trading of such instruments, enhancing their liquidity and consequently rendering them appealing to investors. Further initiatives will be undertaken to promote the listing of additional companies on the NSE and to facilitate the utilization of capital markets for securing long-term financing. The existing legal framework is designed to promote long-term securities via the annual budget; various incentives have been established to stimulate

an increase in listings. The Government intends to engage with stakeholders and formulate a strategy aimed at enhancing the comprehensive development of capital markets in alignment with Kenya Vision 2030. The research could provide methodologies that will facilitate the realization of expansive economic objectives as delineated in Kenya's Vision 2030 and Africa's Agenda 2063. The insights regarding behavioral biases and their impact on investment decisions at the Nairobi Securities Exchange (NSE), Kenya, will prove beneficial for policymakers, professional practitioners, and investors in formulating policies and developing strategies. Through an analysis of cognitive biases, including herding, overconfidence, and risk tolerance, this study aims to inform the creation of strategies designed to counteract these biases, thereby refining investor decision-making and fostering greater market efficiency.

### 1.6 Scope of the study

The scope of this study focuses on examining how behavioral biases, such as herding, overconfidence, and conservatism, impact investment decisions at the Nairobi Securities Exchange (NSE), Kenya. The study specifically investigates the mediating role of risk tolerance in this relationship. The independent variables, including herding bias, overconfidence bias, regret and conservatism bias, are measured in relation to risk tolerance, which is quantified by stock variance. The dependent variable, investment decision, is assessed through portfolio returns on investment, providing a direct link between investor behavior and financial outcomes. The study targets firms listed on the NSE, covering the period from 2014 to 2023, with the aim of providing insights into how these factors influence investor decisions in Kenya's stock market.

The rationale for focusing on the NSE is its central role in Kenya's capital market, making it an ideal setting for studying investor behavior in an emerging market. The

market is characterized by a small number of dominant firms, which could contribute to unique behavioral patterns such as herd mentality. By concentrating on these biases and their impact on investment decisions, the study aims to offer valuable insights for policymakers, investors, and financial institutions in Kenya. It will also contribute to the broader field of behavioral finance, particularly in emerging markets where the effects of such biases may be more pronounced.

### 1.7 Limitation of the study

One of the limitations of this study is that some of the companies listed on the Nairobi Securities Exchange (NSE) may not have existed for the entire duration covered by the research. Therefore, 62 listed companies were chosen which had full records between the period of 2014 to 2023. Certain companies might have been delisted from the market during the study period, which could affect the uniformity and consistency of the data required for analysis. This challenge was mitigated by selecting only those companies that had been quoted for at least two years prior to the date of analysis. This ensured a more reliable and robust dataset for assessing the behavioral biases and their impact on investment decisions.

Another limitation is the potential for incomplete or inaccurate data from some firms due to inconsistent financial reporting practices or other external factors that could influence the availability and quality of the information. Given the behavioral variables under study, the accuracy of the data related to investor behavior, such as risk tolerance and biases, is crucial for drawing valid conclusions. While efforts were made to control for time dynamics and to ensure that only active firms with a stable presence on the NSE were included, external factors may have still affected the precision of the findings.

# CHAPTER TWO
# LITERATURE REVIEW

## 2.1 Introduction

This chapter discussed literature reviews on behavioral biases, investment decision, and risk tolerance of investors at NSE Kenya. The conceptual framework and a review of past studies done in this area were included. Summary and research gaps were also discussed in this chapter.

## 2.2 Theoretical Review

These sections contain relevant theories that supported this study which was to determine the effect of behavioral biases, investment decision, risk tolerance of investors at NSE, Kenya. The study is anchored on Heuristic Theory and supported by prospect theory, herding theory and Modern Portfolio Theory.

### 2.2.1 Heuristic Theory

The term heuristic originates from the Greek word meaning to find out. It refers to problem-solving techniques that serve as mental shortcuts or "rules of thumb" for simplifying decision-making in complex and uncertain situations (Ahmad, 2020). While heuristics enable individuals to process information quickly, they can also lead to systematic errors or biases, particularly when compared to decisions guided by probability theory (Skagerlund, *et al.,* 2020).

The concept of heuristics was pioneered by Tversky and Kahneman (1979), who argued that individuals often rely on simplified judgment processes rather than complex probability assessments when making decisions in uncertain environments. Heuristics reduce cognitive effort by substituting difficult probability calculations with easier approximations, allowing faster, though sometimes biased, decisions

(Mahina, Muturi & Memba, 2017; Kahneman, 2003). Kartini (2021) further noted that investors' beliefs and perceptions often distort their judgments, influencing the way they interpret and act on financial information.

Waweru, *et al.,* (2008) expanded on the theory by introducing factors such as overconfidence and gambler's fallacy, highlighting their role in financial decision-making. Heuristics are thus essential in uncertain investment environments because they simplify decision-making but also increase susceptibility to cognitive errors (Ahmad, 2021). Shah and Oppenheimer (2008) classified heuristics into categories such as availability, representativeness, and affect-based heuristics, while other domain-specific heuristics, such as brand-name or price cues, are more relevant in consumer and market psychology.

Empirical studies support the role of heuristics in financial decision-making. Evidence shows that investors frequently rely on these mental shortcuts to mitigate uncertainty, though outcomes can vary from beneficial to detrimental (Shah, 2018; Ul Abdin, 2017; Guercini & Milanesi, 2020; Saeed, 2019). Nofsinger (2008) argued that heuristics are not merely inferior substitutes for rational analysis but often provides efficient, cost-effective decision strategies in environments where complete information is unavailable.

In the context of financial markets, heuristics significantly influence investor behavior. Overconfidence bias, for example, leads investors to overestimate their ability to forecast returns, increasing the likelihood of risky and suboptimal decisions (De Bondt, Muradoglu, Shefrin & Staikouras, 2008). Herding bias, similarly rooted in heuristic behavior, occurs when investors imitate market trends rather than rely on their own analysis, leading to mispricing of securities (Waweru, *et al.,* 2008).

This theory is particularly relevant to the present study as it underpins the investigation of behavioral biases overconfidence, herding, regret, and conservatism and their influence on investment decisions at the NSE. Heuristics explain why investors may deviate from rational models, relying instead on simplified judgment processes shaped by emotional and cognitive constraints. While heuristics reduce complexity and allow quicker decisions, they also expose investors to biases that distort risk tolerance and investment outcomes. Understanding these dynamics is therefore crucial for improving investor education and designing regulatory policies that minimize irrational behavior in Kenya's capital markets.

### 2.2.2 Prospect theory

Prospect Theory, also known as Loss Aversion Theory, was developed by Daniel Kahneman and Amos Tversky in 1979 to explain how individuals make decisions under risk and uncertainty. Unlike the Expected Utility Theory, which assumes that rational investors make choices to maximize utility, Prospect Theory demonstrates that human decisions are often influenced more by psychological biases than by rational calculations (Thaler, 1985). Specifically, the theory posits that people place greater weight on potential losses than on equivalent gains, meaning that the pain of losing is psychologically stronger than the pleasure of gaining.

The theory outlines two key phases of decision-making. The first is the editing phase, in which individuals frame their choices depending on how options are presented. This "framing effect" implies that wording, order, or method of presenting alternatives significantly influences decision outcomes. The second is the evaluation phase, where individuals assess potential outcomes and select the option with the highest subjective value. Here, two functions are central: the value function, which reflects that people are risk-averse in gains but risk-seeking in losses, and the

weighting function, which describes how individuals subjectively distort probabilities rather than evaluating them objectively (Tuyon & Ahmad, 2018). Prospect Theory highlights the inconsistencies in human risk attitudes. Individuals are generally risk-averse when facing gains but become risk-seeking when facing losses. Kishore (2004) emphasizes this certainty effect, whereby investors tend to take additional risks after experiencing losses in an attempt to recover, while Lehenkari (2004) notes that both past positive and negative returns influence investors' tendency to hold onto losing stocks due to loss aversion. This explains why markets often witness irrational investor behaviors during downturns or booms.

Moreover, because of limited cognitive capacity, many individual investors cannot process or analyze information effectively, leading to reliance on heuristics and biases in decision-making. Consequently, losses often create stronger emotional reactions than equivalent gains, influencing investors to make suboptimal choices. This also explains gambling behaviors, where individuals take excessive risks to recover losses (Cherono, 2018).

In the context of the Nairobi Securities Exchange (NSE), Prospect Theory is especially relevant in explaining the relationship between risk tolerance, cognitive biases, and investment decisions. For instance, herding bias can be linked to the framing effect, where investors abandon individual analysis and follow the crowd, often leading to market inefficiencies. Risk tolerance mediates these biases, as investors' attitudes toward gains and losses shape their willingness to take calculated risks or engage in irrational actions.

Thus, Prospect Theory provides a strong foundation for this study, as it explains why investors at the NSE may exhibit herding, overconfidence, or regret biases. By understanding these psychological tendencies, investors can improve decision-

making, while policymakers can design interventions that mitigate irrational behaviors and promote a more stable investment environment.

### 2.2.3 Herding Theory

Herding Theory, advanced by Shiller (2002), posits that human beings have a natural inclination to conform to group behavior, preferring to be associated with the majority rather than relying solely on independent judgment. In financial markets, this manifests when investors spend little time analyzing individual stocks and instead purchase securities that are popular among other investors. According to Pham (2023), individuals often believe that the collective knowledge of the crowd provides superior guidance, enabling them to make quicker and seemingly safer investment decisions. However, this mimicry frequently results in security prices deviating from their intrinsic values, thereby distorting investment outcomes.

Empirical evidence demonstrates that even professional analysts are not immune to herding behavior. Frijns (2018) notes that analysts frequently align their forecasts with prevailing market consensus, reinforcing the momentum of market trends. Such behavior contributes to the formation of asset price bubbles, which eventually burst, causing significant harm to both individual investors and financial markets. Kostakis and Philippas (2010), examining markets in Greece, Italy, Spain, and Portugal between 1998 and 2008, found that herding intensified during bullish periods, reinforcing unsustainable price increases until abrupt crashes occurred.

Chiang and Zheng (2010) emphasize that herding has dual implications for financial markets. For economists, herding is central to understanding the relationship between risk, return, and asset pricing. For investors, it creates trading opportunities but simultaneously reduces portfolio diversification by increasing correlations across

securities. Consequently, herding behavior is both a driver of market inefficiency and a factor shaping investment strategies.

Herding Theory is particularly relevant to the current study as it highlights the extent to which external influences shape individual investor decisions at the Nairobi Securities Exchange (NSE). The mimicry of others' actions amplifies price volatility, often based on the perception that others possess superior information (Cherono, 2018; Froot, Scharfstein & Stein, 1992). These dynamics explain the cyclical emergence of bubbles and crashes that destabilize financial markets.

The theory also interacts with overconfidence bias, as investors may overestimate their ability to extract valuable insights from crowd behavior. Wang (2023) suggests that herding is partly driven by the belief that the crowd's decisions validate one's own. Additionally, Artur (2014) observes that the overwhelming volume of financial information compels investors to rely on group consensus as a heuristic for decision-making. This behavior contradicts standard financial theories such as Expected Utility Theory, which assume rational decision-making under uncertainty (Kahneman & Tversky, 1982).

By examining herding behavior, this study underscores how collective biases distort market efficiency and hinder rational investment decisions at the NSE. It also establishes the theoretical foundation for understanding the influence of herding bias on investor behavior, making it a key driver in explaining price volatility, bubbles, and inefficiencies in Kenya's capital market.

### 2.2.4 Modern Portfolio theory

The Modern Portfolio Theory (MPT), introduced by Harry Markowitz (1952), remains one of the most influential frameworks in investment decision-making. The

theory emphasizes the principle that investors can maximize returns for a given level of risk or minimize risk for a given level of return by holding a diversified portfolio of assets rather than concentrating on individual securities. According to Markowitz, portfolio risk is not simply the sum of individual asset risks but is significantly affected by the correlation among assets. Diversification across negatively or weakly correlated assets reduces overall portfolio volatility, thereby improving risk-adjusted performance.

A fundamental concept of MPT is the efficient frontier, which represents the set of optimal portfolios that provide the highest expected return for a given level of risk. Investors are assumed to be rational and risk-averse, preferring portfolios that lie on the efficient frontier. The Capital Market Line (CML) and the Security Market Line (SML), later developed under the Capital Asset Pricing Model (CAPM), extend MPT by introducing the role of a risk-free asset and systematic risk (beta), respectively.

Empirical evidence has shown, however, that while MPT provides a strong normative model, its assumptions often diverge from actual investor behavior. Behavioral finance scholars argue that investors may deviate from rationality due to cognitive biases, herding, and overconfidence, which sometimes undermine the diversification principle. Nonetheless, the theory remains the cornerstone for understanding the risk-return trade-off in modern financial markets.

In the context of the Nairobi Securities Exchange (NSE), MPT is particularly relevant because the market exhibits both developed and emerging market characteristics. The NSE offers a relatively diverse set of investment opportunities ranging from equities, bonds, and exchange-traded funds (ETFs) yet faces challenges such as low liquidity, information asymmetry, and high volatility. Applying MPT in this environment highlights the importance of diversification across sectors (banking, manufacturing,

agriculture) and even across asset classes to cushion investors against sector-specific shocks.

Implication for this study: This theory underpins the examination of how return dispersion influences investment decisions at the NSE. It provides a benchmark against which to evaluate whether investors adopt rational portfolio diversification strategies or whether behavioral factors lead them to deviate from the efficient frontier. By analyzing investment decisions through the MPT lens, this study seeks to establish whether investors in Kenya's capital markets are optimizing their portfolios for risk and return or are swayed by non-rational dynamics.

## 2.3 Conceptual Literature

### 2.3.1 Behavioral Biases

Behavioral bias is a standard variance ruling under certain characteristic and attitude (Shefrin & Statman, 1985). Human being may depict a rational behavior or an irrational when it comes to investment decisions. Individuals are either rational or irrational as far investment decision is concerned thus behavioral biases impact on investment decision, and this in turn drift away from rationality and make them irrational investment decision makers (Madaan & Sing, 2019). Investors have an ability to diminish risk by either being rational or irrational (Naseem *et al.,* 2016)

Behavioral biases are psychological aspect that induces human or institutional investment decision. Most financial literature has put forwards a number of factors and heuristic that affects decisions. These comprise the following and not limited to herding bias, conservatism bias, overconfidence bias and regret bias (Shakun &Arya, 2014). According to Joo and Duri (2015) biases arises from herding, loss aversion, disposition effect, overconfidence, framing, hindsight bias and representativeness,

mental accounting and confirmation bias being some the variables studied by Sukheja (2016).

According to Puaschunder (2022), behavioral bias can be broken into three kinds that is judgment biases, preference errors bias and self-induced biases, however, Shefrin broke down biases as heuristics and framework dependencies and the other classifications is according to scientist who categorized as cognitive and emotional biases (Mahashid & Yaday, 2016). Cognitive biases can a rose from mix up of data, mistaken belief, or mistaken memory that can be worked on, on the other hand emotional bias can arise from feelings, intuitions and impulse thinking (Mahashid & Yaday, 2016). These biases are hard to rectify but can only be mitigated if one knows already there is an issue and beliefs that it is more hazardous in the long term as pertain to the successes of the investment.

On the flipside, behavioral biases can add to the processing of data to form an opinion and preference since they do exist deeper in human mindset and may work in some aspect (Simonova, 2015) Individual comprehension of biases effect on investment process will better off investment as they provide good economic findings and identifies behavioral biases in a timely manner which saves decision makers from disastrous potential finances loss and better off those investment decisions (Mittal, 2019) and as for the experienced and analyst they can provide a better platform by providing services to their customers by educating them about those anomalies and cognitive emotional errors (Lekovic, 2020). Jaiyeoba (2025) also classified biases into heuristic and cognitive types, representativeness, anchoring and availability which he classified as heuristic. Overconfidence, overreaction, and herding are cognitive bias.

### 2.3.2 Investment Decision making

Individual investment decision is about making a choice of acquisition of securities in smaller quantity for a personal account (Quimet & Tate, 2020). Investment decision is very subjective therefore it is influenced by various factors such as habit, emotions, financial literacy, object of an investment, type of investment and social interaction amongst individuals (Aren & Hamamci, 2020). Majority of researchers in BF put a very serious aspersion on validity of traditional finance theories such as EMH, portfolio theory, and risk return trade off, MM works and assumption of rationality on maximization of wealth of utility (Karna, 2020). Standard financial models are also based on rationality which means investors rely on their current scenarios to make their decisions which in turn a very subjective. The efficient capital markets proposed that non-rationality investors exaggerate prices due to arbitrage opportunities therefore full advantage will be taken by knowhow investors. However, human attitude and overconfidence bias play a critical role in a financial decision (Karna, 2020).

Investors with different profile makes investment in a peculiar way and therefore behave in a different manner (Pombian & Longo, 2014) and on the same breath investors profiling ought to take account the mere fact that different investors have different behavior. The author further suggests that investment policy statements should be based on investor's profile which in turn is an effective way to manage individual overconfidence bias.

Investors can be grouped into two main categories as suggested by Zahera and Bansal, (2018) these are passive (Acquire wealth through inheritance) and active investors (Collect wealth by taking risk on their own capital and they are more confident). Zahera and Bansal (2018) highlighted that active investors portray more confidence

bias unlike passive investors and in light of that investors type ought to include in studying investment decision making. In the word of Shunmugathangam, (2017) investor's type has an effect on investment decision by investors.

Various factors are put into consideration by investors in the preference about securities since majority of investors prefer to buy most preferable stocks, investors selling decisions depend on winning stocks while buying decisions linked with both loosing and winning stock. There exist thousands of stocks quoted in security market and investors often purchase those securities in which they are interested and awareness regarding the security past performances either good or bad (Kevin, 2022). Furthermore, selling decisions are easy for individual investor since during selling decisions they concentrate on their holding stocks while buying decision is tricky since many factors are put into consideration before purchasing takes place (Sitinjak, Haryanti, Sasmito, & Kurniasari, 2021). Chauhan and Patel (2024), investigated buying behavior of investors using BF approach. The study centered on communal dynamics that determine market values, elements shareholders considers and the resources of information they put into account when making investment decision. The study revealed that the shareholders are not always reasonable; they determine their decision based on their feelings.

Investment decision is measured using portfolio return on investment (ROI) because it serves as a comprehensive indicator of how effectively an investor allocates and manages financial resources to generate value. Portfolio ROI captures the actual performance outcome of investment decisions by quantifying the gains or losses realized relative to the invested capital (Zamfir, Manea, & Ionescu, 2016). It reflects the combined effect of multiple investment choices; such as asset selection, diversification, timing, and risk management thereby providing a holistic measure of

decision quality. In behavioral finance, portfolio ROI is particularly useful because it links psychological and cognitive biases directly to tangible financial outcomes. For instance, investors influenced by herding or overconfidence may take excessive risks or make impulsive trades, which are ultimately reflected in lower or more volatile portfolio returns. Similarly, regret aversion or conservatism biases may cause underinvestment or delayed responses to market signals, reducing potential gains. Measuring investment decisions through portfolio ROI therefore provides an objective and quantifiable metric that integrates both rational and behavioral components of investor behavior, making it a reliable basis for evaluating the effectiveness of decision-making among investors or firms listed at the Nairobi Securities Exchange.

### 2.3.3 Risk tolerance (RT)

Risk tolerance is defined as an individual's assessment of how risky a situation is in terms of probabilistic estimates of the degree of situational uncertainty, how controllable that uncertainty is, and confidence in those estimates (Finke, & Guillemette, 2016)). Risk perception and overconfidence strongly impact the risk-taking behavior of professionals (Broihanne *et al.*2014). Decision makers exhibiting overconfidence, treat their assumptions as facts, they may not see the uncertainty associated with conclusions stemming from those assumptions.

The study elucidates the diminishing inclination towards risk tolerance in relation to financial commitments at the individual retirement phase in Bahrain（Ankomah, 2022). This study indicates that men exhibit a lower degree of risk aversion compared to women, while investors with less education tend to be more hesitant in taking risks. Additionally, demographic factors play a significant role in determining risk

tolerance, with wealthier investors generally displaying a greater propensity for risk than their less affluent counterparts.

Risk tolerance is the variance between the expected value and the actual value received from a given investment opportunity (Weber & Klement, 2018). Risk tolerance on the other hand is the willingness of an investor to accept risk on a particular opportunity so as to make a gain from such a venture (Lippi & Rossi, 2020). Majority of finance analyst have argued that risk is directly related with the returns that is the higher the risk the higher the returns and vice versa and therefore investors who invest in risky investment have a higher potential to reap a higher return from such investment (Yao, 2014). According to Likudie (2020), argued that the propensity for lesser RT requires added compensation when encountered with uncertainty in a financial investment decision.

For any meaningful success of an investment risk tolerance do exist and therefore it is one of the factors which influences in the choosing of asset allocation, asset selection and strategic objective plans, therefore risk tolerance assessment is a critical factor in regards to planning for future objects (Sivarajan, 2019). R.T induce investors in failing to accept unfavorable projects which leads to a negative NPV and hence reduction of shareholder's wealth.

RT can be regarded as an acceptance by an investor to take up an investment decision where there exist an important object and probability of success of such a venture is uncertain therefore chances of failure is high (Ismail & Medhat, 2019). It's a critical factor that affects savings both short- and long-term object. Individual's behavior varies depending on various risk level while undertaking investment decision depending on different arrays of opportunity level (Zahera, & Bansal, 2018). Risk can

be categorized into four aspects namely risk attitude, financial risk, Knowhow and ability towards confidentiality (Bunyamin, 2022).

RT is flexible depending on time for instance, when time are favorable, security prices goes up, individuals in turn develop a higher level of RT and a vice versa (Weber & Klement, 2018). RT process is a very difficult process to conduct this is due to the fact it is very tedious to comprehend the risk tolerance and the concept is subjective rather than being objective therefore it is rather difficult to measure (Marinelli, Mazzoli, & Palmucci, 2017). RT can be measured by beta, book-market ratio and standard deviation (Gleißner, Günther & Walkshäusl, 2022).

Majority of decision-making models describe risk as an internal component of an asset of a business set up which in turn affect objective of a firm hence investment decision therefore investor have a varying degree of risk tolerance than those who have none or little wealth thus risk tolerance increases with wealth and experience (Yoe, 2019).

### 2.3.4 Behavioral bias and decision making

#### 2. 3. 4. 1 Herding

Herding is defined as a behavior to mimic other ways rather than following your own beliefs (Kameda & Hastie, 2015). The herd effect may also be perceived in particular events in day-to-day life of persons, for example the choice of restaurant, shops and brands which are generally affected by the popularity level, in which we may identify each option of choices, and at the end, the most popular is chosen in the same breath this effect may be observed when analyzing the way in which the agents of the security markets behave before the decision of the other agents. There are various ways of viewing herding which include and not limited such as trends, new information, bubbles, and undefined expectation (Prieto & Perote, 2017).

This is an observable behavior that occurs in a financial market. It denotes a human character to mimic action of other individuals at irregular condition in the financial market (Yu, Dan, Ma & Jin, 2018). In herding individual aren't rational in making investment choices instead they follow others phrases and opinion while undertaking an investment decision. Therefore, when an individual herd one restrains his belief and knowledge and instead copies the activities of others individual.

When the market experiences distress scenarios such as market anomalies, price hikes, innuendos among other herding effect will be felt more (Mertzanis & Allam, 2018). Since herding entail copying activities of other investors this tend towards collective imitation resulting to congruence of movement (Wang & Nuangjamnong, (2022). In addition, various researchers have advanced the notion that herding exhibit a similar movement amongst individuals resulting to huge losses in investments. On the similar breath expert in the financial market also do consider existence of herd in the market since majority of investors rely on accumulated information amongst investors more than private information, thereby catalyzes the valuation of securities further away from their real values causing losses amongst investors.

Herding individually in the stock market will deploy their investment based on the collective sentiments on buying and selling of securities which in turn causes speculative bubbles phenomenon resulting to inefficient security market (Ooi, Binti Ab Aziz, & Lau, (2025). If individuals put a colossal amount of monies in the market, they tend to mimic the action of others to minimize risks because they feel secure since they think that others know more than they do.

**2. 3. 4. 2 Overconfidence**

Feld, Sauermann, & De Grip (2017), defined overconfidence as people who overestimate their own abilities. The author suggested that people are overconfident in

areas of their specialization. This may end up to overtrading in which the resultant effect is poor decision making. At the same time, overconfidence is the tendency of people to overestimate their knowledge, abilities and the precision of their information (Hoffrage, 2022). Kommalapati (2024) pointed that overconfidence can lead to investment distortions that arise when risk-averse managers evaluate the feasibility of engaging in risky projects, utilizing data sourced from public companies. The researchers examined the extent of distortion present in the investment decision-making process. The findings suggest that in scenarios where investors exhibit risk aversion, they tend to alter their investment strategies, opting to derive funds from equity holders rather than pursuing debt opportunities.

Overconfidence is a situation where investors feel they can predict the future earning better. It causes humans to overestimate their predictive knowledge (Pikulina, Renneboog, & Tobler, 2017). It is a psychological trait that has an effect on individual investment decisions, which it may entail security market investment decisions or any other kind of investment (Joo, 2017)

Overconfidence is one of the common psychological traits which makes financial market inefficient by causing mispricing in the form of massive volatility and varied returns (Loang, 2025). Overconfidence investors are characterized by people who are known to do excess trading a concept known as overtrading which in turn causes higher prices volatility in the security market leading to negative abnormal returns (Mushinada & Veluri, 2018).

The notion of overconfidence emerges from a broader spectrum of cognitive psychological studies and surveys wherein individuals tend to overrate their predictive capabilities as well as the accuracy of the information they possess. Human beings often struggle with accurately assessing probabilities; the events they anticipate may

diverge significantly from actual outcomes. In conclusion, individuals often reflect on their own wisdom, believing themselves to be more informed than they truly are (Mushinada & Veluri, 2018).

### 2. 3. 4. 3 Regret aversion bias

Regret theory posits why individual investors do often fall to the temptation to dispose stocks whose price have depreciated and at the same time quicken the sale of those assets which have gained value according to Lilu (2024). The majority of investors avoid disposing stocks whose price have gone down since they are avoiding falling to a trap of regret in other words, they are evading regret bias.

Investors dispose of securities that have gained a higher valuation before dropping its value this is just a strategy that one does to avoid falling to the trap of regret. Most investors hold longer those securities whose value have fallen and dispose of those whose price quicker (Ferenčak, Dobromirov, Radišić, & Takači, 2018). Therefore, regret form part of component because people do make a change. Moreover, individual's behavior can be adjusted to mitigate effect of regret bias.

### 2. 3. 4. 4 Conservatism bias

Li-Kuehne (2021) articulate conservatism as the process of choosing an accounting methodology in the face of uncertainty, ultimately resulting in diminished assets and revenues, with a minimal positive impact on the equity of owners. Alkordi, Al-Nimer & Dabaghia (2017) posits that conservatism is characterized by a tendency to acknowledge reduced earnings and a diminished assessment of assets. Clarke (2017) propose that conservatism encompasses the recognition of all potential losses while disregarding possible gains.

Kamarudin, Islam, Habib and Wan-Ismail, (2022) articulates conservatism as a mechanism whereby a heightened level of reliability is employed to identify and

document earnings and favorable information (incremental value), whereas a diminished level of reliability is utilized for the acknowledgment of losses and unfavorable news. Zhong and Li (2017) observed that accounting conservatism entails the selection of an accounting estimation method that distinctly reflects the book value of assets at a reduced level. Two principal attributes of conservatism have been extensively examined: the downward bias of book value of equity relative to its market value; and the propensity for prompt acknowledgment of costs while deferring revenue recognition. The prevalent indicators of conservatism encompass, though are not restricted to, net assets, earnings and accruals metrics, as well as the relationship between earnings and returns.

## 2.4 Empirical Literature

This subsection provides past studies of behavioral biases, investment decision, risk tolerance of investors at NSE, Kenya. It discusses literature as per objective outline.

### 2.4.1 Herding and investment decision

Lakshman (2013) examined market-wide herding in the Indian capital market, focusing on how volatility and returns influence institutional investor behavior. Using secondary data from the Bombay Stock Exchange and regression analysis, the study found that herding behavior was more pronounced in volatile markets. However, the study did not consider corporate investor behavior or the interaction of herding with other psychological biases. The current study extends this by focusing on listed companies at NSE in Kenya and exploring how herding interacts with biases such as overconfidence and regret.

Chiang (2013) investigated herding behavior in Pacific-Basin equity markets using cross-country stock market data. The study revealed that herding was stronger during

bullish markets and negatively correlated with volatility. While valuable, the study's cross-country design lacked depth in market-specific analysis, particularly in emerging economies. The present study addresses this gap by analyzing herding within the specific context of Kenya's NSE, a frontier market with unique volatility and governance challenges.

Cipriani and Guarino (2012) studied herding in the New York Stock Exchange (NYSE) using microstructure data to assess buy and sell decisions. They found that herding significantly influenced asset prices in a developed market setting. However, the focus on advanced markets limited insights into less mature markets. The current research fills this by exploring herding in an African frontier market (NSE, Kenya) where investor demographics and volatility differ considerably.

Bekiros *et al.* (2017) analyzed herding in Asian money markets using nonlinear econometric approaches. The findings showed that investor sentiment and asymmetric risk-return dynamics drive herding behavior. Although comprehensive, the study did not capture investor-level decision-making or firm-level dynamics. The present study adds value by capturing individual investor behavior through survey data in Kenya, linking herding directly to portfolio outcomes.

Ullah (2020) conducted a survey among 475 investors in the Pakistan Stock Exchange, applying descriptive statistics, correlation, and regression analysis. The study found that herding and other biases strongly influenced investment decisions, supporting the integration of psychological factors into financial models. However, the study did not assess the mediating role of risk tolerance. The current study addresses this by examining how risk tolerance moderates herding behavior in Kenya's NSE.

Shah, Naveed, and Hussain (2024) studied 400 SME investors in Khyber Pakhtunkhwa, Pakistan, investigating the moderating role of overconfidence on herding behavior. Using cross-sectional survey data and regression analysis, they found that overconfidence amplified the influence of herding on investment choices. Although the study integrated behavioral biases, it did not consider financial literacy or market structures. The present study extends this by incorporating Kenya-specific market dynamics and investor demographics to explain how herding interacts with other factors.

Khalid *et al.* (2018) analyzed overconfidence and herding in the Islamabad Stock Exchange, finding that these biases significantly shaped investment choices, with financial literacy acting as a moderator. Similarly, Rekik and Boujelbene (2013) surveyed 300 Tunisian investors, discovering that herding, representativeness, and loss aversion were more influential than overconfidence. These studies highlighted regional variations but did not fully incorporate the impact of market inefficiencies. The current study builds on this by exploring how political and economic volatility in Kenya magnifies herding effects on investment decisions.

Allameh *et al.* (2015) investigated herding in the Tehran Stock Exchange using survey and market analysis methods, finding that herding significantly influenced investment outcomes, while heuristic and prospect theories had limited support. Despite similarities with Kenya in terms of market volatility, the study did not examine investor-level psychological profiles. This research addresses the gap by focusing on individual investors' psychological tendencies in Kenya's NSE.

Chelangat, Kiprop, and Tanui (2018) studied the effect of herding on investment decisions among SMEs in Bomet County, Kenya. Out of 4,196 SMEs, 108 were sampled through stratified random sampling and questionnaires. Correlation analysis

showed a positive relationship between herding and investment decisions, but regression analysis yielded a negative beta (-0.146), suggesting herding was not a significant determinant. The study concluded that herding has minimal influence on SME investment decisions. However, it did not extend the analysis to capital markets or securities trading. The current study fills this gap by analyzing herding among investors in the NSE, where market volatility is higher and herding is more likely.

Nyamute, Lishenga, and Oloko (2015) explored behavioral biases among 385 individual investors at the Nairobi Securities Exchange (Kenya). Using survey data, they found that while overconfidence negatively affected portfolio returns, herding and disposition effects improved outcomes. The study provided local insights but did not test mediating variables such as risk tolerance or the interaction of herding with other biases. The present research builds on this by examining how herding interacts with overconfidence and regret in Kenya's volatile NSE environment.

Most existing studies are primarily conducted in developed or specific regional markets. Variations in market maturity, investor sophistication, and economic environments across countries lead to differing results regarding the intensity and impact of herding behavior. Additionally, while several studies focus on herding, they often overlook the role of other behavioral biases, such as overconfidence and conservatism, in shaping investment decisions. Furthermore, there is limited research integrating the role of risk tolerance as a mediating factor in the relationship between behavioral biases and investment decisions, particularly in the context of the NSE. More research is needed to explore the complex interactions between multiple biases and their influence on investment decisions in emerging markets.

Previous studies have predominantly examined the influence of individual biases on investment decisions. However, few have explored the role of risk tolerance in

mediating these biases, especially in dynamic emerging markets such as Kenya. This gap in the literature is critical, as understanding how investors' psychological profiles, coupled with their risk tolerance, influence investment decisions can lead to more informed financial advice and better investment strategies. Therefore, this study will not only contribute to the body of knowledge on behavioral finance but also provide practical insights for investors, financial advisors, and policymakers aiming to optimize decision-making processes in the Kenyan context.

In summary, the empirical literature suggests that herding behavior significantly influences investment decisions across different markets, although its impact varies depending on regional and economic contexts. While herding is well-documented in developed markets, its effects in emerging economies, such as Kenya, require further exploration, particularly concerning the mediating role of risk tolerance. The existing research gap in understanding how multiple behavioral biases interact to shape investment decisions underscores the need for further studies to provide deeper insights into investor behavior in emerging financial markets.

### 2.4.2 Overconfidence and investment decision

Cekauskas and Liatukas (2011) conducted a study in the Estonian stock market examining behavioral biases, specifically the disposition effect and overconfidence. Using stock trading data, they found that investors were reluctant to sell stocks at a loss (disposition effect) and that overconfidence, measured through stock volatility and trading volume, significantly shaped investment decisions. While the study highlighted the influence of cognitive biases, it did not examine the role of mediating factors such as risk tolerance. The current study addresses this by testing how overconfidence operates alongside other behavioral biases in Kenya's volatile securities market.

Abrar *et al.* (2014) examined individual investor behavior across multiple international markets, focusing on overconfidence bias. Using survey-based analysis, they found that many investors displayed overconfidence in their market knowledge and skills, leading to distorted investment decisions. The study emphasized the universal role of overconfidence but lacked a country-specific focus in emerging economies. The present study builds on this by providing context-specific evidence from Kenya's NSE.

Bashir *et al.* (2013) studied investors in Pakistan, aiming to evaluate the impact of overconfidence, loss aversion, and mental accounting on investment decisions. Using primary survey data with regression analysis, they found that overconfidence had a strong and direct impact, whereas other biases had weaker effects. The study did not, however, account for cultural or political factors that may shape these behaviors. The current research extends this by examining how such contextual factors interact with overconfidence in Kenya.

Kafayat (2014) and Qadri and Shabbir (2014), also in Pakistan, analyzed the role of overconfidence, particularly the illusion of control, in shaping financial decisions. Using investor surveys, they found that overconfident investors often make overly optimistic choices and underestimate risks, leading to irrational behavior. However, these studies did not examine how overconfidence interacts with demographic characteristics. The present study addresses this by considering both psychological and demographic influences in Kenya.

Shrestha (2019) explored overconfidence in the Nepalese stock market, focusing on demographic influences. Using survey data, the study found that female investors, those with college education, and those with moderate wealth (Rs 2–5 million) were highly overconfident, believing they outperformed peers and thus trading more

frequently. This highlighted the role of demographic factors in shaping overconfidence. The study, however, was geographically limited. The current research addresses this by analyzing how investor characteristics in Kenya moderate the effects of overconfidence bias.

Ahammed and Tazminur (2024) investigated Bangladeshi retail investors, with the purpose of identifying gender differences in overconfidence. Using survey questionnaires, they found that male investors were significantly more overconfident than females, suggesting cultural and social influences on financial decision-making. The study, however, was limited to gender differences and ignored broader market conditions. The present study extends this by analyzing how both gender and market volatility shape overconfidence in Kenya.

Ramiah *et al.,* (2016) focused on African markets, studying the role of behavioral biases in shaping investment choices. Using a multi-country empirical analysis, they found that overconfidence strongly influenced investment decisions in emerging markets, particularly where market volatility is high. However, the study generalized across African countries and did not isolate specific contexts. The current study fills this gap by focusing specifically on Kenya's NSE.

Tripathy (2014) studied behavioral biases in South Asia, including overconfidence, regret, anchoring, and loss aversion. Using questionnaire-based methods, the findings showed that overconfidence and related biases are primary drivers of irrational investment behavior. While the study highlighted the relevance of psychology, it did not consider institutional or governance contexts. This study addresses that by situating overconfidence within Kenya's regulatory and market framework.

Chaudhary (2013) examined investor overconfidence in India, focusing on forecasting ability and trading behavior. Using a mixed-method approach with surveys and secondary data, the study found that overconfident investors overestimated their forecasting skills, traded excessively, and underperformed the market. The study did not consider how risk preferences mediate these outcomes. The current research addresses this by examining risk tolerance as a potential mediator in Kenya's market.

Malik, Hanif, and Azhar (2019) studied investors in Lahore and Islamabad stock exchanges (Pakistan). Using survey data and regression analysis, they found that overconfidence positively correlated with investment choices, and that risk tolerance mediated this relationship. While insightful, the study was geographically narrow and context-specific. The current study builds on this by investigating whether similar mediation occurs in Kenya's NSE.

Nyamute, Lishenga, and Oloko (2015) provided a Kenyan perspective by examining investor behavior at the Nairobi Securities Exchange. Using survey data from 385 retail investors, they found that overconfidence and herding negatively affected portfolio performance, while rational investors achieved better returns. The study highlighted the influence of political risks and market instability but did not isolate overconfidence as a distinct factor. The present study addresses this by specifically analyzing overconfidence and its interaction with other biases in Kenya's securities market.

The literature suggests that overconfidence can lead to overtrading and suboptimal investment choices, yet there is a need for more specific studies on how these biases are influenced by local factors such as economic volatility, political instability, and cultural influences in Kenya. Additionally, there is a gap in integrating overconfidence bias with other behavioral biases (such as herding and loss aversion)

to provide a more comprehensive understanding of investor decision-making in Kenya. This study aims to fill these gaps by focusing on the Kenyan context, specifically at the Nairobi Securities Exchange (NSE), to explore how overconfidence bias and other behavioral factors such as herding, disposition effect, and loss aversion influence individual investment decisions. While existing research highlights the significance of overconfidence in shaping investment behavior globally, this study will contribute to the understanding of how these biases specifically impact Kenyan investors, taking into account local market conditions, economic factors, and investor demographics.

### 2.4.3 Regret and investment decision

Qadri and Shabbir (2014) conducted a study in Pakistan examining how regret aversion influences stock market investors. The study aimed to determine how regret shapes future investment decisions when investors either miss opportunities or suffer losses. Using a survey-based methodology with regression analysis, the study found that regret often leads investors to adopt overly conservative strategies or overreact to market movements. The gap identified was that while the study established the existence of regret aversion, it did not examine how regret interacts with other behavioral biases such as overconfidence. The current study addresses this gap by exploring regret alongside multiple behavioral biases within the Kenyan context.

Edison and Aisyah (2023) investigated the psychology of bias among seasoned stock investors in Indonesia, focusing specifically on the role of regret in investment decision-making. The study employed an experimental design with a 2x5 factorial between-subjects method. Findings revealed that regret significantly influenced subsequent investment decisions; however, the interaction between regret and investors' risk aversion was not significant. The study's limitation was its narrow

scope, as it excluded broader cultural and market dynamics that may amplify or minimize regret. The present study expands on this by analyzing regret in a volatile and politically unstable Kenyan market setting, offering contextualized insights.

Hidaya and Irowati (2019) examined the role of overconfidence, regret aversion bias, and risk perception in investment decisions among Yogyakarta (Indonesia) residents. Using a questionnaire survey and regression analysis, their findings showed that regret aversion had no direct impact on investment choices, while risk perception and overconfidence significantly shaped investor behavior. The study highlighted a gap in understanding why regret bias may not directly affect investment in certain contexts. The current study addresses this by testing regret bias in Kenya's Nairobi Securities Exchange (NSE), where high volatility may amplify regret more strongly than in stable environments.

Ramiah *et al.* (2016) studied behavioral biases in African markets, emphasizing the influence of regret and overconfidence on investment decisions. Through empirical market data and investor surveys, they found that regret aversion, combined with market volatility, led to irrational trading patterns among African investors. The study, however, generalized across African countries without isolating specific national contexts. The present research narrows this gap by focusing specifically on Kenyan investors, thereby providing country-specific insights.

Tripathy (2014) explored behavioral biases including regret, anchoring, and loss aversion in South Asian markets. The study employed a survey-based methodology among retail investors. Results indicated that regret often drove investors to make decisions based on perceived rather than actual abilities, contributing to irrational trading behavior. However, the study was limited by its regional scope and did not

account for political and economic volatility as moderating factors. The current study extends this work by incorporating Kenya's unique macroeconomic environment.

Chaudhary (2013) analyzed regret and overconfidence in India, focusing on how forecasting errors influence investor behavior. Using a mixed-method approach combining surveys and secondary data, the study revealed that regret-prone investors engaged in excessive trading, ultimately reducing returns. The gap here was that the study emphasized the link between regret and trading frequency but did not explore regret's broader role in decision-making outcomes. The present study broadens the analysis by examining how regret interacts with portfolio performance among Kenyan investors.

Nyamute, Lishenga, and Oloko (2015) studied investor behavior at the Nairobi Securities Exchange (Kenya), focusing on behavioral biases such as regret, overconfidence, and herding. Using a survey-based methodology, the study found that investors influenced by regret and other biases performed worse than rational investors. The research highlighted how market volatility, political instability, and economic uncertainty amplify the impact of biases in Kenya. However, regret was not analyzed in depth as an independent factor, but rather grouped with other biases. The current study addresses this gap by isolating regret bias and investigating its direct influence on investment decisions at the NSE.

Additionally, existing research does not consider the specific local factors in Kenya—such as market volatility, political instability, and unique investor demographics—that might exacerbate or mitigate the effects of regret. Moreover, there is limited understanding of how regret interacts with other biases, such as risk aversion and overconfidence, in the decision-making process of Kenyan investors. This study aims to fill these gaps in the literature by examining the role of regret in investment

decision-making among Kenyan investors, particularly those trading on the Nairobi Securities Exchange (NSE). By considering the unique local context where economic and political volatility can greatly influence investor behavior, this research will provide a deeper understanding of how regret impacts investment decisions in Kenya.

### 2.4.4 Conservatism and investment decision

Conservative financial reporting discourages managers from engaging in negative Net Present Value (NPV) projects, as timely recognition of losses reduces their earnings-based compensation and may damage their professional reputation. This link between conservatism and investment decisions has been widely explored in finance and behavioral economics literature.

Francis and Martin (2010) conducted a study in the United States to assess how timely loss recognition affects corporate acquisition decisions. The purpose of their research was to determine whether conservative accounting practices reduce the likelihood of firms engaging in unprofitable acquisitions. Using archival data on U.S. firms' acquisitions, they applied regression analysis to test the relationship between conservatism and investment outcomes. Their findings revealed that firms recognizing economic losses more promptly tend to make more profitable acquisitions and are less likely to engage in post-acquisition divestitures. Moreover, when divestitures occurred, they were executed more swiftly, demonstrating that conservatism enhances investment efficiency by mitigating overinvestment. However, the study focused narrowly on acquisitions and did not explore the broader role of conservatism in other forms of investment decisions.

Barbosa, Nobre, Nobre, and Bento (2024) investigated conservatism in Brazil with the purpose of exploring its interaction with the endowment effect in shaping investment decisions. They administered questionnaires to 150 managers across various

industries and analyzed responses using factor analysis to identify key dimensions of conservatism bias. The study found that conservative bias manifests in three main areas: financial decision-making, investment selection, and security choices. The findings suggest that conservative managers tend to favor familiar assets while avoiding riskier investments, thereby reducing portfolio diversification. The limitation of this study is that it relied solely on perceptual data rather than actual investment outcomes, leaving a gap in understanding the real financial performance implications of conservatism.

Giri and Adhikari (2023) examined the role of conservatism bias in the Nepali stock market. Their study aimed to test the influence of overconfidence and conservatism on individual investors' decisions. Using a structured survey administered to 335 respondents, they employed Covariance-Based Structural Equation Modeling (CB-SEM) to evaluate their hypotheses. Results indicated that conservatism significantly affects investment decisions by making investors overly reliant on historical trends and reluctant to adjust to new market information. Interestingly, overconfidence bias played a minor role, showing that Nepali investors are cautious rather than excessively confident. A gap in this study is that it concentrated solely on individual investors and ignored institutional investors, whose behavior may differ.

Rahim, Shah, and Aamir (2019) carried out a study in Pakistan to analyze the impact of conservatism bias on investment decisions in the Pakistan Stock Exchange (PSX). The purpose was to understand how behavioral biases influence stock investment patterns. Using stratified random sampling, they collected data from PSX investors and employed logistic regression, rank correlation, and descriptive statistics grounded in Prospect Theory. Their findings revealed that conservatism bias positively influences investment decisions by leading investors to favor historically successful

stocks while discounting new information. However, the limitation was the lack of cross-market comparison, as the study only focused on Pakistani investors, making it difficult to generalize to other contexts.

In Kenya, research on conservatism bias in investment decisions remains limited. However, existing studies on investor behavior at the Nairobi Securities Exchange (NSE) suggest that Kenyan investors exhibit a preference for familiar investment options, often resisting changes despite evolving market trends. Investors at the NSE tend to base decisions on historical price patterns and past performance, reflecting a conservatism bias that affects their risk tolerance and investment diversification strategies.

Despite this, empirical studies focusing exclusively on conservatism bias among Kenyan investors are scarce. Most research has primarily examined broader behavioral biases, such as herding, overconfidence, and loss aversion, without isolating the effects of conservatism bias. Additionally, there is little exploration of how conservatism bias interacts with local factors such as political uncertainty, inflation, and regulatory changes in shaping investment decisions.

This study seeks to address these gaps by examining how conservatism bias influences investment decisions at the NSE, particularly in the context of Kenya's economic and financial market dynamics. By analyzing how Kenyan investors incorporate new market information and adjust their investment choices, this research will contribute to the growing body of knowledge on behavioral finance within emerging economies.

### 2.4.5 Mediating role of risk tolerance and investment decisions

Risk tolerance plays a central role in determining how investors evaluate opportunities, respond to uncertainty, and make investment decisions. It reflects the degree of variability in investment returns an individual or firm is willing to withstand. Empirical studies across different contexts demonstrate that variations in risk tolerance significantly influence investment choices and behaviors.

Anbar and Eker (2013) conducted a study in Turkey to examine the relationship between personal financial risk tolerance and demographic characteristics. The purpose of their study was to identify how demographic variables such as gender, age, marital status, and number of children affect risk tolerance. Using logistic regression, t-tests, and ANOVA on a sample of 1,097 university students, they found that gender, type of academic department, and employment status significantly influenced financial risk tolerance. Females exhibited lower levels of risk tolerance compared to males, while variables such as age, marital status, and number of children showed no significant effects. Although the study provided valuable insights, it was limited to students, raising concerns about generalizability to broader populations such as institutional or professional investors.

Alame (2020) emphasized the critical role of risk tolerance in shaping individual investment behavior. The study argued that investment decisions should not only account for expected returns but also the uncertainties and future benefits associated with investments. The findings highlighted that investors with low risk tolerance tend to avoid volatile assets, while those with higher tolerance are more willing to engage in uncertain ventures, even if this exposes them to higher losses. However, the study was conceptual in nature and lacked empirical validation, leaving a gap for evidence-based research in real investment settings.

Jackson and Orr (2019) examined how uncertainty affects investment decisions, particularly in the context of asset pricing. Conducted in the United Kingdom, their study revealed that asset prices often deviate from intrinsic market values due to investors' irrational risk-taking behaviors. The purpose was to understand how risk tolerance under uncertainty leads to deviations from rational investment decisions. Findings indicated that investors with higher risk tolerance are more prone to speculative trading and suboptimal decision-making. Nonetheless, the study did not explicitly measure mediating effects of risk tolerance between behavioral biases and investment decisions, leaving this linkage underexplored.

Tamara, Arianto, Marzuki, and Zulhamdani (2022) investigated the effects of risk tolerance, herding behavior, and financial literacy on investment choices in Indonesia. Their study also examined self-monitoring as a moderating factor. Using survey data analyzed with regression techniques, they found that risk tolerance, herding behavior, and financial literacy significantly influenced investment decisions. However, self-monitoring did not moderate the relationship between herding, risk tolerance, and financial literacy. This suggested that investor self-awareness does not necessarily reduce the impact of behavioral biases on decision-making. A key limitation of the study was that it focused on individual investors, neglecting the institutional context where investment behavior may differ significantly.

In the Kenyan context, financial risk tolerance and its mediating role in investment decision-making remain underexplored. Studies on behavioral finance at the Nairobi Securities Exchange (NSE) have shown that Kenyan investors exhibit varying levels of risk tolerance shaped by macroeconomic volatility, political instability, and access to financial literacy. However, few empirical studies have specifically analyzed how

risk tolerance mediates the relationship between behavioral biases (conservatism, herding, over confidence) and investment decisions.

In Kenya, financial risk tolerance and its impact on investment decisions remain underexplored. However, available studies on behavioral finance at the Nairobi Securities Exchange (NSE) suggest that Kenyan investors display varying levels of risk tolerance influenced by economic volatility, political uncertainty, and access to financial literacy. Kenyan investors, particularly retail investors, often exhibit risk-averse behavior, preferring to invest in traditional assets such as real estate, government securities, and blue-chip stocks. This aligns with global studies indicating that lower financial literacy and economic instability tend to reduce risk tolerance levels among investors. Therefore, there the study aims to address these gaps by analyzing the determinants of financial risk tolerance among Kenyan investors, particularly those participating in the NSE and alternative investment platforms. By integrating global and regional insights, this research will contribute to a deeper understanding of investor behavior in Kenya's financial markets.

### 2.4.6 Behavioral bias and Risk tolerance

Behavioral biases strongly influence investor perceptions of risk and, in turn, shape risk tolerance levels. Among the most studied biases are herding and overconfidence, which alter investors' judgment and can result in irrational investment outcomes.

Messis and Zapranis (2014) examined the relationship between herding behavior and market volatility in developed markets. Their findings revealed that herding acts as a catalyst for volatility by amplifying fluctuations in asset prices, leading to heightened instability. This suggests that herding undermines rational decision-making by reinforcing collective rather than independent analysis.

Jaiyeoba and Haron (2016) investigated the prevalence of herding among retail investors in Malaysia. Using primary survey data and regression analysis, they found that many investors prefer to follow the majority rather than conduct independent evaluation of investment opportunities. This collective action often contributed to the formation of market bubbles and subsequent crashes, confirming the destabilizing role of herding in emerging markets. However, the study did not examine the interaction between herding and investor-specific risk tolerance.

Shekhar (2015) explored the effect of herding on security price volatility in the Indian capital market. Employing secondary data and econometric modeling, the study showed that both professional and amateur investors exhibit cognitive and emotional biases that drive irrational investment choices. By rejecting purely rational economic models, the research attributed volatility largely to psychological biases. While valuable, the study overlooked the mediating influence of demographic or risk preference factors.

Glaser *et al.* (2013) investigated overconfidence bias by analyzing individual interval estimates of financial decisions in Germany. Their findings revealed that prior investment mistakes did not significantly reduce overconfidence, suggesting that investors fail to learn from past losses. This persistence of overconfidence leads to distorted risk assessments and suboptimal investment choices.

Dickason and Ferreira (2018) examined the relationship between overconfidence, risk tolerance, and personality traits in South Africa. Using survey-based quantitative analysis, they found that overconfidence bias often manifests even among conservative investors with low risk tolerance. This paradox implies that even risk-averse individuals may display excessive confidence in specific scenarios, potentially resulting in poor portfolio diversification and asset allocation.

Kannadhasan (2016) highlighted the central role of risk tolerance in determining investment strategy, particularly portfolio diversification, asset allocation, and long-term wealth creation. The study argued that misjudging risk tolerance leads to financial disutility, investor dissatisfaction, and in extreme cases, substantial financial losses. Furthermore, it emphasized that ignoring behavioral biases in risk profiling compromises both individual financial stability and broader market efficiency.

The reviewed studies demonstrate that behavioral biases such as herding and overconfidence directly affect investor risk tolerance and financial decision-making. Herding behavior contributes to market-wide volatility, while overconfidence skews individual perceptions of risk, sometimes even among inherently risk-averse investors. However, most studies were conducted in developed or Asian emerging markets (e.g., India, Malaysia, Germany, South Africa), with limited research in African contexts such as Kenya. Moreover, the mediating role of risk tolerance between behavioral biases and investment decisions remains underexplored. While existing evidence highlights the interplay between behavioral biases and risk tolerance, there is a scarcity of empirical studies contextualized in African emerging markets. Specifically, at the Nairobi Securities Exchange (NSE), little is known about how herding and overconfidence shape investor risk tolerance and influence investment outcomes. The current study addresses this gap by examining the mediating role of risk tolerance on the relationship between behavioral biases and investment decisions among Kenyan investors, thereby providing context-specific insights that expand the global behavioral finance discourse.

### 2.5 Summary of literature and research gap

Studies across India, Pakistan, Tunisia, and other emerging markets (Lakshman, 2013; Ullah, 2020; Rekik & Boujelbene, 2013) confirm that herding influences asset pricing

and market volatility. However, most evidence relies on secondary market data and does not adequately capture individual-level behavioral dynamics. Locally, Chelangat, Kiprop, and Tanui (2018) and Nyamute, Lishenga, and Oloko (2015) provided insights into Kenyan SMEs and NSE listed companies but failed to integrate mediating factors such as risk tolerance. The current study fills this gap by examining herding behavior among Kenyan investors with a focus on its interaction with risk tolerance.

Empirical evidence from Estonia, Pakistan, Nepal, and Bangladesh (e.g., Cekauskas & Liatukas, 2011; Bashir *et al.,* 2013; Shrestha, 2019; Ahammed & Tazminur, 2024) consistently identifies overconfidence as a dominant behavioral bias shaping investment choices. Yet, most of these studies overlook the moderating or mediating role of psychological and contextual factors such as risk tolerance and financial literacy. In Kenya, Nyamute *et al.,* (2015) found overconfidence negatively affected returns, but they did not isolate it as a distinct bias. This study bridges the gap by isolating overconfidence bias within the Kenyan context and analyzing its interaction with risk tolerance.

Research in Pakistan, Asia, and Africa (Qadri & Shabbir, 2014; Edison & Aisyah, 2023; Ramiah *et al.,* 2016) shows that regret influences conservative investment behavior and sometimes leads to overreaction in volatile markets. However, the studies rarely integrate cultural, political, or economic volatility as contextual amplifiers of regret. Locally, Nyamute *et al.,* (2015) acknowledged regret alongside herding and overconfidence but did not examine it as a stand-alone determinant of investment outcomes. The current study addresses this limitation by focusing specifically on regret aversion in Kenya's volatile investment environment and linking it to risk tolerance.

Conservatism bias has been shown to shape investment outcomes by leading managers and investors to rely on past information rather than updating beliefs (Francis & Martin, 2010; Giri & Adhikari, 2023; Rahim *et al.,* 2019). While these findings highlight the global importance of conservatism, most studies are limited to firm-level managers or stock investors in Asia. Research in Kenya remains scarce, with little empirical evidence addressing how conservatism bias specifically influences retail investor behavior. This study fills the gap by contextualizing conservatism bias within the Nairobi Securities Exchange (NSE) and examining its relationship with investment decisions through the mediating role of risk tolerance.

Studies such as Anbar and Eker (2013), Tamara *et al.* (2022), and Jackson & Orr (2019) confirm that demographic and psychological factors shape risk tolerance, which in turn influences investment behavior. Yet, their analyses often neglect country-specific factors like political instability, financial literacy, and investor culture. In Kenya, empirical evidence remains underdeveloped despite the NSE operating under conditions of high uncertainty. This study extends the literature by explicitly testing the mediating role of risk tolerance in the relationship between behavioral biases and investment decisions within the Kenyan context.

Global evidence (Messis & Zapranis, 2014; Dickason & Ferreira, 2018; Glaser *et al.,* 2013) emphasizes that behavioral biases, particularly herding and overconfidence, distort risk assessments and amplify market volatility. However, most studies are based on developed and Asian markets, limiting their applicability to African settings. Locally, very few studies isolate how behavioral biases shape investor risk tolerance. The current study contributes by exploring how risk tolerance mediates the effects of behavioral biases on investment decisions among Kenyan investors, offering context-specific insights that enrich behavioral finance literature.

This chapter summarizes the gap that exists in the previous studies undertaken on behavioral finance;

**Table 2.1: Summary of literature and research gap**

| Author | Objectives | Key finding | Knowledge gap | Focus on the current study |
|---|---|---|---|---|
| Ofir and Wiener (2012) | Research herding behavior and investment Decisions | The findings from the study concluded no effect of herding behavior of a majority of subjects | The participants were non-professional investors, single bias was investigated and study area was Jerusalem. | The study focused on investors both professional and non-professionals, the study took place in NSE Kenya. |
| Weru (2019) | To find out the effect of behavioral bias on investment decision of structured products by retail investors at NSE | Anchoring is very significant to investment decision while herding, representative overconfidence were | This study examined behavioral bias and investment decision. Primary data was collected. | This study focused on behavioral biases in addition to a mediator for individual investors at NSE. Secondary data |

| Author | Objectives | Key finding | Knowledge gap | Focus on the current study |
|---|---|---|---|---|
| | Kenya | insignificant to investment decision on structured products | | will be used for analyses |
| Don A More and Amelia (2020) | study of overconfidence in decision-making | There was negative relationship between overestimation and over placement and that more accurate results were related to the individual's ability to curtail against overestimation and over-placement. | Study focused on one bias only and was carried on a mature market. | Current study focused biases with a mediator and the study area were done on the underdeveloped market. |
| Khoula Benayad and Rashid Mohammed | Investigated overconfidence, optimism, risk aversion, | Optimistic managers often make decision frequently and | Participant of this research were Morrocan SMES and | Our participants were investors at stock market in Kenya and study |

| Author | Objectives | Key finding | Knowledge gap | Focus on the current study |
|---|---|---|---|---|
| (2023) | mimicry and intuition biases on investment decision of Morrocan investment managers | risk averse managers are very cautious in their decision making mimicry also plays crucial role in decision making. | targeted managers | will focus on biases and risk tolerance as a mediator on investment decision. |
| Zipporah Nyaboke Onsumu (2014) | Determined the effect of availability bias, representative bias, disposition effect and overconfidence bias at NSE | Investors are affected by availability bias, representative bias, confirmation bias, disposition effect and overconfidence has no impact on investors decision | The study focused on biases only for investor at NSE. | This study focused on biases in addition to a mediator for individual investors at NSE. |
| Wendo (2015) | Factors that influence participations of individual's NSE | Investors are risk averse and prefer to invest in real estate rather than | Participants are 105 county advocates in Nairobi county | Participants in this study are investors in NSE, Kenya. |

| Author | Objectives | Key finding | Knowledge gap | Focus on the current study |
|---|---|---|---|---|
| | listed companies. | stock exchange | | |
| Mohammadi, Heyrani, and Golestani (2013) | Investigating the impact of conservatism on the quality of the accounting information and decisions of the shareholders and the Tehran listed firms | There is a relationship between conservatism and information quality, conservatism positively influences on each characteristic of relevancy, reliability and timeliness. | The study carried out on conservatism only, the study area was on a mature market that is Tehran stock market. | The study exploited 4 behavioral biases plus a mediator on investors decision, it was carried out in less developed market. |
| Shao and Wang (2013) | To determine behavior of irrational managers and the rational of its existence in business capital investment in decision making | Managers act irrational during decision making process since cognitive biases affect their behavior. | The participant are managers, capital investment being investigate, | This study focused on behavioral biases in addition to a mediator for individual investors at NSE. The study subject was individual |

| Author | Objectives | Key finding | Knowledge gap | Focus on the current study |
|---|---|---|---|---|
| | process. | | | investors. |
| Çankaya, Ucal and O'Neil (2013) | Studied risk attitude and risk tolerance among students in a Turkish University. | Women were found to be less risk tolerant in their finance decisions as compared to men who had a risk seeking attitude. | The study participant was student at the university and risk was being investigated. | Our participants were investors at stock market in Kenya and four biases plus a mediator on investment decisions at NSE. |
| Muchemi Kuria (2019) | To explore behavioral bias of real estate investors and moderating role of financial literacy on selected investors bias and investment performance in Kenya | Heuristic bias ,prospect bias, herding bias and market based bias and financial literacy influence performance of real estate industry | The study focused on real estate investors. In addition to that these tests were carried with a moderator. | This study focused on biases in addition to a mediator for individual investors at NSE. |

Source: Researcher (2024)

## 2.6 Conceptual framework

This study was guided by the conceptual framework.

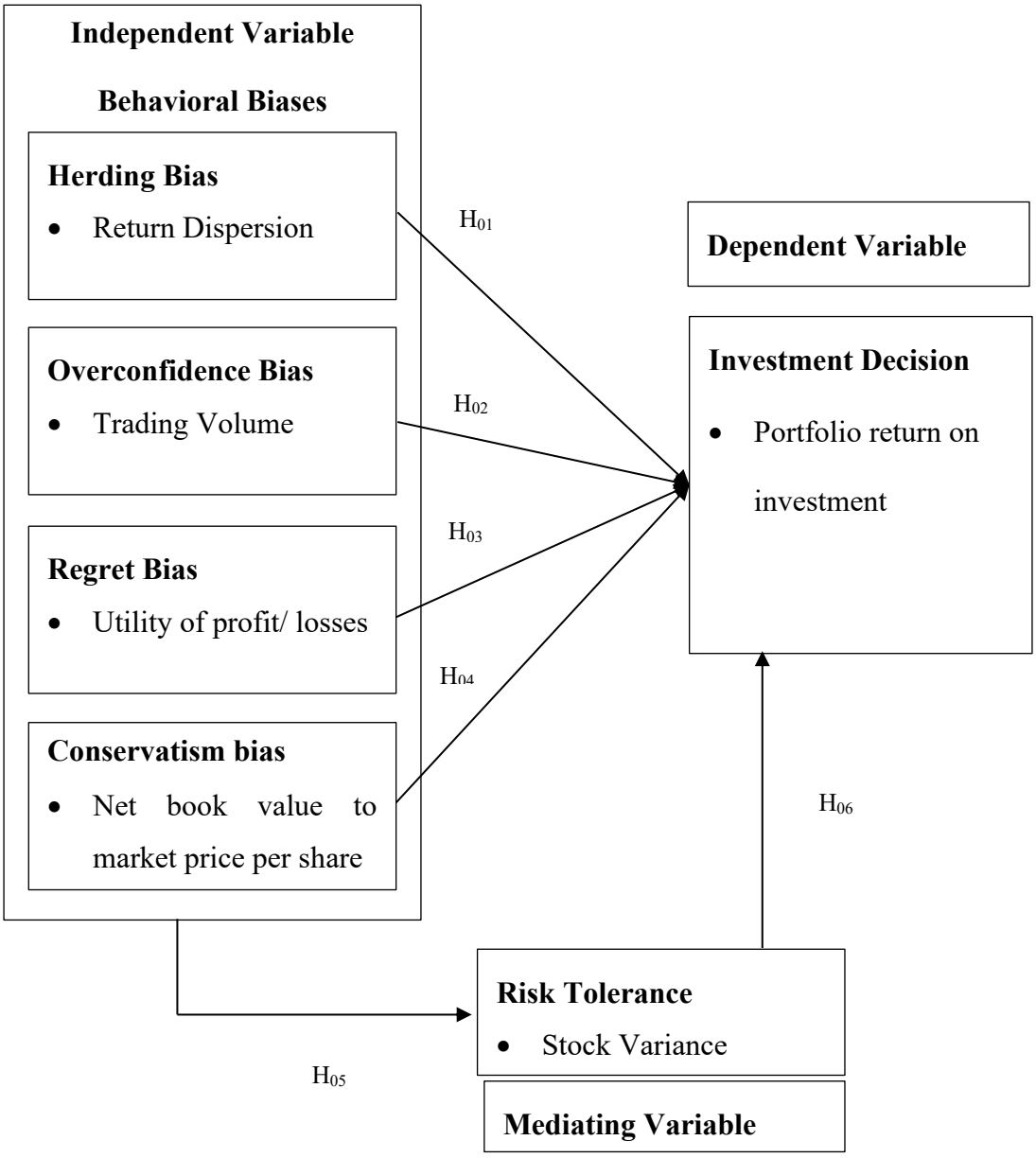



**Figure 2.1: Adapted and Modified from Jain and Kesari (2022)**

# CHAPTER THREE
# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter described the study approach to arrive at the study objective of behavioral biases, risk tolerance, investment decision of investors at Nairobi Security Exchange. It depicted the research design, study area, target population, data analysis, data collection, model specification, data measurement variables, preliminary test and the diagnostic tools to utilize.

## 3.2 Study Area

The study took place at Nairobi security Exchange Kenya; data was extracted from companies quoted at market and currently 62 companies are active in the markets which are classified into various segments. Such segments include main investment market segment, Growth Enterprise market segments and Alternative investment market segment. NSE market was chosen to carry out this research because asset securities are traded in this market and therefore it was possible to analyze the effect of biases and mediating role of risk tolerance on investment decision thus allows investors to be advised accordingly.

## 3.3 Research Design

A research design is a systematic framework that outlines the plan, structure, and strategy for conducting a study. It serves as a logical model that guides the process of collecting, analyzing, and interpreting data to address research questions and test hypotheses. The suitability of a research design depends on the nature of the study, the research objectives, and the type of data required (Asenahabi, 2019). This study adopted both descriptive and causal research designs to provide a comprehensive

understanding of the relationship between behavioral biases, risk tolerance, and investment decisions among investors at the Nairobi Securities Exchange (NSE).

The descriptive research design was used to profile the behavioral biases and investment decision-making patterns of NSE listed companies. This design enabled the researcher to systematically describe the characteristics, attitudes, and behaviors of investors without manipulating variables. By employing this approach, the study provided a clear picture of how behavioral biases manifest among NSE listed companies.

The causal research design was employed to examine cause-and-effect relationships between variables. Specifically, it was used to investigate the effect of behavioral biases on investment decisions and the mediating role of risk tolerance. This design allowed the researcher to analyze how changes in behavioral biases influenced investment decisions and whether risk tolerance played a significant role in mediating this effect. By integrating both descriptive and causal research designs, the study not only captured the characteristics of investor behavior but also established causal linkages among key variables, ensuring a more robust and well-rounded analysis.

### 3.4 Research Philosophy

Research philosophy refers to the set of principles and assumptions that guide how a researcher understands a phenomenon and the methods used to investigate it (Hughes & Sharrock, 2016). This study adopted a positivist philosophy, which is grounded in the belief that reality is objective, measurable, and independent of the researcher. Under positivism, knowledge is derived from observable facts and statistical analysis, making it possible to establish cause-and-effect relationships between variables.

Positivism was considered appropriate for this study because the research aimed to examine the relationship between behavioral biases, risk tolerance, and investment decisions using quantifiable data collected from investors. The philosophy allowed the researcher to remain objective, minimize personal biases, and apply statistical tools to test hypotheses and generalize findings (Dehalwar & Sharma, 2023). Moreover, the use of positivism ensured that the study findings were based on empirical evidence rather than subjective interpretation, thereby enhancing validity and reliability. By adopting a positivist stance, the study was able to systematically analyze the interactions among variables and draw conclusions that are both replicable and applicable to a wider population of investors. This aligns well with the study's purpose, which is to provide evidence-based insights into behavioral finance within the Kenyan investment context.

### 3.5 Target Population

Population refers to the total number of units with specific characteristics from which a researcher can draw a sample (Cherono, 2018). In this study, the unit of analysis was the listed companies, not individual investors. The focus was on companies currently trading in the Nairobi Securities Exchange (NSE), since they provide the historical and financial data necessary for analyzing behavioral biases and the mediating role of risk tolerance in investment decision-making. As of the study period (2014–2023), the NSE had 62 actively trading companies listed in the equity securities market. These 62 quoted companies formed the entire study population. By considering all the listed firms, the study ensured comprehensive coverage of the market, eliminated sampling bias, and provided more robust findings. Census of all the NSE listed companies were used based on availability of secondary data. The study utilized daily historical stock data from the NSE for all active trading

companies during the reference period. This dataset was particularly relevant for assessing how behavioral biases influence investment decision-making and how risk tolerance mediates these effects. The detailed list of the quoted companies is provided in Appendix 1.

### 3.6 Data Collection Procedures and Collection Instruments

The study relied entirely on secondary data to establish the effect of behavioral biases on investment decisions and the mediating role of risk tolerance at the Nairobi Securities Exchange (NSE), Kenya. The data were drawn from published financial statements, daily trading reports, and market summaries for the period between 2014 and 2023. Specific data sources included the NSE official website, the Central Depository and Settlement Corporation (CDSC), the Capital Markets Authority (CMA) reports, relevant journals, and investment bank publications. A structured secondary data collection schedule (Appendix 2) was developed to systematically capture the required variables.

The data were operationalized in line with the study's conceptual framework, where each behavioral bias, the mediating variable (risk tolerance), and the dependent variable (investment decision) were linked to measurable market indicators. Herding bias was measured using return dispersion across stocks, extracted from NSE daily price movements and cross-sectional return variations. Overconfidence bias was proxied through trading volumes, obtained from CDSC and NSE market activity reports, since high turnover reflects excessive confidence in investment decisions. Regret bias was measured through the utility of profits and losses, estimated from realized gains and losses reported in equity returns of listed companies. Conservatism bias was captured by the net book value to market price per share ratio, calculated

from published company annual reports and CMA disclosures, since it reflects the tendency of investors to underreact to new information.

The mediating variable, risk tolerance, was operationalized using stock return variance as derived from historical daily stock prices of each listed company. This measure was appropriate because higher variance signals lower tolerance to risk, consistent with finance literature. The dependent variable, investment decision, was measured through the portfolio return on investment (ROI), computed by aggregating stock performance of listed firms over the study period.

Panel data was adopted as it accommodates both time-series and cross-sectional dimensions, allowing the study to control for firm-specific heterogeneity in the NSE market. The use of panel data regression further strengthened the reliability of the estimates, since it accounted for unobserved differences across firms and over time. The selected proxies for behavioral biases and investment decision-making were appropriate and consistent with prior empirical studies, ensuring both theoretical validity and statistical robustness of the analysis.

### 3.7 Data Analysis

Data analysis is the systematic process of organizing, coding, interpreting, and presenting research data to make it meaningful and useful for decision-making (Kombo & Tromp, 2006). In this study, both descriptive and inferential statistical analyses were performed using STATA version 15. Data were obtained from secondary sources covering a 10-year period (2014–2023) from firm-level reports and the Nairobi Securities Exchange (NSE).

Descriptive statistics, including measures of central tendency (mean) and dispersion (standard deviation), were used to summarize the data and identify patterns or trends

among variables. Inferential analysis was then conducted to test hypotheses, including both simple and multiple linear regression models, as well as correlation analysis to assess the strength and direction of associations among the variables. Results were presented in frequency tables and regression outputs for interpretation.

The independent variable, behavioral bias, was multidimensional, consisting of four behavioral factors: herding bias, overconfidence bias, regret bias, and conservatism bias. These variables were derived from secondary financial data and expressed in ratio form. Because these four variables were measured in different scales and economic magnitudes, direct aggregation could lead to biased estimations or disproportionate weighting (Gujarati & Porter, 2009; Hair et al., 2019).

To ensure comparability, the behavioral bias variables were standardized using Z-score transformation, following the approach recommended by Wooldridge (2019) and Field (2018). Standardization was necessary to place all variables on a common scale with mean = 0 and standard deviation = 1, allowing for accurate computation of a composite behavioral bias index. The Z-score transformation was computed as:

$$Z_i = \frac{X_i - \bar{X}}{SD_i}$$

Where:

- Zi = standardized value of the variable,
- Xi = raw score,
- $\bar{X}$= mean of the variable, and
- SDi = standard deviation of the variable.

Standardization allows for meaningful combination and comparison of variables that are originally measured in different units (Hair et al., 2019). After standardization, a composite behavioral bias variable was constructed using a weighted linear combination of the standardized behavioral bias factors, reflecting their relative contribution to investment decisions. The weighting coefficients were obtained from individual regression coefficients of each bias on investment decisions as follows:

$$X = \beta_1 {}^{*}Z_Herding + \beta_2 {}^{*}Z_Overconfidence + \beta_3 {}^{*}Z_Regret + \beta_4 {}^{*}Z_Conservatism$$

This composite variable represented an aggregate measure of overall behavioral bias for each firm-year observation, preserving the proportional importance of each behavioral factor. The approach is supported by Baron and Kenny (1986), who argue that creating a composite latent variable enhances model parsimony and allows mediation analysis with multidimensional predictors.

The standardization and weighting procedure was necessary because combining unstandardized behavioral bias variables with heterogeneous scales would distort the true variance structure and lead to biased coefficients (Gujarati & Porter, 2009; Hair et al., 2019). Standardization also improves the interpretability of coefficients and ensures that each bias contributes proportionally to the composite behavioral bias index (Field, 2018).

Moreover, the use of STATA version 15 facilitated robust econometric estimation by providing the option of heteroscedasticity-robust standard errors, which correct for non-constant variance typical in panel data (Cameron & Trivedi, 2010; Wooldridge, 2019). This enhances the efficiency and validity of statistical inference.

The use of multiple regressions allowed examination of both direct and mediated effects, consistent with the causal modeling framework suggested by Baron and

Kenny (1986). The inclusion of a mediation pathway through risk tolerance aligns with findings in behavioral finance literature indicating that tolerance to risk plays an essential role in moderating and transmitting behavioral biases to investment outcomes (Pompian, 2017; Statman, 2019).

The regression model that was used on the study was as follows;

**Model 1** Testing the relationship between herding bias and investment decision

$$ID=\beta_0+\beta_1X_1+\varepsilon$$

**Model 2** Testing the relationship between overconfidence bias and investment decision

$$ID=\beta_0+\beta_2X_2+\varepsilon$$

**Model 3** Testing the relationship between regret bias and investment decision

$$ID=\beta_0+\beta_3X_3+\varepsilon$$

**Model 4** Testing relationship between conservatism bias and investment decision

$$ID=\beta_0+\beta_4X_4+\varepsilon$$

**Model 5** Combined effect of Herding, overconfidence, Regret and conservatism on investment decision

$$ID=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\varepsilon$$

**Model 6** Behavioral Biasness on Risk Tolerance

$$R=\beta_0+\beta_6X+\varepsilon$$

**Model 7** Behavioral Biasness, Risk Tolerance on Investment Decision

$$ID=\beta_0+\beta_7X+\beta_8R+\varepsilon$$

Where

ID investment decision

$X_1$, $X_2$, $X_3$, and $X_4$ Herding, overconfidence, regret and conservatism bias respectively

R Risk tolerance, $\beta_0$ constant

$\varepsilon$ error term, X Standardized Behavioral biases

$\beta_1$…….. $\beta_7$ are coefficient of regression

### 3.7.1 Preliminary test for panel data

#### 3.7.1.1 Panel unit Root test

Panel data variables yield a spurious regression result. Therefore, panel data unit root was carried out before doing a regression analysis on each variable of study (Hill, 2008). The following panel unit root test was done to ascertain its consistency as highlighted by Greene (2012).

##### 3.7.1.1.1 Augmented Dickey Fuller (ADF) test

Augmented Dickey Fuller test assumes a AR(p) type time series model and it is represented mathematically as,

$$\Delta y_t = \mu + \delta y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta y_{t-1} + \varepsilon_t$$

where, **μ**: Constant, **yt-1:** Value in the time series at lag of 1, **Et:** Error component, **ϕ**: Co-efficient. If P≤ 0.05 reject null hypothesis time series is considered stationery.

### 3.7.1.1.2 Levin-Lin-Chu Panel Unit Root Test

This test was done through the following model

$$\hat{\rho}_{Yi}^2 = \frac{1}{T-1}\sum_{t=1}^{T}\Delta Y_{it}^2 + 2\sum_{L=1}^{\overline{K}}\omega\overline{K}L\left[\frac{1}{T-1}\sum_{t=2+L}^{T}\Delta Y_{it}\Delta Y_{it-L}\right]$$

Where $\varepsilon_t$ a white noise process is $\rho = 1$ indicates a unit root $0 < \rho < 1$ implies stationary (Levin, Lin and Chu, 2002; Phillips and Moon 1999 and Phillips and Moon 2000).

### 3.7.1.1. 3 Im-Pesaran-Shin Unit Root Test

It is an extension of Dickey-Fuller test and it is done as per the classic Dicker-Fuller Test (DK) test as follows;

$$\Delta Y_{it} = \phi_i Y_{i,t-1} + Z_{it}'\gamma_i + \varepsilon_{it}$$

Where

$\varepsilon_t$ is a white noise,

$\rho = 1$ Indicates a unit root $0 < \rho < 1$ implies stationerity (IM,Peseran and Shin,2003;Shin and Smith ,1997 and Peseran,Shin and Smith,1999 Peseran and Smith,1995).

### 3.7.1.1. 4 Phillip Peron Test

This highlight the parameterization that yield a satisfactory demonstration of both stationary and non-stationary parameters and document laced preparation for outstanding centered *LM* test of stationary. The advantage of this test is that there is instant asymptotic distribution of Philip Peron test and are precisely consequential and also this test allows tolerance disorder expression for heteroscedasticity. It also permits consecutive dependence replacing hypothesis in the miscalculation over time *t*

with the supposition that they fulfil the collaborating consistency setting of Phillip Peron test.

#### 3.7.1.1.5 Hausman Test (HTM)

HTM test was utilized in distinguishing amongst fixed effect (FE) and Random effect (RE) in the panel data model.HTM uses variables that are specified in a regression equation as a tool to seek out endogeneity problem. Therefore, it makes it possible to eliminate the correlation between the explanatory variables and the unobserved individual effect that undermine the appropriateness of the RE model in the gravity model context (Keith, 2006)

More over the merit of HTM is that it is difficult to find unspecified variable in the equation that can serve as a valid instrument for endogenous regressors. HTM test detect endogenous regressors (Predictor variables) in a regression model. Endogenous variables have values that are determined by other variables in the system.

In a model where fixed effect estimation is appropriate, conduct a Hausman test to determine if random effect estimation is more suited. In a fixed effects scenario, the Hausman test evaluates the null hypothesis (H0) that the random effects estimator is consistent and efficient, against the alternative hypothesis (H1) that the random effects estimator is inconsistent. The test result is a vector of dimension k (dim(β)), which will follow a chi-square distribution with k degrees of freedom. If the Hausman test statistic is substantial, one should employ fixed effects (FE). If the statistic is minimal, one may evade repercussions.

The HTM test helps in determining between FE and RE models. The H0 hypothesis is that FE is preferred model over RE and $H_1$ is that the model is fixed effect. In the

summary this test confirms if there is correlation between the unique errors and the regressors in the model

Under the null hypothesis HTM test estimate the following equation;

$$H = (b_1 - b_0)' \left( \mathrm{Var}(b_0) - \mathrm{Var}(b_1) \right)^{\dagger} (b_1 - b_0)$$

If p values is less than 0.05 reject null hypothesis.

### 3.8 Reliability of the Instrument

The reliability of instrument was ensured by collecting second data from Audited financial statement to determine behavioral biases, risk tolerance, investment decision of individual investor at NSE, Kenya. Instruments were discussed with experts in the school of Business and financial analyst from ICIFA prior to data collection and necessary adjustment was made.

### 3.9 Measurement of Study Variables

#### 3.9.1 Decision Making

Investment decision was measured using return on investment (ROI). Return on investment was computed as the difference between ending investment value less initial investment value divided by the initial investment value that is Return On Investment=(Ending investment value-Initial investment value)/ Initial investment value

ROI,i,t=( EVm,t- IVm,t)/ IVm,t

ROI,*i,t*=actual return observed from all quoted companies stocks in a 10 year period

EV*m,t*=Market value of investment of stocks of quoted companies in a 10 year period

IV*m,t* =Market value of investment stocks of quoted companies at the initially over a 10 year period

*t* = the 10 year period

*i* = 62 quoted companies at NSE

### 3.9.2 Herd behavior

Was measured using return dispersion based on cross sectional absolute Deviations method. As measured by (Cherono,2018)

$$\textbf{CSAD} = \frac{1}{N}\sum_{i=1}^{N} |Ri, t - Rm, t|$$

**CSAD is a measure of cross-sectional return dispersion**, R*i, t* is the return of asset *I* at the time *t,* R*m, t* is the corresponding cross-section average market portfolio return and *N* is the number of firms in the total sample

### 3.9.3 Overconfidence behaviour

Was measured by computing monthly average volume of trade of quoted companies' revenue for the periods under review. The quantity of overconfidence will be obtained using Parkinson procedures which are obtained as follows:

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

Where:

$\delta_{i,t}$=overconfidence bias measure bias

H=maximum volume traded during the year under review

L = least volume traded during the period under review

12=Number of months in the year

i=low or high volume the listed companies may gain subsequently one month in study time

In=Natural logarithm

### 3.9.4 Regret behavior

Regret aversion was measured by method used in Barberis & Huang, 2001 stated as below:

$$X_{i,t+1} = S_{i,t}R_{i,t+1} - S_{i,t}R_{f,t}$$

Whereas

$X_{i,t+1}$ is the measure of loss or gain on asset i flanked by time t-1 and time t where a positive value shows a gain beside a negative value indicating a loss

$S_{i,t}$ is the base state of the value of the investors holding asset i at the time t

$R_{f,t}$ Risk free rate return (TB Rate)

$R_{i,t+1}$ Future expected yield (One year lead)

### 3.9.5 Conservatism behaviour

Conservatism bias will be measured by dividing net book value of stock asset over the market price of shares

Conservatism bias =net book value/market price of shares

CB*i,t*=NBV*i,t*/MPm,*t*

Where

CB*i,t*=Conservatism bias obtained from all quoted companies in a 10 year period

NBV*i,t*=Actual net book value of assets of quoted companies

MPm,*t*=Market price of stock of quoted companies

*t*=The 10year period

*i*=62 quoted companies

### 3.9.6 Risk tolerance

Risk tolerance was measured as follows:

RT= (S+-S-)/( S+-S-)

As recommended by Weber and Camerer (1998)

This proxy outline of disposal for every single subject computed as the variance between winners S+ (the stock has winner S+ or stocks which has improved value) of the sold shares and losers S-(stocks which has declined its value) of the sold shares.

**Table 3.1: Operationalization of variables**

This indicates the way the variables were measured to approximate values

| **Variable** | **Measure** | **Proxy** | **Data** | **Authors** |
|---|---|---|---|---|
| Investment decision (Dependent variable) | Portfolio Return On Investment | ROI,*i,t=(*EV*m,t*-IV*m,t)/* IV*m,t* | Historical results | Jegadeesh & Titman (1993), Fama and French (1996); Kumar and Lim (2008) |

| Independent Variables | Measures | Proxy | Data | Author |
|---|---|---|---|---|
| Herding biases | Return dispersion | CSAD $=\frac{1}{N}\sum_{i=1}^{N}\|Ri,t-m,t\|$ | Historical results | Chang, Cheng, and Khorana (2000); Chiang and Zheng (2010); Demirer and Kutan (2006) |
| Overconfidence bias | Trading volume | $\delta_{i,t}=\sqrt{12}\frac{\sqrt{in\left(\frac{H_{i,t}}{L_{i,t}}\right)^2}}{4in(2)}$ | Historical results | Statman, Thorley, and Vorkink (2006); Odean (1998); Barber and Odean (2001) |
| Regret bias | Utility gain/loss | $X_{i,t+1}=S_{i,t}R_{i,t+1}-S_{i,t}R_{f,t}$ | Historical results | Shefrin and Statman (1985); Kahneman and Tversky (1979); Zeelenberg and Pieters (2007) |
| Conservatism bias | Net Book Value to Market value ratio | CB$i,t$=NBV$i,t$/MPm,$t$ | Past Return | Daniel, Hirshleifer, and Subrahmanyam (1998); De Bondt and Thaler (1985); Fama and French (1992). |

## 3.10. Diagnostic Test

Test that was carried out includes multicollinearity, normality, and heteroscedasticity.

### 3.10.1 Multi-collinearity test

Calculated utilizing the variance inflation factor (VIF) and Tolerance. VIF is the inverse of the estimated tolerance (1-R²) and quantifies the extent of linear correlation

between a certain independent variable and the other variables in the investigation. Higher VIF values signify an increased variance of the regression coefficient for that predictor.It is expected that a VIF≥ 10 is an indication of multicollinearity (Meyers, Guarino & Gamst, 2007).

### 3.10.2 Serial correlation Test

Error in prediction ought to be independent. To confirm this Wooldridge test for autocorrelation was used to confirm this assumption. The study aimed to test the credibility of the alternative hypothesis, which states that a first order serial correlation does exist. The data confirmed the validity of hypothesis that residuals do not share a correlation with respect to time, making them suitable for panel regression analysis.

### 3.10.3 Heteroscedasticity test

Homoscedasticity/ homogeneity of variance imply that the dependent variables reflect equals variances across the range of values for an independent variable (Hair 2014). Walid test was used to test homogeneity of variance. If Walid test is significant at $P<0.05$ we reject the hypothesis and if $p>0.05$ is and the test is insignificant, we accept the null hypothesis that the variance is equal and the assumption of homoscedasticity is ok (Viniod, 2018).

### 3.10.4 Normality test

The test carried out to ascertain whether data is normally distributed in a data set. The normality test was used to determine whether a sample has been drawn from normally distributed population. It was tested using kolmogorov- smirnov test. If the test is non-significant ($p>0.05$), the distribution of the sample is not significantly different from that of normal distribution hence normally distributed and vice versa (Elliott & Woodward, 2007).

### 3.10 Ethical Consideration

The study utilized secondary data from NSE-listed firms, making it crucial to uphold data privacy and confidentiality. Although secondary data is typically aggregated and publicly available, care was taken to avoid disclosing sensitive or proprietary information that could harm the firms or individuals involved. The researcher ensured that all data was used strictly for academic purposes, anonymizing firm-specific information where necessary to prevent any misuse. Data security protocols were also implemented to safeguard the information against unauthorized access or breaches during the study.

Even with secondary data, transparency in the study's objectives and methodology is essential. The researcher clarified the purpose of using the data and ensured that its analysis respects the rights and interests of the NSE and the participating firms. The researcher sought permissions from relevant authorities or custodians of the data. This approach maintains trust and adheres to ethical standards in research.

The study was also free from any manipulation or selective analysis that could misrepresent the data or findings. Researchers adhered to principles of honesty and integrity, ensuring that the analysis objectively represents the behavioral biases, risk tolerance, and investment decisions among NSE listed companies. Additionally, ethical reporting of findings was paramount to avoid creating biases or misconceptions that could influence investor behavior or market dynamics. This commitment reinforces the study's credibility and aligns with professional research standards.

# CHAPTER FOUR
# RESEARCH RESULTS AND DISCUSSIONS

## 4.1 Introduction

This chapter presents the research findings their discussions articulating relationships among variables. Descriptive statistics were provided on basis of skewness and kurtosis. Inferential statistics were based on Pearson correlation, multiple and hierarchical regression analysis.

## 4.2 Descriptive Statistics

The research collected data from 62 publicly traded NSE companies. Results from 62 organizations were comprehensively accessible from the different company depositories for a decade, spanning from 2014 to 2023. Data was acquired from the publicly available financial accounts of these corporations. The research demonstrated the impact of behavioural biases on investment choices. The herding bias exhibited a mean of 0.215 and a statistically significant standard deviation of 1.197, indicating its efficacy for the investment decisions of NSE listed companies. The mean of herding bias was 0.735, with a statistically significant standard deviation of 1.321. Consequently, it can be stated that herding bias significantly influences the investing decisions of NSE listed companies, since 0.735, equivalent to 73.5%, above the 15% herding threshold. The mean of regret bias was 0.192, with a statistically significant standard deviation of 1.810, indicating that regret bias significantly influences the investing decisions of NSE participants. The conservatism bias exhibited a mean of 0.981 and a statistically significant standard deviation of 1.921, indicating its substantial impact on the investing decisions of NSE listed companies.

Risk tolerance had a mean of 0.136 and a statistically significant standard deviation of 1.151 therefore risk tolerance has a significant effect on the relationship between behavioral biases and investment decision of NSE listed companies. Investment decision of NSE listed companies had a mean of 0.921 and a statistically significant standard deviation of 1.051.

**Table 4.1: Descriptive statistics**

| Variable | | Mean | Std | Min | Max |
|---|---|---|---|---|---|
| Investment decision | Overall | 0.921 | 1.051 | -11.821 | 7.191 |
| | Between | | 0.181 | -2.132 | 6.120 |
| | Within | | 0.921 | -0.305 | 6.000 |
| Herding bias | Overall | 0.215 | 1.197 | -1.442 | 6.491 |
| | Between | | 0.195 | -0.813 | 6.612 |
| | Within | | 0.132 | -2.132 | 7.421 |
| Overconfidence bias | Overall | 0.735 | 1.321 | 0.000 | 5.150 |
| | Between | | 0.251 | -0.001 | 5.031 |
| | Within | | 0.108 | 0.021 | 5.231 |
| Regret bias | Overall | 0.192 | 1.810 | 0.235 | 7.042 |
| | Between | | 0.195 | -0.131 | 6.091 |
| | Within | | 0.146 | 0.027 | 6.032 |
| Conservatism bias | Overall | 0.981 | 1.921 | 0.034 | 4.013 |
| | Between | | 0.132 | -0.067 | 4.132 |
| | Within | | 0.762 | 0.429 | 4.012 |
| Risk tolerance | Overall | 0.136 | 1.151 | 1.921 | 5.205 |
| | Between | | 0.092 | 1.891 | 5.250 |
| | Within | | 0.212 | 0.679 | 5.001 |

Source: Field data (2024)

### 4.3 Panel Unit Root Test

Unit root test is important in preventing issues of spurious regression due to non-stationary of data. The analysis confirmed that there was no unit root, indicating that the time series data were stationary. This study employed four-unit root tests: Levin-Lin, Augmented Dickey-Fuller (ADF), Im-Pesaran-Shin, and Phillips-Perron. The results, as presented in Table 4.2, showed that all tests yielded p-values below 0.05 ($p < 0.05$), confirming the absence of a unit root. Given this finding, stationarity was established, and no further differencing was required. Consequently, differencing was deemed unnecessary for this dataset.

**Table 4.2: Unit Root Tests**

| Variable | Levin, Lin & Chu Stat | Augmented DickieFuller | Im Pesaran | Phillips Perron |
|---|---|---|---|---|
| Investment decision | -17.3164** | 383.8045** | -2.9033** | 383.8045** |
| PV | (0.0000) | (0.0000) | (0.0002) | (0.0000) |
| Herding bias | -17.5650** | 369.4048** | -3.4672** | 369.4048** |
| PV | (0.0000) | (0.0000) | (0.0002) | (0.0000) |
| Overconfidence bias | 34.2797** | 171.2762** | -2.1624** | 171.2762** |
| PV | (0.0000) | (0.0000) | (0.0023) | (0.0000) |
| Regret bias | -12.4622** | 157.6094** | -1.8818** | 157.6094** |
| PV | (0.0000) | (0.0000) | (0.0089) | (0.0000) |
| Conservatism bias | -12.3012** | 144.6021** | -1.8213** | 173.3122** |
| PV | (0.0000) | (0.0000) | (0.0089) | (0.0000) |
| Risk tolerance | -8.8214** | 156.3012** | -2.0457** | 171.3127** |
| PV | (0.0000) | (0.0000) | (0.005) | (0.0000) |

Source: Field data (2024)

### 4.4 Diagnostic Tests

In order to tell whether the research model was appropriate for the study, diagnostic tests were conducted. The normality, multi-collinearity, autocorrelation, heteroskedasticity and linearity were conducted.

#### 4.4.1 Normality Test

**Table 4.3: Normality Test**

| Variable | skewness | Kurt | J Bera Adj. chi2(2) | Prob>chi2 |
|---|---|---|---|---|
| Herding bias | 0.9899 | 3.5251 | 14.68 | 0.1010 |
| Overconfidence bias | 0.4362 | 2.4115 | 3.1208 | 0.1428 |
| Regret bias | 0.4362 | 2.4115 | 3.1208 | 0.1465 |
| Conservatism bias | 0.4508 | 3.1408 | 2.915 | 0.2326 |
| Risk tolerance | 1.2323 | 2.6537 | 1.175 | 0.5559 |
| Investment decision | 0.9208 | 3.0508 | 2.801 | 0.3321 |

Source: Field data (2024)

This thesis used Jarque Bera (1981) criteria for normality to assess variables normal distribution. A p value of less than 0.05 implies that the null hypothesis is to be rejected, that is the data is not normally distributed.

For this findings there was no case of non-normal data since the highest skewness value was 1.2323<2 hence very normal, for kurtosis no the highest value was 3.5251<6 as benchmarks for skewness and kurtosis respectively. For Jarque-Bera test the probability values were p>0.05 hence data was normal (Chatterjee & Hadi, 2015).

### 4.4.2 Multi-Collinearity

**Table 4.4: Multi-Collinearity**

| Variable | Tolerance | VIF |
|---|---|---|
| Herding bias | 0.210 | 4.762 |
| Overconfidence bias | 0.321 | 3.115 |
| Regret bias | 0.250 | 4.000 |
| Conservatism bias | 0.172 | 5.814 |
| Risk tolerance | 0.124 | 8.065 |
| Investment decision | 0.175 | 5.714 |

Source: Field data (2024)

Variance inflation factors (VIF) and tolerance values were used to explain Multicollinearity. Multicollinearity occurs when two or more independent variables exhibit correlation (Cooper & Schindler, 2011). A VIF of less than 10 and a tolerance value below 1 indicate the lack of multicollinearity.

The variance inflation factors (VIF) from the coefficient table are below 10; hence, Herding bias: 4.762, Overconfidence bias: 3.115, Regret bias: 4.000, Conservatism bias: 5.814, Risk tolerance: 8.065, Investment decision: 5.714. The tolerance values were as follows: herding bias 0.21, overconfidence bias 0.321, regret bias 0.250, conservatism bias 0.172, risk tolerance 0.124, and investment decision 0.175, confirming the absence of multicollinearity issues. Ofir and Wiener (2012) determined that a VIF of less than 10 signifies the absence of multicollinearity when evaluating herding behavior and investing decisions.

### 4.4.3 Heteroscedasticity Test

**Table 4.5: Breuch Pagan Test for Heteroscedasticity Results**

| Walid Test | Walid test Statistic |
|---|---|
| Chi2 | 2.05 |
| P-value | 0.0759 |

Source: Field data (2024)

Heteroscedasticity happens when the error term of variance, which is ideally taken to be common, fluctuates. This implies that the ordinary least square model is infective since it underestimates the variance of standard errors thus resulting in misleading results. Heteroscedasticity was tested using the Walid test in this research (Vinod, 2018). Table 4.4 From Walid test result showed a Chi-square = 2.05, p-values = 0.0759 more than 0.05. This affirms that heteroskedasticity problem did not exist.

### 4.4.4 Auto Correlation Test

The presence of serial correlation in linear panel data models introduces bias in standard errors and reduces the efficiency of findings. Consequently, it is important for researchers to detect and identify serial correlation in the idiosyncratic error component inside a panel data model.

**Table 4.6: Auto Correlation Test**

| **Wooldridge test for autocorrelation in panel data** |
|---|
| H0: no first order autocorrelation |
| F( 1, 61) = 1.068 |
| Prob > F = 0.3055 |

Source: Research Survey Data, (2024)

The wooldridge test for autocorrelation was used to confirm this assumption. The study aimed to test the credibility of the alternative hypothesis, which states that a first order serial correlation does exist. Based on the results provided in table 4.10 it emerged that no first order serial correlation existed. The study failed to reject the null hypothesis since the p value (Prob > F = 0.3055). According to findings, the data confirmed the validity of hypothesis that residuals do not share a correlation with respect to time, making them suitable for panel regression analysis.

### 4.4.5 Test for Linearity

This refers to the extent to which the variation in the dependent variable is associated with the variation in the independent variable. The linearity of the data was assessed by analyzing P-P plots, as shown in figure 4.12. The graphic illustrates that the points are predominantly situated along a straight diagonal line, running from the bottom left to the top right. This suggests a linear correlation between the independent and dependent variables.

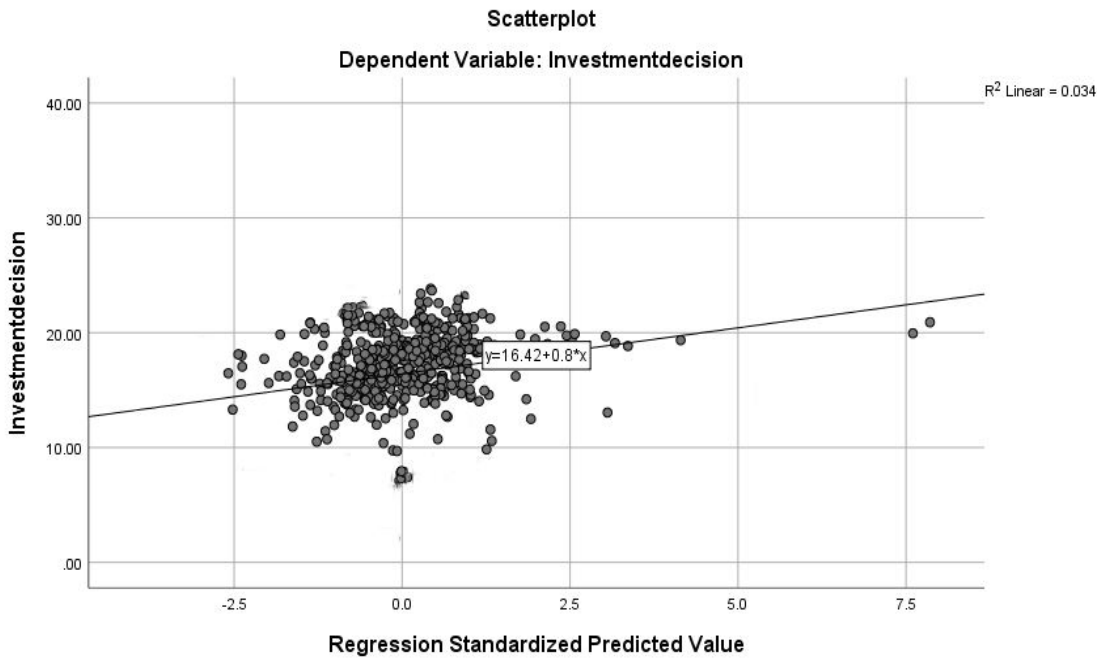



**Figure 4.1: Test for Linearity**

## 4.5 Correlation Analysis

**Table 4.7: Correlation Analysis**

| Variables | HB | OB | RB | CB | RT | ID |
|---|---|---|---|---|---|---|
| Herding bias (HB) | 1.000 | | | | | |
| Overconfidence bias (OB) | 0.274* | 1.000 | | | | |
| Regret bias (RB) | –0.115 | 0.152* | 1.000 | | | |
| Conservatism bias (CB) | 0.257* | 0.267* | 0.254* | 1.000 | | |
| Risk tolerance (RT) | 0.330** | 0.246* | 0.186* | 0.172* | 1.000 | |
| Investment decision (ID) | 0.131* | 0.510** | –0.346** | 0.242** | 0.560** | 1.000 |

*p < 0.05, *p < 0.01

Source: Field data (2024)

Table 4.7 presents the Pearson correlation analysis showing the association between behavioural biases (herding bias, overconfidence bias, regret bias, and conservatism bias), the mediating variable (risk tolerance), and investment decision.

The results show that herding bias was positively and significantly correlated with investment decision ($r = 0.131$, $p < 0.05$). This aligns with the fixed-effects regression results in Table 4.9, which also revealed that herding behavior (proxied by return dispersion) had a positive and significant effect on investment decisions of NSE listed companies. This is similar to the results from Shah, Naveed, and Hussain (2024) who found that herding behaviour had a positive significant relationship with investment decision among SMEs investors in Pakistan.

Overconfidence bias was also positively and significantly related to investment decision ($r = 0.510$, $p < 0.01$). This is consistent with the regression results in Table 4.10, which found that trading volume as a measure of overconfidence significantly

influenced investment decision-making. This confirms that overconfident investors tend to rely on their judgment, often increasing trading frequency and risk exposure. These results were in line Malik, Hanif and Azhar (2019) who found that overconfidence had a strong positive relationship with investment decision in Lahore and Islamabad stock exchange.

In contrast, regret bias was negatively and significantly correlated with investment decision ($r = –0.346$, $p < 0.01$). This is supported by the regression results in Table 4.11, which found that regret (proxied by utility gain/loss) had a negative and significant effect. The implication is that investors who are highly sensitive to regret are more cautious, leading to suboptimal or delayed investment decisions. However, researcher such as Edison and Aisyah (2023) found that regret had no significant effect on investment. Similarly, Hidaya and Irowati (2019) had similar findings with Edison and Aisyah (2023) which implies that regret bias has mixed results. In NSE, the results showed that regret bias contribute negative to the investment decision.

For conservatism bias, the results indicated a positive and significant correlation with investment decision ($r = 0.242$, $p < 0.01$). This finding is in line with Table 4.12 regression results, where conservatism bias (proxied by NBV/MVR) positively influenced investment decisions. Conservative investors tend to rely on past information and are less adaptive to new signals, yet this behavior still translated into consistent, if cautious, investment decisions.

Finally, risk tolerance exhibited the strongest positive correlation with investment decision ($r = 0.560$, $p < 0.01$). This is consistent with the multiple regression results in Table 4.14, where risk tolerance significantly mediated the relationship between behavioral biases and investment decisions. This suggests that investors with higher

risk tolerance are more likely to act on their biases, leading to more active decision-making in the NSE.

Overall, the correlation results confirm the regression evidence that behavioural biases significantly shape investment decision-making. While herding, overconfidence, conservatism, and risk tolerance positively drive decisions, regret bias works in the opposite direction by constraining investors. These results align with previous findings by Dickason and Ferreira (2018), who reported that overconfidence interacts strongly with risk tolerance, often pushing conservative individuals into riskier investment behaviour.

### 4.6 Hausman Test

**Table 4.8: Hausman Test**

| Variable | (b) fixed | (B) random | (b-B) Difference | Sqrt (diag (V_b-V_B) S.E. |
|---|---|---|---|---|
| Herding bias | 0.054 | 0.043 | 0.012 | 0.005 |
| Overconfidence bias | 1.516 | 1.469 | 0.0470 | 0.025 |
| Regret bias | -.863 | -0.515 | -0.347 | 0.05 |
| Conservatism bias | 1.017 | 0.671 | 0.346 | 0.04 |

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 97.296

Prob>chi2 = 0.0001”

Source: Research Survey data 2024

Linear regression analysis was conducted to examine the relationship between behavioral biases, risk tolerance, and investment decision variables. The study employed a fixed effects model, as determined by the Hausman test, which was used to assess model suitability between fixed and random effects specifications.

According to Borenstein *et al.,* (2010), the fixed effects model is preferred when the Hausman test yields a significance level (p-value) less than 0.05, indicating that individual-specific effects are correlated with the explanatory variables. The Hausman test result showed a p-value of 0.0001 (< 0.05), confirming that the fixed effects model was appropriate.

Consequently, the fixed effects model was adopted for the regression analysis, and the F-statistic was found to be statistically significant ($p = 0.0001 < 0.05$), implying that the overall model was a good fit and that behavioral biases and risk tolerance jointly had a significant effect on investment decisions among NSE-listed companies in Kenya.

### 4.7 Discussions of Regression Results

Building on the regression analysis the section presents and discusses the influence of behavioral biases and risk tolerance on investment decision among NSE-listed companies in Kenya.

#### 4.7.1 Influence of Herding bias on Investment decision of NSE listed companies

In examining the effect of herding bias on investment decision of NSE listed companies in Kenya the study confirmed results below. The null hypothesis $Ho_1$: Herding bias has no significant effect on investment decision of NSE listed companies in Kenya. Table 4.9 contains the findings.

**Table 4.9: Regression of Fixed Effects of herding bias on Investment decision**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observations = | 620 | |
| Group variable: NSE | | | | No of groups = | 62 | |
| R-square: | | | | Observation per group: | | |
| within = 0.0215 | | | | minimum = 7 | | |
| between = 0.0973 | | | | average = 7.0 | | |
| overall = 0.0171 | | | | maximum = 7 | | |
| | | | | F = | 2.55 | |
| corr(u_i, Xb) = 0.19 | | | Prob > F = | | 0.040 | |
| Investment decision | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Return dispersion. | .131 | .0.51 | 2.59 | 0.04 | .575 | .078 |
| _cons | -.261 | .442 | -0.59 | 0.50 | 1.18 | .623 |
| F test that all u_i=0: F = 5.16 | | | | Prob > F = 0.040 | | |

Source: Field data (2024)

The fixed-effects model results indicated that herding bias, as measured by return dispersion, accounted for 2.15% of the variation in investment decisions among NSE listed companies in Kenya (within $R^2 = 0.0215$). The findings revealed a statistically significant relationship, with a p-value of 0.040 and a t-statistic of 2.59. The coefficient for herding bias was 0.131, meaning that a one-unit increase in herding bias leads to a 0.131-unit increase in investment decisions. This relationship was found to be statistically significant, as the p-value (0.040) was below the 0.05 threshold. The regression equation is as follows:

Investment Decision=−0.261+0.131(Herding Bias)

These findings suggest that herding behavior plays a significant role in shaping investment decisions among NSE listed companies. Therefore, the study therefore rejected the null hypothesis and concluded that the effect of herding bias on investment decision of NSE listed companies in Kenya was statistically significant. Lakshman (2013) studied market wide herding in Indian capital market and found the

impact of volatility and return on herding behavior of institutional investors as positively and significant on investor decisions. Contrary, Agarwal, Chiu, Liu and Rhee (2011) studied herding behavior for both home and foreign investors firms in Indonesia. The findings revealed that international investors showed a higher propensity to herd compared to home investors. The author further revealed that a strong brokerage impact on herding led to insignificant relationship with investors.

The study's findings align with several prior research efforts on herding behavior. Lakshman (2013) identified market-wide herding in the Indian capital market, noting that volatility and returns significantly impact institutional investors' herding tendencies.

This is consistent with the present findings, which suggest that herding bias influences investment choices, particularly in volatile markets. Similarly, Chiang (2013) reported heightened herding behavior in bullish markets, while Cipriani and Guarino (2012) linked herding to asset price fluctuations at the NYSE, illustrating its role in shaping investor sentiment and decision-making.

Other studies, such as Bekiros *et al.,* (2017), have explored the implications of herding in Asian money markets, finding an inverse feedback loop and asymmetrical risk-return relationships. These results suggest that herding behavior not only affects individual investment decisions but also has broader market implications. Ullah (2020) examined herding bias among Pakistani investors and confirmed its significant role in shaping investment decisions, supporting the theoretical integration of herding into investment models. The study also emphasized the need for investors to develop self-control and analytical skills to mitigate behavioral biases.

In a similar vein, Shah, Naveed, and Hussain (2024) investigated the moderating role of overconfidence in herding behavior among SME investors in Pakistan. Their findings confirmed a strong positive relationship between investment decisions, overconfidence, and herding, reinforcing the idea that behavioral biases interact in shaping investment outcomes. Khalid *et al.,* (2018) further demonstrated the impact of herding and overconfidence on investment decisions in Islamabad, with financial literacy playing a moderating role. This suggests that while herding is a significant factor, its influence can be modulated by investor knowledge and awareness.

Regionally, research has identified herding behavior as a significant factor in investment decision-making. Rekik and Boujelbene (2013) found that herding, representativeness, and loss aversion had a greater impact than overconfidence on investor behavior in Tunisia, indicating the relevance of cognitive biases in emerging markets. In Kenya, Nyamute, Lishenga, and Oloko (2015) examined investor behavior at the NSE and reported a positive relationship between herding and portfolio performance. This corroborates the current findings, demonstrating the presence of herding behavior among NSE listed companies.

Contrastingly, Chelangat, Kiprop, and Tanui (2018) studied SME investment decisions in Bomet County, Kenya, and found that herding behavior had a negative beta value (-0.146), implying an insignificant impact. This discrepancy may stem from differences in market structure, investor profile, and decision-making processes between SMEs and stock market investors.

These findings contribute to the growing body of knowledge on behavioral finance in emerging markets. The variation in herding effects across studies highlights the need for further investigation into the interplay between behavioral biases and market conditions. Notably, the limited explanatory power of herding bias (within $R^2$ =

0.0215) suggests that other factors, such as risk tolerance, financial literacy, and external market influences, may also shape investment decisions.

### 4.7.2 Influence of Overconfidence bias on Investment decision of NSE listed companies

In examining the effect of herding bias on investment decision of NSE listed companies in Kenya the study confirmed results below. The null hypothesis $Ho_2$: Overconfidence bias has no significant effect on investment decision of NSE listed companies in Kenya. Table 4.10 contains the findings.

**Table 4.10: Regression Fixed Effects of Overconfidence bias on Investment decision**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observations = | 620 | |
| Group variable: NSE | | | | No of groups = | 62 | |
| R-square: | | | | Observation per group: | | |
| within = 0.1209 | | | | minimum = | 7 | |
| between = 0.0265 | | | | average = | 7.0 | |
| overall = 0.2601 | | | | maximum = | 7 | |
| | | | | F = | 15.96 | |
| corr(u_i, Xb) = -0.284 | | | | Prob > chi2 = | 0.0000 | |
| Investment decision | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Trading volume | .510 | .091 | 5.59 | 0.000 | .329 | .686 |
| _cons | -.211 | .346 | -0.61 | 0.500 | 1.29 | .633 |
| F test that all u_i=0: F = 6.23 | | | | Prob > F = 0.000 | | |

Source: Field data (2024)

The fixed-effects model results indicated that overconfidence bias accounted for 12.09% of the variation in investment decisions among NSE listed companies in Kenya (within $R^2 = 0.1209$). The relationship was found to be highly significant, with a p-value of 0.000 ($p < 0.05$) and a t-statistic of 5.59. The coefficient for overconfidence bias, measured by trading volume, was 0.510, suggesting that a one-

unit increase in overconfidence bias leads to a 0.510-unit increase in investment decisions. Given that the p-value (0.000) was well below the 0.05 significance threshold, the relationship is statistically significant. The regression model is expressed as:

Investment Decision=−0.211+0.510 (Overconfidence Bias).

These findings highlight the substantial influence of overconfidence bias on investment decisions among NSE listed companies. The study therefore rejected the null hypothesis that overconfidence bias has no significant effect on investment decision of NSE listed companies in Kenya and concluded that the influence of overconfidence bias on investment decision of NSE listed companies in Kenya was statistically significant. This confirms that increase in overconfidence bias would result to increase in investment decision of NSE listed companies in Kenya. This is in concurrence with Ramiah *et al.,* (2016) who found out that overconfidence bias negative significant influences investment decisions. Qadri and Shabbir (2014), in their study, found out that overconfidence bias and illusion of control has a significant favorable influence on investment decisions. Khalid *et al*, (2018) found that overconfidence and herding bias with mediating effect of financial literacy have a positive significant impact on investment decision.

Cekauskas and Liatukas (2011) conducted a study on the behavioral biases of disposition effect and overconfidence in the Estonian stock market. Their research found that investors were less willing to sell stocks that had lost value compared to those that had gained value, a phenomenon known as the disposition effect. They also measured overconfidence bias using stock volatility and stock volume, finding that overconfidence had a direct impact on investment decisions. This aligns with other global studies, such as those by Abrar *et al.,* (2014), who investigated individual

investor behavior and found that many investors exhibit overconfidence in their market knowledge and skills.

Overconfidence, according to Bashir *et al.,* (2013), has a direct influence on investment decisions, while other biases like loss aversion and mental accounting have minimal influence. Studies by Kafayat (2014) and Qadri and Shabbir (2014) similarly demonstrate that overconfidence biases, including the illusion of control, significantly affect investment decisions by leading investors to make overly optimistic choices. Shrestha (2019) investigated investing choices and overconfidence in the Nepalese stock market. This study evaluates how an individual's overconfidence bias affects their financial choices. The study found that investors who are female, have a college degree, and have a net worth of between Rs 2 and Rs 5 million are confident in their own skills, believe they are better investors than their colleagues, and tend to trade more. The impact of overconfidence bias on investment decisions was also examined by Ahammed and Tazminur (2024), focusing on Bangladeshi retail investors. The findings indicated that male investors tend to be more overconfident in their investment selections than females, highlighting significant overconfidence bias among retail investors.

In Africa, studies such as those by Ramiah *et al.,* (2016) reinforce the global findings by emphasizing that overconfidence bias significantly influences investment decisions. In a similar vein, Tripathy (2014) identified overconfidence, anchoring, regret bias, and loss aversion as key factors influencing investment decisions in the South Asian region. These biases often lead investors to make decisions based on inaccurate perceptions of their abilities, which can result in irrational financial behavior. Chaudhary (2013) also examined the perception of overconfidence and its impact on financial decision-making. The study showed that overconfident investors

tend to overestimate their forecasting abilities and often engage in excessive trading, which can lead to lower returns than the market. Malik, Hanif, and Azhar (2019) evaluated how overconfidence bias affected investment choices in Lahore and Islamabad stock exchanges, finding that overconfidence bias positively correlates with investment choices, with risk tolerance mediating this relationship. These studies indicate that overconfidence and related biases have a consistent impact on investment behavior across different regions, suggesting that investor psychology is a key determinant of market outcomes in both developed and emerging markets.

Locally, while there is a growing body of research on investor behavior in Kenya, studies focusing on overconfidence bias specifically are still limited. However, studies like Nyamute, Lishenga, and Oloko (2015) provide insight into how investor behavior, including biases like overconfidence and herding, influences investment decisions at the Nairobi Securities Exchange (NSE). Their research demonstrated that individual investor behavior, influenced by biases like disposition and herding, significantly affects portfolio performance in Kenya. The study concluded that investors who succumbed to biases like overconfidence and herding tendencies performed poorly compared to others who made more rational investment decisions. This finding is in line with global research but highlights the unique characteristics of investor behavior in the Kenyan market, where factors such as market volatility, political instability, and economic uncertainty play a significant role in shaping investment decisions.

The literature suggests that overconfidence can lead to overtrading and suboptimal investment choices, yet there is a need for more specific studies on how these biases are influenced by local factors such as economic volatility, political instability, and cultural influences in Kenya. Additionally, there is a gap in integrating

overconfidence bias with other behavioral biases (such as herding and loss aversion) to provide a more comprehensive understanding of investor decision-making in Kenya. This study aims to fill these gaps by focusing on the Kenyan context, specifically at the Nairobi Securities Exchange (NSE), to explore how overconfidence bias and other behavioral factors such as herding, disposition effect, and loss aversion influence individual investment decisions. While existing research highlights the significance of overconfidence in shaping investment behavior globally, this study will contribute to the understanding of how these biases specifically impact Kenyan investors, taking into account local market conditions, economic factors, and investor demographics.

### 4.7.3 Influence of Regret bias on Investment decision of NSE listed companies

In examining the effect of regret bias on investment decision of NSE listed companies in Kenya the study confirmed results below. The null hypothesis $Ho_3$: Regret bias has no significant effect on investment decision of NSE listed companies in Kenya. Table 4.11 contains the findings.

**Table 4.11: Regression Fixed Effects of Regret bias on Investment decision**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observations = | | 620 |
| Group variable: NSE | | | | No of groups = | | 62 |
| R-square: | | | | Observations per group: | | |
| within = 0.1832 | | | | minimum = 7 | | |
| between = 0.3037 | | | | average = 7.0 | | |
| overall = 0.1197 | | | | maximum = 7 | | |
| | | | | F = 26.02 | | |
| corr(u_i, Xb) = 0.321 | | | | Prob > F = 0.003 | | |
| Investment decision | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Utility gain/loss | -.346 | .0485 | -7.14 | 0.003 | .442 | .251 |
| _cons | 1.671 | .157 | 10.65 | 0.000 | 1.362 | 1.981 |
| F test that all u_i=0: F = 1.89 | | | | Prob > F = 0.003 | | |

Source: Field data (2024)

The fixed-effects model results indicated that regret bias accounted for 18.32% of the variation in investment decisions among NSE listed companies in Kenya ($R^2$ = 0.1832). The findings revealed a statistically significant negative relationship, with a p-value of 0.003 and a t-statistic of 7.14. The coefficient for regret bias, measured by utility gain/loss, was -0.346, indicating that a one-unit increase in regret bias leads to a 0.346-unit decrease in investment decisions. Since the p-value (0.000) was below the 0.05 significance threshold, this negative relationship was statistically significant. The regression model is expressed as:

Investment Decision=1.671−0.346 (Utility gain/loss)

These findings suggest that regret bias significantly influences investment decisions among NSE listed companies, leading to more conservative or risk-averse behavior. The study rejected the null hypothesis that regret bias has no significant effect on investment decision of NSE listed companies in Kenya and concluded that regret bias had a significant effect on investment decision of NSE listed companies in Kenya. The study conducted by Mbaluka *et al.* (2012) found out that framing and regret bias negatively influence investment decisions. This was also supported by Ullah, Jamil, Qamar and Waheed (2012) who found out in their research that managers in an organization are risk reluctant while size and profitability are related positively with investment decisions.

Several global studies have explored regret bias and its impact on investor behavior. Qadri and Shabbir (2014) found that Pakistani investors exhibit strong regret aversion, often leading to overly cautious investment behavior after experiencing financial losses. This aligns with the current study's finding that regret bias negatively influences investment decisions at the NSE, suggesting that Kenyan investors may similarly avoid trading after regretting past losses.

Edison and Aisyah (2023) demonstrated that regret significantly influences later investment choices, although their findings indicated no significant interaction between regret and risk aversion. This partially supports the current study's findings by reinforcing the idea that regret bias affects investment decisions, though further investigation is needed to determine how regret interacts with risk perception in the Kenyan market.

Tripathy (2014) identified regret bias, anchoring, and loss aversion as key factors affecting investment decisions in South Asia, with regret often leading to hesitation in future investments. Likewise, Chaudhary (2013) found that regret and overconfidence interact in financial decision-making, leading investors to either overtrade or avoid trading altogether after negative experiences. These studies provide a consistent picture of how regret shapes investment behavior, corroborating the NSE findings that regret bias discourages investor participation in the market.

Ramiah *et al.* (2016) emphasized that regret and overconfidence significantly influence investment decisions in African markets. This reinforces the current study's findings, indicating that NSE listed companies, like their counterparts in other African stock markets, are affected by regret bias, which in turn alters their trading behavior.

In Kenya, investor behavior studies such as Nyamute, Lishenga, and Oloko (2015) have acknowledged the role of regret in shaping investment decisions, but specific empirical research on regret bias remains limited. Their study suggested that regret, along with overconfidence and herding, influences investment performance, supporting the notion that investors who experience regret may underperform compared to those who take a more rational approach. The current study builds upon this by quantitatively establishing the extent of regret bias's influence on investment decisions at the NSE.

The findings of this study align with global literature that identifies regret bias as a significant determinant of investment decisions. The negative relationship between regret bias and investment activity at the NSE suggests that Kenyan investors, like those in other markets, are influenced by emotional responses to past financial outcomes, which may hinder their decision-making. This study contributes to the behavioral finance discourse by providing empirical evidence on regret bias in the Kenyan stock market and emphasizing the need for investor education and psychological interventions to mitigate its adverse effects.

### 4.7.4 Influence of Conservatism bias on Investment decision of NSE listed companies

In examining the effect of conservatism biases on investment decision of NSE listed companies in Kenya the study confirmed results below. The null hypothesis $Ho_3$: Conservatism bias has no significant effect on investment decision of NSE listed companies in Kenya. Table 4.12 contains the findings.

**Table 4.12: Regression Fixed Effects of Conservatism bias on Investment decision**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | Number of obs = | 620 | |
| Group variable: NSE | | | | Number of groups = | 62 | |
| R-sq: | | | | Obs per group: | | |
| within = 0.2808 | | | | min = | 7 | |
| between = 0.3766 | | | | avg = | 7.0 | |
| overall = 0.0586 | | | | max = | 7 | |
| | | | | F = | 22.52 | |
| corr(u_i, Xb) = 0.169 | | | | Prob > F = | 0.0000 | |
| Investment decision \| | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
| NBV/MVR \| | .242 | .051 | 4.75 | 0.000 | .189 | .077 |
| _cons \| | .629 | .198 | 3.17 | 0.000 | .631 | .749 |
| F test that all u_i=0: F = 7.63 | | | | Prob > F = 0.0000 | | |

Source: Field data (2024)

The fixed-effects model results indicated that conservatism bias, measured through NBV/MVR, accounted for 28.08% of the variation in investment decisions among NSE listed companies in Kenya ($R^2 = 0.2808$). The findings revealed a statistically significant relationship, with a p-value of 0.000 and a t-statistic of 4.75. Since the p-value (0.000) was well below the 0.05 significance threshold, the influence of conservatism bias on investment decisions was confirmed to be statistically significant. The regression model is expressed as:

Investment Decision= 0.629+0.242(Conservatism Bias)

These results suggest that conservatism bias positively influences investment decisions, meaning that as conservatism bias increases, investment decisions tend to increase correspondingly. The study rejected the null hypothesis that conservatism bias has no significant effect of on investment decision of NSE listed companies in Kenya and concluded that the effect of Conservatism bias on investment decision of

NSE listed companies was statistically significant. This implies that increase in conservatism bias would results to increase in investment decision of NSE listed companies in Kenya. The study was supported by Wolk, *et al.,* (2014) who found conservatism significant on investment decisions.

The study findings are consistent with the literature on conservatism bias in investment decisions. Rahim, Shah, and Aamir (2019) found that Pakistani investors tend to favor historically successful stocks and underweight new information, a pattern similarly observed among NSE listed companies. This indicates that conservatism bias leads investors to rely on past performance as a key decision-making criterion, often at the expense of incorporating emerging market data.

Similarly, Giri and Adhikari (2023) demonstrated that conservatism bias significantly affects investment decisions in Nepal, with investors reluctant to update beliefs despite new market trends. This aligns with the present study's findings, suggesting that NSE listed companies also exhibit resistance to adjusting their strategies based on recent market fluctuations.

Barbosa *et al.* (2024) identified conservatism in financial decisions, investment choices, and security selection as key elements influencing investment behavior. Their study found that conservatism bias leads to a preference for familiar assets and an aversion to riskier investments. This concurs with the NSE findings, where conservatism bias has a significant influence on investment decisions, reinforcing the idea that investors may prioritize stability over potential high-risk opportunities.

While conservatism bias has been well-documented in developed and emerging economies, its specific role in Kenya remains underexplored. Existing studies indicate that Kenyan investors often exhibit a preference for historically stable investment

options, resisting changes despite evolving market trends. This study's finding that conservatism bias significantly influences NSE listed companies supports prior observations that local investors rely heavily on past price patterns and historical stock performance when making investment choices.

However, unlike some global studies that emphasize the role of overconfidence alongside conservatism bias (Giri & Adhikari, 2023), NSE listed companies appear to exhibit conservatism bias more prominently. This may be attributed to Kenya's market conditions, including political uncertainty, inflation, and regulatory changes, which reinforce investors' preference for familiar assets. These factors could contribute to a more cautious investment approach, limiting diversification and adaptability to new market opportunities.

The study adds to the limited research on conservatism bias in Kenya by quantifying its effect on NSE listed companies and highlighting its significance in shaping investment decisions. Given the strong influence of conservatism bias, future research should explore its interaction with other behavioral biases, such as risk aversion, herding, and loss aversion. Additionally, further investigation into how local economic and regulatory factors shape conservatism bias among Kenyan investors would provide a more comprehensive understanding of its long-term impact on market efficiency.

The study's findings align with global literature demonstrating that conservatism bias plays a significant role in investment decisions. The positive relationship between conservatism bias and investment decisions at the NSE suggests that Kenyan investors, like those in other emerging markets, exhibit reluctance to adjust their investment strategies based on new information. While this bias may provide stability,

it could also limit market adaptability and diversification, necessitating investor education programs to encourage more balanced decision-making.

**Table 4.13: Behavioral Bias and Investment Decision Regression Model**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observe = | 620 | |
| Group V: NSE | | | | No of G = | 62 | |
| R-square: | | | | Observation per G: | | |
| Within = 0.4614 | | | | minim = | 7 | |
| Between = 0.449 | | | | aver = | 7.0 | |
| overall = 0.417 | | | | maxim = | 7 | |
| | | | | F = | 15.96 | |
| corr(u_i, Xb) = -0.2842 | | | | Prob > chi2 = | 0.0000 | |
| Investment decision | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Herding bias | .210 | .074 | 2.83 | 0.011 | .049 | .570 |
| Overconfidence bias | .458 | .083 | 5.49 | 0.000 | .289 | .374 |
| Regret bias | -.330 | .070 | 4.69 | 0.000 | .191 | .270 |
| Conservatism bias | .233 | .049 | 4.75 | 0.000 | .190 | .277 |
| _cons \| | .295 | .115 | 2.56 | 0.000 | .123 | .532 |

Source: Field data (2024)

The multiple models entail investment decision and the behavioral biasness elements. The model of independent and dependent variable produced an $R^2$=0.4614 implying that 46.14% of the variation in investment decision of NSEs investors is significantly affected by behavioral biasness. In examining the effect of herding bias on investment decision of NSE listed companies in Kenya the study confirmed results below. $Ho_1$: Herding bias has no significant effect on investment decision of NSE listed companies in Kenya. The findings revealed a p-value 0.011<0.05. The study therefore concluded that the effect of herding bias on investment decision of NSE listed companies in Kenya was statistically significant hence rejection of null hypothesis.

In examining the effect of overconfidence bias on investment decision of NSE listed companies in Kenya the study confirmed results below. $Ho_2$: Overconfidence bias has no significant effect on investment decision of NSE listed companies in Kenya. The result obtained from fixed effect model indicated that the corresponding p-value is 0.000 which <0.05. The study found that overconfidence bias had a significant effect on Investment decision of NSE listed companies in Kenya hence rejection of null hypothesis. This confirms that increase in overconfidence bias would result to increase in investment decision of NSE listed companies in Kenya.

In examining the effect of regret bias on investment decision of NSE listed companies in Kenya the study confirmed results below. $Ho_3$: Regret bias has no significant effect on investment decision of NSE listed companies in Kenya. The values for Regret bias was -0.330 shows that a decrease in a given percentage in regret bias makes investment decision to decreased by 0.330. This relationship was further found to be statistically significant since the p-value for Regret bias was 0.000<0.05 hence rejection of null hypothesis.

In examining the effect of conservatism bias on investment decision of NSE listed companies in Kenya the study confirmed results below. $Ho_4$: Conservatism bias has no significant effect on investment decision of NSE listed companies in Kenya. This relationship was further found to be statistically significant since the p-value for conservatism bias was 0.000<0.05 which was less than the adopted significance level of 0.05. The study rejected the null hypothesis that conservatism bias has no significant effect of on investment decision of NSE listed companies in Kenya and concluded that the effect of conservatism bias on investment decision of NSE listed companies was statistically significant. This implies that increase in conservatism bias would results to increase in investment decision of NSE listed companies in Kenya.

### 4.7.5 Risk tolerance on Behavioural biases and Investment decision of NSE listed companies

The study sought to obtain the mediating effect of risk tolerance on the relationship between behavioral biases and investment decision of NSE listed companies in Kenya. The null hypothesis

Ho5: Risk tolerance has no significant mediating effect on the relationship between behavioral biases and investment decision of NSE listed companies in Kenya. To examine the mediating role of risk tolerance in the relationship between behavioral biases and investment decisions of NSE listed companies, a hierarchical regression analysis was conducted. In order to develop behavioral biases, a weighted mean using beta coefficient from the multiple linear regression were used to obtained one variable. The results behavioral biases from the composite mean was used with risk tolerance and investment decision to examine the mediating effect. The composite mean was obtained as follows:

X = 0.210*Z_Herding + 0.458PZ_Overconfidence − 0.330*Z_Regret + 0.233*Z_Conservatism

Mediation was assessed by first evaluating the relationship between behavioral biases (X) and risk tolerance (R), followed by analyzing the impact of risk tolerance on investment decisions, and finally examining the direct effect of behavioral biases on investment decisions.

**Table 4.14: Behavioral Biases and Risk Tolerance Regression Model**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observe = | 620 | |
| Group V: NSE | | | | No of G = | 62 | |
| R-square: | | | | Observation per G: | | |
| Within = 0.5601 | | | | minim = 7 | | |
| Between = 0.3419 | | | | aver = 7.0 | | |
| overall = 0.4234 | | | | maxim = 7 | | |
| | | | | F = 10.73 | | |
| corr(u_i, Xb) = -0.2842 | | | | Prob > chi2 = | 0.0000 | |
| Risk Tolerance | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Behavioral Biases | .560 | .131 | 4. 27 | 0.000 | .349 | .570 |
| _cons \| | .395 | .163 | 2.42 | 0.003 | .243 | .491 |

Source: Field data (2024)

The results indicated a significant positive relationship between behavioral biases and risk tolerance ($p = 0.000$, $p < 0.05$), confirming the first step in the mediation pathway. The $R^2$ value of 0.5601 suggests that behavioral biases explain 56.01% of the variance in risk tolerance among investors. This implies that variations in behavioral biases substantially influence investors' tolerance toward risk. The fitted regression model for this relationship is expressed as:

Risk Tolerance=0.395+0.560(Behavioral Biases).

This model demonstrates that for every one-unit increase in behavioral biases, risk tolerance is predicted to increase by 0.560 units, holding other factors constant.

The second model 7 examined the relationship between behavioral biasness and investment decision as well as the relationship between risk tolerance and investment decision as presented in Table 4.15.

**Table 4.15: Behavioral Biases, Risk Tolerance and investment Decision Regression Model**

| | | | | | | |
|---|---|---|---|---|---|---|
| Fixed-effects (within) regression | | | | No of observe = | 620 | |
| Group V: NSE | | | | No of G = | 62 | |
| R-square: | | | | Observation per G: | | |
| Within = 0.8914 | | | | minim = | 7 | |
| Between = 0.5819 | | | | aver = | 7.0 | |
| overall = 0.7821 | | | | maxim = | 7 | |
| | | | | F = | 77.13 | |
| corr(u_i, Xb) = 0.4842 | | | | Prob > chi2 = | 0.0000 | |
| Investment decision | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| Behavioral Biases | .430 | .031 | 13.871 | 0.000 | .391 | .570 |
| Risk Tolerance | .454 | .028 | 16.214 | 0.000 | .290 | .577 |
| _cons \| | .295 | .115 | 2.560 | 0.003 | .101 | .324 |

Source: Field data (2024)

The regression model indicated that the indirect path between risk tolerance also had a significant positive effect on investment decisions ($p = 0.000$, $p < 0.05$), confirming the second stage of mediation. Additionally, the direct relationship between behavioral biases and investment decisions remained statistically significant ($p = 0.000$, $p < 0.05$), indicating that both behavioral biases and risk tolerance contributed substantially to investment decision-making. The combined effect of these variables explained 89.14% of the variance in investment decisions ($R^2 = 0.8914$). The final regression model was:

Investment Decision=0.295+0.430(Behavioral Biases) +0.454 (Risk Tolerance).

The significant relationships observed in all paths suggest that risk tolerance partially mediates the relationship between behavioral biases and investment decisions among NSE listed companies in Kenya. This implies that while behavioral biases directly influence investment decisions, their effect is also channeled through risk tolerance,

highlighting the critical role of investors' risk preferences in shaping financial decision-making.

**Table 4.16: Effects of Behavioral Biases on Investment Decisions with Risk Tolerance as a Mediator**

| Model | Dependent Variable | Independent Variable(s) | Coefficient (β) | Standard Error (SE) | p-value | $R^2$ | Interpretation |
|---|---|---|---|---|---|---|---|
| Model 1 | Risk Tolerance (R) | Behavioral Biases (X) | 0.560 | 0.131 | 0.000** | 0.56 | Behavioral biases significantly increase investors' risk tolerance. |
| Model 2 | Investment Decision (ID) | Behavioral Biases (X), Risk Tolerance (R) | X = 0.430 R = 0.454 | X = 0.031, R = 0.028 | 0.000** | 0.89 | Risk tolerance partially mediates the relationship between behavioral biases and investment decisions. |

*p<0.05, **p<0.01

Source: Field data (2024)

In ascertaining the mediating role of risk tolerance, the results from Model 1 show that behavioral biases had a statistically significant and positive effect on risk tolerance ($\beta = 0.560$, SE = 0.131, $p < 0.01$). This implies that an increase in behavioral biases leads to a corresponding increase in investors' tolerance for risk. In other words, investors exhibiting greater tendencies toward herding, overconfidence, conservatism, or regret biases are more likely to engage in higher-risk investment behaviors. This finding aligns with Baker and Ricciardi (2014), who noted that behavioral biases often distort risk perception, leading to risk-taking tendencies among investors.

In Model 2, both behavioral biases and risk tolerance were regressed against investment decisions. The results reveal that risk tolerance ($\beta = 0.454$, SE = 0.028, $p < 0.01$) had a significant and positive influence on investment decisions, indicating that as investors' tolerance for risk increases, their likelihood of making active or aggressive investment choices also rises. Additionally, behavioral biases retained a significant direct effect on investment decisions ($\beta = 0.430$, SE = 0.031, $p < 0.01$). The persistence of a significant direct effect, even after introducing the mediator, suggests a partial mediation effect (Baron & Kenny, 1986).

The reduction in the coefficient of behavioral biases from 0.560 in Model 1 to 0.430 in Model 2 confirms that part of the influence of behavioral biases on investment decisions operates indirectly through risk tolerance, while another portion exerts a direct influence. This implies that although behavioral biases directly affect investment behavior, investors' tolerance for risk amplifies or moderates the strength of this relationship. The high explanatory power ($R^2 = 0.89$) of the combined model underscores the substantial predictive value of behavioral and psychological factors in shaping investment decisions.

Overall, these results suggest that risk tolerance serves as a partial mediator between behavioral biases and investment decisions. This finding is consistent with the behavioral finance theory, which posits that cognitive and emotional biases influence investors' risk perception and consequently their financial choices (Kahneman & Tversky, 1979; Pompian, 2012). It also supports Baron and Kenny's (1986) mediation framework, which states that partial mediation occurs when the direct path between the independent and dependent variables remains significant after the mediator is introduced.

The mediating role of risk tolerance suggests that improving investors' risk tolerance may mitigate some negative effects of these biases on their investment decisions. It further agrees with Allameh, Chitsaz, Hosseini and Esfahani (2015) did an investigation on the relationship between behavioral aspect and individual investor performance in Tehran security exchange.

The results support Alame (2020) and Jackson & Orr (2019), who emphasize that risk tolerance is a crucial determinant of investment behavior, shaping how investors respond to uncertainty and future financial prospects. The significant positive relationship between risk tolerance and investment decisions in this study mirrors their assertion that investors with higher risk tolerance are more likely to engage in riskier but potentially more rewarding investments.

Tamara *et al.* (2022) also found that risk tolerance significantly influences investment decisions, alongside herding behavior and financial literacy. The current study confirms this relationship but adds that risk tolerance acts as a mediator, further refining the understanding of how psychological biases translate into investment choices. The findings, however, diverge from Tamara *et al.*in that self-monitoring was not considered as a moderating factor in this study, leaving room for future exploration.

The strong relationship between behavioral biases and risk tolerance in this study aligns with Dickason & Ferreira (2018), who argue that overconfidence bias can influence even conservative investors, affecting their willingness to take risks. The results also support Glaser *et al.* (2013), who found that overconfidence does not necessarily diminish even after repeated financial losses, implying that certain biases can sustain or even heighten risk tolerance over time.

The role of herding behavior, as explored by Messis & Zapranis (2014) and Jaiyeoba & Haron (2016), is also relevant. Their studies suggest that behavioral biases like herding amplify market volatility and distort price formation. The current study's finding that behavioral bias directly influences investment decisions aligns with this literature, as herd mentality often leads investors to make collective, rather than rational, investment choices.

While international studies extensively document risk tolerance and behavioral bias, research on these aspects in Kenya is limited. However, the results align with general observations about Kenyan investors, particularly retail investors, who tend to be risk-averse due to economic and political uncertainties. The preference for stable investment options like government securities and blue-chip stocks suggests that while behavioral biases influence risk tolerance, broader market conditions also play a role.

Anbar & Eker (2013) provide a demographic dimension to risk tolerance, noting that gender significantly affects financial risk-taking, with women exhibiting lower tolerance than men. While the current study does not explicitly examine demographic variations, this could be a valuable area for future research, particularly in the Kenyan context, where financial literacy and access to investment opportunities may differ based on socioeconomic factors.

The study's findings largely concur with existing literature, reinforcing the notion that behavioral biases influence investment decisions both directly and through risk tolerance. However, the Kenyan context presents unique considerations, such as economic instability and limited investor education, which may shape the extent of these effects. Recognizing and addressing behavioral biases through financial

education and risk management strategies can help investors make more rational, well-informed decisions.

**Table 4.17: Summary of hypothesis testing**

| Hypothesis | T-Value | Significant | Decision |
|---|---|---|---|
| $Ho_1$: Herding bias has no significant effects on investment decision of investors at NSE, Kenya | t=2.59 | p=0.040<0.05 | $H_0$ Rejected |
| $H_{02}$: Overconfidence bias has no significant effects on investment decision of investors at NSE, Kenya | t=5.59 | p=0.000<0.05 | $H_0$ Rejected |
| $H_{03}$: Regret bias has no significant effects on investment decision of investors at NSE, Kenya | t=-7.14 | p=0.003<0.05 | $H_0$ Rejected |
| $H_{04}$: Conservatism bias has no significant effects on investment decision of investors at NSE, Kenya | t=4.75 | p=0.000<0.05 | $H_0$ Rejected |
| $H_{04}$: Risk tolerance has no significant mediating effect on investment decision of investors at NSE, Kenya | Path A (t=4.27) Path B (t=16.2) | Path A (p=0.000<0.05) Path B (p=0.000<0.05) | $H_0$ Rejected |

The finding that herding bias significantly impacts investment decisions at the NSE aligns with prior studies globally and regionally. Lakshman (2013) and Chiang (2013)

demonstrated that herding behavior is more pronounced during market volatility and bullish conditions, consistent with the Kenyan context where market inefficiencies and volatility are common. Locally, Nyamute, Lishenga, and Oloko (2015) found that herding positively influences portfolio performance at the NSE, corroborating the study's results. However, regional variations, such as the findings of Khalid *et al.*(2018), suggest that external factors like financial literacy can moderate the effects of herding. This nuanced understanding indicates that while herding is prevalent in Kenya, its effects might be amplified by the unique challenges of an emerging market.

Overconfidence was found to have a positive significant effect on investment decisions at the NSE, aligning with global findings. Studies by Abrar *et al.*(2014) and Bashir *et al.*(2013) emphasize that overconfidence leads to excessive trading and suboptimal decisions, a pattern echoed locally by Nyamute *et al.*(2015). This research highlights how overconfidence can impair rational decision-making by encouraging investors to overestimate their market knowledge. However, while global studies often attribute overconfidence to individual traits, the Kenyan context might reflect a mix of cultural and economic factors that exacerbate this bias. Political instability and fluctuating economic conditions could magnify overconfidence among Kenyan investors, driving them to take undue risks based on perceived market expertise.

Regret's negative impact on investment decisions at the NSE is contrast with findings from Qadri and Shabbir (2014), who noted that regret often leads to conservative investment behavior. However, in Kenya, regret might manifest differently due to unique socio-economic factors. While empirical studies on regret in Kenya remain limited, the high market volatility and instances of political instability likely intensify regret bias, influencing decisions. Investors who experience regret from losses or missed opportunities may adopt more cautious or reactionary strategies, potentially

limiting their long-term portfolio performance. This contrasts with the more structured regret responses observed in developed markets, underscoring the need for further local research.

The positive influence of conservatism on investment decisions aligns with studies like Francis and Martin (2010), which link conservatism to improved investment efficiency. However, conservatism in Kenya might take on a different dimension. Kenyan investors, operating in a relatively nascent and volatile market, may exhibit a heightened preference for secure, familiar investments, avoiding riskier opportunities. This could potentially limit their exposure to high-reward investments, contrasting with more diversified approaches seen in mature markets. Thus, while conservatism promotes prudence, it may also contribute to suboptimal diversification, reinforcing the need for targeted investor education in Kenya.

The significant mediating role of risk tolerance highlights its critical influence in behavioral biases and investment decisions. Studies like Anbar and Eker (2013) and Jackson and Orr (2019) emphasize how risk tolerance varies across demographics and affects decision-making under uncertainty. In Kenya, risk tolerance likely interacts with biases like overconfidence and regret to shape investment behavior. For example, less risk-tolerant investors might amplify the effects of regret bias, while those with higher risk tolerance might exacerbate overconfidence. This finding suggests that understanding and managing individual risk profiles is vital for mitigating the adverse effects of behavioral biases in the NSE's dynamic environment.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

The study employed provided summary of findings, conclusions and recommendations strictly based on investment decision, behavioral biasness and risk tolerance among NSE listed companies in Kenya.

## 5.2 Summary of the Findings

The study ascertained the influence of behavioral biases on investment decision of Kenyan NSE listed companies. From this overall objective, the study specifically examined herding bias, Overconfidence bias, Regret bias, Conservatism bias and risk tolerance mediation. The findings are as follows.

### 5.2.1 Herding bias Effect on Investment decision of NSE listed companies in Kenya

The first objective was to examine the effect of Herding bias on Investment decision of NSE listed companies in Kenya. The Pearson correlation indicated that their existing a weak positive significant correlation between herding bias and investment decision. The panel data revealed a significant positive effect between herding bias and investment decision of NSE listed companies in Kenya. Therefore, the study rejected the null hypothesis that Herding bias had no significant effect on investment decision of NSE listed companies in Kenya since it was found significant.

### 5.2.2 Overconfidence bias effect on Investment decision of NSE listed companies in Kenya

The second objective was to examine the effect of overconfidence bias on investment decision of NSE listed companies in Kenya. Panel data Pearson correlation indicated that overconfidence bias had positive relationship with investment decision. The

results showed a moderate significant positive association between overconfidence bias and investment decision of NSE listed companies in Kenya. The second null hypothesis that overconfidence bias had no significant effect on investment decision of NSE listed companies in Kenya was rejected since it was found significant.

### 5.2.3 Regret bias effect on Investment decision of NSE listed companies in Kenya

The third objective was to examine the effect of regret bias on investment decision of NSE listed companies in Kenya. The Pearson correlation results indicated that regret bias had a strong negative correlation with investment decision. It was also revealed a significant negative association between regret bias and investment decision of NSE listed companies in Kenya. Thus, regret bias has got effect on investment decision of NSE listed companies in Kenya. The third null hypothesis that regret bias had no significant effect on investment decision of NSE listed companies in Kenya was rejected since it was found significant.

### 5.2.4 Conservatism bias effect on Investment decision of NSE listed companies in Kenya

The fourth objective was to examine the effect of conservatism bias on investment decision of NSE listed companies in Kenya. Panel data Pearson correlation results indicated that conservatism bias had moderate positive significant relationship with investment decision. The results revealed a moderate significant positive association between conservatism bias and investment decision of NSE listed companies in Kenya. Thus, conservatism bias has got effect on investment decision of NSE listed companies in Kenya. The fourth null hypothesis that conservatism bias had no significant effect on investment decision of NSE listed companies in Kenya was rejected since it was found significant.

### 5.2.5 Risk tolerance on Behavioural biases and Investment decision

The fifth objective was to examine the mediating effect of risk tolerance on the relationship between behavioral biases and investment decision of NSE listed companies in Kenya. The study found that risk tolerance had a moderate positive correlation with investment decision. Overall, the results indicate that herding bias, overconfidence bias, regret bias and conservatism bias significantly influence risk tolerance, which in turn positively affects investment decisions. Therefore, the study rejected the null hypothesis. Hence, risk tolerance had a mediating role on the relationship between behavioral biases and investment decision.

## 5.3 Conclusion

Basically the findings indicate agreement that behavioural biases had a significant effect on investment decision of NSE listed companies in Kenya. The study concludes that an increase in herding bias would result to significant increase in investment decision of NSE listed companies in Kenya. Therefore, herding bias has significant effect on investment decision of NSE listed companies in Kenya.

The study concludes that an increase in over confidence bias would result to significant increase in investment decision of NSE listed companies in Kenya. Therefore, overconfidence bias has significantly affected investment decision of NSE listed companies in Kenya.

The study concludes that an increase in regret bias would result to significant increase in investment decision of NSE listed companies in Kenya. Therefore, regret bias has significantly affected investment decision of NSE listed companies in Kenya.

The study concludes that an increase in conservatism bias would result to significant increase in investment decision of NSE listed companies in Kenya. Therefore,

conservatism bias has significantly affected investment decision of NSE listed companies in Kenya

The study concludes that an increase in risk tolerance would result to significant increase in the relationship between behavioral biases and investment decision of NSE listed companies in Kenya. Therefore, risk tolerance has a mediating significant effect on the relationship between behavioral biases and investment decision of NSE listed companies in Kenya.

### 5.4 Recommendation

The study recommends that the average return of the market should be the key guide on return dispersion for and effective herd behavior solutions. Investors should have a centralized approach since temporal herd behavior would be ideal that permanent one. NSE listed companies should be considerate on investment decisions they choose

Investors at Nairobi security exchange confidence levels should be guided by trading volume whereby averages for highest volume traded and lowest traded volume should be assed and upon moderate state confidence levels should arise. The study recommends that investors should trust the process and be risk averse at some point.

Nairobi security exchange investors should minimize blames centered on regrets for the past but take them as lessons for future investments. The profits or losses are well in ascertaining difference between future expected return and stock valuation held.

Investors at NSE should avoid ego behavior purposed on defense behavior but concentrate on net book value to market value in guiding investment approaches. Investors should therefore ensure that performance is the guiding principle for their investments.

Investors should assess the winners and losers of shares sold, this would guide in establishing the level of risk tolerance. If the gain outweighs losses, it's worth investment idea. Basically behaviors of investments ought to oscillate on winners and losers.

### 5.5 Contribution to Theory

The findings of this study have significant theoretical, practical, and policy implications for investors, financial advisors, policymakers, and regulators in the Kenyan financial markets, particularly in understanding the role of behavioral biases in investment decision-making.

This study contributes to the field of behavioral finance by providing empirical evidence that behavioral biases significantly influence investment decisions at the Nairobi Securities Exchange (NSE). The confirmation of herding bias, regret bias, and conservatism bias as key determinants of investment decisions reinforces the applicability of behavioral finance theories, such as Prospect Theory and Herding Theory, in explaining investor behavior in emerging markets. Furthermore, the study establishes risk tolerance as a mediating factor in investment decision-making, extending existing behavioral finance literature by demonstrating its critical role in mitigating the effects of biases.

The findings also have practical implications for NSE listed companies, financial advisors, and portfolio managers. Investors should recognize the impact of behavioral biases on their decision-making processes and take proactive steps to mitigate irrational behaviors that may lead to suboptimal investment outcomes. For instance, understanding the effects of herding bias can help investors make independent, well-researched investment choices rather than following market trends blindly. Since risk

tolerance mediates the relationship between behavioral biases and investment decisions, investors should develop personalized risk management strategies to balance emotional and rational decision-making. This can be achieved through diversification, risk profiling, and objective investment analysis rather than relying on intuition or market sentiment. Additionally, financial advisors should incorporate behavioral coaching when advising clients, helping them recognize and manage biases such as regret bias and overconfidence bias. By improving financial literacy and risk assessment approaches, investors can make more informed and strategic decisions.

From a policy standpoint, the study provides insights for financial market regulators, such as the Capital Markets Authority (CMA) of Kenya, on how behavioral biases influence investor behavior and market stability. Given that herding bias significantly affects NSE investment decisions, regulatory frameworks should emphasize market transparency, timely disclosure of information, and investor education programs to prevent excessive speculation and irrational trading. Policymakers should also develop risk-based investment guidelines that encourage investors to adopt long-term investment strategies rather than making impulsive decisions based on short-term market movements. Moreover, government and financial institutions should integrate behavioral finance principles into financial literacy initiatives to help investors identify and counteract common psychological biases affecting their investment choices.

This study opens up several avenues for future research. Future studies should examine the influence of behavioral biases on institutional investors, as this study focused primarily on individual NSE listed companies. Additional research could explore a broader range of behavioral biases, such as confirmation bias, anchoring

bias, loss aversion, and the framing effect, to gain a more comprehensive understanding of investor behavior. Furthermore, cross-market studies comparing behavioral biases across different stock exchanges in Africa could provide insights into whether these biases are culturally or regionally influenced. Therefore, the study highlights the profound impact of behavioral biases on investment decision-making and the crucial mediating role of risk tolerance. Addressing these biases through investor education, risk assessment frameworks, and regulatory interventions can enhance market efficiency and promote rational investment behavior at the Nairobi Securities Exchange.

### 5.6 Suggestion for Further Studies

This study focused specifically on NSE listed companies, excluding individual investors. This limitation presents a gap for further research, as future studies could explore behavioral biases among a broader range of investors, such as non-listed institutional investors, retail investors outside the NSE, or investors in different financial markets.

Additionally, behavioral biases are diverse, and this study did not cover all possible biases. Future research could focus on specific biases such as Confirmation Bias, Anchoring Bias, Hindsight Bias, Availability Heuristic, Loss Aversion, Framing Effect, Sunk Cost Fallacy, Bandwagon Effect, and Self-Serving Bias. Investigating these biases in different investment contexts would enhance the understanding of behavioral finance and provide deeper insights into how psychological factors influence investment decisions.

## REFERENCES


Afego, P. N. (2015). Market efficiency in developing African stock markets: what do we know? *The Journal of Developing Areas*, 49(1), 243-266.

Ahammed, Y. & Tazminur, S. (2024). Exploring the Sense of Overconfidence Bias on Investment Decisions: Insight from The Retail Investors of Bangladesh. *International Journal of Management, Accounting and Economics*, 11(4), 350-370.

Ahmad, M. (2021). The role of recognition-based heuristics in investment management activities: are expert investors immune? A systematic literature review. *Qualitative Research in Financial Markets*. 321-329.

Ahmad, M., & Shah, S. Z. A. (2020). Overconfidence heuristic-driven bias in investment decision-making and performance: mediating effects of risk perception and mediating effects of financial literacy. *Journal of Economic and Administrative Sciences*. 1-14.

Alkordi, A., Al-Nimer, M., & Dabaghia, M. (2017). Accounting conservatism and ownership structure effect: Evidence from industrial and financial Jordanian listed companies. *International Journal of Economics and Financial Issues*, 7(2), 608-619.

Ankomah, K. (2022). *Cultural Adherence, Personal Financial Behaviour and Investment Decision Making* (Doctoral dissertation, University of Cape Coast).

Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches,* 6(5), 76-89.

Azar, K. H. (2025). Exploring the Cognitive Systems and its Distortion. *Journal of Preventive,* 6(1), 29-45.

Barberis, N. & Thaler R. H., (2003). *A Survey of Behavioural Finance, A Handbook of the Economics of Finance.* Amsterdam: Elsevier Science.

Barberis, N. and Thaler R. (2001). A survey of behavioral finance. *Handbook of the Economics of Finance, (1),* 1053-1128.

Barbosa, S., Nobre, C., Nobre, N. & Bento, S., (2024). Conservative bias and endowment effect in investment decision-making process: Development and validation of scale. *RGSA – Revista de Gestão Social e Ambiental,* 8(7), 1-22.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bashir, T., Azam, M. S., Butt, M. S., Javed, M. S., & Tanvir, M. S. (2013). Are behavioral biases influenced by demographic characteristics &personality traits? Evidence from Pakistan. *European Scientific Journal*, *9*(29), 277–293.

Bashir, T., Rasheed, U., Raftar, S., Fatima, S. &Maqsood, M. (2013). Impact of Behavioural Biases on Investors Decision Making: Male and Female. *Journal of Business and Management*, 10 (3): 60-68.

Bunyamin, M. (2022). The Influence of financial behaviour on financial risk tolerance in investment decision: a conceptual paper. *International Journal of Industrial Management| Jul.*

Cameron, A. C., & Trivedi, P. K. (2010). *Microeconometrics Using Stata* (Rev. ed.). Stata Press.

Chauhan, R., & Patel, N. (2024). Unraveling investor behavior: Exploring the influence of behavioral finance on investment decision-making. *Journal of Economics, Assets, and Evaluation,* 1(4), 1-13.

Chelangat, N., Kiprop, S. & Tanui, J. (2018). Influence of Herding Behavior on Investment Decision of SMEs in Bomet County, Kenya. *East African Scholars Journal of Economics, Business and Management.* 1(2), 34-39.

Cherono, I., (2018), *Effect of Investor Behaviour on stock Market Reaction.* Unpublished PhD Project, Jomo Kenyatta University of Agriculture and Technology.

Chiang, T. C., Li, J., & Tan, L. (2010). Empirical investigation of herding behavior in Chinese stock markets: Evidence from quantile regression analysis. *Global Finance Journal*, *21*(1), 111-124.

Clarke, S. (2017). A prospect theory approach to understanding conservatism. *Philosophia*, 45(2), 551-568.

CMA Quarterly Capital Markets Statistical Bulletin – Q1.2020.

De Bondt, W. F., & Thaler, R. (1985). Does the stock market overreact? *The Journal of finance*, *40*(3), 793-805.

De Bondt, W., Muradoglu, G., Shefrin, H., and Staikouras, S. K. (2008). Behavioral finance: Quo vadis? *Journal of Applied Finance,* 18(2), 7-21.

Dehalwar, K., & Sharma, S. N. (2023). *Fundamentals of research writing and uses of research methodologies.* Edupedia Publications Pvt Ltd.

Demirer, R., & Kutan, A., 2006. "Does herding behavior exist in Chinese stock markets?" *Journal of International Financial Markets, Institutions and Money, Elsevier*, 16(2), 123-142.

Dhiman, B., & Raheja, S. (2018). Do personality traits and emotional intelligence of investors determine their risk tolerance? *Management and Labour Studies*, 43(1-2), 88-99.

Edison, E. & Aisyah, H. (2023). The Effect of Regret Experienced in Investment Decision: An Experimental Study. *International Journal of Asian Business and Management (IJABM*). 2(1), 85-98.

Feld, J., Sauermann, J., & De Grip, A. (2017). Estimating the relationship between skill and overconfidence. *Journal of behavioral and experimental economics*, 68, 18-24.

Ferenčak, M., Dobromirov, D., Radišić, M., & Takači, A. (2018). Aversion to a sure loss: turning investors into gamblers. Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu, 36(2), 537-557.

Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). Sage Publications.

Finke, M. S., & Guillemette, M. A. (2016). Measuring Risk Tolerance: A Review of Literature. *Journal of Personal Finance*, 15(1).

Francis, J. R., and Martin, X. (2010). Acquisition profitability and timely loss recognition. *Journal of accounting and economics*, *49*(1), 161-162.

Froot, K.A., Scharfstein, D.S., & Stein, J.C. (1992). Herd on the street: Informational inefficiencies in a market with short‐term speculation. *The Journal of Finance*, *47*(4), 1461-1484.

Gabhane, D., Sharma, A., & Mukherjee, R. (2023). Behavioral finance: exploring the influence of cognitive biases on investment decisions. *Boletin de Literatura Oral-The Literary Journal,* 10(1), 3133-3141.

Giri, B. & Adhikari, S. (2023). The influence of conservatism and overconfidence on investment decisions among investors in Nepali stock market. *Journal of Emerging Management Studies*, 1(1), 20-36.

Gleißner, W., Günther, T., & Walkshäusl, C. (2022). Financial sustainability: measurement and empirical evidence. *Journal of Business Economics*, 92(3), 467-516.

Greene, W. (2012) *Econometric Analysis 7th Edition.* Prentice Hall, Upper Saddle River.

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). McGraw-Hill.

Gupta, I., & Garg, V. (2025). Overconfidence and Its Consequences in Financial Markets. In *Unveiling Investor Biases That Shape Market Dynamics* (pp. 195-224). IGI Global Scientific Publishing.

Gurung, R., Dahal, R. K., Ghimire, B., & Koirala, N. (2024). Unraveling behavioral biases in decision making: A study of Nepalese investors. *Investment Management & Financial Innovations,* 21(1), 25.

Gurung, S. (2024). *Factors Affecting the Investment Decision of Individual Investors of Pokhara Metropolitan City*. (Doctoral dissertation, Shanker Dev Campus).

Hair Jr., J.F., *et al.*(2014) Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review*, 26,106-121.https://doi.org/10.1108/EBR-10-2013-0128

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage Learning.

Hoffmann, A. O., Post, T., & Pennings, J. M. (2015). How investor perceptions drive actual trading and risk-taking behavior. *Journal of Behavioral Finance*, 16(1), 94-103.

Hoffrage, U. (2022). Overconfidence. *Cognitive Illusions,* 287-306.

Ismail, E. A., & Medhat, M. I. (2019). What determines Venture Capital investment decisions? Evidence from the emerging VC market in Egypt. *The Journal of Entrepreneurial Finance,* 21(2), 1.

Jain, N. & Kesari, B. (2022). *The Impact of Behavioral Biases on Financial Risk Tolerance of Investor and Their Decision Making.* Maulana Azad National Institute of Technology, India.

Jaiyeoba, H. B. (2025). Behavioural Finance Explained: Understanding Biases, Heuristics, and Risk Behaviour. *Journal of Entrepreneurship and Business Sustainability,* 1(1), 1-19.

Joo, B. A., & Durri, K. (2015). Comprehensive review of literature on behavioural finance. *Indian Journal of Commerce and Management Studies*, *6*(2), 11.

Kafayat, A. (2014). Interrelationship of biases: effect investment decisions ultimately. *Theoretical and Applied Economics*, *21*(6 (595)), 85-110

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica. *Journal of the Econometric Society,* 6 (7), 263-291.

Kahneman, D., & Tversky, A. (1982). Variants of uncertainty. *Cognition*, *11*(2), 143-157.

Kamarudin, K. A., Islam, A., Habib, A., & Wan Ismail, W. A. (2022). Auditor switching, lowballing and conditional conservatism: evidence from selected Asian countries. *Managerial Auditing Journal*, 37(2), 224-254.

Kameda, T., & Hastie, R. (2015). Herd behavior. Emerging trends in the social and behavioral sciences: *An interdisciplinary, searchable, and linkable resource*, 1-14.

Karna, A. K. (2020). *Creating Convergence of Classical and Behavioral Finance Theories to Strengthen Investor Foresight* (Doctoral dissertation, Northcentral University).

Keith, H. and Wong, S.C. (2006) Measurement of Soil CO2 Efflux Using Soda Lime Absorption: Both Quantitative and Reliable. Soil Biology & Biochemistry, 38, 1121-1131

Kevin, S. (2022). *Security analysis and portfolio management.* PHI Learning Pvt. Ltd..

Kishore, R. (2004). Theory of behavioural finance and its application to property market.*A change in paradigm, twelfth annual pacific rim real estate society conference (1-17).* Auckland, New Zealand.

Kombo, D. K., & Tromp, D. L. A. (2006). *Proposal and Thesis Writing: An Introduction.* Paulines Publications Africa.

Kombo, D. K., & Tromp, L. A. (2006). *Proposal & Thesis Writing.* Nairobi: Pauline Publishers.

Kommalapati, M. (2024). *Managerial Overconfidence and Corporate Investment Decision-Making: Theoretical and Empirical Studies* (Doctoral dissertation, Birmingham City University).

Lepone, G. (2016). *Retail investor behavioural biases, the causes and impacts: evidence from equity markets* (Doctoral dissertation, Macquarie University).

Letkiewicz, J. (2018). Heuristics and biases. *Client Psychology*, 25-42.

Likudie, P. Y. M. (2020). *Risk tolerance and investment choices among the youth in Ghana.* (Doctoral dissertation).

Li-Kuehne, M. (2021). *The impact of community social capital and trust on levels of accounting conservatism.* University of Wisconsin-Whitewater.

Lilu, A. H. (2024). *Effect of Regret Aversion on Investment Decisions of Real Estate Investors in Mombasa County, Kenya* (Doctoral dissertation, University of Nairobi).

Lippi, A., &Rossi, S., (2020) Run for the hills: Italian investors risk appetite before and during the financial crisis. *International Journal of Bank Marketing,*38(5),1195-1213.

Loang, O. K. (2025). *Why Do Investors Act Irrationally? Behavioral Biases of Herding, Overconfidence, and Overreaction*. Vernon Press.

Mahina, J. N., Muturi, W. M., and Memba, F. S (2017). *Influence of Loss Aversion Bias on Investments at The Rwanda Stock Exchange*.

Malik, M. A. S., Zafar, M., Ullah, S., & Ullah, A. (2021). Role of behavioral biases in real estate prices in Pakistan. *Real Estate Management and Valuation*, 29(1), 41-53.

Malik, M., Hanif, M. & Azhar, M. (2019). The Impact of Overconfidence Bias on Investment Decisions: Mediating Role of Risk Tolerance. *International Journal of Research and Innovation in Social Science* (IJRISS), III(VIII), 154-160.

Marinelli, N., Mazzoli, C., & Palmucci, F. (2017). Mind the gap: Inconsistencies between subjective and objective financial risk tolerance. *Journal of Behavioral Finance,* 18(2), 219-230.

Markowitz, H. (1952) 'Portfolio Selection'. *Journal of Finance,*7(1), 77-91

Masema, E. W. (2019). *Effect of Herding Behaviour on Market Performance of Insurance Companies Listed On Nairobi Securities Exchange* (Doctoral dissertation, University of Nairobi).

Mbaluka, P., Muthama, C., and Kalunda, E. (2012). Prospect theory: Test of framing and loss aversion effects on investors' decision-making process at Nairobi Securities Exchange, Kenya. *Research Journal of Finance and Accounting*, 3(9), 31-40.

Mushinada, V. N. C., & Veluri, V. S. S. (2018). Investors overconfidence behaviour at Bombay stock exchange. *International Journal of Managerial Finance*, 14(5), 613-632.

Naseem, S., Mohsin, M., Hui, W., Liyan, G., & Penglai, K. (2016). The investor psychology and stock market behavior during the initial era of COVID-19: a study of China, Japan, and the United States. *Frontiers in Psychology*, *12*, 16.

Nguyen, L. T. M., Nguyen, P. T., Tran, Q. N. N., & Trinh, T. T. G. (2022). Why does subjective financial literacy hinder retirement saving? The mediating roles of risk tolerance and risk perception. *Review of Behavioral Finance,* 14(5), 627-645.

NSE (2020). Integrated Report and Financial Statement 2020. Nairobi: NSE.

Nyamute, W., Lishenga, J. & Oloko, M. (2015). The Effect of Investment Style on Portfolio Performance: Evidence from the Nairobi Securities Exchange. *International Journal of Multidisciplinary Research and Development,*2(5): 552-554.

Ooi, K. L., Binti Ab Aziz, N., & Lau, W. Y. (2025). Psychological Drivers of Herding. In Following the Crowd: *Psychological Drivers of Herding and Market Overreaction* (pp. 57-68). Singapore: Springer Nature Singapore.

Osei-Assibey, E., & Adu, C. (2020). Socio-economic determinants of academic performance of mature students in Ghana: a case study of University of Ghana entrance examinations. *Ghana Journal of Higher Education,* 6(1), 90-113.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association, 94*(446), 621-634.

Pikulina, E., Renneboog, L., & Tobler, P. N. (2017). Overconfidence and investment: An experimental approach. *Journal of Corporate Finance,* 43, 175-192.

Pompian, M. (2016). Risk Profiling through a Behavioral Finance Lens. *CFA Institute Research Foundation Briefs,*2(1), 1-13.

Pompian, M. M. (2017). *Behavioral Finance and Investor Types: Managing Behavior to Make Better Investment Decisions.* Wiley Finance.

Prieto, P. M., & Perote, J. (2017). Agents' Behavior in Market Bubbles: Herding and Information Effects. *Economics,* 5(1), 44-51.

Puaschunder, J. (2022). Financial Behavioralism: A Behavioral Finance Approach to Minimize Losses and Maximize Profits from Heuristics and Biases. In *Advances in Behavioral Economics and Finance Leadership: Strategic Leadership, Wise Followership and Conscientious Usership in the Digital Century* (pp. 97-119). Cham: Springer International Publishing.

Qadri, S. U., & Shabbir, M. (2014). An Empirical Study of Overconfidence and Illusion of Control Biases, Impact on Investor's Decision Making: An Evidence from ISE. *European Journal of Business and Management,* 6(14), 38-44.

Rahim, A., Shah, M. & Aamir, A. (2019). Impact of Conservatism Bias Effect on Investment Decisions of Pakistani Stock Investor. *City University Research Journal,* 09 (01), 85-97.

Ramiah, V., Xu, X., & Moosa, I. A. (2015). Neoclassical finance, behavioral finance and noise traders: A review and assessment of the literature. *International Review of Financial Analysis*, *41*, 89-100.

Ritter, J. (2003). Behavioural Finance Pacific-Basin. *Finance Journal,* 11(4), 429-437.

Saeed, K. (2019). Impact of Heuristic Biases on Investment Decision Locus of Control Playing a Mediating Role. Available at *SSRN 3499658*

Shah, T., Naveed, H. & Hussain, I. (2024). The Effect of Herding Behavior on Investment Decision: Moderating Effect of Over-Confidence. *Qlantic Journal of Social Sciences and Humanities*, 5(3), 132-146.

Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of finance*, *40*(3), 777-790.

Sheikh, S. A. (2025). *The Effects of cognitive biases on investment decisions among retail investors at the Nairobi Securities Exchange*. Nairobi: Doctoral dissertation, Strathmore University.

Shiller, R. (2000). *Irrational Exuberance.* New Jersey: Princeton University Press

Shrestha, N. (2019). Overconfidence and Investment Decisions in Nepalese Stock Market. *PYC Nepal Journal of Management,* XII(1), 27-37.

Shunmugathangam, P. (2017). Investment Decision Making for Small Individual Investors–A Study with Special Reference to Tirunelveli District. *International Research Journal of Engineering and Technology*, 4(11), 1257-1261.

Singh, P. (2025). Behavioral Biases in Real Estate Markets. In *Unveiling Investor Biases That Shape Market Dynamics* (pp. 1-42). IGI Global Scientific Publishing.

Sitinjak, E. L. M., Haryanti, K., Sasmito, Y. W. D., & Kurniasari, W. (2021, July). Investor style in stock investment decisions. In *2021 International Conference on Computer & Information Sciences (ICCOINS)* (pp. 252-257). IEEE.

Sivarajan, S. S. (2019). *Risk tolerance, return expectations and other factors impacting investment decisions.* The University of Manchester (United Kingdom).

Skagerlund, K., Forsblad, M., Slovic, P., & Västfjäll, D. (2020). The affect heuristic and risk perception–stability across elicitation methods and individual cognitive abilities. *Frontiers in psychology*, *11*, 970.

Statman, M. (2008, September). Countries and culture in behavioral finance. In *CFA Institute Conference Proceedings Quarterly* (25(3) 38-44). CFA Institute.

Statman, M. (2019). *Behavioral Finance: The Second Generation.* CFA Institute Research Foundation.

Tamara, D., Arianto, A., Marzuki, E. & Zulhamdani, A. (2022). The Effect of Financial Literacy, Herding Behavior and Risk Tolerance on Investment Decisions. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal),* 5(4), 30259-30271.

Thaler, R. H. (Ed.). (2005). *Advances in behavioral finance* (Vol. 2). Princeton: Princeton University Press.

Thaler.R. and Shefrin, H. (1981), An economic theory of self-control. *Journal of Political Economy,* 89 (2), 392-410.

Toma, F. M. (2015). Behavioral biases of the investment decisions of Romanian investors on the Bucharest Stock Exchange. *Procedia Economics and Finance*, *32,* 200–207. https://doi.org/10.1016/S2212-5671(15)01383-0

Tripathy, L. M. (2014). *Investigating the traits of investors in Ho Chi Minh Stock Exchange market*. Unpublished PhD dissertation, Vietnam: International University HCMC.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty.*Heuristicsand Biases Science*, 185(4157), 1124-1131.

Ullah, I., Ullah. A., & Rehman, N. U., (2017). Impact of overconfidence and optimism on investment decision.*International Journal of Information, Business, and Management*, *9*(2), 231–243. http://ejournal.ukrida.ac.id/ojs/index.php/Akun/article/download/1802/1821/

Ullah, K. (2020). Impact of herding on individual investor's investment decision. *Ilkogretim Online - Elementary Education Online,* 19 (3), 3747 3753.

Wamae, J., N., (2013). Behavioral factors influencing investment decision in stock market: A survey of investment banks in Kenya. *International Journal of Social Sciences and Entrepreneurship 1*(6), 68-83.

Wang, P., & Nuangjamnong, C. (2022). Determinant Factors of Overconfidence, Herding Behavior, and Investor Elements on Investment Decision Making in China. *Universal Journal of Financial Economics,* 1(1), 23-42.

Waweru, N., M., Munyoki, E.,& Uliana, E. (2008). "The effects of behavioral factors in investment decision-making: a survey of institutional investors operating at the Nairobi stock exchange."*International Journal of Business and Emerging Markets*, 1(1),24-41.

Weber, E. U., & Klement, J. (2018). *Risk tolerance and circumstances.* CFA Institute Research Foundation.

Weber, M., & Camerer, C., F., (1998). The Disposition Effect in Securities Trading: An Experimental Analysis. *Journal of Economic Behavior and Organization*, 33(2), 167-184.

Weru, G., (2019). Effect of Behavioural Biases on Investment Decision for Structured Products by Retail Investors at Nairobi Securities Exchange

Wolk, Harry. I, J. L. Dodd, and M. G. Tearney, (2014), *"Accounting Theory: A Conceptual and Institutional Approach", 5th edition.* South-Western.

Wooldridge, J. M. (2019). *Introductory Econometrics: A Modern Approach* (7th ed.). Cengage Learning.

Yoe, C. (2019). *Principles of risk analysis: decision making under uncertainty.* CRC press.

Zahera, S. A., & Bansal, R. (2018). Do investors exhibit behavioral biases in investment decision making? A systematic review. *Qualitative Research in Financial Markets,* 10(2), 210-251.

Zamfir, M., Manea, M. D., & Ionescu, L. (2016). Return on investment–indicator for measuring the profitability of invested capital. *Valahian Journal of Economic Studies,* 7(2), 79-86.

Zhong, Y., & Li, W. (2017). Accounting conservatism: A literature review. *Australian Accounting Review,* 27(2), 195-213.

## APPENDICES

### Appendix I: List of quoted companies in Kenya

A. AGRICULTURAL

Eagaads Ltd

Kapchorua Tea Kenya Plc

Kakuzi Plc

Limuru Tea Company Ltd

Sasini Plc

Williamson Tea Kenya Plc

B. AUTOMOBILE &ACCESSORIES

Car &General (K) ltd

C. BANKING

ABSA Bank Kenya Plc

Stanbic Holding Ltd

I&M Holding Plc

Diamond Trust Bank Kenya Ltd

HF Group Plc

KCB Group Plc

NCBA Group Plc

Standard Chartered Bank Kenya Ltd

Equity Group Holding Plc

The Co-operative Bank of Kenya Ltd

E. COMMERCIAL & SERVICE

Express Kenya Plc

Kenya Airways Ltd

Nation Media Group Plc

Standard Group Plc

TPS Eastern Africa (Serena) Ltd

WPP Scan Group Plc

Uchumi Super market

Eveready East Africa ltd

Longhorn Publisher Plc

Deacons (East Africa) Plc

Sameer Africa Plc

Nairobi Business Venture Ltd

Homeboyz Entertainment Plc

F. CONTRUCTION&ALLIED

ARM Cement Plc.

Bamburi Cement Plc.

Crown Paints Kenya Plc

E.A Cables Ltd

E.A Portland Cement Ltd.

G. ENERGY &PETROLEUM

Total Kenya Ltd

Kengen Plc

Kenya Power Ltd

Umeme Ltd

H. INSURANCE

Jubilee Holding Ltd

Sanlam Kenya Plc

Kenya Re-Insurance Corporation Ltd

Liberty Kenya Holdings

Britam Holding Plc

CIC Insurance Group Ltd

I. INVESTMENT

Olympia Capitals Holding Ltd.

Centum Investment Plc

Trans-Century Plc

Home Africa Ltd

Kurwitu Venture Ltd

J. INVESTMENT SERVICES

Nairobi Security Exchange Plc

K. MANUFACTURING &ALLIED

B.O.C Kenya Plc.

B.A.T Kenya Plc.

Carbacid Investment Plc

E.A.B.L Ltd.

Mumias Sugar Company Ltd

Unga Group Ltd.

Kenya Orchards Ltd

Flame Tree Group Holding Ltd

L. TELECOMMUNICATION

Safaricom Plc.

M. REAL ESTATE INVESTMENT TRUST(REIT)

ILAM-Fahari I-REIT

N. EXCHANGE TRADED FUNDS

ABSA New Gold ETF

## Appendix II: Data collection tool

Herd behaviour

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

Return of Assets

Average return of the market

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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B Regret Aversion

Future expected return in one year lead

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

Stock valuation held by listed companies

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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Overconfidence

Highest volume traded

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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Lowest volume traded

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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iii) High or low volume traded after one month

C) Risk Tolerance i) Winners shares sold

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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Losers shares sold

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

D) Conservatism

i) Net Book value of assets

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

Market Book value of stocks

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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E) Decision making

i) Value of ending investment

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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Value of initial investment

| Company | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
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## Appendix III: Raw Data

| | | Herding | | Return Dispersion: Average return of the market | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FIRM NSE | M 2014 | M 2015 | M 2016 | (M) 2017 | M 2018 | M 2019 | M 2020 | 2021 | 2022 | 2023 |
| 1 | Eagaads Ltd | 36.45353533 | 39.09142 | 67.46796 | 41.87111 | 25.32645 | 25.85252 | 31.51189 | 31.15565 | 32.36337 | 34.37858 |
| 2 | Kapchorua Tea Kenya Plc | 34.10379535 | 36.01206 | 34.17185 | 37.28425 | 24.11557 | 27.29803 | 27.43433 | 30.16333 | 31.67342 | 34.69166 |
| 3 | Kakuzi Plc | 35.92736719 | 36.05977 | 35.79069 | 36.95888 | 32.35516 | 32.71407 | 30.53118 | 31.32155 | 39.66898 | 40.1625 |
| 4 | Limuru Tea Company Ltd | 33.65245739 | 38.56876 | 32.65211 | 39.42701 | 31.16597 | 31.16597 | 14.46273 | 30.04727 | 39.3627 | 39.87111 |
| 5 | Sasini Plc | 34.0267288 | 36.80892 | 35.56164 | 40.28762 | 28.8179 | 29.31979 | 25.64492 | 28.59822 | 33.47544 | 34.07528 |
| 6 | Williamson Tea Kenya Plc | 34.45286462 | 36.56677 | 30.34852 | 31.74184 | 29.98602 | 31.26065 | 28.92977 | 22.21262 | 31.45329 | 33.62836 |
| 7 | Car &General (K) ltd | 34.00169535 | 35.42115 | 33.06969 | 39.94786 | 30.7528 | 32.1696 | 22.7794 | 27.70364 | 40.16548 | 40.54912 |
| 8 | ABSA Bank Kenya Plc | 32.72754269 | 34.85188 | 34.44582 | 38.34729 | 25.30768 | 27.44755 | 27.50634 | 31.14779 | 31.81487 | 32.88711 |
| 9 | Stanbic Holding Ltd | 31.54896488 | 35.95528 | 33.15848 | 37.77469 | 22.56396 | 25.20164 | 25.43973 | 29.18164 | 26.89717 | 27.27314 |
| 10 | I&M Holding Plc | 39.62406823 | 39.93778 | 30.41419 | 38.96307 | 30.07153 | 30.60483 | 25.57792 | 32.14173 | 34.16569 | 34.46134 |
| 11 | Diamond Trust Bank Kenya Ltd | 27.45658185 | 32.54698 | 30.74474 | 27.62012 | 23.31864 | 25.11654 | 29.23463 | 28.91123 | 33.88549 | 34.07971 |
| 12 | HF Group Plc | 29.6168613 | 30.48156 | 27.0451 | 30.5527 | 25.94267 | 26.37961 | 22.63019 | 30.7216 | 24.70655 | 28.22548 |
| 13 | KCB Group Plc | 32.8319997 | 33.2192 | 37.39471 | 39.50755 | 38.93794 | 39.00549 | 13.07961 | 38.21156 | 25.65142 | 26.92536 |
| 14 | NCBA Group Plc | 34.73332496 | 30.09331 | 30.56106 | 33.19529 | 37.05822 | 37.20712 | 1.235361 | 41.27161 | 13.5329 | 16.4625 |
| 15 | Standard Chartered Bank Kenya Ltd | 33.0632919 | 37.34036 | 21.82741 | 34.49877 | 31.24317 | 31.56949 | 30.49975 | 30.89165 | 28.24313 | 28.36653 |
| 16 | Equity Group Holding Plc | 25.81819126 | 29.51376 | 32.40662 | 29.76711 | 37.12793 | 39.27375 | 36.44589 | 39.94815 | 33.40726 | 33.75251 |
| 17 | The Co-operative Bank Of Kenya Ltd | 38.13090399 | 28.49226 | 30.33961 | 29.76609 | 35.77978 | 40.17032 | 33.70404 | 37.74453 | 30.33242 | 30.57492 |
| 18 | Express Kenya Plc | 26.43505004 | 26.74395 | 37.73237 | 30.78474 | 34.04899 | 34.98869 | 36.28455 | 40.10506 | 25.17421 | 25.34876 |
| 19 | Kenya Airways Ltd | 33.44755017 | 38.22193 | 30.30782 | 33.33287 | 34.22886 | 35.85897 | 35.085 | 39.28968 | 24.80548 | 26.33294 |
| 20 | Nation Media Group Plc | 24.19499999 | 28.07985 | 38.34631 | 34.7875 | 35.68164 | 37.89505 | 35.26081 | 39.37216 | 27.49215 | 27.77074 |
| 21 | Standard Group Plc | 28.30400462 | 31.74585 | 28.33067 | 29.1869 | 34.54927 | 36.19621 | 33.53109 | 38.04957 | 31.97983 | 32.26595 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | TPS Eastern Africa(Serena)Ltd | 29.72649646 | 25.74086 | 25.58713 | 27.63076 | 33.36898 | 34.90702 | 33.83584 | 34.19464 | 32.12212 | 32.12212 |
| 23 | WPP Scan Group Plc | 28.66137583 | 27.04826 | 31.26582 | 28.86028 | 34.87584 | 37.66826 | 32.64548 | 39.35543 | 24.5283 | 25.84047 |
| 24 | Uchumi Super market | 31.04629621 | 29.1071 | 26.75077 | 28.89817 | 34.35971 | 35.41774 | 32.94136 | 41.21596 | 30.53222 | 31.0237 |
| 25 | Eveready East Africa ltd | 34.38103131 | 30.38711 | 26.94588 | 28.45323 | 30.13489 | 33.62491 | 37.32183 | 37.27536 | 22.53433 | 25.93419 |
| 26 | Longhorn Publisher Plc | 24.1824775 | 32.53117 | 20.7375 | 25.30673 | 38.7989 | 39.26206 | 50.60403 | 56.74859 | 41.93809 | 41.93809 |
| 27 | Deacons(East Africa) Plc | 33.41342427 | 35.12168 | 27.36441 | 33.85523 | 38.32983 | 38.70738 | 35.83877 | 39.04144 | 43.03511 | 43.03511 |
| 28 | Sameer Africa Plc | 33.39408012 | 31.40297 | 17.74557 | 39.73661 | 31.54245 | 33.64952 | 34.15553 | 34.23461 | 29.42335 | 29.51623 |
| 29 | Nairobi Business Venture Ltd | 29.97828254 | 32.23082 | 22.37383 | 19.28617 | 26.22241 | 26.68494 | 35.26715 | 36.80033 | 30.96327 | 31.16899 |
| 30 | Homeboyz Entertainment Plc | 25.81758887 | 28.46438 | 24.79457 | 22.49421 | 33.39355 | 34.49941 | 29.64901 | 36.09328 | 25.49434 | 27.66944 |
| 31 | ARM Cement Plc. | 23.15770107 | 32.122 | 23.52406 | 25.50742 | 37.83751 | 38.28577 | 38.85238 | 30.94912 | 10.23798 | 15.18292 |
| 32 | Bamburi Cement Plc. | 28.68981849 | 25.19834 | 30.06014 | 28.89505 | 28.1131 | 29.33724 | 35.05834 | 32.62536 | 37.31643 | 38.40923 |
| 33 | Crown Paints Kenya Plc | 27.72191895 | 24.30546 | 30.1827 | 27.96188 | 29.64472 | 30.53096 | 35.74691 | 36.80499 | 34.28435 | 34.28435 |
| 34 | E.A Cables Ltd | 28.63363876 | 19.93221 | 32.7713 | 27.85173 | 27.51463 | 31.04759 | 26.23916 | 34.79028 | 34.98738 | 43.85626 |
| 35 | E.A Portland Cement Ltd. | 36.90888375 | 29.47473 | 24.9398 | 25.81867 | 31.92892 | 32.18294 | 37.94129 | 38.21469 | 36.77979 | 38.29631 |
| 36 | Total Kenya Ltd | 27.80805188 | 31.15908 | 22.70058 | 31.20195 | 31.09347 | 31.40253 | 31.92827 | 29.10184 | 33.85432 | 35.50504 |
| 37 | Kengen Plc | 17.91867882 | 29.78322 | 26.98707 | 23.45482 | 27.57747 | 27.62805 | 29.96592 | 27.59691 | 35.17641 | 37.27259 |
| 38 | Kenya Power Ltd | 29.7199123 | 39.55327 | 19.49801 | 33.01549 | 30.12965 | 30.17111 | 33.95387 | 33.32807 | 35.61892 | 36.19254 |
| 39 | Umeme Ltd | 20.73480676 | 25.44447 | 16.71252 | 44.11845 | 32.16558 | 32.56159 | 28.53138 | 33.47753 | 33.08965 | 35.25507 |
| 40 | Jubilee Holding Ltd | 34.54758492 | 35.699 | 37.21253 | 41.08443 | 40.2788 | 40.49732 | 11.02575 | 37.59753 | 35.00678 | 36.18442 |
| 41 | Sanlam Kenya Plc | 34.15782852 | 35.48272 | 34.0234 | 37.31049 | 33.52143 | 33.83769 | 30.75696 | 36.23788 | 33.54244 | 34.79476 |
| 42 | Kenya Re-Insurance Corporation Ltd | 34.05628984 | 38.95379 | 33.58338 | 38.1835 | 27.85268 | 28.23484 | 30.37028 | 29.8189 | 40.18487 | 33.26186 |
| 43 | Liberty Kenya Holdings | 34.20531894 | 36.09331 | 35.08773 | 39.27325 | 28.45205 | 28.61403 | 33.30872 | 34.70264 | 41.96644 | 33.81003 |
| 44 | Britam Holding Plc | 35.38721004 | 37.75856 | 35.00199 | 39.30159 | 24.74526 | 26.91112 | 21.96087 | 24.48727 | 36.56807 | 39.17709 |
| 45 | CIC Insurance Group Ltd | 32.93005927 | 34.86093 | 32.51815 | 32.46264 | 29.2863 | 29.59553 | 23.49005 | 28.74065 | 43.32683 | 41.61177 |
| 46 | Olympia Capitals Holding Ltd. | 32.87158789 | 35.05443 | 33.12075 | 38.6479 | 31.50774 | 32.91151 | 27.79852 | 23.24597 | 31.23294 | 37.04494 |
| 47 | Centum Investment Plc | 34.45118415 | 35.93099 | 32.76201 | 39.67686 | 27.42857 | 33.64216 | 26.75962 | 28.13499 | 37.1816 | 44.07418 |
| 48 | Trans-Century Plc | 31.98946046 | 36.13178 | 33.80417 | 38.57628 | 33.59387 | 33.18125 | 16.15306 | 37.13656 | 27.55117 | 30.84468 |

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| 49 | Home Africa Ltd | 40.38353901 | 40.77778 | 31.46868 | 39.38318 | 25.02036 | 30.9823 | 26.91372 | 31.6566 | 32.83231 | 35.44971 |
| 50 | Kurwitu Venture Ltd | 28.48325373 | 32.84854 | 28.65149 | 26.06541 | 27.89886 | 23.90055 | 31.50464 | 27.87168 | 27.84681 | 27.40889 |
| 51 | Nairobi Security Exchange Plc | 30.91078703 | 33.2259 | 35.88077 | 38.92512 | 22.34302 | 31.58569 | 29.07599 | 35.71986 | 31.94292 | 29.55325 |
| 52 | B.O.C Kenya Plc. | 36.23387936 | 36.56595 | 32.24434 | 32.63828 | 33.27549 | 25.50106 | 22.68127 | 29.62067 | 25.25325 | 27.49635 |
| 53 | B.A.T Kenya Plc. | 28.5475714 | 29.37238 | 31.22441 | 34.04217 | 16.91986 | 32.91746 | 26.14541 | 44.81341 | 26.97366 | 33.41808 |
| 54 | Carbacid Investment Plc | 33.3444111 | 34.27877 | 32.26545 | 30.27694 | 39.55897 | 22.24055 | 9.986991 | 36.53833 | 25.06612 | 30.49788 |
| 55 | E.A.B.L Ltd. | 28.83525307 | 28.83525 | 35.7812 | 29.17494 | 35.73322 | 36.75783 | 36.68882 | 39.61396 | 29.39332 | 28.80933 |
| 56 | Mumias Sugar Company Ltd | 25.55572418 | 27.70564 | 37.79169 | 30.47953 | 35.6458 | 36.20567 | 35.17355 | 39.15002 | 30.66735 | 26.71976 |
| 57 | Unga Group Ltd. | 38.22979067 | 38.52586 | 33.41564 | 31.76711 | 36.03817 | 40.13908 | 37.02879 | 40.77785 | 26.94857 | 28.18367 |
| 58 | Kenya Orchards Ltd | 32.45315556 | 32.74205 | 35.75263 | 33.25643 | 34.61326 | 36.16545 | 35.00857 | 37.30924 | 31.19522 | 29.46212 |
| 59 | Flame Tree Group Holding Ltd | 26.43470566 | 26.43471 | 38.33775 | 37.66546 | 34.5076 | 36.64919 | 34.08386 | 37.96987 | 33.45802 | 29.16237 |
| 60 | Safaricom Plc. | 29.53360434 | 29.60867 | 33.56139 | 27.8334 | 35.65231 | 36.82457 | 34.77503 | 39.21941 | 32.43557 | 31.77072 |
| 61 | ILAM-Fahari I-REIT | 28.26228938 | 28.61947 | 30.83463 | 32.44811 | 33.45804 | 34.76592 | 34.4608 | 34.29774 | 8.027333 | 30.09243 |
| 62 | ABSA New Gold ETF | 31.35942788 | 31.82667 | 25.54607 | 28.89968 | 35.1169 | 36.08283 | 32.92342 | 36.01338 | 26.68859 | 24.23519 |

| | | Herding | | Return Dispersion: ROA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FIRM NSE | M 2014 | M 2015 | M 2016 | (M) 2017 | M 2018 | M 2019 | M 2020 | 2021 | 2022 | 2023 |
| 1 | Eagaads Ltd | 5.93 | 2 | 27 | 21.1 | 15.8 | 17.6 | 23 | 24.1 | 17.10 | 21.00 |
| 2 | Kapchorua Tea Kenya Plc | 7.26 | 3.2 | 13.2 | 16.6 | 17.2 | 18.6 | 26 | 26.9 | 15.2 | 17.7 |
| 3 | Kakuzi Plc | 6.42 | 2.8 | 14.3 | 27 | 16.7 | 19.9 | 15.4 | 16.3 | 18.5 | 18.7 |
| 4 | Limuru Tea Company Ltd | 4.43 | 5.8 | 11.1 | 18.7 | 13.5 | 17.3 | 11.9 | 16.5 | 14.6 | 21.6 |
| 5 | Sasini Plc | 5.44 | 3.8 | 15.2 | 14.4 | 24.6 | 25.6 | 32.9 | 34.2 | 15.8 | 19.8 |
| 6 | Williamson Tea Kenya Plc | 5.64 | 4.5 | 24.1 | 16 | 30.9 | 32.3 | 17.6 | 17.6 | 18.4 | 22 |
| 7 | Car &General (K) ltd | 4.31 | 2.3 | 14 | 15.8 | 21.3 | 22.5 | 20.4 | 21.5 | 16.8 | 18.9 |
| 8 | ABSA Bank Kenya Plc | 4.47 | 1.7 | 29.7 | 24.6 | 16.4 | 19.9 | 32.1 | 37.2 | 15.8 | 18.9 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Stanbic Holding Ltd | 4.44 | 1.6 | 21.5 | 14.5 | 52 | 54 | 23.6 | 27.3 | 14.4 | 20.9 |
| 10 | I&M Holding Plc | 2.57 | 7.4 | 33.2 | 30.9 | 15.5 | 17 | 14 | 17.5 | 26.6 | 27.3 |
| 11 | Diamond Trust Bank Kenya Ltd | 5.22 | 1.9 | 2.3 | 22.7 | 15.4 | 16 | 11.5 | 15.3 | 11.4 | 17.9 |
| 12 | HF Group Plc | 3.08 | 1.7 | 18 | 13.8 | 22.1 | 22.7 | 22.8 | 24.1 | 12.9 | 13.9 |
| 13 | KCB Group Plc | 4.35 | 1.6 | 28.5 | 23.2 | 26.4 | 26.9 | 13.5 | 16.5 | 19.6 | 20.3 |
| 14 | NCBA Group Plc | 4.24 | 1.4 | 22.5 | 19.6 | 11.2 | 15.8 | 15 | 15.7 | 23.3 | 15.3 |
| 15 | Standard Chartered Bank Kenya Ltd | 1.9 | 1.5 | 29.9 | 28.5 | 14.2 | 16.2 | 32.9 | 33.1 | 16.8 | 24.2 |
| 16 | Equity Group Holding Plc | 3.74 | 0.3 | 41.4 | 22.5 | 4 | 5.4 | 23.5 | 23.8 | 11.8 | 16.8 |
| 17 | The Co-operative Bank Of Kenya Ltd | 4.61 | 0.6 | 23.7 | 29.9 | 16.3 | 16.5 | 7.8 | 9.4 | 38.5 | 15.3 |
| 18 | Express Kenya Plc | 2.08 | 1 | 6.5 | 44.9 | 32.7 | 33.9 | 16.9 | 19.9 | 15.4 | 15.9 |
| 19 | Kenya Airways Ltd | 5.29 | 0.6 | 0.5 | 23.7 | 26.4 | 27.1 | 16.2 | 22.8 | 24.9 | 39.4 |
| 20 | Nation Media Group Plc | 3.68 | 0.7 | -23.5 | -22 | 15.6 | 15.9 | 14.4 | 15.5 | 13.1 | 19.8 |
| 21 | Standard Group Plc | 3.11 | 0.8 | 15.6 | 17.5 | 12.9 | 15.1 | 15.7 | 17.9 | 18.2 | 25.9 |
| 22 | TPS Eastern Africa(Serena)Ltd | 5.63 | 0.2 | 15.3 | 15.8 | 19.6 | 20.2 | 17.5 | 20.9 | 20.2 | 13.5 |
| 23 | WPP Scan Group Plc | 3.13 | 0.5 | 17.8 | 18.6 | 18.8 | 19.3 | 16.2 | 18.5 | 22.9 | 19.2 |
| 24 | Uchumi Super market | 2.59 | 0.7 | 13.1 | 17.4 | 38.8 | 38.8 | 16.1 | 18.3 | 25.2 | 20.6 |
| 25 | Eveready East Africa ltd | 1.49 | 10 | 19.1 | 20.9 | 20.1 | 23.6 | 17.2 | 21.6 | 36.1 | 23.8 |
| 26 | Longhorn Publisher Plc | 1.88 | 10.6 | 14 | 16.7 | 26 | 27.4 | 16.6 | 18.1 | 11.3 | 26.1 |
| 27 | Deacons(East Africa) Plc | 1.8 | 4.2 | 18 | 21.6 | 10.7 | 15.3 | 13.6 | 18.4 | 31.2 | 37.2 |
| 28 | Sameer Africa Plc | 0.33 | 6.6 | 15.2 | 18.3 | 70.1 | 70.1 | 25.4 | 26.4 | 20.6 | 17.2 |
| 29 | Nairobi Business Venture Ltd | 1.86 | 4.4 | 14.7 | 17.7 | 94.5 | 94.5 | 29.5 | 30.5 | 25.7 | 32.8 |
| 30 | Homeboyz Entertainment Plc | 1.32 | 8.8 | 32.4 | 32.7 | 42.1 | 42.6 | 17.2 | 20.8 | 16.3 | 21.7 |
| 31 | ARM Cement Plc. | 0.73 | 10.7 | 40.3 | 41.4 | 16.1 | 16.4 | 11.4 | 11.9 | 11.5 | 29.6 |
| 32 | Bamburi Cement Plc. | 1.07 | 13.3 | 27.2 | 27.2 | 10.4 | 12.7 | 20.1 | 22.2 | 24.5 | 16.6 |
| 33 | Crown Paints Kenya Plc | 1.28 | 6.7 | 47.8 | 48.4 | 3 | 5.1 | 43.7 | 45.7 | 24.3 | 16.4 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | E.A Cables Ltd | 0.21 | 3.11 | 15.8 | 18.7 | 16.4 | 17.8 | 15.7 | 17.7 | 33.4 | 11.5 |
| 35 | E.A Portland Cement Ltd. | 1.02 | 3.41 | 23 | 23.1 | 14 | 14 | 17.8 | 19.4 | 58 | 25.6 |
| 36 | Total Kenya Ltd | -1.82 | 2.13 | 9.8 | 11.5 | 15 | 29.8 | 11.8 | 16.2 | 18 | 25.5 |
| 37 | Kengen Plc | -6.97 | 3.63 | 18.4 | 20.2 | 18.7 | 21.1 | 26.5 | 27.2 | 8.3 | 33.7 |
| 38 | Kenya Power Ltd | -2.78 | 2.2 | 13 | 14.3 | 14.4 | 16.4 | 24.7 | 25.5 | 21.3 | 58.6 |
| 39 | Umeme Ltd | -1.09 | 2.15 | 13.6 | 16.3 | 16.5 | 19.5 | 18.6 | 18.7 | 6.9 | 10.7 |
| 40 | Jubilee Holding Ltd | 5.01 | 1.41 | 26.3 | 26.3 | 17.1 | 17.9 | 23.1 | 23.2 | 14.1 | 15.4 |
| 41 | Sanlam Kenya Plc | 6.56 | 1.96 | 12.4 | 17.1 | 14.6 | 17.4 | 24.8 | 25.8 | 14.6 | 16.2 |
| 42 | Kenya Re-Insurance Corporation Ltd | 4.14 | 3.48 | 13.5 | 17.9 | 17 | 18.7 | 31.7 | 32.3 | 14.5 | 21.3 |
| 43 | Liberty Kenya Holdings | 5.01 | 5.15 | 26.8 | 27.3 | 15.7 | 17.4 | 37.4 | 38.7 | 15.8 | 18.4 |
| 44 | Britam Holding Plc | 3.83 | 1.26 | 14.1 | 15 | 34.4 | 18.7 | 19.3 | 20.1 | 17.5 | 21.2 |
| 45 | CIC Insurance Group Ltd | 5.66 | 3.64 | 28.2 | 31.5 | 35.9 | 17.9 | 22.4 | 22.8 | 15.9 | 18.7 |
| 46 | Olympia Capitals Holding Ltd. | 3.56 | 1.59 | 33.2 | 34.4 | 27.4 | 34.7 | 12.8 | 16 | 14.8 | 17.7 |
| 47 | Centum Investment Plc | 3.69 | 1.46 | 20.4 | 22.2 | 43.3 | 37.3 | 19 | 19.6 | 17 | 19.2 |
| 48 | Trans-Century Plc | 3.99 | 0.78 | 12.1 | 15.4 | 16.4 | 27.6 | 38.5 | 45.3 | 14.5 | 20.5 |
| 49 | Home Africa Ltd | 3.14 | 1.49 | 25.4 | 25.4 | 24.3 | 43.9 | 19.7 | 38.7 | 27.4 | 28.3 |
| 50 | Kurwitu Venture Ltd | 6.33 | 1.58 | 30.1 | 30.1 | 14.2 | 19.5 | 21.6 | 20.8 | 12.2 | 17.9 |
| 51 | Nairobi Security Exchange Plc | 3.55 | 1.27 | 18.3 | 20.2 | 19.2 | 24.3 | 13.5 | 25.1 | 15.4 | 18.9 |
| 52 | B.O.C Kenya Plc. | 3.99 | 1.66 | 6.2 | 10.8 | 16.3 | 15.6 | 26 | 16.3 | 26.3 | 27.1 |
| 53 | B.A.T Kenya Plc. | 3.49 | 0.25 | 11.4 | 13.5 | 17.7 | 17.7 | 10.4 | 27.4 | 13 | 14 |
| 54 | Carbacid Investment Plc | 4.42 | 1.09 | 31 | 31.2 | 14.7 | 14.9 | 31.3 | 14 | 22.9 | 25 |
| 55 | E.A.B.L Ltd. | 1.86 | 0.45 | 14.7 | 17.5 | 8.3 | 8.3 | 5.9 | 31.6 | 17.3 | 17.3 |
| 56 | Mumias Sugar Company Ltd | 2.72 | 0.95 | 18.8 | 22 | 4.4 | 8.1 | 39.5 | 7.9 | 13.2 | 16.4 |
| 57 | Unga Group Ltd. | 3.53 | 0.31 | 16 | 18.1 | -21.8 | -20.6 | 14.9 | 16.1 | 41.1 | 42.3 |
| 58 | Kenya Orchards Ltd | 4.74 | 0.85 | 10.41 | 2.03 | 15.6 | 19.4 | 15.8 | 16.5 | 26.9 | 27.7 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | Flame Tree Group Holding Ltd | 3.03 | 0.45 | 19.81 | 2.76 | 15.5 | 17 | 16.5 | 22.7 | 15.8 | 15.8 |
| 60 | Safaricom Plc. | 1.61 | 0.3 | 24.59 | 1.51 | 12.4 | 16.2 | 15.9 | 18 | 24.5 | 24.7 |
| 61 | ILAM-Fahari I-REIT | 2.25 | 0.33 | 0.95 | 5.22 | 17.8 | 17.9 | 15.6 | 18.5 | 18.6 | 19.3 |
| 62 | ABSA New Gold ETF | 2.39 | 0.11 | 0.31 | 1.77 | 20.7 | 22.5 | 17.3 | 19 | 16.2 | 15.9 |

| | | Herding | | Return Dispersion: TOTAL ASSETS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M | M | M | (M) | M | M | M | M | M | M |
| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| 1 | Eagaads Ltd | 373031 | 28482 | 386611 | 85691 | 504778 | 28333 | 80989.89 | 34918 | 24714 | 38653 |
| 2 | Kapchorua Tea Kenya Plc | 411666 | 27472 | 445398 | 78020 | 555630 | 34182 | 88991 | 34370 | 20020 | 31267 |
| 3 | Kakuzi Plc | 434361 | 31384.94 | 486613 | 95595972 | 621722.88 | 30012 | 97789 | 15799 | 29374 | 37894 |
| 4 | Limuru Tea Company Ltd | 468258 | 33183.95 | 536830 | 101066966 | 674301.72 | 34786 | 92608 | 32992 | 19107 | 29216 |
| 5 | Sasini Plc | 544837 | 23586 | 591067 | 126674 | 758345 | 66810 | 111271 | 12147 | 14440 | 126908 |
| 6 | Williamson Tea Kenya Plc | 132497 | 22778 | 277274.67 | 72770 | 379749 | 15038 | 52341.04 | 17244 | 10230 | 21847 |
| 7 | Car &General (K) ltd | 139406 | 23086 | 298703 | 61902 | 406402 | 17621 | 61906 | 19734 | 15810 | 329439 |
| 8 | ABSA Bank Kenya Plc | 257566 | 24382.34 | 341782 | 55864207 | 438508.78 | 28953 | 60587 | 9449 | 22058 | 11129 |
| 9 | Stanbic Holding Ltd | 290564 | 25973.66 | 381138 | 64711979 | 507525.24 | 26185 | 69914 | 15082 | 14609 | 33688 |
| 10 | I&M Holding Plc | 355630 | 16961 | 502423 | 77446 | 496823 | 42825 | 86697 | 14571 | 10533 | 17379 |
| 11 | Diamond Trust Bank Kenya Ltd | 176349 | 18024 | 259471.75 | 55095 | 349998 | 11472 | 60045.83 | 21439 | 16943 | 16959 |
| 12 | HF Group Plc | 177224 | 16502 | 285990 | 81048 | 382830 | 12615 | 68227 | 16515 | 10526 | 18290 |
| 13 | KCB Group Plc | 231026 | 17586.76 | 304593 | 109429717 | 408303.62 | 17064 | 68319 | 62212 | 52427 | 12993 |
| 14 | NCBA Group Plc | 281516 | 20326.06 | 360305 | 65182117 | 449616.47 | 31156 | 69416 | 10240 | 14136 | 18231 |
| 15 | Standard Chartered Bank Kenya Ltd | 307324 | 14207 | 394813 | 92118 | 667650 | 51781 | 72028 | 10402 | 5678 | 23946 |
| 16 | Equity Group Holding Plc | 19354 | 12764 | 178447.78 | 42746 | 250274 | 272 | 42094.71 | 22403 | 674301.72 | 257029 |
| 17 | The Co-operative Bank Of Kenya Ltd | 20771 | 10006 | 226051 | 43934 | 271682 | 435 | 44584 | 27156 | 507525.24 | 97427 |
| 18 | Express Kenya Plc | 18615 | 11433.57 | 213033 | 45102257 | 284691 | 13910 | 43393 | 29619 | 449616.47 | 31613 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | Kenya Airways Ltd | 244395 | 12691.23 | 330113 | 82739024 | 302295.9 | 30516 | 77088 | 69432 | 302295.9 | 13887 |
| 20 | Nation Media Group Plc | 259698 | 10289 | 370085 | 61233 | 283569 | 35995 | 85597 | 17033 | 254252.17 | 15727 |
| 21 | Standard Group Plc | 38089 | 10440 | 186598.23 | 42104 | 259498 | 3392 | 43904.78 | 16254 | 374109.2 | 45918 |
| 22 | TPS Eastern Africa(Serena)Ltd | 43943 | 9510 | 209254 | 42242 | 285125 | 2666 | 43004 | 12508 | 464890.69 | 14267 |
| 23 | WPP Scan Group Plc | 152287 | 10250.07 | 220784 | 42880319 | 325362.74 | 11036 | 47713 | 14705 | 287250.6 | 55473 |
| 24 | Uchumi Super market | 205304 | 12012.34 | 242375 | 48907303 | 254252.17 | 13519 | 44079 | 22422 | 292705.14 | 50981 |
| 25 | Eveready East Africa ltd | 229677 | 8300 | 257706 | 51543 | 377936 | 17099 | 44969 | 115114 | 96570.19 | 758345 |
| 26 | Longhorn Publisher Plc | 105082 | 8876 | 169599.9 | 33904 | 244124 | 7450 | 36431.81 | 10465 | 143311.34 | 496823 |
| 27 | Deacons(East Africa) Plc | 107038 | 8228 | 189305 | 38790 | 270082 | 7798 | 43559 | 12202 | 62543.24 | 667650 |
| 28 | Sameer Africa Plc | 133166 | 9264.77 | 224440 | 41776778 | 281515.7 | 21661 | 45336 | 9427 | 108785.53 | 283569 |
| 29 | Nairobi Business Venture Ltd | 163859 | 11857.47 | 236461 | 46433739 | 374109.2 | 19345 | 47222 | 16418 | 377936 | 377936 |
| 30 | Homeboyz Entertainment Plc | 176597 | 7018 | 256951 | 51909 | 325873 | 25038 | 50219 | 20875 | 31117 | 325873 |
| 31 | ARM Cement Plc. | 4339 | 8651 | 159284.81 | 32876 | 164116 | 816 | 27470.17 | 109942 | 115143.44 | 491614 |
| 32 | Bamburi Cement Plc. | 39763 | 7516 | 186444 | 36208 | 183953 | 2252 | 31571 | 18708 | 32336.96 | 318986 |
| 33 | Crown Paints Kenya Plc | 155498 | 8797.96 | 212282 | 35785032 | 280953.01 | 16644 | 34591 | 62127 | 66909.84 | 166313 |
| 34 | E.A Cables Ltd | 155307 | 9289.88 | 221038 | 45275624 | 464890.69 | 12892 | 52001 | 31316 | 21520.67 | 106454 |
| 35 | E.A Portland Cement Ltd. | 165948 | 6955 | 235048 | 49335 | 491614 | 19747 | 54032 | 27628 | 16185.96 | 312189 |
| 36 | Total Kenya Ltd | 40170 | 7593 | 121989.23 | 31883 | 210878 | 1855 | 30237.5 | 15803 | 17805.42 | 75129 |
| 37 | Kengen Plc | 7232 | 7189 | 178696 | 32227 | 229525 | 18714 | 33051 | 17360 | 25323.37 | 116204 |
| 38 | Kenya Power Ltd | 144434 | 8725.33 | 186521 | 39656966 | 229161.13 | 21115 | 33775 | 24804 | 33325.58 | 27212.71 |
| 39 | Umeme Ltd | 152807 | 9279.31 | 195841 | 43686655 | 287250.6 | 18799 | 47015 | 14465 | 49080.86 | 9887.41 |
| 40 | Jubilee Holding Ltd | 160665 | 6237 | 219167 | 46444 | 318986 | 20178 | 52324 | 10577 | 15323.11 | 54463.88 |
| 41 | Sanlam Kenya Plc | 241395 | 6910 | 104160.2 | 26934 | 204895 | 11273 | 30288.26 | 9541 | 27212.71 | 10515.02 |
| 42 | Kenya Re-Insurance Corporation Ltd | 68153 | 6373 | 134247 | 32964 | 98232 | 27658 | 35024 | 16320 | 9887.41 | 15332.12 |
| 43 | Liberty Kenya Holdings | 117786 | 7952.41 | 177250 | 30856983 | 232317.12 | 15830 | 38339 | 10295 | 54463.88 | 5360.86 |
| 44 | Britam Holding Plc | 144483 | 8239.66 | 205516 | 43037925 | 292705.14 | 20058 | 38940 | 54191 | 10515.02 | 10235.52 |
| 45 | CIC Insurance Group Ltd | 152711 | 5791 | 233493 | 45676 | 166313 | 22337 | 41857 | 6505 | 15332.12 | 6856.57 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 | Olympia Capitals Holding Ltd. | 28242 | 5926 | 62485.52 | 19196 | 82907 | 29987 | 26186.68 | 5121 | 5360.86 | 17880.46 |
| 47 | Centum Investment Plc | 5680 | 5599 | 65461 | 19763 | 96132 | 1724 | 28938 | 3548 | 10235.52 | 9223.08 |
| 48 | Trans-Century Plc | 49215 | 5643.03 | 71467 | 20200548 | 123014.4 | 31461 | 31117 | 11745 | 6856.57 | 12887.33 |
| 49 | Home Africa Ltd | 49335 | 5466.2 | 97079 | 22033737 | 62543.24 | 8244 | 22943 | 13456 | 17880.46 | 10004.86 |
| 50 | Kurwitu Venture Ltd | 51151 | 3942 | 81190 | 22912 | 75129 | 9391 | 2667 | 19302 | 9223.08 | 57083.28 |
| 51 | Nairobi Security Exchange Plc | 6243 | 3876 | 11772.94 | 13992 | 115114 | 856 | 109996.68 | 12851 | 12887.33 | 25329.17 |
| 52 | B.O.C Kenya Plc. | 13746 | 5053 | 13808 | 16909 | 10577 | 592 | 17900 | 2610 | 10004.86 | 5250.61 |
| 53 | B.A.T Kenya Plc. | 10691 | 5159.08 | 20525 | 20074411 | 15323.11 | 13334 | 20415 | 69051 | 57083.28 | 30612 |
| 54 | Carbacid Investment Plc | 13608 | 2798.62 | 20532 | 18596724 | 28680.49 | 4126 | 24455 | 53456 | 25329.17 | 12886 |
| 55 | E.A.B.L Ltd. | 20980 | 2733 | 22082 | 18515 | 11378 | 6342 | 24902 | 183953 | 280953.01 | 12729 |
| 56 | Mumias Sugar Company Ltd | 104302 | 162 | 12313.03 | 2789 | 20875 | 805 | 19628.61 | 229525 | 229161.13 | 44917 |
| 57 | Unga Group Ltd. | 235 | 116 | 5612 | 2906 | 6505 | 1421 | 20177 | 98232 | 232317.12 | 13263 |
| 58 | Kenya Orchards Ltd | 10027 | 168.81 | 12964 | 2683456 | 15332.12 | 4940 | 23039 | 192817 | 195054.63 | 54478 |
| 59 | Flame Tree Group Holding Ltd | 8929 | 164.26 | 13600 | 2740810 | 8466.28 | 1212 | 11705 | 239408 | 85638.69 | 16185.96 |
| 60 | Safaricom Plc. | 10130 | 97 | 13238 | 2654 | 23145 | 996 | 22134 | 96132 | 123014.4 | 17805.42 |
| 61 | ILAM-Fahari I-REIT | 667650 | 379749 | 406402 | 250274 | 271682 | 325873 | 166313 | 56631 | 62689.13 | 25323.37 |
| 62 | ABSA New Gold ETF | 283569 | 349998 | 382830 | 259498 | 285125 | 491614 | 106454 | 13600 | 2740810 | 33325.58 |

| | Herding | | Return Dispersion: TOTAL INCOME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | M | M | M | (M) | M | M | M | M | M | M |

| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 43904.78 | 43004 | 47713 | 44079 | 44969 | 111271 | 28333 | 34182 | 30012 | 34786 |
| 2 | Kapchorua Tea Kenya Plc | 36431.81 | 43559 | 45336 | 47222 | 50219 | 86697 | 15038 | 17621 | 28953 | 26185 |
| 3 | Kakuzi Plc | 27470.17 | 31571 | 34591 | 52001 | 54032 | 72028 | 11472 | 12615 | 17064 | 31156 |
| 4 | Limuru Tea Company Ltd | 30237.5 | 33051 | 33775 | 47015 | 52324 | 85597 | 272 | 435 | 13910 | 30516 |
| 5 | Sasini Plc | 30288.26 | 35024 | 38339 | 38940 | 41857 | 66810 | 3392 | 2666 | 11036 | 13519 |
| 6 | Williamson Tea Kenya Plc | 26186.68 | 28938 | 31117 | 22943 | 2667 | 42825 | 7450 | 7798 | 21661 | 19345 |
| 7 | Car &General (K) ltd | 109996.68 | 17900 | 20415 | 24455 | 24902 | 51781 | 1855 | 18714 | 21115 | 18799 |
| 8 | ABSA Bank Kenya Plc | 19628.61 | 20177 | 23039 | 11705 | 22134 | 35995 | 11273 | 27658 | 15830 | 20058 |
| 9 | Stanbic Holding Ltd | 25038 | 816 | 2252 | 16644 | 12892 | 19747 | 20178 | 22337 | 1724 | 31461 |
| 10 | I&M Holding Plc | 21445 | 22362 | 23445 | 28482 | 27472 | 31384.94 | 33183.95 | 23586 | 57805 | 56103 |
| 11 | Diamond Trust Bank Kenya Ltd | 19388 | 20112 | 22388 | 22778 | 23086 | 24382.34 | 25973.66 | 16961 | 40733 | 47659 |
| 12 | HF Group Plc | 14073 | 14300 | 14073 | 18024 | 16502 | 17586.76 | 20326.06 | 14207 | 37980 | 43283 |
| 13 | KCB Group Plc | 12174 | 12515 | 12074 | 12764 | 10006 | 11433.57 | 12691.23 | 10289 | 37462 | 35419 |
| 14 | NCBA Group Plc | 8979 | 12294 | 8974 | 10440 | 9510 | 10250.07 | 12012.34 | 8300 | 28944 | 33259 |
| 15 | Standard Chartered Bank Kenya Ltd | 8398 | 7749 | 8367 | 8876 | 8228 | 9264.77 | 11857.47 | 7018 | 25587 | 25881 |
| 16 | Equity Group Holding Plc | 7118 | 7391 | 7077 | 8651 | 7516 | 8797.96 | 9289.88 | 6955 | 22245 | 25421 |
| 17 | The Co-operative Bank Of Kenya Ltd | 6051 | 6307 | 7055 | 7593 | 7189 | 8725.33 | 9279.31 | 6237 | 19122 | 23559 |
| 18 | Express Kenya Plc | 6169 | 6081 | 6260 | 6910 | 6373 | 7952.41 | 8239.66 | 5791 | 18826 | 21529 |
| 19 | Kenya Airways Ltd | 6119 | 4522 | 6227 | 6033 | 5676 | 5982.05 | 5646.51 | 5480 | 17592 | 18448 |
| 20 | Nation Media Group Plc | 5478 | 4145 | 5577 | 5926 | 5599 | 5643.03 | 5466.2 | 3942 | 13779 | 17099 |
| 21 | Standard Group Plc | 2891 | 3302 | 2883 | 3876 | 5053 | 5159.08 | 2798.62 | 2733 | 10343 | 11329 |
| 22 | TPS Eastern Africa(Serena)Ltd | 2589 | 2695 | 2593 | 2336 | 2675 | 2447.91 | 2456.5 | 1849 | 10184 | 11181 |
| 23 | WPP Scan Group Plc | 1193 | 1284 | 1093 | 796 | 740 | 587.5 | 1136.82 | 559 | 6105 | 8351 |
| 24 | Uchumi Super market | 891 | 729 | 677 | 754 | 409 | 565.1 | 668.56 | 493 | 5902 | 6970 |
| 25 | Eveready East Africa ltd | 581 | 687 | 547 | 659 | 393 | 419.88 | 491.2 | 480 | 5079 | 6948 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 | Longhorn Publisher Plc | 571 | 643 | 520 | 633 | 254 | 359.04 | 385.27 | 451 | 4667 | 5023 |
| 27 | Deacons(East Africa) Plc | 523 | 635 | 510 | 622 | 241 | 348.05 | 300.07 | 313 | 3056 | 3877 |
| 28 | Sameer Africa Plc | 489 | 615 | 485 | 601 | 228 | 332.21 | 250.55 | 238 | 2615 | 3756 |
| 29 | Nairobi Business Venture Ltd | 439 | 532 | 479 | 493 | 216 | 307.08 | 243.35 | 147 | 2337 | 3342 |
| 30 | Homeboyz Entertainment Plc | 381 | 472 | 355 | 302 | 203 | 292.2 | 218.05 | 105 | 2330 | 2715 |
| 31 | ARM Cement Plc. | 319 | 378 | 329 | 222 | 179 | 209.56 | 185.48 | 104 | 2197 | 2495 |
| 32 | Bamburi Cement Plc. | 281 | 319 | 252 | 162 | 116 | 168.81 | 164.26 | 97 | 2179 | 2186 |
| 33 | Crown Paints Kenya Plc | 178 | 318 | 178 | 160 | 96 | 157.6 | 105.58 | 77 | 1928 | 2181 |
| 34 | E.A Cables Ltd | 193 | 298 | 169 | 158 | 58 | 150.79 | 85.64 | 56 | 1846 | 2031 |
| 35 | E.A Portland Cement Ltd. | 373031 | 411666 | 434361 | 468258 | 544837 | 71210 | 61072 | 85691 | 78020 | 95595972 |
| 36 | Total Kenya Ltd | 132497 | 139406 | 257566 | 290564 | 355630 | 47552 | 52887 | 72770 | 61902 | 55864207 |
| 37 | Kengen Plc | 176349 | 177224 | 231026 | 281516 | 307324 | 38419 | 63372 | 55095 | 81048 | 109429717 |
| 38 | Kenya Power Ltd | 19354 | 20771 | 18615 | 244395 | 259698 | 55534 | 41222 | 42746 | 43934 | 45102257 |
| 39 | Umeme Ltd | 38089 | 43943 | 152287 | 205304 | 229677 | 36288 | 40147 | 42104 | 42242 | 42880319 |
| 40 | Jubilee Holding Ltd | 105082 | 107038 | 133166 | 163859 | 176597 | 30529 | 30351 | 33904 | 38790 | 41776778 |
| 41 | Sanlam Kenya Plc | 4339 | 39763 | 155498 | 155307 | 165948 | 25065 | 30299 | 32876 | 36208 | 35785032 |
| 42 | Kenya Re-Insurance Corporation Ltd | 40170 | 7232 | 144434 | 152807 | 160665 | 22863 | 26544 | 31883 | 32227 | 39656966 |
| 43 | Liberty Kenya Holdings | 241395 | 68153 | 117786 | 144483 | 152711 | 27340 | 30357 | 26934 | 32964 | 30856983 |
| 44 | Britam Holding Plc | 28242 | 5680 | 49215 | 49335 | 51151 | 21705 | 25201 | 19196 | 19763 | 20200548 |
| 45 | CIC Insurance Group Ltd | 6243 | 13746 | 10691 | 13608 | 20980 | 11206 | 13884 | 13992 | 16909 | 20074411 |
| 46 | Olympia Capitals Holding Ltd. | 104302 | 235 | 10027 | 8929 | 10130 | 1942 | 2108 | 2789 | 2906 | 2683456 |
| 47 | Centum Investment Plc | 386611 | 445398 | 486613 | 536830 | 591067 | 101066966 | 126674 | 504778 | 555630 | 621722.88 |
| 48 | Trans-Century Plc | 277274.67 | 298703 | 341782 | 381138 | 502423 | 64711979 | 77446 | 379749 | 406402 | 438508.78 |
| 49 | Home Africa Ltd | 259471.75 | 285990 | 304593 | 360305 | 394813 | 65182117 | 92118 | 349998 | 382830 | 408303.62 |
| 50 | Kurwitu Venture Ltd | 178447.78 | 226051 | 213033 | 330113 | 370085 | 82739024 | 61233 | 250274 | 271682 | 284691 |
| 51 | Nairobi Security Exchange Plc | 186598.23 | 209254 | 220784 | 242375 | 257706 | 48907303 | 51543 | 259498 | 285125 | 325362.74 |
| 52 | B.O.C Kenya Plc. | 169599.9 | 189305 | 224440 | 236461 | 256951 | 46433739 | 51909 | 244124 | 270082 | 281515.7 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | B.A.T Kenya Plc. | 159284.81 | 186444 | 212282 | 221038 | 235048 | 45275624 | 49335 | 164116 | 183953 | 280953 |
| 54 | Carbacid Investment Plc | 121989.23 | 178696 | 186521 | 195841 | 219167 | 43686655 | 46444 | 210878 | 229525 | 229161.1 |
| 55 | E.A.B.L Ltd. | 104160.2 | 134247 | 177250 | 205516 | 233493 | 43037925 | 45676 | 204895 | 98232 | 232317.1 |
| 56 | Mumias Sugar Company Ltd | 62485.52 | 65461 | 71467 | 97079 | 81190 | 22033737 | 22912 | 82907 | 96132 | 123014.4 |
| 57 | Unga Group Ltd. | 11772.94 | 13808 | 20525 | 20532 | 22082 | 18596724 | 18515 | 115114 | 10577 | 15323.11 |
| 58 | Kenya Orchards Ltd | 12313.03 | 5612 | 12964 | 13600 | 13238 | 2740810 | 2654 | 20875 | 6505 | 15332.12 |
| 59 | Flame Tree Group Holding Ltd | 674301.72 | 758345 | 254252.2 | 377936 | 292705.1 | 166313 | 80989.89 | 88991 | 97789 | 92608 |
| 60 | Safaricom Plc. | 507525.24 | 496823 | 374109.2 | 325873 | 62543.24 | 75129 | 52341.04 | 61906 | 60587 | 69914 |
| 61 | ILAM-Fahari I-REIT | 449616.47 | 667650 | 464890.7 | 491614 | 28680.49 | 11378 | 60045.83 | 68227 | 68319 | 69416 |
| 62 | ABSA New Gold ETF | 302295.9 | 283569 | 287250.6 | 318986 | 8466.28 | 23145 | 42094.71 | 44584 | 43393 | 77088 |

| | | investment decisions | | Value of initial investment | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FIRM NSE | B 2014 | B 2015 | B 2016 | B 2017 | B 2018 | B 2019 | B 2020 | B 2021 | B 2022 | B 2023 |
| 1 | Eagaads Ltd | 2.92852E+14 | 3.049273 | 2.724064 | 3.014021 | 3.015535 | 3.100092 | 3.267532 | 3.042562 | 1.780024 | 3.54674 |
| 2 | Kapchorua Tea Kenya Plc | 2.667228207 | 2.797281 | 2.685433 | 3.073189 | 2.493205 | 2.734368 | 1.709657 | 2.194731 | 1.98238 | 3.618993 |
| 3 | Kakuzi Plc | 2.803360381 | 2.970414 | 2.779083 | 3.005663 | 3.234749 | 3.234749 | 3.461691 | 4.182305 | 1.859418 | 3.317816 |
| 4 | Limuru Tea Company Ltd | 2.839078464 | 2.884801 | 2.510576 | 2.790848 | 3.404525 | 3.404525 | 3.276447 | 2.802469 | 1.4884 | 3.781914 |
| 5 | Sasini Plc | 2.681021529 | 2.85647 | 2.690466 | 2.896347 | 2.906901 | 3.005683 | 1.673503 | 3.500116 | 1.693779 | 2.970414 |
| 6 | Williamson Tea Kenya Plc | 2.833213344 | 2.928524 | 2.803535 | 3.074077 | 1.824549 | 2.379546 | 3.066402 | 3.12402 | 1.729884 | 3.190476 |
| 7 | Car &General (K) ltd | 2.753660712 | 2.85647 | 2.769645 | 3.064675 | 2.433613 | 2.60269 | 3.022813 | 3.043067 | 1.460938 | 2.747271 |
| 8 | ABSA Bank Kenya Plc | 3.538056564 | 2.928524 | 3.171303 | 2.996399 | 3.433987 | 3.440418 | 3.277156 | 3.242812 | 1.497388 | 3.049273 |
| 9 | Stanbic Holding Ltd | 3.580737295 | 2.884801 | 2.930057 | 3.473123 | 2.873565 | 2.873565 | 2.829163 | 3.429161 | 1.490654 | 2.809403 |
| 10 | I&M Holding Plc | 3.310543013 | 3.54674 | 2.403707 | 1.885614 | 2.687847 | 2.701361 | 2.554255 | 2.784703 | 0.943906 | 3.295837 |
| 11 | Diamond Trust Bank Kenya Ltd | 3.768152635 | 3.618993 | 2.980552 | 3.514645 | 2.116256 | 2.116256 | 0.074365 | 2.657476 | 1.652497 | 2.928524 |
| 12 | HF Group Plc | 2.797281335 | 3.317816 | 2.926999 | 3.287674 | 1.481605 | 2.091864 | 1.26448 | 1.846869 | 1.12493 | 2.667228 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | KCB Group Plc | 3.19047635 | 3.781914 | 2.294883 | 3.153208 | 3.08191 | 3.025291 | 0.226862 | 2.495177 | 1.470176 | 2.772589 |
| 14 | NCBA Group Plc | 2.653241965 | 2.970414 | 3.065973 | 2.609496 | 2.747271 | 2.965273 | 2.686 | 2.935209 | 1.444563 | 2.76001 |
| 15 | Standard Chartered Bank Kenya Ltd | 2.954910279 | 3.190476 | 2.617216 | 3.25258 | 2.74084 | 2.833213 | 2.859356 | 2.848147 | 0.641854 | 3.202746 |
| 16 | Equity Group Holding Plc | 2.791165108 | 2.747271 | 3.393704 | 2.608578 | 2.517696 | 2.785011 | 2.378461 | 2.903813 | 1.319086 | 2.674149 |
| 17 | The Co-operative Bank Of Kenya Ltd | 3.295836866 | 3.049273 | 3.728492 | 3.105424 | 2.879198 | 2.884801 | 3.407365 | 3.141088 | 1.528228 | 3.430756 |
| 18 | Express Kenya Plc | 2.58021683 | 2.809403 | 3.511241 | 3.198664 | 3.030134 | 3.113515 | 2.476419 | 2.859324 | 0.732368 | 3.122365 |
| 19 | Kenya Airways Ltd | 2.660259537 | 3.295837 | 2.870383 | 2.81786 | 2.687847 | 2.862201 | 2.735056 | 2.972678 | 1.665818 | 2.624669 |
| 20 | Nation Media Group Plc | 2.406945108 | 2.928524 | 3.233366 | 3.920696 | 2.933857 | 3.091042 | 2.397053 | 3.134957 | 1.302913 | 3.144152 |
| 21 | Standard Group Plc | 2.721295428 | 2.667228 | 1.980619 | 2.784228 | 2.772589 | 2.895912 | 2.797478 | 3.172791 | 1.134623 | 2.97553 |
| 22 | TPS Eastern Africa(Serena)Ltd | 3.18221184 | 2.772589 | 3.27131 | 2.979028 | 2.766319 | 2.917771 | 3.225558 | 2.886277 | 1.728109 | 3.349904 |
| 23 | WPP Scan Group Plc | 2.63905733 | 2.76001 | 2.413015 | 2.920027 | 3.424263 | 3.424263 | 0.918411 | 0.655933 | 1.141033 | 3.113515 |
| 24 | Uchumi Super market | 3.391147046 | 3.202746 | 3.365778 | 2.990368 | 3.65584 | 3.671225 | 2.07651 | 3.336054 | 0.951658 | 3.397858 |
| 25 | Eveready East Africa ltd | 3.068052935 | 2.674149 | 1.546467 | 2.953538 | 3.091042 | 3.113515 | 3.383078 | 3.305493 | 0.398776 | 3.804438 |
| 26 | Longhorn Publisher Plc | 3.502549876 | 3.430756 | 2.492169 | 2.101492 | 3.871201 | 3.881564 | 2.329382 | 2.360248 | 0.631272 | 3.165475 |
| 27 | Deacons(East Africa) Plc | 0.832909123 | 3.122365 | 2.651789 | 2.819563 | 2.721295 | 2.884801 | 2.676149 | 2.9258 | 0.587787 | 3.091042 |
| 28 | Sameer Africa Plc | 2.890371758 | 2.624669 | 3.399354 | 3.723062 | 2.766319 | 2.844909 | 3.115492 | 3.445836 | -1.10866 | 2.862201 |
| 29 | Nairobi Business Venture Ltd | 3.349904087 | 3.144152 | 3.336965 | 3.172409 | 2.163323 | 2.332144 | 2.932618 | 2.118132 | 0.620576 | 2.76001 |
| 30 | Homeboyz Entertainment Plc | 3.113515309 | 2.97553 | 1.6435 | 2.349733 | 2.850707 | 2.933857 | 3.345394 | 2.743259 | 0.277632 | 2.923162 |
| 31 | ARM Cement Plc. | 3.39785848 | 3.349904 | 2.906413 | 3.033053 | 2.564949 | 2.766319 | 3.080332 | 2.996679 | 0.314711 | 2.85647 |
| 32 | Bamburi Cement Plc. | 3.723280881 | 3.113515 | 2.61934 | 3.609681 | 3.258097 | 3.306887 | 3.210314 | 3.153388 | 0.067659 | 3.039749 |
| 33 | Crown Paints Kenya Plc | 3.165475048 | 3.397858 | 2.321902 | 2.899531 | 2.674149 | 2.944439 | 1.980235 | 3.763719 | 0.24686 | 2.815409 |
| 34 | E.A Cables Ltd | 1.871802177 | 3.804438 | 1.225921 | 4.107907 | 3.972177 | 3.972177 | 3.206451 | 2.963699 | 1.560648 | 3.072693 |
| 35 | E.A Portland Cement Ltd. | -0.69314718 | 3.165475 | 1.519908 | 3.329479 | 2.054124 | 2.208274 | 2.734761 | 2.820128 | 0.019803 | 2.906901 |
| 36 | Total Kenya Ltd | 3.157000421 | 3.091042 | 2.976385 | 2.676044 | 2.424803 | 2.80336 | 3.54448 | 2.609244 | 0.598837 | 2.873565 |
| 37 | Kengen Plc | 2.747270914 | 2.862201 | 2.619868 | 2.847864 | 2.564949 | 2.674149 | 2.499722 | 2.842843 | 1.941615 | 3.487375 |
| 38 | Kenya Power Ltd | 2.727852828 | 2.76001 | 2.62289 | 2.909275 | 3.222868 | 3.280911 | 3.337889 | 2.674807 | 1.022451 | 3.723281 |
| 39 | Umeme Ltd | 2.879198457 | 2.923162 | 2.736893 | 2.958337 | 3.091042 | 3.161247 | 2.949105 | 2.875315 | 0.086178 | 3.303217 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | Jubilee Holding Ltd | 2.57261223 | 2.85647 | 3.238711 | 3.150683 | 3.374169 | 3.417727 | 2.392677 | 2.377061 | 1.611436 | 3.8795 |
| 41 | Sanlam Kenya Plc | 2.949688335 | 3.039749 | 2.852827 | 2.900668 | 2.484907 | 2.721295 | 2.855412 | 2.675532 | 1.880991 | 2.928524 |
| 42 | Kenya Re-Insurance Corporation Ltd | 2.63905733 | 2.815409 | 2.535482 | 2.994247 | 2.985682 | 3.100092 | 3.100018 | 3.832483 | 1.420696 | 3.139833 |
| 43 | Liberty Kenya Holdings | 2.890371758 | 3.072693 | 2.414631 | 3.158099 | 3.414443 | 3.414443 | 2.505081 | 3.063768 | 1.611436 | 2.442347 |
| 44 | Britam Holding Plc | 2.721295428 | 2.906901 | 2.795282 | 3.178334 | 2.351375 | 2.791165 | 1.473428 | 3.931627 | 1.342865 | 3.005683 |
| 45 | CIC Insurance Group Ltd | 2.687847494 | 2.873565 | 2.588026 | 2.941668 | 3.206803 | 3.206803 | 2.305781 | 3.450009 | 1.733424 | 2.66026 |
| 46 | Olympia Capitals Holding Ltd. | 3.478158423 | 3.487375 | 3.167913 | 2.956198 | 2.753661 | 2.785011 | 2.311393 | 3.242026 | 1.269761 | 2.791165 |
| 47 | Centum Investment Plc | 3.696351469 | 3.723281 | 2.836985 | 3.403306 | 3.049273 | 3.049273 | 3.107553 | 3.334061 | 1.305626 | 3.269569 |
| 48 | Trans-Century Plc | 3.303216973 | 3.303217 | 2.929328 | 2.489661 | 3.321432 | 3.321432 | 1.408488 | 2.984688 | 1.383791 | 2.839078 |
| 49 | Home Africa Ltd | 3.867025639 | 3.8795 | 2.862701 | 3.372552 | 2.624669 | 2.624669 | 2.667819 | 3.026553 | 1.144223 | 2.884801 |
| 50 | Kurwitu Venture Ltd | 2.76000994 | 2.928524 | 2.755874 | 3.057361 | 1.568616 | 1.568616 | 0.849535 | 2.585048 | 1.8453 | 3.306887 |
| 51 | Nairobi Security Exchange Plc | 3.135494216 | 3.139833 | 3.064219 | 3.503151 | 1.94591 | 1.94591 | 3.318903 | 2.893434 | 1.266948 | 2.70805 |
| 52 | B.O.C Kenya Plc. | 2.282382386 | 2.442347 | 3.755738 | 2.292873 | 4.123903 | 4.094345 | 2.886829 | 3.63685 | 1.383791 | 3.449988 |
| 53 | B.A.T Kenya Plc. | 2.912350665 | 3.005683 | 3.083589 | 2.745699 | 0.04879 | 9.589393 | 1.729884 | 13.13187 | 1.249902 | 3.538057 |
| 54 | Carbacid Investment Plc | 2.564949357 | 2.66026 | 3.449009 | 3.181451 | 0.470004 | 9.262268 | 1.791759 | 12.84727 | 1.48614 | 3.100092 |
| 55 | E.A.B.L Ltd. | 2.610069793 | 2.791165 | 2.846399 | 2.55176 | 1.297463 | 11.99441 | 1.638997 | 12.76568 | 0.620576 | 2.734368 |
| 56 | Mumias Sugar Company Ltd | 3.269568939 | 3.269569 | 3.384623 | 3.145853 | 1.541159 | 11.32547 | 1.629241 | 12.43031 | 1.000632 | 3.234749 |
| 57 | Unga Group Ltd. | 2.517696473 | 2.839078 | 3.984376 | 3.839977 | 1.272566 | 11.08733 | 1.391282 | 12.4665 | 1.261298 | 3.404525 |
| 58 | Kenya Orchards Ltd | 2.602689685 | 2.884801 | 1.816293 | 2.813123 | 1.519513 | 10.77509 | 1.291984 | 12.40543 | 1.556037 | 3.005683 |
| 59 | Flame Tree Group Holding Ltd | 3.288401888 | 3.306887 | 2.35167 | 2.775858 | 0.751416 | 11.12851 | 1.66203 | 12.00833 | 1.108563 | 2.839078 |
| 60 | Safaricom Plc. | 2.646174797 | 2.70805 | 3.064076 | 3.104805 | 1.266948 | 10.01695 | 1.280934 | 12.25904 | 0.476234 | 2.884801 |
| 61 | ILAM-Fahari I-REIT | 3.339321978 | 3.449988 | 2.372908 | 2.707141 | 1.022451 | 10.20935 | 1.214913 | 12.23025 | 0.81093 | 3.306887 |
| 62 | ABSA New Gold ETF | 3.502549876 | 3.538057 | 2.925689 | 2.850363 | 0.802002 | 10.29617 | 1.764731 | 11.54562 | 0.871293 | 2.70805 |

| | | investment decisions | | Value of ending investment | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | B | B | B | B | B | B | B | B | B |

| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 12.83991823 | 34.85188 | 39.09142 | 67.46796 | 41.87111 | 31.24317 | 31.56949 | 30.49975 | 30.89165 | 31.67342 |
| 2 | Kapchorua Tea Kenya Plc | 12.53219147 | 34.1038 | 36.01206 | 34.17185 | 37.28425 | 25.32645 | 25.85252 | 31.51189 | 31.15565 | 39.66898 |
| 3 | Kakuzi Plc | 12.31329343 | 35.92737 | 36.05977 | 35.79069 | 36.95888 | 24.11557 | 27.29803 | 27.43433 | 30.16333 | 39.3627 |
| 4 | Limuru Tea Company Ltd | 12.55210263 | 33.65246 | 38.56876 | 32.65211 | 39.42701 | 32.35516 | 32.71407 | 30.53118 | 31.32155 | 33.47544 |
| 5 | Sasini Plc | 12.32848053 | 34.02673 | 36.80892 | 35.56164 | 40.28762 | 31.16597 | 31.16597 | 14.46273 | 30.04727 | 31.45329 |
| 6 | Williamson Tea Kenya Plc | 11.82991631 | 34.45286 | 36.56677 | 30.34852 | 31.74184 | 28.8179 | 29.31979 | 25.64492 | 28.59822 | 40.16548 |
| 7 | Car &General (K) ltd | 12.05144602 | 34.0017 | 35.42115 | 33.06969 | 39.94786 | 29.98602 | 31.26065 | 28.92977 | 22.21262 | 31.81487 |
| 8 | ABSA Bank Kenya Plc | 11.85776262 | 32.72754 | 34.85188 | 34.44582 | 38.34729 | 30.7528 | 32.1696 | 22.7794 | 27.70364 | 26.89717 |
| 9 | Stanbic Holding Ltd | 11.82837104 | 31.54896 | 35.95528 | 33.15848 | 37.77469 | 25.30768 | 27.44755 | 27.50634 | 31.14779 | 34.16569 |
| 10 | I&M Holding Plc | 12.07715346 | 39.62407 | 39.93778 | 30.41419 | 38.96307 | 22.56396 | 25.20164 | 25.43973 | 29.18164 | 33.88549 |
| 11 | Diamond Trust Bank Kenya Ltd | 11.28222846 | 27.45658 | 32.54698 | 30.74474 | 27.62012 | 30.07153 | 30.60483 | 25.57792 | 32.14173 | 24.70655 |
| 12 | HF Group Plc | 11.58163029 | 29.61686 | 30.48156 | 27.0451 | 30.5527 | 23.31864 | 25.11654 | 29.23463 | 28.91123 | 25.65142 |
| 13 | KCB Group Plc | 11.03400217 | 32.832 | 33.2192 | 37.39471 | 39.50755 | 25.94267 | 26.37961 | 22.63019 | 30.7216 | 13.5329 |
| 14 | NCBA Group Plc | 11.03186898 | 34.73332 | 30.09331 | 30.56106 | 33.19529 | 38.93794 | 39.00549 | 13.07961 | 38.21156 | 28.24313 |
| 15 | Standard Chartered Bank Kenya Ltd | 11.71884147 | 33.06329 | 37.34036 | 21.82741 | 34.49877 | 37.05822 | 37.20712 | 1.235361 | 41.27161 | 33.40726 |
| 16 | Equity Group Holding Plc | 10.46075773 | 25.81819 | 29.51376 | 32.40662 | 29.76711 | 35.77978 | 40.17032 | 33.70404 | 37.74453 | 30.33242 |
| 17 | The Co-operative Bank Of Kenya Ltd | 10.44493937 | 38.1309 | 28.49226 | 30.33961 | 29.76609 | 34.04899 | 34.98869 | 36.28455 | 40.10506 | 25.17421 |
| 18 | Express Kenya Plc | 9.667701926 | 26.43505 | 26.74395 | 37.73237 | 30.78474 | 34.22886 | 35.85897 | 35.085 | 39.28968 | 34.69166 |
| 19 | Kenya Airways Ltd | 10.40402039 | 33.44755 | 38.22193 | 30.30782 | 33.33287 | 35.68164 | 37.89505 | 35.26081 | 39.37216 | 40.1625 |
| 20 | Nation Media Group Plc | 9.404837505 | 24.195 | 28.07985 | 38.34631 | 34.7875 | 34.54927 | 36.19621 | 33.53109 | 38.04957 | 39.87111 |
| 21 | Standard Group Plc | 9.755219536 | 28.304 | 31.74585 | 28.33067 | 29.1869 | 33.36898 | 34.90702 | 33.83584 | 34.19464 | 34.07528 |
| 22 | TPS Eastern Africa(Serena)Ltd | 9.890098315 | 29.7265 | 25.74086 | 25.58713 | 27.63076 | 34.87584 | 37.66826 | 32.64548 | 39.35543 | 33.62836 |
| 23 | WPP Scan Group Plc | 9.153664195 | 28.66138 | 27.04826 | 31.26582 | 28.86028 | 34.35971 | 35.41774 | 32.94136 | 41.21596 | 40.54912 |
| 24 | Uchumi Super market | 9.621257259 | 31.0463 | 29.1071 | 26.75077 | 28.89817 | 30.13489 | 33.62491 | 37.32183 | 37.27536 | 32.88711 |
| 25 | Eveready East Africa ltd | 9.586788531 | 34.38103 | 30.38711 | 26.94588 | 28.45323 | 38.7989 | 39.26206 | 50.60403 | 56.74859 | 27.27314 |
| 26 | Longhorn Publisher Plc | 9.972966972 | 24.18248 | 32.53117 | 20.7375 | 25.30673 | 38.32983 | 38.70738 | 35.83877 | 39.04144 | 34.46134 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Deacons(East Africa) Plc | 9.712024338 | 33.41342 | 35.12168 | 27.36441 | 33.85523 | 31.54245 | 33.64952 | 34.15553 | 34.23461 | 34.07971 |
| 28 | Sameer Africa Plc | 11.03830319 | 33.39408 | 31.40297 | 17.74557 | 39.73661 | 26.22241 | 26.68494 | 35.26715 | 36.80033 | 28.22548 |
| 29 | Nairobi Business Venture Ltd | 9.234056899 | 29.97828 | 32.23082 | 22.37383 | 19.28617 | 33.39355 | 34.49941 | 29.64901 | 36.09328 | 26.92536 |
| 30 | Homeboyz Entertainment Plc | 9.249753374 | 25.81759 | 28.46438 | 24.79457 | 22.49421 | 37.83751 | 38.28577 | 38.85238 | 30.94912 | 16.4625 |
| 31 | ARM Cement Plc. | 9.481740612 | 23.1577 | 32.122 | 23.52406 | 25.50742 | 28.1131 | 29.33724 | 35.05834 | 32.62536 | 28.36653 |
| 32 | Bamburi Cement Plc. | 8.9692874 | 28.68982 | 25.19834 | 30.06014 | 28.89505 | 29.64472 | 30.53096 | 35.74691 | 36.80499 | 33.75251 |
| 33 | Crown Paints Kenya Plc | 8.688959234 | 27.72192 | 24.30546 | 30.1827 | 27.96188 | 27.51463 | 31.04759 | 26.23916 | 34.79028 | 30.57492 |
| 34 | E.A Cables Ltd | 8.161089513 | 28.63364 | 19.93221 | 32.7713 | 27.85173 | 31.92892 | 32.18294 | 37.94129 | 38.21469 | 25.34876 |
| 35 | E.A Portland Cement Ltd. | 9.089866219 | 36.90888 | 29.47473 | 24.9398 | 25.81867 | 31.09347 | 31.40253 | 31.92827 | 29.10184 | 32.96211 |
| 36 | Total Kenya Ltd | 9.620925683 | 27.80805 | 31.15908 | 22.70058 | 31.20195 | 27.57747 | 27.62805 | 29.96592 | 27.59691 | 24.91802 |
| 37 | Kengen Plc | 8.467162258 | 17.91868 | 29.78322 | 26.98707 | 23.45482 | 30.12965 | 30.17111 | 33.95387 | 33.32807 | 34.92517 |
| 38 | Kenya Power Ltd | 9.716495104 | 29.71991 | 39.55327 | 19.49801 | 33.01549 | 32.16558 | 32.56159 | 28.53138 | 33.47753 | 27.59452 |
| 39 | Umeme Ltd | 10.73496086 | 20.73481 | 25.44447 | 16.71252 | 44.11845 | 40.2788 | 40.49732 | 11.02575 | 37.59753 | 32.96364 |
| 40 | Jubilee Holding Ltd | 13.05567 | 34.54758 | 35.699 | 37.21253 | 41.08443 | 33.52143 | 33.83769 | 30.75696 | 36.23788 | 38.62139 |
| 41 | Sanlam Kenya Plc | 12.7406021 | 34.15783 | 35.48272 | 34.0234 | 37.31049 | 27.85268 | 28.23484 | 30.37028 | 29.8189 | 27.37533 |
| 42 | Kenya Re-Insurance Corporation Ltd | 12.73537649 | 34.05629 | 38.95379 | 33.58338 | 38.1835 | 28.45205 | 28.61403 | 33.30872 | 34.70264 | 39.10186 |
| 43 | Liberty Kenya Holdings | 12.39318687 | 34.20532 | 36.09331 | 35.08773 | 39.27325 | 24.74526 | 26.91112 | 21.96087 | 24.48727 | 25.80836 |
| 44 | Britam Holding Plc | 12.36363607 | 35.38721 | 37.75856 | 35.00199 | 39.30159 | 29.2863 | 29.59553 | 23.49005 | 28.74065 | 34.13363 |
| 45 | CIC Insurance Group Ltd | 11.90392647 | 32.93006 | 34.86093 | 32.51815 | 32.46264 | 31.50774 | 32.91151 | 27.79852 | 23.24597 | 35.17075 |
| 46 | Olympia Capitals Holding Ltd. | 12.19893725 | 32.87159 | 35.05443 | 33.12075 | 38.6479 | 27.42857 | 33.64216 | 26.75962 | 28.13499 | 32.20284 |
| 47 | Centum Investment Plc | 12.15975642 | 34.45118 | 35.93099 | 32.76201 | 39.67686 | 33.59387 | 33.18125 | 16.15306 | 37.13656 | 33.93156 |
| 48 | Trans-Century Plc | 11.96248401 | 31.98946 | 36.13178 | 33.80417 | 38.57628 | 25.02036 | 30.9823 | 26.91372 | 31.6566 | 25.74959 |
| 49 | Home Africa Ltd | 12.19846377 | 40.38354 | 40.77778 | 31.46868 | 39.38318 | 27.89886 | 23.90055 | 31.50464 | 27.87168 | 30.376 |
| 50 | Kurwitu Venture Ltd | 11.38676115 | 28.48325 | 32.84854 | 28.65149 | 26.06541 | 22.34302 | 31.58569 | 29.07599 | 35.71986 | 30.49581 |
| 51 | Nairobi Security Exchange Plc | 11.30454737 | 30.91079 | 33.2259 | 35.88077 | 38.92512 | 33.27549 | 25.50106 | 22.68127 | 29.62067 | 29.45624 |
| 52 | B.O.C Kenya Plc. | 11.08215793 | 36.23388 | 36.56595 | 32.24434 | 32.63828 | 16.91986 | 32.91746 | 26.14541 | 44.81341 | 36.68442 |
| 53 | B.A.T Kenya Plc. | 11.12987721 | 28.54757 | 29.37238 | 31.22441 | 34.04217 | 39.55897 | 22.24055 | 9.986991 | 36.53833 | 38.85703 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Carbacid Investment Plc | 10.64929834 | 33.34441 | 34.27877 | 32.26545 | 30.27694 | 35.73322 | 36.75783 | 36.68882 | 39.61396 | 39.33405 |
| 55 | E.A.B.L Ltd. | 10.11512516 | 28.83525 | 28.83525 | 35.7812 | 29.17494 | 35.6458 | 36.20567 | 35.17355 | 39.15002 | 21.35339 |
| 56 | Mumias Sugar Company Ltd | 9.904487053 | 25.55572 | 27.70564 | 37.79169 | 30.47953 | 36.03817 | 40.13908 | 37.02879 | 40.77785 | 35.88459 |
| 57 | Unga Group Ltd. | 10.28786521 | 38.22979 | 38.52586 | 33.41564 | 31.76711 | 34.61326 | 36.16545 | 35.00857 | 37.30924 | 32.46245 |
| 58 | Kenya Orchards Ltd | 9.857810039 | 32.45316 | 32.74205 | 35.75263 | 33.25643 | 34.5076 | 36.64919 | 34.08386 | 37.96987 | 37.78962 |
| 59 | Flame Tree Group Holding Ltd | 9.577757412 | 26.43471 | 26.43471 | 38.33775 | 37.66546 | 35.65231 | 36.82457 | 34.77503 | 39.21941 | 32.39861 |
| 60 | Safaricom Plc. | 9.233079859 | 29.5336 | 29.60867 | 33.56139 | 27.8334 | 33.45804 | 34.76592 | 34.4608 | 34.29774 | 29.16 |
| 61 | ILAM-Fahari I-REIT | 9.66839793 | 28.26229 | 28.61947 | 30.83463 | 32.44811 | 35.1169 | 36.08283 | 32.92342 | 36.01338 | 33.48686 |
| 62 | ABSA New Gold ETF | 10.00143063 | 31.35943 | 31.82667 | 25.54607 | 28.89968 | 32.36337 | 34.37858 | 41.08197 | 37.49148 | 40.37983 |

| | risk tolerance | | winners shares sold | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | M | M | M | (M) | M | M | M | M | M | M |

| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 31384.94 | 486613 | 95595972 | 621722.88 | 30012 | 31156 | 69416 | 5159.08 | 20525 | 20074411 |
| 2 | Kapchorua Tea Kenya Plc | 33183.95 | 536830 | 101066966 | 674301.72 | 34786 | 51781 | 72028 | 2798.62 | 20532 | 18596724 |
| 3 | Kakuzi Plc | 24382.34 | 341782 | 55864207 | 438508.78 | 28953 | 23272 | 42094.71 | 15323.11 | 13334 | 20415 |
| 4 | Limuru Tea Company Ltd | 25973.66 | 381138 | 64711979 | 507525.24 | 26185 | 3435 | 44584 | 28680.49 | 4126 | 24455 |
| 5 | Sasini Plc | 11433.57 | 213033 | 45102257 | 284691 | 13910 | 13910 | 43393 | 25323.37 | 9887.41 | 32336.96 |
| 6 | Williamson Tea Kenya Plc | 12691.23 | 330113 | 82739024 | 302295.9 | 30516 | 30516 | 77088 | 33325.58 | 54463.88 | 66909.84 |
| 7 | Car &General (K) ltd | 10289 | 370085 | 61233 | 283569 | 35995 | 35995 | 85597 | 49080.86 | 10515.02 | 21520.67 |
| 8 | ABSA Bank Kenya Plc | 10250.07 | 220784 | 42880319 | 325362.74 | 11036 | 3392 | 43904.78 | 15323.11 | 15332.12 | 16185.96 |
| 9 | Stanbic Holding Ltd | 12012.34 | 242375 | 48907303 | 254252.17 | 13519 | 45102257 | 284691 | 27212.71 | 10235.52 | 17805.42 |
| 10 | I&M Holding Plc | 10526 | 16515 | 69051 | 57083 | 112028 | 54478 | 16858 | 62485 | 6856.57 | 71467 |
| 11 | Diamond Trust Bank Kenya Ltd | 52427 | 62212 | 53456 | 25329 | 8584.54 | 5114 | 18743 | 117724 | 13808 | 20525 |
| 12 | HF Group Plc | 14136 | 10240 | 11148 | 5250 | 43996 | 10147 | 12985 | 12313.03 | 5612 | 12964 |
| 13 | KCB Group Plc | 373031 | 411666 | 132497 | 139406 | 257566 | 290564 | 355630 | 536830 | 591067 | 31384 |
| 14 | NCBA Group Plc | 132497 | 139406 | 176349 | 177224 | 231026 | 281516 | 307324 | 381138 | 502423 | 24382 |
| 15 | Standard Chartered Bank Kenya Ltd | 176349 | 177224 | 19354 | 20771 | 18615 | 244395 | 259698 | 360305 | 394813 | 17586 |
| 16 | Equity Group Holding Plc | 19354 | 20771 | 38089 | 43943 | 152287 | 205304 | 229677 | 330113 | 370085 | 11433 |
| 17 | The Co-operative Bank Of Kenya Ltd | 38089 | 43943 | 105082 | 107038 | 133166 | 163859 | 176597 | 242375 | 257706 | 10250 |
| 18 | Express Kenya Plc | 105082 | 107038 | 4339 | 39763 | 155498 | 155307 | 165948 | 236461 | 256951 | 9264 |
| 19 | Kenya Airways Ltd | 4339 | 39763 | 40170 | 7232 | 144434 | 152807 | 160665 | 221038 | 235048 | 8797 |
| 20 | Nation Media Group Plc | 40170 | 7232 | 241395 | 68153 | 117786 | 144483 | 152711 | 195841 | 219167 | 8725 |
| 21 | Standard Group Plc | 241395 | 68153 | 68616 | 7741 | 118271 | 60677 | 74774 | 205516 | 233493 | 7952 |
| 22 | TPS Eastern Africa(Serena)Ltd | 28242 | 5680 | 7109 | 38080 | 66123 | 54389 | 63111 | 97079 | 81190 | 5643 |
| 23 | WPP Scan Group Plc | 6243 | 13746 | 28242 | 5680 | 49215 | 49335 | 51151 | 20532 | 22082 | 5159 |
| 24 | Uchumi Super market | 13418 | 10710 | 5361 | 3242 | 47023 | 45822 | 41836 | 13600 | 13238 | 1681 |
| 25 | Eveready East Africa ltd | 28333 | 34182 | 15038 | 17621 | 28953 | 26185 | 42825 | 33183 | 14440 | 12147 |
| 26 | Longhorn Publisher Plc | 15038 | 17621 | 11472 | 12615 | 17064 | 31156 | 51781 | 25973 | 10230 | 17244 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Deacons(East Africa) Plc | 11472 | 12615 | 272 | 435 | 13910 | 30516 | 35995 | 20326 | 15810 | 19734 |
| 28 | Sameer Africa Plc | 7189 | 178696 | 32227 | 229525 | 18714 | 33051 | 45822 | 41836 | 13600 | 13238 |
| 29 | Nairobi Business Venture Ltd | 8725.33 | 186521 | 39656966 | 229161.13 | 21115 | 33775 | 26185 | 42825 | 33183 | 14440 |
| 30 | Homeboyz Entertainment Plc | 7450 | 7798 | 816 | 2252 | 16644 | 12892 | 19747 | 11857 | 10533 | 14571 |
| 31 | ARM Cement Plc. | 816 | 2252 | 1855 | 18714 | 21115 | 18799 | 20178 | 9289 | 16943 | 21439 |
| 32 | Bamburi Cement Plc. | 1855 | 18714 | 11273 | 27658 | 15830 | 20058 | 22337 | 9279 | 10526 | 16515 |
| 33 | Crown Paints Kenya Plc | 11273 | 27658 | 29987 | 809 | 9271 | 25175 | 26438 | 8239 | 52427 | 62212 |
| 34 | E.A Cables Ltd | 9264.77 | 224440 | 41776778 | 281515.7 | 21661 | 45336 | 20326.06 | 360305 | 65182117 | 449616.47 |
| 35 | E.A Portland Cement Ltd. | 11857.47 | 236461 | 46433739 | 374109.2 | 19345 | 47222 | 14207 | 394813 | 92118 | 667650 |
| 36 | Total Kenya Ltd | 7952.41 | 177250 | 30856983 | 232317.12 | 15830 | 38339 | 12764 | 178447.78 | 42746 | 250274 |
| 37 | Kengen Plc | 8239.66 | 205516 | 43037925 | 292705.14 | 20058 | 38940 | 10006 | 226051 | 43934 | 271682 |
| 38 | Kenya Power Ltd | 5643.03 | 71467 | 20200548 | 123014.4 | 31461 | 31117 | 11433.57 | 213033 | 45102257 | 284691 |
| 39 | Umeme Ltd | 5466.2 | 97079 | 22033737 | 62543.24 | 8244 | 22943 | 12691.23 | 330113 | 82739024 | 302295.9 |
| 40 | Jubilee Holding Ltd | 3942 | 81190 | 22912 | 75129 | 9391 | 2667 | 10289 | 370085 | 61233 | 283569 |
| 41 | Sanlam Kenya Plc | 3876 | 11772.94 | 13992 | 115114 | 856 | 109996.68 | 10440 | 186598.23 | 42104 | 259498 |
| 42 | Kenya Re-Insurance Corporation Ltd | 5053 | 13808 | 16909 | 10577 | 592 | 17900 | 7952.41 | 177250 | 30856983 | 232317.12 |
| 43 | Liberty Kenya Holdings | 5159.08 | 20525 | 20074411 | 15323.11 | 13334 | 20415 | 8239.66 | 205516 | 43037925 | 292705.14 |
| 44 | Britam Holding Plc | 2798.62 | 20532 | 18596724 | 28680.49 | 4126 | 24455 | 15830 | 38339 | 16881 | 12964 |
| 45 | CIC Insurance Group Ltd | 2733 | 22082 | 18515 | 11378 | 6342 | 24902 | 20058 | 38940 | 16426 | 13600 |
| 46 | Olympia Capitals Holding Ltd. | 162 | 12313.03 | 2789 | 20875 | 805 | 19628.61 | 28953 | 23272 | 4209471 | 1532311 |
| 47 | Centum Investment Plc | 116 | 5612 | 2906 | 6505 | 1421 | 20177 | 373031 | 2666 | 11036 | 13519 |
| 48 | Trans-Century Plc | 168.81 | 12964 | 2683456 | 15332.12 | 4940 | 23039 | 132497 | 7798 | 21661 | 19345 |
| 49 | Home Africa Ltd | 164.26 | 13600 | 2740810 | 8466.28 | 1212 | 11705 | 176349 | 2252 | 16644 | 12892 |
| 50 | Kurwitu Venture Ltd | 5926 | 62485.52 | 19196 | 82907 | 29987 | 536830 | 31267 | 18714 | 21115 | 18799 |
| 51 | Nairobi Security Exchange Plc | 5599 | 65461 | 19763 | 96132 | 1724 | 341782 | 37890 | 27658 | 15830 | 20058 |
| 52 | B.O.C Kenya Plc. | 5643.03 | 71467 | 20200548 | 123014.4 | 31461 | 381138 | 27212 | 809 | 9271 | 25175 |
| 53 | B.A.T Kenya Plc. | 5466.2 | 97079 | 22033737 | 62543.24 | 8244 | 213033 | 126842 | 1724 | 31461 | 8244 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Carbacid Investment Plc | 3942 | 81190 | 22912 | 75129 | 9391 | 330113 | 21947 | 94428 | 126842 | 45822 |
| 55 | E.A.B.L Ltd. | 3876 | 11772.94 | 13992 | 115114 | 856 | 370085 | 32643 | 30612 | 21947 | 26185 |
| 56 | Mumias Sugar Company Ltd | 5053 | 13808 | 16909 | 10577 | 592 | 220784 | 11022 | 12886 | 32643 | 31156 |
| 57 | Unga Group Ltd. | 7952.41 | 177250 | 30856983 | 232317.12 | 15830 | 242375 | 33500 | 12729 | 11022 | 30516 |
| 58 | Kenya Orchards Ltd | 8239.66 | 205516 | 43037925 | 292705.14 | 20058 | 38940 | 11378 | 44917 | 33500 | 13519 |
| 59 | Flame Tree Group Holding Ltd | 16881 | 12964 | 2683456 | 1533212 | 4940 | 23039 | 16858 | 13263 | 11378 | 19345 |
| 60 | Safaricom Plc. | 16426 | 13600 | 2740810 | 846628 | 1212 | 11705 | 18743 | 54478 | 16858 | 12892 |
| 61 | ILAM-Fahari I-REIT | 19354 | 20771 | 38089 | 43943 | 152287 | 205304 | 229677 | 330113 | 18743 | 18799 |
| 62 | ABSA New Gold ETF | 38089 | 43943 | 105082 | 107038 | 133166 | 163859 | 176597 | 242375 | 12985 | 5963 |

| | | risk tolerance | | Losers shares sold | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | FIRM NSE | M 2014 | M 2015 | M 2016 | (M) 2017 | M 2018 | M 2019 | M 2020 | M 2021 | M 2022 | M 2023 |
| 1 | Eagaads Ltd | 805 | 592 | 856 | 1724 | 31461 | 8244 | 17.10 | 21.00 | 65338 | 88147 |
| 2 | Kapchorua Tea Kenya Plc | 1322 | 1421 | 805 | 592 | 13334 | 4126 | 15.2 | 17.7 | 47815 | 81190 |
| 3 | Kakuzi Plc | 2141 | 1122 | 158 | 1438 | 8138 | 12316 | 18.5 | 18.7 | 68085 | 65001 |
| 4 | Limuru Tea Company Ltd | 687 | 547 | 659 | 393 | 419.88 | 491.2 | 14.6 | 21.6 | 22403 | 68178 |
| 5 | Sasini Plc | 643 | 520 | 633 | 254 | 359.04 | 385.27 | 15.8 | 19.8 | 27156 | 42163 |
| 6 | Williamson Tea Kenya Plc | 635 | 510 | 622 | 241 | 348.05 | 300.07 | 18.4 | 22 | 29619 | 24714 |
| 7 | Car &General (K) ltd | 615 | 485 | 601 | 228 | 332.21 | 250.55 | 16.8 | 18.9 | 69432 | 20020 |
| 8 | ABSA Bank Kenya Plc | 532 | 479 | 493 | 216 | 307.08 | 243.35 | 7858 | 18708 | 17033 | 29374 |
| 9 | Stanbic Holding Ltd | 472 | 355 | 302 | 203 | 292.2 | 218.05 | 5937 | 62127 | 16254 | 19107 |
| 10 | I&M Holding Plc | 378 | 329 | 222 | 179 | 209.56 | 185.48 | 3502 | 31316 | 12508 | 14440 |
| 11 | Diamond Trust Bank Kenya Ltd | 319 | 252 | 162 | 116 | 168.81 | 164.26 | 8865 | 27628 | 14705 | 10230 |
| 12 | HF Group Plc | 318 | 178 | 160 | 96 | 157.6 | 105.58 | 15077 | 15803 | 22422 | 15810 |
| 13 | KCB Group Plc | 298 | 169 | 158 | 58 | 150.79 | 85.64 | 4756 | 17360 | 115114 | 22058 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | NCBA Group Plc | 204 | 93 | 105 | 54 | 136.26 | 64.49 | 16589 | 24804 | 10465 | 14609 |
| 15 | Standard Chartered Bank Kenya Ltd | 191 | 49 | 95 | 35 | 105.31 | 64.45 | 9541 | 14465 | 12202 | 10533 |
| 16 | Equity Group Holding Plc | 7828 | 9536 | 821 | 6938 | 7877 | 8871 | 16320 | 10577 | 9427 | 16943 |
| 17 | The Co-operative Bank Of Kenya Ltd | 6075 | 7307 | 831 | 9165 | 9152 | 8247 | 10295 | 69051 | 16418 | 10526 |
| 18 | Express Kenya Plc | 7165 | 8366 | 856 | 6408 | 4276 | 6745 | 54191 | 53456 | 20875 | 52427 |
| 19 | Kenya Airways Ltd | 3147 | 4375 | 719 | 6736 | 6356 | 9189 | 6505 | 11148 | 5601 | 14136 |
| 20 | Nation Media Group Plc | 2623 | 2996 | 875 | 5963 | 8808 | 5419 | 3548 | 2051 | 9920 | 5678 |
| 21 | Standard Group Plc | 2876 | 5060 | 568 | 4468 | 4635 | 5029 | 11745 | 2257 | 55996 | 16782 |
| 22 | TPS Eastern Africa(Serena)Ltd | 2432 | 3868 | 629 | 8453 | 3689 | 3816 | 13456 | 13519 | 14962 | 14613 |
| 23 | WPP Scan Group Plc | 2422 | 2964 | 813 | 3557 | 4018 | 4080 | 19302 | 19345 | 5234 | 10287 |
| 24 | Uchumi Super market | 1715 | 2903 | 591 | 4037 | 3077 | 3204 | 12851 | 23145 | 13918 | 15025 |
| 25 | Eveready East Africa ltd | 2764 | 3077 | 899 | 3039 | 3000 | 3218 | 2610 | 94428 | 15724 | 7781 |
| 26 | Longhorn Publisher Plc | 3105 | 3590 | 861 | 2863 | 2741 | 2051 | 12851 | 12887 | 13802 | 14470 |
| 27 | Deacons(East Africa) Plc | 1155 | 1577 | 872 | 2557 | 1462 | 2257 | 15.8 | 19.8 | 47124 | 69280 |
| 28 | Sameer Africa Plc | 272 | 435 | 3392 | 2666 | 11036 | 13519 | 17099 | 12691 | 555630 | 9449 |
| 29 | Nairobi Business Venture Ltd | 3392 | 2666 | 7450 | 7798 | 21661 | 19345 | 25038 | 12012 | 406402 | 15082 |
| 30 | Homeboyz Entertainment Plc | 29374 | 15799 | 10295 | 54463.88 | 26451 | 12985 | 31267 | 14.4 | 20.9 | 17.6 |
| 31 | ARM Cement Plc. | 19107 | 32992 | 54191 | 10515 | 12393 | 17222 | 37890 | 26.6 | 27.3 | 20.4 |
| 32 | Bamburi Cement Plc. | 14440 | 12147 | 6505 | 15332 | 8466 | 23145 | 27212 | 11.4 | 17.9 | 32.1 |
| 33 | Crown Paints Kenya Plc | 10230 | 17244 | 3548 | 10235 | 5783 | 94428 | 12842 | 12.9 | 13.9 | 23.6 |
| 34 | E.A Cables Ltd | 15810 | 19734 | 11745 | 6856 | 9317 | 30612 | 21947 | 19.6 | 20.3 | 14 |
| 35 | E.A Portland Cement Ltd. | 22058 | 9449 | 13456 | 17880 | 8652 | 12886 | 32643 | 23.3 | 15.3 | 11.5 |
| 36 | Total Kenya Ltd | 14609 | 15082 | 19302 | 9223 | 6860 | 12729 | 11022 | 16.8 | 24.2 | 22.8 |
| 37 | Kengen Plc | 10533 | 14571 | 12851 | 12887 | 11865 | 44917 | 33500 | 11.8 | 16.8 | 13.5 |
| 38 | Kenya Power Ltd | 16943 | 21439 | 2610 | 10004 | 8987 | 13263 | 11378 | 38.5 | 15.3 | 15 |
| 39 | Umeme Ltd | 9391 | 5466 | 14136 | 10240 | 17.6 | 14.5 | 21.3 | 15.4 | 15.9 | 32.9 |
| 40 | Jubilee Holding Ltd | 6342 | 2798 | 373031 | 411666 | 21.5 | 15.8 | 18.4 | 24.9 | 39.4 | 23.5 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | Sanlam Kenya Plc | 10799 | 1646 | 152287 | 205304 | 37.2 | 17.5 | 21.2 | 13.1 | 19.8 | 7.8 |
| 42 | Kenya Re-Insurance Corporation Ltd | 19354 | 20771 | 155498 | 155307 | 27.3 | 15.9 | 18.7 | 18.2 | 25.9 | 16.9 |
| 43 | Liberty Kenya Holdings | 38089 | 43943 | 144434 | 152807 | 17.5 | 14.8 | 17.7 | 20.2 | 13.5 | 16.2 |
| 44 | Britam Holding Plc | 15082 | 68153 | 117786 | 144483 | 15.3 | 17 | 19.2 | 22.9 | 19.2 | 14.4 |
| 45 | CIC Insurance Group Ltd | 14571 | 7741 | 118271 | 60677 | 24.1 | 14.5 | 20.5 | 25.2 | 20.6 | 15.7 |
| 46 | Olympia Capitals Holding Ltd. | 21439 | 38080 | 66123 | 54389 | 16.5 | 27.4 | 28.3 | 36.1 | 23.8 | 17.5 |
| 47 | Centum Investment Plc | 16515 | 5680 | 49215 | 49335 | 15.7 | 12.2 | 17.9 | 11.3 | 26.1 | 16.2 |
| 48 | Trans-Century Plc | 62212 | 3242 | 47023 | 45822 | 33.1 | 15.4 | 18.9 | 31.2 | 37.2 | 16.1 |
| 49 | Home Africa Ltd | 10240 | 17621 | 28953 | 26185 | 23.8 | 26.3 | 27.1 | 20.6 | 17.2 | 17.2 |
| 50 | Kurwitu Venture Ltd | 52427 | 12615 | 17064 | 31156 | 9.4 | 13 | 14 | 25.7 | 32.8 | 16.6 |
| 51 | Nairobi Security Exchange Plc | 14136 | 435 | 13910 | 30516 | 19.9 | 22.9 | 25 | 16.3 | 21.7 | 13.6 |
| 52 | B.O.C Kenya Plc. | 386611 | 445398 | 486613 | 34.2 | 22.8 | 17.3 | 17.3 | 11.5 | 29.6 | 25.4 |
| 53 | B.A.T Kenya Plc. | 277274 | 298703 | 341782 | 22 | 15.5 | 13.2 | 16.4 | 24.5 | 16.6 | 29.5 |
| 54 | Carbacid Investment Plc | 259471 | 285990 | 304593 | 18.9 | 17.9 | 41.1 | 42.3 | 24.3 | 16.4 | 17.2 |
| 55 | E.A.B.L Ltd. | 178447 | 226051 | 213033 | 18.4 | 20.9 | 26.9 | 27.7 | 33.4 | 11.5 | 11.4 |
| 56 | Mumias Sugar Company Ltd | 186598 | 209254 | 220784 | 16.8 | 18.5 | 15.8 | 15.8 | 58 | 25.6 | 20.1 |
| 57 | Unga Group Ltd. | 169599 | 189305 | 224440 | 7858 | 18.3 | 24.5 | 24.7 | 18 | 25.5 | 43.7 |
| 58 | Kenya Orchards Ltd | 159284 | 186444 | 212282 | 5937 | 21.6 | 18.6 | 19.3 | 8.3 | 33.7 | 15.7 |
| 59 | Flame Tree Group Holding Ltd | 121989 | 178696 | 186521 | 3502 | 18.1 | 23 | 24.1 | 21.3 | 58.6 | 11.9 |
| 60 | Safaricom Plc. | 104160 | 134247 | 177250 | 22.9 | 18.4 | 26 | 26.9 | 6.9 | 10.7 | 22.2 |
| 61 | ILAM-Fahari I-REIT | 17.10 | 21.00 | 18.5 | 18.7 | 26.4 | 15.4 | 16.3 | 14.1 | 15.4 | 45.7 |
| 62 | ABSA New Gold ETF | 15.2 | 17.7 | 14.6 | 21.6 | 30.5 | 11.9 | 16.5 | 14.6 | 16.2 | 17.7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | overconfidence | | Lowest volume traded | | | | |
| | Billions | B | B | B | B | B | B |

| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 2.839078464 | 3.044522 | 5.254547 | 3.261011 | 3.135494 | 3.182212 | 2.554242 | 2.889554 | 2.844909 | 2.923162 |
| 2 | Kapchorua Tea Kenya Plc | 2.721295428 | 2.873565 | 2.726726 | 2.975079 | 3.258097 | 3.292126 | 3.180572 | 3.22144 | 2.815409 | 2.99072 |
| 3 | Kakuzi Plc | 2.917770732 | 2.928524 | 2.906671 | 3.001543 | 2.734368 | 2.791165 | 3.402178 | 3.363717 | 2.60269 | 2.850707 |
| 4 | Limuru Tea Company Ltd | 2.681021529 | 3.072693 | 2.601326 | 3.141068 | 2.476538 | 2.80336 | 2.817357 | 3.097611 | 3.202746 | 3.242592 |
| 5 | Sasini Plc | 2.76000994 | 2.985682 | 2.884512 | 3.267849 | 3.493473 | 3.532226 | 3.296533 | 3.381871 | 3.430756 | 3.475067 |
| 6 | Williamson Tea Kenya Plc | 2.912350665 | 3.091042 | 2.565405 | 2.683184 | 2.867899 | 2.867899 | 1.330863 | 2.764957 | 3.058707 | 3.113515 |
| 7 | Car &General (K) ltd | 2.821378886 | 2.939162 | 2.744043 | 3.314777 | 3.015535 | 3.068053 | 2.683511 | 2.992547 | 2.797281 | 2.99072 |
| 8 | ABSA Bank Kenya Plc | 2.76000994 | 2.939162 | 2.904917 | 3.23394 | 3.468856 | 3.616309 | 3.346667 | 2.56961 | 3.951244 | 3.988984 |
| 9 | Stanbic Holding Ltd | 2.667228207 | 3.039749 | 2.8033 | 3.193567 | 3.161247 | 3.306887 | 2.341618 | 2.847806 | 2.74084 | 2.833213 |
| 10 | I&M Holding Plc | 3.280911216 | 3.306887 | 2.518324 | 3.22618 | 2.639057 | 2.862201 | 2.868331 | 3.248058 | 2.734368 | 2.772589 |
| 11 | Diamond Trust Bank Kenya Ltd | 2.433613355 | 2.884801 | 2.725059 | 2.448108 | 2.442347 | 2.727853 | 2.753624 | 3.158652 | 3.095578 | 3.122365 |
| 12 | HF Group Plc | 2.557227311 | 2.631889 | 2.335173 | 2.638031 | 3.126761 | 3.182212 | 2.659526 | 3.342015 | 3.273364 | 3.292126 |
| 13 | KCB Group Plc | 2.975529566 | 3.010621 | 3.389043 | 3.580528 | 2.60269 | 2.80336 | 3.262998 | 3.226901 | 2.415914 | 2.76001 |
| 14 | NCBA Group Plc | 3.148453361 | 2.727853 | 2.770252 | 3.009036 | 2.70805 | 2.753661 | 2.362274 | 3.206904 | 2.653242 | 2.785011 |
| 15 | Standard Chartered Bank Kenya Ltd | 2.821378886 | 3.186353 | 1.862591 | 2.943872 | 3.493473 | 3.499533 | 1.17349 | 3.428303 | 1.386294 | 1.686399 |
| 16 | Equity Group Holding Plc | 2.468099531 | 2.821379 | 3.097923 | 2.845597 | 3.157 | 3.169686 | 0.105241 | 3.515941 | 2.791165 | 2.80336 |
| 17 | The Co-operative Bank Of Kenya Ltd | 3.650658241 | 2.727853 | 2.904719 | 2.84981 | 2.054124 | 2.24071 | 2.1931 | 3.306863 | 3.487375 | 3.523415 |
| 18 | Express Kenya Plc | 2.734367509 | 2.766319 | 3.902931 | 3.184287 | 2.827314 | 2.99072 | 2.775376 | 3.042075 | 3.273364 | 3.299534 |
| 19 | Kenya Airways Ltd | 3.214867803 | 3.673766 | 2.913087 | 3.203845 | 2.785011 | 3.126761 | 2.62344 | 2.937942 | 2.747271 | 2.766319 |
| 20 | Nation Media Group Plc | 2.57261223 | 2.985682 | 4.077296 | 3.698895 | 2.667228 | 2.74084 | 2.842351 | 3.14163 | 2.557227 | 2.714695 |
| 21 | Standard Group Plc | 2.901421594 | 3.254243 | 2.904156 | 2.991926 | 2.753661 | 2.884801 | 2.822536 | 3.160796 | 2.97553 | 3.005683 |
| 22 | TPS Eastern Africa(Serena)Ltd | 3.005682604 | 2.60269 | 2.587146 | 2.79378 | 2.862201 | 3.039749 | 2.828444 | 3.158236 | 2.933857 | 2.960105 |
| 23 | WPP Scan Group Plc | 3.131136911 | 2.95491 | 3.415662 | 3.152866 | 2.785011 | 2.917771 | 2.702936 | 3.06717 | 3.65842 | 3.65842 |
| 24 | Uchumi Super market | 3.226843995 | 3.025291 | 2.780382 | 3.003575 | 2.778819 | 2.906901 | 2.817697 | 2.847577 | 3.00072 | 3.161247 |
| 25 | Eveready East Africa ltd | 3.586292865 | 3.169686 | 2.810731 | 2.967963 | 2.844909 | 3.072693 | 2.662973 | 3.21032 | 3.258097 | 3.310543 |
| 26 | Longhorn Publisher Plc | 2.424802726 | 3.261935 | 2.079372 | 2.537533 | 2.809403 | 2.895912 | 2.693433 | 3.37 | 2.370244 | 2.727853 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | Deacons(East Africa) Plc | 3.440418095 | 3.616309 | 2.81758 | 3.485909 | 2.61007 | 2.912351 | 3.232551 | 3.228527 | 4.249923 | 4.249923 |
| 28 | Sameer Africa Plc | 3.025291076 | 2.844909 | 1.607636 | 3.599884 | 3.234749 | 3.273364 | 4.218969 | 4.731255 | 4.5486 | 4.5486 |
| 29 | Nairobi Business Venture Ltd | 3.246490992 | 3.490429 | 2.422969 | 2.088592 | 3.38439 | 3.417727 | 3.164439 | 3.447224 | 3.740048 | 3.751854 |
| 30 | Homeboyz Entertainment Plc | 2.791165108 | 3.077312 | 2.680566 | 2.431872 | 2.844909 | 3.034953 | 3.080591 | 3.087724 | 2.778819 | 2.797281 |
| 31 | ARM Cement Plc. | 2.442347035 | 3.387774 | 2.480986 | 2.690163 | 2.433613 | 2.476538 | 3.273025 | 3.415314 | 2.341806 | 2.541602 |
| 32 | Bamburi Cement Plc. | 3.198673118 | 2.809403 | 3.351452 | 3.221554 | 3.00072 | 3.100092 | 2.664238 | 3.243316 | 1.098612 | 1.629241 |
| 33 | Crown Paints Kenya Plc | 3.19047635 | 2.797281 | 3.473684 | 3.218093 | 3.777348 | 3.822098 | 3.878664 | 3.089675 | 2.797281 | 2.879198 |
| 34 | E.A Cables Ltd | 3.5085559 | 2.442347 | 4.015554 | 3.412747 | 2.753661 | 2.873565 | 3.433943 | 3.195634 | 2.639057 | 2.639057 |
| 35 | E.A Portland Cement Ltd. | 4.060443011 | 3.242592 | 2.743692 | 2.84038 | 2.879198 | 2.965273 | 3.471864 | 3.574628 | 2.70805 | 3.394508 |
| 36 | Total Kenya Ltd | 2.890371758 | 3.238678 | 2.3595 | 3.243134 | 2.4681 | 2.785011 | 2.353688 | 3.120735 | 2.66721 | 2.917536 |
| 37 | Kengen Plc | 2.116255515 | 3.517498 | 3.187263 | 2.770092 | 3.277145 | 3.303217 | 3.894247 | 3.922308 | 3.573872 | 3.261522 |
| 38 | Kenya Power Ltd | 3.058707073 | 4.070735 | 2.006691 | 3.39788 | 3.206803 | 3.238678 | 3.2929 | 3.001398 | 2.708584 | 3.014456 |
| 39 | Umeme Ltd | 1.931521412 | 2.370244 | 1.556831 | 4.109791 | 2.923162 | 2.928524 | 3.176333 | 2.925222 | 2.011802 | 3.137193 |
| 40 | Jubilee Holding Ltd | 2.646174797 | 2.734368 | 2.850296 | 3.146865 | 3.139833 | 3.144152 | 3.538357 | 3.473142 | 3.043991 | 3.428259 |
| 41 | Sanlam Kenya Plc | 2.681021529 | 2.785011 | 2.670471 | 2.928471 | 3.210844 | 3.250374 | 2.848069 | 3.341805 | 2.521358 | 1.951095 |
| 42 | Kenya Re-Insurance Corporation Ltd | 2.674148649 | 3.058707 | 2.637015 | 2.998223 | 3.456317 | 3.475067 | 0.946118 | 3.226237 | 2.931604 | 3.191377 |
| 43 | Liberty Kenya Holdings | 2.76000994 | 2.912351 | 2.831211 | 3.168939 | 3.621671 | 3.65584 | 3.322996 | 3.915157 | 3.799345 | 3.193465 |
| 44 | Britam Holding Plc | 2.862200881 | 3.054001 | 2.831044 | 3.178805 | 2.960105 | 3.00072 | 3.227668 | 3.169069 | 2.358375 | 3.255562 |
| 45 | CIC Insurance Group Ltd | 2.766319109 | 2.928524 | 2.731716 | 2.727053 | 3.109061 | 3.126761 | 3.639767 | 3.792086 | 3.975097 | 3.293644 |
| 46 | Olympia Capitals Holding Ltd. | 2.694627181 | 2.873565 | 2.715052 | 3.168137 | 2.549445 | 2.772589 | 2.262576 | 2.522866 | 2.338363 | 2.642037 |
| 47 | Centum Investment Plc | 2.833213344 | 2.95491 | 2.694298 | 3.262965 | 2.944439 | 2.97553 | 2.361685 | 2.889579 | 3.297335 | 3.234857 |
| 48 | Trans-Century Plc | 2.674148649 | 3.020425 | 2.825849 | 3.224771 | 3.650658 | 3.813307 | 3.220888 | 2.693405 | 3.439149 | 3.948515 |
| 49 | Home Africa Ltd | 3.310543013 | 3.342862 | 2.579725 | 3.228536 | 2.980619 | 3.65584 | 2.907925 | 3.057385 | 3.330884 | 2.828957 |
| 50 | Kurwitu Venture Ltd | 2.501435952 | 2.884801 | 2.516211 | 2.289098 | 3.072693 | 3.034953 | 1.477454 | 3.396729 | 3.475909 | 3.391656 |
| 51 | Nairobi Security Exchange Plc | 2.734367509 | 2.939162 | 3.174012 | 3.443315 | 2.60269 | 3.222868 | 2.799643 | 3.293011 | 2.544737 | 2.754823 |
| 52 | B.O.C Kenya Plc. | 3.269568939 | 3.299534 | 2.909572 | 2.945119 | 3.258097 | 2.791165 | 3.679189 | 3.254923 | 3.170943 | 3.193667 |
| 53 | B.A.T Kenya Plc. | 2.564949357 | 2.639057 | 2.805459 | 3.058629 | 2.341806 | 3.310543 | 3.047498 | 3.743852 | 3.290996 | 3.02443 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Carbacid Investment Plc | 3.131136911 | 3.218876 | 3.02982 | 2.843092 | 3.443618 | 2.639057 | 2.347242 | 3.065387 | 3.214569 | 2.89603 |
| 55 | E.A.B.L Ltd. | 2.850706502 | 2.850707 | 3.537396 | 2.884289 | 1.774952 | 3.453157 | 2.742745 | 4.701084 | 2.348687 | 2.447601 |
| 56 | Mumias Sugar Company Ltd | 2.58021683 | 2.797281 | 3.815613 | 3.077346 | 3.676301 | 2.066863 | 0.928113 | 3.395586 | 3.253716 | 3.144332 |
| 57 | Unga Group Ltd. | 3.716008122 | 3.744787 | 3.248064 | 3.087823 | 2.701361 | 2.778819 | 2.773603 | 2.994737 | 1.687658 | 3.643508 |
| 58 | Kenya Orchards Ltd | 3.292126287 | 3.321432 | 3.626833 | 3.373613 | 2.76001 | 2.80336 | 2.723444 | 3.031338 | 3.972132 | 4.119796 |
| 59 | Flame Tree Group Holding Ltd | 2.76000994 | 2.76001 | 4.00279 | 3.932597 | 2.80336 | 3.122365 | 2.88042 | 3.172054 | 4.446688 | 3.639901 |
| 60 | Safaricom Plc. | 3.198673118 | 3.206803 | 3.634907 | 3.014531 | 2.766319 | 2.890372 | 2.797913 | 2.981785 | 2.898803 | 3.181248 |
| 61 | ILAM-Fahari I-REIT | 2.923161581 | 2.960105 | 3.189218 | 3.3561 | 2.747271 | 2.917771 | 2.713536 | 3.022914 | 2.071533 | 2.747878 |
| 62 | ABSA New Gold ETF | 2.76000994 | 2.867899 | 2.842729 | 2.829278 | 2.850707 | 2.944439 | 2.780561 | 3.135927 | 2.119331 | 3.03456 |

| | | overconfidence | | Highest volume traded | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Billions | B | B | B | B | B | B | | | |
| | FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| 1 | Eagaads Ltd | 191.4348395 | 26.075881 | 24.06051 | 25.06418 | 14.39974 | 18.495657 | 29.94474 | 41.390952 | 22.54451 | 31.36948 |
| 2 | Kapchorua Tea Kenya Plc | 15.28276967 | 19.591163 | 30.02943 | 28.8964 | 35.65437 | 26.089224 | 28.1336 | 23.864902 | 18.77672 | 8.315593 |
| 3 | Kakuzi Plc | 18.29578325 | 20.116552 | 16.73257 | 22.14498 | 15.00801 | 20.378012 | 5.173245 | 10.482774 | 28.37177 | 15.53753 |
| 4 | Limuru Tea Company Ltd | 13.48159992 | 23.128554 | 27.01881 | 29.42576 | 7.476776 | 23.039102 | 18.29107 | 20.760522 | 21.76564 | 20.01893 |
| 5 | Sasini Plc | 17.89482532 | 26.254811 | 3.78431 | 15.87835 | 20.98885 | 30.822933 | 13.72666 | 36.954251 | 24.78686 | 23.41526 |
| 6 | Williamson Tea Kenya Plc | 13.00592138 | 14.631608 | 14.63639 | 19.9364 | 12.44548 | 7.03639 | 10.19505 | 18.165628 | 7.244446 | 43.10846 |
| 7 | Car &General (K) ltd | 15.54973241 | 27.516266 | 28.40789 | 13.06073 | 18.75769 | 24.321894 | 3.407302 | 60.819262 | 24.6913 | 19.36948 |
| 8 | ABSA Bank Kenya Plc | 18.26372755 | 25.379452 | 10.39805 | 17.2499 | 44.67193 | 24.37273 | 4.571804 | 27.9238 | 15.40606 | 16.77899 |
| 9 | Stanbic Holding Ltd | 16.49901158 | 24.375209 | 17.60761 | 25.7403 | 10.57376 | 25.934189 | -19.6168 | -14.527504 | 34.62167 | 13.58878 |
| 10 | I&M Holding Plc | 12.40778345 | 25.18327 | 15.69943 | 23.53884 | 53.25529 | 26.940862 | 13.73391 | 17.250899 | 12.1791 | 17.16449 |
| 11 | Diamond Trust Bank Kenya Ltd | 15.25731127 | 11.566445 | 14.28952 | 28.27604 | 10.36425 | 14.041783 | 13.77547 | 18.343487 | 28.15961 | 14.50956 |
| 12 | HF Group Plc | 10.33124206 | 13.985643 | 26.12775 | 25.20144 | 27.04049 | 25.40273 | 15.43894 | 19.2659 | 19.08886 | 17.731 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | KCB Group Plc | 29.63758173 | 35.892473 | 10.61507 | 24.70248 | 31.16042 | 51.858322 | 25.50084 | 23.352004 | 10.94275 | 10.77319 |
| 14 | NCBA Group Plc | 15.96266158 | 20.267855 | 3.233256 | 30.82427 | 27.96304 | 16.927792 | 17.33673 | 18.186282 | 17.38159 | 14.52007 |
| 15 | Standard Chartered Bank Kenya Ltd | 6.440402067 | 18.989225 | 1.110978 | 33.64757 | 32.32719 | 29.715133 | 12.62252 | 19.970312 | 22.19835 | 46.17707 |
| 16 | Equity Group Holding Plc | 22.15189873 | 17.211838 | 1.98212 | 27.29934 | 12.73988 | 15.718265 | 11.18564 | 23.525819 | 12.24455 | 21.40807 |
| 17 | The Co-operative Bank Of Kenya Ltd | 18.26011056 | 17.284495 | 16.04466 | 20.948677 | 23.82993 | 24.377652 | 16.36724 | 24.00672 | 4.364172 | 50.98985 |
| 18 | Express Kenya Plc | 49.54743971 | 24.150059 | 13.78306 | 18.876964 | 26.86962 | 20.582271 | 13.30349 | 18.94743 | 10.03201 | 31.50067 |
| 19 | Kenya Airways Ltd | 18.4135548 | 24.627047 | 17.15605 | 23.141567 | 24.89257 | 18.102134 | 23.75785 | 19.224743 | 10.08847 | 25.58551 |
| 20 | Nation Media Group Plc | 58.9857578 | 40.402616 | 16.81945 | 23.589372 | 10.47181 | 11.560576 | 17.06425 | 30.063311 | 22.36625 | 28.05202 |
| 21 | Standard Group Plc | 18.24982603 | 19.924027 | 16.91912 | 23.529044 | 25.88635 | 23.204179 | 18.71505 | 12.057191 | 4.089766 | 19.78034 |
| 22 | TPS Eastern Africa(Serena)Ltd | 13.29178068 | 16.342679 | 14.92349 | 21.481033 | 5.406802 | 38.225701 | 17.50876 | 29.152828 | 14.4085 | 20.62601 |
| 23 | WPP Scan Group Plc | 30.43708329 | 23.403043 | 16.73826 | 17.245945 | 53.09762 | 61.546686 | 15.73479 | 21.271343 | 2.338559 | 13.26393 |
| 24 | Uchumi Super market | 16.12518234 | 20.15748 | 14.33886 | 24.787024 | 85.34386 | 38.08805 | 21.41773 | 33.219976 | 27.63004 | 18.0552 |
| 25 | Eveready East Africa ltd | 16.62205751 | 19.452253 | 14.78233 | 29.078535 | 18.15241 | 24.076793 | 42.76579 | 9.9033489 | 17.93634 | 37.97204 |
| 26 | Longhorn Publisher Plc | 7.999440272 | 12.648425 | 25.34424 | 25.242453 | 7.93698 | 15.609471 | 21.83663 | 15.575505 | 17.284495 | 22.14498 |
| 27 | Deacons(East Africa) Plc | 16.73630033 | 32.652097 | 67.96337 | 113.43779 | 8.325562 | 20.791823 | 31.4692 | 24.081676 | 24.150059 | 29.42576 |
| 28 | Sameer Africa Plc | 4.990998521 | 36.593989 | 23.67546 | 31.413054 | 13.69543 | 25.798886 | 17.22564 | 12.829668 | 24.627047 | 15.87835 |
| 29 | Nairobi Business Venture Ltd | 11.27929688 | 8.0735356 | 21.77127 | 21.927117 | 45.51724 | 28.32618 | 29.50688 | 23.239488 | 40.402616 | 19.9364 |
| 30 | Homeboyz Entertainment Plc | 14.59334743 | 11.380163 | 26.39105 | 30.426501 | 3.131019 | 55.322416 | 53.75173 | 46.524403 | 19.924027 | 13.06073 |
| 31 | ARM Cement Plc. | 11.95304162 | 14.734073 | 14.35701 | 25.618529 | 2.17375 | 55.865385 | 6.149021 | 16.661874 | 16.342679 | 17.2499 |
| 32 | Bamburi Cement Plc. | 28.54415882 | 25.067054 | 48.35955 | 21.969935 | 10.48619 | 90.972763 | 10.5031 | 16.052391 | 23.403043 | 25.7403 |
| 33 | Crown Paints Kenya Plc | 32.25534782 | 24.980433 | 30.99864 | 24.425664 | 15.72871 | 20.095846 | 21.41467 | 22.304874 | 20.15748 | 23.53884 |
| 34 | E.A Cables Ltd | 55.45402627 | 30.348492 | 32.1967 | 35.681362 | 13.8166 | 17.726797 | 10.72855 | 14.986363 | 19.452253 | 28.27604 |
| 35 | E.A Portland Cement Ltd. | 15.54427524 | 17.122266 | 10.52431 | 22.663035 | 16.7324 | 22.429603 | 18.64707 | 17.294057 | 12.648425 | 25.20144 |
| 36 | Total Kenya Ltd | 10.58566028 | 25.613866 | 49.11906 | 50.516916 | 15.24214 | 20.369145 | 26.24649 | 20.958862 | 32.652097 | 24.70248 |
| 37 | Kengen Plc | 24.22203532 | 15.9601 | 26.92082 | 20.113639 | 14.66456 | 21.610715 | 5.527068 | 8.9775867 | 36.593989 | 30.82427 |
| 38 | Kenya Power Ltd | 7.438664175 | 29.900654 | 23.95875 | 18.638364 | 16.10425 | 20.199608 | 31.87083 | 65.516669 | 8.0735356 | 33.64757 |
| 39 | Umeme Ltd | 4.74376279 | 60.934004 | 34.41034 | 32.23787 | 12.31202 | 16.294834 | 26.48152 | 16.485294 | 11.380163 | 27.29934 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | Jubilee Holding Ltd | 17.29290355 | 23.26302 | 17.25444 | 28.27011 | 14.73854 | 18.107881 | 5.330808 | 33.119286 | 25.24267 | 20.948677 |
| 41 | Sanlam Kenya Plc | 14.44676544 | 18.69902 | 2.57569 | 25.184703 | 16.50287 | 21.629901 | 21.46452 | 22.737608 | 9.86603 | 18.876964 |
| 42 | Kenya Re-Insurance Corporation Ltd | 13.97143278 | 20.04987 | 27.74333 | 50.156949 | 15.95297 | 21.427489 | 20.54902 | 20.969454 | 31.29051 | 23.141567 |
| 43 | Liberty Kenya Holdings | 16.96599254 | 23.78223 | 25.22078 | 23.78534 | 23.83852 | 20.013332 | 26.5003 | 25.605634 | 19.01293 | 23.589372 |
| 44 | Britam Holding Plc | 16.96315311 | 24.01805 | 38.08295 | 44.348804 | 18.7287 | 32.237256 | 16.93128 | 30.850737 | 21.29834 | 23.529044 |
| 45 | CIC Insurance Group Ltd | 15.35922514 | 15.28777 | 9.607809 | 12.464264 | 11.06412 | 6.5903995 | 12.86171 | 16.195013 | 17.16878 | 21.481033 |
| 46 | Olympia Capitals Holding Ltd. | 15.10539939 | 23.76316 | 10.60881 | 17.985744 | 19.69869 | 33.603989 | 0.928333 | 14.26025 | 17.89084 | 20.095846 |
| 47 | Centum Investment Plc | 14.79512747 | 26.12688 | 25.05035 | 14.781917 | 18.67151 | 26.780494 | 3.54125 | 6.3399374 | 21.70073 | 17.726797 |
| 48 | Trans-Century Plc | 16.87526314 | 25.14782 | 18.31875 | 21.271849 | 9.923275 | 23.411056 | -1.25466 | -12.123874 | 21.92929 | 22.429603 |
| 49 | Home Africa Ltd | 13.19350678 | 25.24267 | 4.381777 | 29.866251 | 21.45533 | 13.592195 | 14.67287 | 18.82545 | 29.18376 | 20.369145 |
| 50 | Kurwitu Venture Ltd | 12.38158984 | 9.86603 | 16.43878 | 26.923801 | 13.69754 | 25.856961 | 17.45028 | 17.25578 | 51.03938 | 21.610715 |
| 51 | Nairobi Security Exchange Plc | 23.90319005 | 31.29051 | 39.61425 | 25.917625 | 29.77602 | 13.579724 | 10.78829 | 18.24357 | 20.37952 | 20.199608 |
| 52 | B.O.C Kenya Plc. | 18.34894848 | 19.01293 | 21.06258 | 42.260463 | 41.61631 | 22.318677 | 30.1856 | 23.12901 | 28.67713 | 16.294834 |
| 53 | B.A.T Kenya Plc. | 16.53465927 | 21.29834 | 10.45669 | 21.442768 | 33.4898 | 24.499774 | 11.89858 | 17.44973 | 17.98529 | 18.107881 |
| 54 | Carbacid Investment Plc | 20.69349904 | 17.16878 | 15.52956 | 110.06645 | 17.64378 | 16.740979 | 15.4106 | 19.54419 | 41.2354 | 21.629901 |
| 55 | E.A.B.L Ltd. | 34.37727604 | 17.89084 | 2.52973 | 29.832135 | 25.3649 | 50.435561 | 10.99074 | 22.98765 | 23.2147 | 21.427489 |
| 56 | Mumias Sugar Company Ltd | 45.4045954 | 21.70073 | 16.01623 | 19.980108 | 7.247224 | 16.187312 | 16.40323 | 23.87403 | 6.1335 | 20.013332 |
| 57 | Unga Group Ltd. | 25.74045074 | 21.92929 | 15.2327 | 20.724934 | 26.34583 | 19.668697 | 25.16761 | 17.92645 | 17.64378 | 32.237256 |
| 58 | Kenya Orchards Ltd | 37.5935521 | 29.18376 | 17.82175 | 23.856429 | 11.16758 | 18.541794 | 2.505307 | 1.92694 | 25.3649 | 6.5903995 |
| 59 | Flame Tree Group Holding Ltd | 54.75069252 | 51.03938 | 16.41036 | 19.722983 | 28.95602 | 19.892996 | 7.976578 | 28.108 | 7.247224 | 33.603989 |
| 60 | Safaricom Plc. | 37.89833822 | 20.37952 | 15.08251 | 20.551101 | 4.694855 | 19.173665 | 29.46133 | 27.26198 | 26.34583 | 26.780494 |
| 61 | ILAM-Fahari I-REIT | 24.26944972 | 28.67713 | 16.12806 | 23.009957 | 12.08747 | 8.1783669 | 10.27159 | 10.59358 | 21.29834 | 23.411056 |
| 62 | ABSA New Gold ETF | 12.86154683 | 17.98529 | 17.16254 | 16.933235 | 14.17938 | 16.769516 | 14.52904 | 18.64913 | 17.16878 | 17.89084 |

| | | Regret | Stock valuation held by listed companies | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B | B | B | B | B | B | B | B | B | B |

| FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Eagaads Ltd | 2.827314 | 2.99072 | 2.775376 | 3.042075 | 0.00525 | 2.57763 | 1.729884 | 13.131874 | 3.487375 | 3.523415 |
| Kapchorua Tea Kenya Plc | 2.785011 | 3.126761 | 2.62344 | 2.937942 | 0.41521 | 2.17598 | 1.791759 | 12.847266 | 3.170943 | 3.193667 |
| Kakuzi Plc | 2.667228 | 2.74084 | 2.842351 | 3.14163 | 0.45179 | 2.73256 | 1.638997 | 12.765683 | 2.639057 | -1.55067 |
| Limuru Tea Company Ltd | 2.753661 | 2.884801 | 2.822536 | 3.160796 | 3.84858 | 4.26485 | 1.629241 | 12.430312 | 3.273364 | 3.299534 |
| Sasini Plc | 2.862201 | 3.039749 | 2.828444 | 3.158236 | 1.12422 | 2.41851 | 1.391282 | 12.466504 | 2.747271 | 2.766319 |
| Williamson Tea Kenya Plc | 2.785011 | 2.917771 | 2.702936 | 3.06717 | 0.17514 | 2.64653 | 1.291984 | 12.405432 | 2.557227 | 2.714695 |
| Car &General (K) ltd | 2.778819 | 2.906901 | 2.817697 | 2.847577 | 2.36102 | 1.67098 | 1.66203 | 12.008329 | 2.97553 | 3.005683 |
| ABSA Bank Kenya Plc | 2.844909 | 3.072693 | 2.662973 | 3.21032 | 1.40934 | 3.07524 | 1.280934 | 12.259035 | 2.933857 | 2.960105 |
| Stanbic Holding Ltd | 2.809403 | 2.895912 | 2.693433 | 3.37 | 0.489441 | 3.06402 | 1.214913 | 12.230253 | 3.65842 | 3.65842 |
| I&M Holding Plc | 2.61007 | 2.912351 | 3.232551 | 3.228527 | 1.60352 | 0.82776 | 1.764731 | 11.545625 | 3.00072 | 3.161247 |
| Diamond Trust Bank Kenya Ltd | 3.234749 | 3.273364 | 4.218969 | 4.731255 | 1.93483 | 2.11685 | 1.297463 | 11.994407 | 3.290996 | 3.02443 |
| HF Group Plc | 3.38439 | 3.417727 | 3.164439 | 3.447224 | 1.57172 | 3.55772 | 1.541159 | 11.325475 | 3.214569 | 2.89603 |
| KCB Group Plc | 2.844909 | 3.034953 | 3.080591 | 3.087724 | 2.6936 | 3.52431 | 1.272566 | 11.087329 | 2.348687 | 2.447601 |
| NCBA Group Plc | 2.433613 | 2.476538 | 3.273025 | 3.415314 | 0.60514 | 1.21357 | 1.519513 | 10.775095 | 3.253716 | 3.144332 |
| Standard Chartered Bank Kenya Ltd | 3.00072 | 3.100092 | 2.664238 | 3.243316 | 2.010881 | 1.24482 | 0.751416 | 11.128512 | 1.687658 | 3.643508 |
| Equity Group Holding Plc | 3.777348 | 3.822098 | 3.878664 | 3.089675 | 0.940125 | 1.62182 | 1.266948 | 10.01695 | 3.972132 | 4.119796 |
| The Co-operative Bank Of Kenya Ltd | 2.753661 | 2.873565 | 3.433943 | 3.195634 | -0.1092 | 2.51514 | 1.022451 | 10.209353 | 4.446688 | 3.639901 |
| Express Kenya Plc | 2.879198 | 2.965273 | 3.471864 | 3.574628 | 0.301621 | 2.06503 | 0.802002 | 10.296171 | 2.505526 | 2.26939 |
| Kenya Airways Ltd | 2.4681 | 2.785011 | 2.353688 | 3.120735 | 2.40505 | 2.827 | 0.09431 | 11.148103 | -1.73113 | 7.01302 |
| Nation Media Group Plc | 3.277145 | 3.303217 | 3.894247 | 3.922308 | 1.518619 | 1.66571 | 1.294727 | 9.7429079 | 2.962425 | 2.25607 |
| Standard Group Plc | 3.206803 | 3.238678 | 3.2929 | 3.001398 | 3.046818 | 2.18538 | 1.308333 | 9.6960943 | 5.790583 | 0.972694 |
| TPS Eastern Africa(Serena)Ltd | 2.923162 | 2.928524 | 3.176333 | 2.925222 | 0.92239 | 3.85826 | 1.371181 | 9.4341237 | 4.189655 | -4.218 |
| WPP Scan Group Plc | 3.139833 | 3.144152 | 3.538357 | 3.473142 | 0.215111 | 9.5794872 | 0.71784 | 9.5959429 | 5.634024 | 2.813496 |
| Uchumi Super market | 3.210844 | 3.250374 | 2.848069 | 3.341805 | 3.183855 | 0.43976 | 0.01005 | 10.017798 | 3.690646 | -0.03541 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Eveready East Africa ltd | 3.456317 | 3.475067 | 0.946118 | 3.226237 | 2.099305 | 1.55232 | 1.96611 | 11.653678 | 0.09531 | 9.2664371 |
| Longhorn Publisher Plc | 3.621671 | 3.65584 | 3.322996 | 3.915157 | 1.581553 | 2.60212 | 0.425268 | 9.2557916 | 0.00995 | 9.1633536 |
| Deacons(East Africa) Plc | 2.960105 | 3.00072 | 3.227668 | 3.169069 | 2.606433 | 1.83532 | 0.262364 | 9.4093552 | -1.04982 | 9.7001466 |
| Sameer Africa Plc | 3.109061 | 3.126761 | 3.639767 | 3.792086 | 2.247777 | 2.73341 | 0.10436 | 9.1513332 | -0.65393 | 9.2394136 |
| Nairobi Business Venture Ltd | 2.549445 | 2.772589 | 2.262576 | 2.522866 | 3.977614 | 0.63844 | 0.54473 | 9.7061336 | -2.81341 | 10.90027 |
| Homeboyz Entertainment Plc | 2.944439 | 2.97553 | 2.361685 | 2.889579 | 2.541094 | 4.88682 | 1.20397 | 9.9463075 | -1.56065 | 8.7803264 |
| ARM Cement Plc. | 3.650658 | 3.813307 | 3.220888 | 2.693405 | 3.948933 | 4.00053 | 0.11653 | 8.6307004 | 2.125848 | 8.1741393 |
| Bamburi Cement Plc. | 2.980619 | 3.65584 | 2.907925 | 3.057385 | 5.032614 | 0.96494 | 1.02165 | 9.2023082 | 3.258097 | 3.310543 |
| Crown Paints Kenya Plc | 3.072693 | 3.034953 | 1.477454 | 3.396729 | 5.034921 | 4.49858 | 3.50656 | 10.933036 | 2.370244 | 2.727853 |
| E.A Cables Ltd | 2.60269 | 3.222868 | 2.799643 | 3.293011 | 5.932245 | 1.24134 | 1.27297 | 9.6132689 | 4.249923 | 4.249923 |
| E.A Portland Cement Ltd. | 3.258097 | 2.791165 | 3.679189 | 3.254923 | 4.240685 | 0.86652 | 0.65752 | 8.5629311 | 4.5486 | 4.5486 |
| Total Kenya Ltd | 2.341806 | 3.310543 | 3.047498 | 3.743852 | 1.76431 | 1.99815 | 0.688135 | 9.5409382 | 3.740048 | 3.751854 |
| Kengen Plc | 3.443618 | 2.639057 | 2.347242 | 3.065387 | 2.062202 | 2.46516 | 1.137833 | 9.6629435 | 2.778819 | 2.797281 |
| Kenya Power Ltd | 1.774952 | 3.453157 | 2.742745 | 4.701084 | 2.64113 | 3.81372 | 1.947338 | 9.5325688 | 2.341806 | 2.541602 |
| Umeme Ltd | 3.676301 | 2.066863 | 0.928113 | 3.395586 | 0.762509 | 2.21587 | 1.813195 | 10.760538 | 1.098612 | 1.629241 |
| Jubilee Holding Ltd | 2.701361 | 2.778819 | 2.773603 | 2.994737 | 0.218532 | 2.48851 | 1.597365 | 13.227858 | 2.797281 | 2.879198 |
| Sanlam Kenya Plc | 2.76001 | 2.80336 | 2.723444 | 3.031338 | 0.27014 | 2.0683 | 1.736951 | 12.915098 | 2.639057 | 2.639057 |
| Kenya Re-Insurance Corporation Ltd | 2.80336 | 3.122365 | 2.88042 | 3.172054 | 0.2686 | 2.64253 | 1.460938 | 12.855346 | 2.70805 | 3.394508 |
| Liberty Kenya Holdings | 2.766319 | 2.890372 | 2.797913 | 2.981785 | 3.13559 | 3.86597 | 1.302913 | 12.512388 | 2.928524 | 3.049273 |
| Britam Holding Plc | 2.747271 | 2.917771 | 2.713536 | 3.022914 | 1.27176 | 2.80231 | 1.205971 | 12.560683 | 2.667228 | 2.797281 |
| CIC Insurance Group Ltd | 2.850707 | 2.944439 | 2.780561 | 3.135927 | 0.05368 | 2.61932 | 1.115142 | 12.506481 | 2.80336 | 2.970414 |
| Olympia Capitals Holding Ltd. | 2.76001 | 2.867899 | 2.842729 | 2.829278 | 1.20522 | 2.87112 | 1.408545 | 12.122436 | 2.839078 | 2.884801 |
| Centum Investment Plc | 2.844909 | 2.923162 | 2.66721 | 2.917536 | 0.95672 | 0.950756 | 1.141033 | 12.343767 | 2.681022 | 2.85647 |
| Trans-Century Plc | 2.815409 | 2.99072 | 3.573872 | 3.261522 | 1.467845 | 0.90184 | 1.870263 | 11.495087 | 2.833213 | 2.928524 |
| Home Africa Ltd | 2.60269 | 2.850707 | 2.708584 | 3.014456 | 1.9482 | 2.25849 | 1.07841 | 12.169497 | 2.753661 | 2.85647 |
| Kurwitu Venture Ltd | 3.202746 | 3.242592 | 2.011802 | 3.137193 | 1.17794 | 3.09504 | 0.850151 | 12.385924 | 3.538057 | 2.928524 |
| Nairobi Security Exchange Plc | 3.430756 | 3.475067 | 3.043991 | 3.428259 | 2.14423 | 2.2612 | 1.660131 | 11.473478 | 3.580737 | 2.884801 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| B.O.C Kenya Plc. | 3.058707 | 3.113515 | 2.521358 | 1.951095 | 0.6207 | 0.81294 | 1.551809 | 10.944312 | 3.310543 | 3.54674 |
| B.A.T Kenya Plc. | 2.797281 | 2.99072 | 2.931604 | 3.191377 | 1.676534 | 1.15608 | 0.951658 | 11.244235 | 3.768153 | 3.618993 |
| Carbacid Investment Plc | 3.951244 | 3.988984 | 3.799345 | 3.193465 | 1.072358 | 1.38205 | 1.18479 | 10.165275 | 2.797281 | 3.317816 |
| E.A.B.L Ltd. | 2.74084 | 2.833213 | 2.358375 | 3.255562 | 0.169857 | 2.45079 | 0.40048 | 11.607708 | 3.190476 | 3.781914 |
| Mumias Sugar Company Ltd | 2.734368 | 2.772589 | 3.975097 | 3.293644 | 1.360914 | 1.52987 | 0.783902 | 9.8367065 | 2.653242 | 2.970414 |
| Unga Group Ltd. | 3.095578 | 3.122365 | 2.338363 | 2.642037 | 3.271801 | 2.5707 | 0.46204 | 11.036936 | 2.95491 | 3.190476 |
| Kenya Orchards Ltd | 3.273364 | 3.292126 | 3.297335 | 3.234857 | 2.633134 | 1.5328 | 0.21072 | 10.351884 | 2.791165 | 2.747271 |
| Flame Tree Group Holding Ltd | 2.415914 | 2.76001 | 3.439149 | 3.948515 | 4.008087 | 2.18944 | 0.13926 | 10.226585 | 3.295837 | 3.049273 |
| Safaricom Plc. | 2.653242 | 2.785011 | 3.330884 | 2.828957 | 3.593098 | 0.95132 | 0.364643 | 9.6679551 | 2.580217 | 2.809403 |
| ILAM-Fahari I-REIT | 1.386294 | 1.686399 | 3.475909 | 3.391656 | 2.386467 | 1.07274 | 0.223144 | 9.761924 | 2.66026 | 3.295837 |
| ABSA New Gold ETF | 2.791165 | 2.80336 | 2.544737 | 2.754823 | 1.343521 | 2.0987 | 0.19845 | 10.11876 | 2.406945 | 2.928524 |

| | | Regret | Future expected return | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B | B | B | B | B | B | B | B | B | B |
| FIRM NSE | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Eagaads Ltd | 27.4921484 | 27.77074 | 30.06243 | 29.05179 | 37.7180727 | 40.09729 | 31.50986 | 41.21179 | 35.58108261 | 35.58108 |
| Kapchorua Tea Kenya Plc | 31.9798324 | 32.26595 | 18.39593 | 39.71522 | 34.2015411 | 36.53425 | 35.13141 | 39.94565 | 24.91527943 | 24.91528 |
| Kakuzi Plc | 32.1221238 | 32.12212 | 34.87662 | 36.17315 | 33.8317242 | 36.16933 | 32.57528 | 37.02655 | 17.10662282 | 17.10662 |
| Limuru Tea Company Ltd | 24.5283019 | 25.84047 | 36.34785 | 29.75305 | 39.9223907 | 40.02818 | 36.36139 | 33.93132 | 16.6175612 | 16.61756 |
| Sasini Plc | 30.5322186 | 31.0237 | 27.16521 | 29.81206 | 43.8859484 | 44.20568 | 33.68289 | 40.40668 | 38.04273378 | 37.77006 |
| Williamson Tea Kenya Plc | 22.5343348 | 25.93419 | 19.69444 | 26.12457 | 36.4794514 | 36.47945 | 32.35037 | 27.49486 | 15.08852 | 31.97369 |
| Car &General (K) ltd | 41.9380851 | 41.93809 | 20.91348 | 29.94493 | 44.846413 | 44.99108 | 33.19913 | 39.11194 | 25.32489 | 28.73026 |
| ABSA Bank Kenya Plc | 43.0351077 | 43.03511 | 24.76049 | 30.75196 | 31.1201968 | 33.02025 | 31.07356 | 34.47294 | 9.264646 | 28.19138 |
| Stanbic Holding Ltd | 29.4233502 | 29.51623 | 30.03733 | 26.30592 | 35.0912248 | 35.13978 | 34.29354 | 39.2059 | 28.34256 | 24.70916 |
| I&M Holding Plc | 30.9632734 | 31.16899 | 12.7177 | 44.71724 | 22.0007884 | 23.54275 | 36.20305 | 22.10191 | 26.6308 | 33.5497 |
| Diamond Trust Bank Kenya Ltd | 25.4943363 | 27.66944 | 8.452955 | 43.79625 | 30.5601214 | 31.53948 | 32.35697 | 28.8114 | 14.09669 | 17.70393 |

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|---|---|---|---|---|---|---|---|---|---|---|
| HF Group Plc | 10.2379848 | 15.18292 | 21.90023 | 42.03398 | 26.3622634 | 27.34185 | 35.44853 | 32.6986 | 12.1481 | 9.214674 |
| KCB Group Plc | 37.3164316 | 38.40923 | 36.7589 | 40.02759 | 26.4127173 | 28.24532 | 28.80426 | 25.82265 | 17.34496 | 25.48991 |
| NCBA Group Plc | 34.2843503 | 34.28435 | 34.11304 | 37.35052 | 32.6227823 | 32.62278 | 33.77076 | 31.38838 | 15.72295 | 33.93159 |
| Standard Chartered Bank Kenya Ltd | 34.9873758 | 43.85626 | 36.39947 | 40.1854 | 24.4322554 | 27.55101 | 38.66522 | 37.26394 | 9.282088 | 25.74459 |
| Equity Group Holding Plc | 36.7797945 | 38.29631 | 34.21195 | 37.85357 | 29.2289046 | 32.39709 | 20.39746 | 31.59213 | 16.14604 | 29.13545 |
| The Co-operative Bank Of Kenya Ltd | 33.8543167 | 35.50504 | 34.08539 | 39.00706 | 34.418423 | 34.6119 | 24.61401 | 29.05382 | 13.67607 | 20.80785 |
| Express Kenya Plc | 35.1764077 | 37.27259 | 34.87178 | 37.71489 | 26.0373904 | 26.64622 | 30.14939 | 30.55015 | 14.87917 | 26.52094 |
| Kenya Airways Ltd | 35.6189158 | 36.19254 | 31.49755 | 35.01382 | 34.2747086 | 35.41058 | 24.35546 | 27.78602 | 16.22847 | 20.51334 |
| Nation Media Group Plc | 33.0896521 | 35.25507 | 33.20621 | 35.74724 | 33.9251686 | 34.26908 | 28.33778 | 27.60818 | 18.21628 | 36.76396 |
| Standard Group Plc | 35.0067835 | 36.18442 | 34.64008 | 37.98286 | 27.9049033 | 28.68737 | 30.23682 | 28.155 | 10.98219 | 39.44952 |
| TPS Eastern Africa(Serena)Ltd | 33.5424374 | 34.79476 | 33.73714 | 37.33091 | 25.3884942 | 27.84427 | 17.40957 | 22.34911 | 9.450792 | 27.32746 |
| WPP Scan Group Plc | 40.1848659 | 33.26186 | 36.01932 | 34.03277 | 30.4873493 | 30.48735 | 32.62626 | 39.41801 | 20.58314 | 37.21098 |
| Uchumi Super market | 41.9664441 | 33.81003 | 34.34044 | 40.7052 | 30.790003 | 30.79 | 29.63169 | 25.3451 | 14.77368 | 34.25213 |
| Eveready East Africa ltd | 36.5680706 | 39.17709 | 26.55122 | 20.82838 | 31.8371552 | 32.91904 | 18.32865 | 38.3342 | 36.87799 | 44.85478 |
| Longhorn Publisher Plc | 43.326828 | 41.61177 | 34.27087 | 40.41195 | 16.6757804 | 21.74827 | 28.0259 | 28.55252 | 7.321946 | 33.49637 |
| Deacons(East Africa) Plc | 31.2329368 | 37.04494 | 32.68129 | 36.70839 | 22.0621683 | 23.59495 | 27.40362 | 27.58723 | 21.74101 | 11.23173 |
| Sameer Africa Plc | 37.1816006 | 44.07418 | 26.74441 | 36.74728 | 30.3341481 | 30.39096 | 28.94878 | 28.6454 | 13.2009 | 4.870684 |
| Nairobi Business Venture Ltd | 27.5511747 | 30.84468 | 31.83696 | 27.09692 | 26.9580581 | 26.95806 | 26.54151 | 32.17033 | 23.20698 | 4.884186 |
| Homeboyz Entertainment Plc | 32.8323075 | 35.44971 | 29.08015 | 36.13974 | 24.4691872 | 24.59221 | 23.25301 | 25.35093 | 39.05474 | 10.897 |
| ARM Cement Plc. | 27.8468099 | 27.40889 | 33.8582 | 26.02518 | 24.6046676 | 24.60467 | -0.8646 | 30.89717 | 26.65622 | 22.53814 |
| Bamburi Cement Plc. | 31.9429196 | 29.55325 | 36.13617 | 30.09746 | 13.4199564 | 18.94752 | 11.4533 | 16.72842 | 28.75009 | 13.1913 |
| Crown Paints Kenya Plc | 25.2532483 | 27.49635 | 34.36542 | 31.30615 | 32.9513398 | 32.34598 | 2.425571 | 26.67807 | 27.50788 | 19.3847 |
| E.A Cables Ltd | 26.9736563 | 33.41808 | 29.1042 | 28.57164 | 37.1950089 | 40.14652 | 36.36547 | 39.73949 | 35.92417 | 7.238484 |
| E.A Portland Cement Ltd. | 25.0661202 | 30.49788 | 33.67254 | 40.83045 | 35.9488279 | 37.1604 | 37.50328 | 37.35627 | 21.75189 | 26.59913 |
| Total Kenya Ltd | 29.3933226 | 28.80933 | 21.39311 | 30.07307 | 33.766135 | 37.35123 | 31.89878 | 38.94454 | 41.10751 | 22.46269 |
| Kengen Plc | 30.6673492 | 26.71976 | 31.526 | 28.70925 | 36.1489435 | 36.21928 | 42.78018 | 39.43702 | 47.19971 | 28.53505 |

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|---|---|---|---|---|---|---|---|---|---|---|
| Kenya Power Ltd | 26.9485741 | 28.18367 | 24.64035 | 29.81768 | 38.9144319 | 39.98526 | 31.80336 | 36.72081 | 31.37846 | 32.53825 |
| Umeme Ltd | 31.1952211 | 29.46212 | 30.96185 | 27.50844 | 34.120243 | 36.33353 | 34.71952 | 37.73596 | 50.6518 | 29.66564 |
| Jubilee Holding Ltd | 33.4580162 | 29.16237 | 16.86468 | 32.20919 | 38.449512 | 40.5095 | 31.41445 | 41.08502 | 57.46998 | 17.0278 |
| Sanlam Kenya Plc | 32.4355732 | 31.77072 | 23.07888 | 19.461 | 35.1367465 | 36.69961 | 35.45217 | 40.20848 | 65.41633 | 22.90384 |
| Kenya Re-Insurance Corporation Ltd | 8.02733263 | 30.09243 | 25.55716 | 27.17411 | 33.255656 | 35.07635 | 38.77645 | 34.69775 | 2.56806 | 37.95308 |
| Liberty Kenya Holdings | 26.6885925 | 24.23519 | 31.38834 | 34.37734 | 39.6374436 | 39.63744 | 10.63104 | 7.592732 | 15.48812 | 45.06748 |
| Britam Holding Plc | 29.5895775 | 27.77218 | 29.47528 | 28.02177 | 46.2513577 | 46.446 | 26.27068 | 42.20564 | 8.175643 | 19.02706 |
| CIC Insurance Group Ltd | 30.4858724 | 29.13479 | 16.09227 | 23.00733 | 34.7030159 | 34.95532 | 37.98169 | 37.11064 | 1.606245 | 17.07642 |
| Olympia Capitals Holding Ltd. | 31.0206278 | 30.58283 | 26.53399 | 27.69015 | 45.1502144 | 45.27108 | 27.16782 | 27.52782 | 4.878547 | 22.19444 |
| Centum Investment Plc | 35.23713 | 29.46631 | 24.78943 | 34.16202 | 31.0611658 | 32.92743 | 30.54586 | 33.3954 | 4.286932 | 36.25717 |
| Trans-Century Plc | 29.1566407 | 31.29708 | 21.38663 | 26.70708 | 31.2029877 | 32.08945 | 35.14152 | 38.86766 | 18.69645 | 10.52463 |
| Home Africa Ltd | 20.5004763 | 41.66722 | 13.42661 | 44.99089 | 22.7931346 | 24.57186 | 30.89856 | 22.317 | 13.69355 | 3.828682 |
| Kurwitu Venture Ltd | 7.02831277 | 32.09701 | 15.41143 | 33.75996 | 29.5057203 | 30.36635 | 34.6259 | 28.3936 | 28.44032 | 1.223538 |
| Nairobi Security Exchange Plc | 27.0431799 | 26.47818 | 25.49601 | 22.92326 | 27.0408311 | 29.16376 | 32.47423 | 31.59231 | 7.998414 | 12.37542 |
| B.O.C Kenya Plc. | 36.8723124 | 38.41484 | 35.16238 | 38.22242 | 33.2697704 | 33.76799 | 32.78184 | 32.20055 | 10.90744 | 40.1995 |
| B.A.T Kenya Plc. | 35.8366257 | 36.25908 | 34.45769 | 38.22002 | 31.4231118 | 34.59921 | 23.26914 | 44.22633 | 8.506167 | 0.632803 |
| Carbacid Investment Plc | 37.4760796 | 38.04831 | 35.62381 | 38.50615 | 39.7074128 | 39.70741 | 32.05292 | 29.62628 | 5.336852 | 0.106462 |
| E.A.B.L Ltd. | 32.4642095 | 36.04626 | 40.86982 | 39.75898 | 21.3493003 | 22.95145 | 28.42342 | 29.31068 | 19.51658 | 5.559237 |
| Mumias Sugar Company Ltd | 36.7120625 | 37.83297 | 35.50652 | 36.10195 | 22.5692116 | 26.09269 | 32.99077 | 24.28593 | 11.12888 | 11.07129 |
| Unga Group Ltd. | 33.8651833 | 36.12818 | 32.53608 | 38.42308 | 26.7249787 | 27.86276 | 26.04535 | 29.62043 | 13.2696 | 1.47065 |
| Kenya Orchards Ltd | 34.3135573 | 34.31356 | 25.17489 | 30.78944 | 30.099771 | 30.64186 | 31.174 | 24.9812 | 7.189903 | 6.281104 |
| Flame Tree Group Holding Ltd | 26.9363977 | 31.97445 | 16.879 | 45.03911 | 30.0838198 | 30.76709 | 28.7024 | 27.98423 | 12.08517 | 4.276096 |
| Safaricom Plc. | 33.1235433 | 33.12354 | 23.81676 | 35.63565 | 33.197014 | 33.62556 | 23.54054 | 23.38689 | 3.871528 | 8.873293 |
| ILAM-Fahari I-REIT | 26.0603606 | 26.35706 | 21.87478 | 30.6822 | 23.5359179 | 25.77489 | 27.04518 | 25.34144 | 29.31385 | 11.19819 |
| ABSA New Gold ETF | 28.8206254 | 28.82063 | 29.37147 | 31.51234 | 29.1221712 | 30.23812 | 30.2374 | 37.38182 | 32.47423 | 17.15751 |

Net Bookvalue of assets

| | FIRM NSE | B 2014 | B 2015 | B 2016 | B 2017 | B 2018 | B 2019 | B 2020 | B 2021 | B 2022 | B 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 32.08945 | 31.80336 | 36.72081 | 31.38834 | 34.37734 | 6.60613 | 37.9774 | 5.270125 | 29.8575 | 26.79309 |
| 2 | Kapchorua Tea Kenya Plc | 24.57186 | 34.71952 | 37.73596 | 29.47528 | 28.02177 | 12.4138 | 40.752 | 22.22664 | 23.1872 | 18.85134 |
| 3 | Kakuzi Plc | 30.36635 | 31.41445 | 41.08502 | 16.09227 | 23.00733 | 7.17952 | 38.4587 | 14.36242 | 25.5857 | 10.90081 |
| 4 | Limuru Tea Company Ltd | 29.16376 | 35.45217 | 40.20848 | 26.53399 | 27.69015 | 31.90586 | 31.1659 | 27.76718 | 20.3875 | 1.971648 |
| 5 | Sasini Plc | 33.76799 | 38.77645 | 34.69775 | 24.78943 | 34.16202 | 12.2435 | 41.1477 | 33.11315 | 37.8878 | 13.38691 |
| 6 | Williamson Tea Kenya Plc | 34.59921 | 10.63104 | 7.592732 | 21.38663 | 26.70708 | 3.08742 | 33.1028 | 33.33716 | 37.5245 | 36.11066 |
| 7 | Car &General (K) ltd | 39.70741 | 26.27068 | 42.20564 | 13.42661 | 44.99089 | 21.9189 | 52.7263 | 27.44706 | 29.593 | 27.2579 |
| 8 | ABSA Bank Kenya Plc | 22.95145 | 37.98169 | 37.11064 | 15.41143 | 33.75996 | 6.10183 | 37.9678 | 36.92796 | 35.3866 | 40.98905 |
| 9 | Stanbic Holding Ltd | 26.09269 | 27.16782 | 27.52782 | 25.49601 | 22.92326 | 13.6795 | 45.7045 | 25.51473 | -25.5416 | 34.73791 |
| 10 | I&M Holding Plc | 27.86276 | 30.54586 | 33.3954 | 35.16238 | 38.22242 | 3.55119 | 39.6449 | 38.79535 | 31.2841 | 23.29651 |
| 11 | Diamond Trust Bank Kenya Ltd | 30.64186 | 35.14152 | 38.86766 | 34.45769 | 38.22002 | 6.287631 | 25.291 | 14.57818 | 19.9472 | 13.59476 |
| 12 | HF Group Plc | 30.76709 | 30.89856 | 22.317 | 35.62381 | 38.50615 | 10.37789 | 33.1297 | 9.842951 | 17.0648 | 23.61497 |
| 13 | KCB Group Plc | 33.62556 | 34.6259 | 28.3936 | 40.86982 | 39.75898 | 44.798 | 26.5703 | 29.22957 | 36.6652 | 23.2173 |
| 14 | NCBA Group Plc | 25.77489 | 32.47423 | 31.59231 | 35.50652 | 36.10195 | 30.90411 | 30.7694 | 44.58755 | 35.4858 | -15.863 |
| 15 | Standard Chartered Bank Kenya Ltd | 30.23812 | 32.78184 | 32.20055 | 32.53608 | 38.42308 | 34.686 | 46.4479 | 43.18747 | 15.2554 | 28.73596 |
| 16 | Equity Group Holding Plc | 34.31356 | 23.26914 | 44.22633 | 31.50986 | 41.21179 | 41.95622 | 34.5664 | 40.37789 | 10.77789 | 53.50159 |
| 17 | The Co-operative Bank Of Kenya Ltd | 31.97445 | 32.05292 | 29.62628 | 35.13141 | 39.94565 | 41.9781 | 34.7508 | 40.06888 | 33.8492 | 45.66837 |
| 18 | Express Kenya Plc | 33.12354 | 28.42342 | 29.31068 | 32.57528 | 37.02655 | 12.33588 | 22.0647 | 25.33438 | 27.9554 | 49.46857 |
| 19 | Kenya Airways Ltd | 26.35706 | 32.99077 | 24.28593 | 36.36139 | 33.93132 | 34.93232 | 27.1694 | 25.76747 | 34.8829 | 30.16785 |
| 20 | Nation Media Group Plc | 28.82063 | 26.04535 | 29.62043 | 33.68289 | 40.40668 | 43.12206 | 25.6359 | 47.8391 | 53.0134 | 53.915 |
| 21 | Standard Group Plc | 35.58108 | 31.174 | 24.9812 | 32.35037 | 27.49486 | 24.58165 | 32.2332 | 34.0152 | 30.1503 | 16.89642 |
| 22 | TPS Eastern Africa(Serena)Ltd | 24.91528 | 28.7024 | 27.98423 | 33.19913 | 39.11194 | 29.9183 | 51.0906 | 52.17265 | 52.8313 | 31.07491 |
| 23 | WPP Scan Group Plc | 17.10662 | 23.54054 | 23.38689 | 31.07356 | 34.47294 | 17.01372 | 12.2587 | 28.3519 | 30.0657 | 23.84956 |
| 24 | Uchumi Super market | 16.61756 | 27.04518 | 25.34144 | 34.29354 | 39.2059 | 6.920169 | 25.6961 | 17.2772 | 37.6994 | 6.683176 |
| 25 | Eveready East Africa ltd | 37.77006 | 30.2374 | 37.38182 | 36.20305 | 22.10191 | 20.86185 | 13.0615 | 15.98599 | 37.4738 | 12.99045 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 | Longhorn Publisher Plc | 44.4715 | 25.17489 | 30.78944 | 32.35697 | 28.8114 | 9.336858 | 25.7889 | 18.51364 | 19.55703 | 24.4333 |
| 27 | Deacons(East Africa) Plc | 34.8931 | 16.879 | 45.03911 | 35.44853 | 32.6986 | 9.431684 | 25.1323 | 23.2072 | 25.3903 | 15.38296 |
| 28 | Sameer Africa Plc | 31.6167 | 23.81676 | 35.63565 | 28.80426 | 25.82265 | 22.15419 | 21.1302 | 17.8004 | 40.2929 | -0.59672 |
| 29 | Nairobi Business Venture Ltd | 28.6509 | 21.87478 | 30.6822 | 33.77076 | 31.38838 | 17.86446 | 18.6753 | 29.8648 | 39.0752 | 2.232068 |
| 30 | Homeboyz Entertainment Plc | 26.2546 | 29.37147 | 31.51234 | 38.66522 | 37.26394 | 5.563542 | 33.4817 | 36.52049 | 33.0763 | -0.38986 |
| 31 | ARM Cement Plc. | 33.8583 | 15.08852 | 31.97369 | 20.39746 | 31.59213 | 17.40762 | 22.7176 | 22.37811 | 23.853 | 2.462277 |
| 32 | Bamburi Cement Plc. | 27.4171 | 25.32489 | 28.73026 | 24.61401 | 29.05382 | 17.42287 | 21.5324 | 9.417186 | 16.2457 | 0.937713 |
| 33 | Crown Paints Kenya Plc | 32.4777 | 9.264646 | 28.19138 | 30.14939 | 30.55015 | 22.92249 | 14.8725 | 21.11485 | 25.678 | 10.6569 |
| 34 | E.A Cables Ltd | 26.3349 | 28.34256 | 24.70916 | 24.35546 | 27.78602 | 35.64468 | 18.5956 | 23.10554 | 21.2619 | 17.99841 |
| 35 | E.A Portland Cement Ltd. | 24.8533 | 26.6308 | 33.5497 | 28.33778 | 27.60818 | 12.13498 | 24.5232 | 26.81175 | 31.5157 | 10.90744 |
| 36 | Total Kenya Ltd | 40.1995 | 5.270125 | 29.8575 | 30.23682 | 28.155 | 20.52725 | 6.83156 | 14.79577 | 16.2289 | 8.506167 |
| 37 | Kengen Plc | 14.6328 | 22.22664 | 13.1872 | 17.40957 | 22.34911 | 10.29089 | 11.2379 | 29.54223 | 21.1896 | 15.33685 |
| 38 | Kenya Power Ltd | 51.10646 | 14.36242 | 25.5857 | 32.62626 | 39.41801 | 16.5431 | 36.8293 | 38.70198 | 36.3993 | 19.51658 |
| 39 | Umeme Ltd | 5.559237 | 27.76718 | 10.3875 | 29.63169 | 25.3451 | 24.2756 | 45.0101 | 51.108 | 51.092 | 11.12888 |
| 40 | Jubilee Holding Ltd | 11.07129 | 33.11315 | 17.8878 | 18.32865 | 38.3342 | 32.54745 | 36.8442 | 31.89522 | 34.40547 | 33.2696 |
| 41 | Sanlam Kenya Plc | 1.47065 | 33.33716 | 17.5245 | 28.0259 | 28.55252 | 15.1219 | 44.7682 | 24.46462 | 18.0902 | 17.1899 |
| 42 | Kenya Re-Insurance Corporation Ltd | 6.281104 | 27.44706 | 19.593 | 27.40362 | 27.58723 | 6.89578 | 41.4809 | 14.63852 | 24.0847 | 12.08517 |
| 43 | Liberty Kenya Holdings | 4.276096 | 36.92796 | 15.3866 | 28.94878 | 28.6454 | 20.12 | 41.2499 | 24.52486 | 17.2692 | 3.871528 |
| 44 | Britam Holding Plc | 8.873293 | 25.51473 | 25.5416 | 26.54151 | 32.17033 | 31.1021 | 43.9866 | 20.57015 | 25.0144 | 29.31385 |
| 45 | CIC Insurance Group Ltd | 11.19819 | 38.79535 | 21.2841 | 23.25301 | 25.35093 | 6.706863 | 25.2804 | 38.60725 | 6.19683 | 22.53814 |
| 46 | Olympia Capitals Holding Ltd. | 17.15751 | 14.57818 | 19.9472 | -0.8646 | 30.89717 | 37.59979 | 26.0114 | 25.2745 | 48.6058 | 13.1913 |
| 47 | Centum Investment Plc | 4.878547 | 9.842951 | 17.0648 | 11.4533 | 16.72842 | 4.87962 | 38.0205 | 34.08206 | 34.5273 | 19.3847 |
| 48 | Trans-Century Plc | 4.286932 | -9.22957 | 36.6652 | 2.425571 | 26.67807 | 22.51744 | 36.1692 | 46.31167 | 38.8797 | 7.238484 |
| 49 | Home Africa Ltd | 18.69645 | -4.58755 | 25.4858 | 36.36547 | 39.73949 | 33.02849 | 37.3186 | 55.04697 | 49.1832 | 26.59913 |
| 50 | Kurwitu Venture Ltd | 13.69355 | -3.18747 | 15.2554 | 37.50328 | 37.35627 | 38.49706 | 20.7628 | 57.02827 | 51.9333 | 22.46269 |
| 51 | Nairobi Security Exchange Plc | 28.44032 | 11.80953 | 11.73591 | 31.89878 | 38.94454 | 32.24065 | 31.6863 | 36.3127 | 57.41995 | 28.53505 |
| 52 | B.O.C Kenya Plc. | 10.17817 | 25.74459 | 13.7213 | 42.78018 | 39.43702 | 5.069417 | 28.7052 | 16.83318 | 19.0642 | 32.53825 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 53 | B.A.T Kenya Plc. | 17.70393 | 29.13545 | 16.873 | 10.3667 | 10.0974 | 10.2588 | 41.621 | 19.92694 | 20.013 | 29.66564 |
| 54 | Carbacid Investment Plc | 9.214674 | 20.80785 | 23.7087 | 27.4847 | 22.4001 | 20.14197 | 15.3217 | 25.1767 | 36.3546 | 17.0278 |
| 55 | E.A.B.L Ltd. | 25.48991 | 26.52094 | 14.5899 | 38.335 | 27.4028 | 17.8031 | 26.4365 | 18.20501 | 23.844 | 22.90384 |
| 56 | Mumias Sugar Company Ltd | 33.93159 | 20.51334 | 24.6018 | 25.9438 | 15.2371 | 12.71459 | 25.1295 | 22.89071 | 32.9177 | 37.95308 |
| 57 | Unga Group Ltd. | 3.828682 | 36.76396 | 33.49637 | 39.44952 | 24.1924 | 12.06927 | 28.3016 | 33.48882 | 26.7123 | 45.06748 |
| 58 | Kenya Orchards Ltd | 1.223538 | 3.20022 | 11.23173 | 27.32746 | 6.6865 | 13.51603 | 38.4403 | 33.45288 | 33.9706 | 19.02706 |
| 59 | Flame Tree Group Holding Ltd | 12.37542 | 21.17625 | 4.870684 | 37.21098 | 30.7362 | 9.658088 | 23.2645 | 39.2338 | 48.3725 | 17.07642 |
| 60 | Safaricom Plc. | 14.09669 | 15.72295 | 4.884186 | 34.25213 | 20.1189 | 15.7729 | 16.2372 | 15.9742 | 35.199 | 22.19444 |
| 61 | ILAM-Fahari I-REIT | 12.1481 | 9.282088 | 23.7087 | 44.85478 | 30.9851 | 11.70887 | 20.4395 | 10.67129 | 32.7584 | 36.25717 |
| 62 | ABSA New Gold ETF | 17.34496 | 16.14604 | 14.5899 | 13.67607 | 16.3723 | 9.16507 | 15.7729 | 14.6101 | 34.8049 | 10.52463 |

Net book value of stock

| | FIRM NSE | B 2014 | B 2015 | B 2016 | B 2017 | B 2018 | B 2019 | B 2020 | B 2021 | B 2022 | B 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Eagaads Ltd | 24.23519 | 36.08283 | 32.92342 | 36.01338 | 31.56949 | 30.49975 | 30.89165 | 39.09142 | 67.46796 | 41.87111 |
| 2 | Kapchorua Tea Kenya Plc | 27.77218 | 34.37858 | 41.08197 | 37.49148 | 25.85252 | 31.51189 | 31.15565 | 36.01206 | 34.17185 | 37.28425 |
| 3 | Kakuzi Plc | 29.13479 | 34.69166 | 32.96211 | 36.68442 | 27.29803 | 27.43433 | 30.16333 | 36.05977 | 35.79069 | 36.95888 |
| 4 | Limuru Tea Company Ltd | 30.58283 | 40.1625 | 24.91802 | 38.85703 | 32.71407 | 30.53118 | 31.32155 | 38.56876 | 32.65211 | 39.42701 |
| 5 | Sasini Plc | 29.46631 | 39.87111 | 34.92517 | 39.33405 | 31.16597 | 14.46273 | 30.04727 | 36.80892 | 35.56164 | 40.28762 |
| 6 | Williamson Tea Kenya Plc | 31.29708 | 34.07528 | 27.59452 | 21.35339 | 29.31979 | 25.64492 | 28.59822 | 36.56677 | 30.34852 | 31.74184 |
| 7 | Car &General (K) ltd | 41.66722 | 33.62836 | 32.96364 | 35.88459 | 31.26065 | 28.92977 | 22.21262 | 35.42115 | 33.06969 | 39.94786 |
| 8 | ABSA Bank Kenya Plc | 32.09701 | 40.54912 | 38.62139 | 32.46245 | 32.1696 | 22.7794 | 27.70364 | 34.85188 | 34.44582 | 38.34729 |
| 9 | Stanbic Holding Ltd | 26.47818 | 32.88711 | 27.37533 | 37.78962 | 27.44755 | 27.50634 | 31.14779 | 35.95528 | 33.15848 | 37.77469 |
| 10 | I&M Holding Plc | 38.41484 | 27.27314 | 39.10186 | 32.39861 | 25.20164 | 25.43973 | 29.18164 | 39.93778 | 30.41419 | 38.96307 |
| 11 | Diamond Trust Bank Kenya Ltd | 36.25908 | 34.46134 | 25.80836 | 29.16 | 30.60483 | 25.57792 | 32.14173 | 32.54698 | 30.74474 | 27.62012 |
| 12 | HF Group Plc | 38.04831 | 34.07971 | 34.13363 | 33.48686 | 25.11654 | 29.23463 | 28.91123 | 30.48156 | 27.0451 | 30.5527 |
| 13 | KCB Group Plc | 36.04626 | 28.22548 | 35.17075 | 40.37983 | 26.37961 | 22.63019 | 30.7216 | 33.2192 | 37.39471 | 39.50755 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | NCBA Group Plc | 37.83297 | 26.92536 | 32.20284 | 27.35023 | 39.00549 | 13.07961 | 38.21156 | 30.09331 | 30.56106 | 33.19529 |
| 15 | Standard Chartered Bank Kenya Ltd | 36.12818 | 16.4625 | 33.93156 | 33.10909 | 37.20712 | 1.235361 | 41.27161 | 37.34036 | 21.82741 | 34.49877 |
| 16 | Equity Group Holding Plc | 40.09729 | 28.36653 | 25.74959 | 27.8754 | 29.321 | 30.2013 | 29.0032 | 29.51376 | 32.40662 | 29.76711 |
| 17 | The Co-operative Bank Of Kenya Ltd | 36.53425 | 33.75251 | 30.376 | 30.59369 | 39.27375 | 36.44589 | 39.94815 | 28.49226 | 30.33961 | 29.76609 |
| 18 | Express Kenya Plc | 36.16933 | 30.57492 | 30.49581 | 28.02569 | 40.17032 | 33.70404 | 37.74453 | 26.74395 | 37.73237 | 30.78474 |
| 19 | Kenya Airways Ltd | 40.02818 | 25.34876 | 29.45624 | 26.53735 | 34.98869 | 36.28455 | 40.10506 | 38.22193 | 30.30782 | 33.33287 |
| 20 | Nation Media Group Plc | 44.20568 | 26.33294 | 22.78261 | 23.74209 | 35.85897 | 35.085 | 39.28968 | 28.07985 | 38.34631 | 34.7875 |
| 21 | Standard Group Plc | 36.47945 | 27.77074 | 30.06243 | 29.05179 | 37.89505 | 35.26081 | 39.37216 | 31.74585 | 28.33067 | 29.1869 |
| 22 | TPS Eastern Africa(Serena)Ltd | 44.99108 | 32.26595 | 18.39593 | 39.71522 | 36.19621 | 33.53109 | 38.04957 | 25.74086 | 25.58713 | 27.63076 |
| 23 | WPP Scan Group Plc | 33.02025 | 32.12212 | 34.87662 | 36.17315 | 34.90702 | 33.83584 | 34.19464 | 27.04826 | 31.26582 | 28.86028 |
| 24 | Uchumi Super market | 35.13978 | 25.84047 | 36.34785 | 29.75305 | 37.66826 | 32.64548 | 39.35543 | 29.1071 | 26.75077 | 28.89817 |
| 25 | Eveready East Africa ltd | 23.54275 | 31.0237 | 27.16521 | 29.81206 | 35.41774 | 32.94136 | 41.21596 | 30.38711 | 26.94588 | 28.45323 |
| 26 | Longhorn Publisher Plc | 31.53948 | 25.93419 | 19.69444 | 26.12457 | 33.62491 | 37.32183 | 37.27536 | 32.53117 | 20.7375 | 25.30673 |
| 27 | Deacons(East Africa) Plc | 27.34185 | 41.93809 | 20.91348 | 29.94493 | 39.26206 | 50.60403 | 56.74859 | 35.12168 | 27.36441 | 33.85523 |
| 28 | Sameer Africa Plc | 28.24532 | 43.03511 | 24.76049 | 30.75196 | 38.70738 | 35.83877 | 39.04144 | 31.40297 | 17.74557 | 39.73661 |
| 29 | Nairobi Business Venture Ltd | 32.62278 | 29.51623 | 30.03733 | 26.30592 | 33.64952 | 34.15553 | 34.23461 | 32.23082 | 22.37383 | 19.28617 |
| 30 | Homeboyz Entertainment Plc | 27.55101 | 31.16899 | 12.7177 | 44.71724 | 26.68494 | 35.26715 | 36.80033 | 28.46438 | 24.79457 | 22.49421 |
| 31 | ARM Cement Plc. | 32.39709 | 27.66944 | 8.452955 | 43.79625 | 34.49941 | 29.64901 | 36.09328 | 32.122 | 23.52406 | 25.50742 |
| 32 | Bamburi Cement Plc. | 34.6119 | 15.18292 | 21.90023 | 42.03398 | 38.28577 | 38.85238 | 30.94912 | 25.19834 | 30.06014 | 28.89505 |
| 33 | Crown Paints Kenya Plc | 26.64622 | 38.40923 | 36.7589 | 40.02759 | 29.33724 | 35.05834 | 32.62536 | 24.30546 | 30.1827 | 27.96188 |
| 34 | E.A Cables Ltd | 35.41058 | 34.28435 | 34.11304 | 37.35052 | 30.53096 | 35.74691 | 36.80499 | 19.93221 | 32.7713 | 27.85173 |
| 35 | E.A Portland Cement Ltd. | 34.26908 | 43.85626 | 36.39947 | 40.1854 | 31.04759 | 26.23916 | 34.79028 | 29.47473 | 24.9398 | 25.81867 |
| 36 | Total Kenya Ltd | 28.68737 | 38.29631 | 34.21195 | 37.85357 | 32.18294 | 37.94129 | 38.21469 | 31.15908 | 22.70058 | 31.20195 |
| 37 | Kengen Plc | 27.84427 | 35.50504 | 34.08539 | 39.00706 | 31.40253 | 31.92827 | 29.10184 | 29.78322 | 26.98707 | 23.45482 |
| 38 | Kenya Power Ltd | 30.48735 | 37.27259 | 34.87178 | 37.71489 | 27.62805 | 29.96592 | 27.59691 | 39.55327 | 19.49801 | 33.01549 |
| 39 | Umeme Ltd | 30.79 | 36.19254 | 31.49755 | 35.01382 | 30.17111 | 33.95387 | 33.32807 | 25.44447 | 16.71252 | 44.11845 |
| 40 | Jubilee Holding Ltd | 32.91904 | 35.25507 | 33.20621 | 35.74724 | 32.56159 | 28.53138 | 33.47753 | 35.699 | 37.21253 | 41.08443 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | Sanlam Kenya Plc | 21.74827 | 36.18442 | 34.64008 | 37.98286 | 40.49732 | 11.02575 | 37.59753 | 35.48272 | 34.0234 | 37.31049 |
| 42 | Kenya Re-Insurance Corporation Ltd | 23.59495 | 34.79476 | 33.73714 | 37.33091 | 33.83769 | 30.75696 | 36.23788 | 38.95379 | 33.58338 | 38.1835 |
| 43 | Liberty Kenya Holdings | 30.39096 | 33.26186 | 36.01932 | 34.03277 | 28.23484 | 30.37028 | 29.8189 | 36.09331 | 35.08773 | 39.27325 |
| 44 | Britam Holding Plc | 26.95806 | 33.81003 | 34.34044 | 40.7052 | 28.61403 | 33.30872 | 34.70264 | 37.75856 | 35.00199 | 39.30159 |
| 45 | CIC Insurance Group Ltd | 24.59221 | 39.17709 | 26.55122 | 20.82838 | 26.91112 | 21.96087 | 24.48727 | 34.86093 | 32.51815 | 32.46264 |
| 46 | Olympia Capitals Holding Ltd. | 24.60467 | 41.61177 | 34.27087 | 40.41195 | 29.59553 | 23.49005 | 28.74065 | 35.05443 | 33.12075 | 38.6479 |
| 47 | Centum Investment Plc | 18.94752 | 37.04494 | 32.68129 | 36.70839 | 32.91151 | 27.79852 | 23.24597 | 35.93099 | 32.76201 | 39.67686 |
| 48 | Trans-Century Plc | 32.34598 | 44.07418 | 26.74441 | 36.74728 | 33.64216 | 26.75962 | 28.13499 | 36.13178 | 33.80417 | 38.57628 |
| 49 | Home Africa Ltd | 40.14652 | 30.84468 | 31.83696 | 27.09692 | 33.18125 | 16.15306 | 37.13656 | 40.77778 | 31.46868 | 39.38318 |
| 50 | Kurwitu Venture Ltd | 37.1604 | 35.44971 | 29.08015 | 36.13974 | 30.9823 | 26.91372 | 31.6566 | 32.84854 | 28.65149 | 26.06541 |
| 51 | Nairobi Security Exchange Plc | 37.35123 | 27.40889 | 33.8582 | 26.02518 | 23.90055 | 31.50464 | 27.87168 | 33.2259 | 35.88077 | 38.92512 |
| 52 | B.O.C Kenya Plc. | 36.21928 | 29.55325 | 36.13617 | 30.09746 | 31.58569 | 29.07599 | 35.71986 | 36.56595 | 32.24434 | 32.63828 |
| 53 | B.A.T Kenya Plc. | 39.98526 | 27.49635 | 34.36542 | 31.30615 | 25.50106 | 22.68127 | 29.62067 | 29.37238 | 31.22441 | 34.04217 |
| 54 | Carbacid Investment Plc | 36.33353 | 33.41808 | 29.1042 | 28.57164 | 32.91746 | 26.14541 | 44.81341 | 34.27877 | 32.26545 | 30.27694 |
| 55 | E.A.B.L Ltd. | 40.5095 | 30.49788 | 33.67254 | 40.83045 | 22.24055 | 9.986991 | 36.53833 | 28.83525 | 35.7812 | 29.17494 |
| 56 | Mumias Sugar Company Ltd | 36.69961 | 28.80933 | 21.39311 | 30.07307 | 36.75783 | 36.68882 | 39.61396 | 27.70564 | 37.79169 | 30.47953 |
| 57 | Unga Group Ltd. | 35.07635 | 26.71976 | 31.526 | 28.70925 | 36.20567 | 35.17355 | 39.15002 | 38.52586 | 33.41564 | 31.76711 |
| 58 | Kenya Orchards Ltd | 39.63744 | 28.18367 | 24.64035 | 29.81768 | 40.13908 | 37.02879 | 40.77785 | 32.74205 | 35.75263 | 33.25643 |
| 59 | Flame Tree Group Holding Ltd | 46.446 | 29.46212 | 30.96185 | 27.50844 | 36.16545 | 35.00857 | 37.30924 | 26.43471 | 38.33775 | 37.66546 |
| 60 | Safaricom Plc. | 34.95532 | 29.16237 | 16.86468 | 32.20919 | 36.64919 | 34.08386 | 37.96987 | 29.60867 | 33.56139 | 27.8334 |
| 61 | ILAM-Fahari I-REIT | 45.27108 | 31.77072 | 23.07888 | 19.461 | 36.82457 | 34.77503 | 39.21941 | 28.61947 | 30.83463 | 32.44811 |
| 62 | ABSA New Gold ETF | 32.92743 | 30.09243 | 25.55716 | 27.17411 | 34.76592 | 34.4608 | 34.29774 | 31.82667 | 25.54607 | 28.89968 |

## Appendix IV: NACOSTI Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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# Effect of Herding Biases on Investment Decisions at NSE in Kenya

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**ABSTRACT**

**Purpose:** To establish the effect of herding biases on investment decisions at NSE in Kenya.

**Design/Methodology/Approach:** The research was conducted between May 2023 to June 2024 and covered 62 quoted companies at the NSE; the research took causal research design. This research design was appropriate since it facilitated data collection by different investors with the aim of establishing whether a phenomenon exists and its magnitude or established the relationship between variables as well as the cause and effect of variables. Quoted companies quoted in Nairobi security exchange were used as the units of study. And at present NSE has 62 listed companies. We used data collection schedule which gathered the data that would be required in the research. The study involved both the descriptive and inferential statistics data; it was coded and analyzed using both the qualitative and quantitative analysis method through strata.

**Findings:** Panel data revealed a significant positive effect between herding bias and investment decision of NSE investors in Kenya (p0.0404<0.05). Therefore, the study rejected the null hypothesis.

**Implications/Originality/Value:** The research suggests that average market performance ought to be the brand control regarding return dispersion to and productive herd behavior solutions. Having a centralized approach would suit investors better because a temporal herd behavior would be ideal than a permanent one.

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# Effect of Overconfidence Biases on Investment Decisions at NSE in Kenya

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*Investment decisions*
*Nairobi Securities exchange.*

**JEL Classification**
*E22, D70*

**ABSTRACT**

**Purpose:** To analyze the effect of overconfidence biases on investment decisions at NSE in Kenya.

**Design/Methodology/Approach:** The study was conducted between May 2023 and June 2024 and focused on 62 quoted companies at the NSE; causal research design was adopted in the study. Quoted companies that trade in the Nairobi security exchange were used as units of study. There are 62 listed companies at the NSE presently. Data collection schedule was embraced to gather data required during the research. The research involved descriptive and inferential data statistics with data collected in coded form and analysed in qualitative and quantitative data analysis approach through strata.

**Findings:** There is a large astronomical relationship between overconfidence biases and investment decision of NSE investors in Kenya (p0.000<0.05)

**Implications/Originality/Value:** The level of confidence given by the investors in security exchange of Nairobi ought to be set in accordance with trading volume whereby, the averages of the maximum volume traded and the minimum volume traded ought to be evaluated and when the state of confidence is moderate then it should emerge.

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## Introduction

Overconfidence is actually a case where investors are convinced that they have more perfect vision of the future earnings. It makes human beings overestimate their knowledge of prediction (Joo, 2017). The overconfidence investors are marked by individuals who are indeed said to engage in excess trading property referred to as overtrading, which in turn, triggers greater volatility of prices in the securities market resulting in undesired negative abnormal returns (Graham, Harvey, & Huang, 2009).

Investors can be classified as rational when they dynamically use new information to adjust their mentality and make rational decisions among the sets of options available that are acceptable in other words an investors opportunity cost of available investment (Thaler, 2005). Previous experience has