MASTER'S THESIS

BEHAVIORAL BIAS AND FINANCIAL PERFORMANCE OF TIER ONE COMMERCIAL BANKS IN KENYA

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DECLARATION

This thesis is my effort and has not been offered for a degree in any other University.

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This Thesis has been submitted for scrutiny with my endorsement as the university supervisor

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ABSTRACT

Focus of this study was for evaluation of Behavioral Bias and Financial Performance of Tier One Commercial Banks in Kenya. Quite a number of studies have been done but with little attention with consideration of Behavioral Bias on Financial Performance of Tier one Commercial Banks in Kenya. Empirical studies evidence some researchers being proponents of existence of relationship between regressing and concerned predictors of the study, however some researchers have mixed reactions on the same. Further, there have been a downward trend on performance of Tier one Commercial Banks in Kenya. This study was solely anchored on; prospective theory, efficient market theory and modern portfolio theory. Purpose of this research was to fill knowledge gap of understanding on both general and specific objectives of the study. General study objective was for evaluation of influence of Behavioral Bias and Financial Performance of Tier one Commercial Banks in Kenya. Concerned precise objectives were; to evaluate influence of Overconfidence Bias, determine influence of Herding Bias, examine influence of Anchoring Bias and to assess influence of Loss Aversion Bias on Financial Performance of Tier one Commercial Banks in Kenya. Descriptive survey research design was used on a population target of 90 people who were senior managers and make decisions on Tier one Commercial banks. Considering the population was manageable purposive Sample size was taken for the whole 90 senior managers. 10% study sample was applied on senior officers of Tier one Commercial Banks who were not part of main study for pilot studying. For data collection a Structured Questionnaire was used as an instrument. Descriptive (frequencies, averages, percentages) and Inferential (correlation and regression analysis) Statistical Package for Social Sciences (SPSS version 27) was used to analyze statistics. Study findings indicated all predictors namely; Overconfidence, Herding, Anchoring, Loss Aversion Bias had influence on Financial Performance. Herding Bias had more strength followed by Anchoring Bias, Loss Aversion Biases and lastly Overconfidence. Conclusion showed behavioral Bias being key, considering there was an influence on financial performance. Further, managers should balance rationality and irrationality perception while making decisions for improved financial performance.

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DEDICATION

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ACRONYMS AND ABBREVIATION

APT	Arbitrage Pricing Theory
CAPM	Capital Asset Pricing Model
CMA	Capital Markets Authority
EMH	Efficient Market Hypothesis
ICIFA	Institute of Certified Investment and Financial Analysts
MPT	Modern Portfolio Theory
NSE	Nairobi Securities Exchange
IMF	International Monetary Fund

DEFINITION OF TERMS

Financial Performance: Denote to measurement of how an association uses her resources to generate revenue (Quasi et al., 2024)

Overconfidence bias: Refers to attitude of Investors having excessive self confidence in Personal judgments, often disregarding relevant pertinent information (Ahmed & Shah, 2022)

Herding Biases: Refers where individuals do not act independently but instead imitate actions of others as they feel uncertain about their expertise (Humairo & Panuntum, 2022)

Anchoring Bias: Refers to erroneous decision making made while concentrating on definite metrics of value, serving to direct decision-making procedure, however not empirically (Ahmed & Shah, 2022)

Loss Aversion Bias: This is situational behavioral tendency of individuals and firms preferring avoiding losses rather than acquiring equivalent gains (Ingalagi, 2024).

CHAPTER ONE

INTRODUCTION

1.1 Introduction Background

Chaudhry and Bajwa (2021) emphasize financial markets performance is analyzed through theories of psychology inclusive of affiliated perspectives. Korteling et al. (2023) assert behavioral finance is considered as research of effect of the psychological factors on financial markets evolution. Globally the growth of world economies through resource mobilization, allocation of capital within the various economies and ensuring funding in productive investment opportunities is determined by the financial markets (Nawaz, 2019).

Existence of securities market entails the most effective avenues for commercial banks to raise capital as it allows Investors to grow their financial assets through making pro-active investment decisions as well as partaking in the development of a strong equity market that has depth and liquidity (Mishkin & Eakins, 2018).Where as a number of researchers among them; Kuria (2024) supported availability of relationship of behavioral bias on Financial Performance making in firms, other researchers had mixed reactions of not finding significant relationship among them included; (Ong'eta &Nasution, 2021).

Developed economies have commercial banks well established and as such play a crucial role in facilitating economic growth and developments while initiating strong and resilient avenues that support robust investment decision making strategies (IMF, 2022). Malkiel (2019) embraced existence of London Stock Exchange as well as New York Stock Exchange significantly contributes to high market efficiency Tiers for commercial banks growth, led by developed financial systems, investor education and technology adoption that embrace high Tier of decision making for improved performance. Chaudhry and Bajwa (2021) emphasize stock

market participation in Asian Markets such as China and India have increased over the years because of government led incentives for financial inclusion and commercial banking engagements.

Africa as a continent with her economies, commercial banks have over the years lagged behind rest of global markets, apart from international commercial banks associated with vibrant security markets in Africa being that of Egypt, South Africa, Nigeria and Kenya (Sheikh, 2025). Johannesburg Securities Exchange is leading securities exchange with most liquidity with institutional Investors especially the commercial banks (Osei-Assibey et al., 2021). Other security markets in the continent; namely; Ghana, Tanzania have low liquidity coupled with regulatory problems as well as low investor confidence Tier making the commercial banks not perform well (Okonkwo & Okereke, 2025). African security markets are more volatile with investor sentiment significantly influenced by economic uncertainty, inflation, ineffective regulations and as such affects commercial banks in terms of making robust investment decisions that ultimately influence performance (Raut, 2020).

Kenyan market economy with her commercial banks' performance recounts illusion of control affecting the investment financial performance which is a significant factor leading to market volatility in the Nairobi securities exchange. Hence the reason being Investors frequently credited successful investments to their skills while at the same time blame failures on external factors (Ong'eta & Nasution, 2021). Muriithi (2021) investigated on how behavioral biases such as the illusion of control influenced actual investment choices of real estate developers operating in Nairobi, Kenya. Research revealed developers who strongly believed in their control over project outcomes tended to invest more in projects despite existing market uncertainties. Developers ignored outside risk variables because they trusted their individual skills and experience would protect them from financial damage. Excessive confidence sometimes resulted in financial problems because market developments failed to match their

expectations. The research demonstrated that Investors must combine their confidence with actual market data analysis.

1.1.1 Behavioral Bias

Behavioral bias is a systematic universal tendency found in individual's decision making, enhancing Investors' decisions exposed to inaccuracy or wrong outcomes (Korteling et al, 2023). Considerably, behavioral finance unlike the traditional finance theories recognizes that behavioral bias can significantly shape the overall financial performance of an institution. The behavioral finance includes bias which influences decision making that ultimately affect financial performance, inclusive; overconfidence, herding, anchoring and loss averse biases (Owusu & Laryea, 2023).

Zhang (2023) embraced overconfidence bias, herding bias and anchoring bias prevalent in global markets, further evidenced to cause mispricing of assets, excessive trading and poor diversification increasing market inefficiencies as evidenced from studies of various countries.

Choowan, Daovisan and Suwawong (2024) stipulate researchers explicitly invites investigations related to investment decisions in fragile states, given pressure from behavioral bias; psychological stress, survival heuristics, mistrust of institutions are acute, hence more consequential in fragile states compared to stable economies, more so financial literacy and behavioral awareness among organization owners is quite low. Korteling et al. (2023) opine behavioral finance research focus on Investors at stock market, dealing with huge companies, or high-income nations.

Abdulrasool and Othman's (2022) linked biases inclusive; overconfidence, anchoring, cognitive dissonance to market inefficiencies, actual forms of biases and effects on Nairobi Securities Exchange, hence market places; not well studied industry specific characteristics, including low financial literacy, lack of reliable information, high proportion small Investors, might amplify or

modify manifestation of biases. Irrespectively little empirical evidence for addressing appropriate distinctions, weakening financial educationalists, policymakers, and market participants with understandings essential to produce behaviorally well-versed intrusions.

Overconfidence relates to an attitude where Investors have excessive self-confidence in their personal judgments, often disregarding relevant information. Overconfidence can lead individuals to underestimate risks and over emphasize information due to their beliefs, which often results in suboptimal decisions (Ahmad & Shah (2022). Anchoring biases results from an individual investor being seen to be heavily relying on their initial references points such as historical securities price when arriving at a decision hence resulting in Investors failing to adjust their expectations with account to the newly available information in the market ((Ong'eta & Nasution, 2021)).

Herding is considerably taken as a situation where individuals work independently, however, imitate the actions of others because they feel uncertain about their own expertise or internal information (Humairo & Panuntun, 2022). Loss aversion biases refer to why individual Investors have to be risk averse, hence makes an investor to continue holding onto underperforming assets longer than the rational investor would in a normal situation, all in attempt to avoid realizing further losses (Chaudhry & Bajwa, 2021).

Sochi (2018) examined influence of behavioral factors on investment decisions on Dhaka Stock Exchange. Study findings indicated behavioral bias influencing financial performance. Study analyzed survey data to find association among retail Investors' socioeconomic characteristics and investment conclusions, hence concluded behavioral factors influence investment outcomes. Over ten years Bangladesh's capital market expanded rapidly considering rising Investors lack financial literacy. Study findings showed behavioral factors influence investment outcomes.

Globally, studies have documented various behavioral biases affecting Investors, leading to market inefficiencies and bad investment decisions (Malkiel, 2019). Studies in the developed economies has identified biases such as illusion of control, anchoring and loss aversion disperse Investors from rational decision making (Statman, 2019). In developing economies behavioral bias leads to herding behavior, excessive trading and speculative investment strategies (Chaudhry & Bajwa, 2021). Developing economies studies show loss aversion is the most significant behavioral bias affecting investor financial performance followed by overconfidence and experience (Varshini & Vinayalaxmi, 2024).

Cascão, Quelhas, and Cunha (2023) examined decision making shortcuts; psychological distortions on property investment domain. Researchers applied EFA on influence of cognitive patterns on Investors' behavior assessment. Study employed SEM path background determining whether recognized heuristics got pretentious by demographic traits of suburban market partakers, evaluating effects on investment preferences. Findings showed Investors' choices in housing sector get formed by behavior bias and decision-making heuristics. Overconfident Investors typically made more than normal sum of cash. Anticipating likely investment, stakeholders apt paying close attention to home's pricing. Ultimately feminine stakeholders demonstrate tougher availability of anchoring heuristics. Assets pricing and geographic placement exercise substantial influence on persons in housing segment showing marked vulnerability for mental crosscuts. Although investigation got accepted inside Kenyan framework, original relative study was assumed in Portugal.

Africa's economy reflects behavioral finance that is still scarce but South African and Nigerian research indicates that loss aversion, herding, and overconfidence significantly influence investor behavior (Okonkwo & Okereke, 2025). South African Investors are more risk-tolerant compared to Investors in East Africa, who are risk-averse and more reliant on social networks before making any investment outcome (Osei-Assibey et al., 2021).

Malkiel (2019) embraced risk aversion being an important factor affecting investor actions and failure to control leads to bias in the other variables. A study done by Ong'eta & Nasution, (2021) on individual investor behavior in NSE also argued that overconfidence bias, which in this case closely relates to the illusion of control, tends to contribute to instances of increased market volatility due to high frequent trading. Woo et.al, (2020) embrace behavioral finance contributes in explaining major financial crises occurring past two ages counting dot com bubble in 1990s and 2008 universal financial disasters; hence crisis was categorized by behavioral biases.

Nairobi Securities Exchange is very relevant component of financial system providing companies entailing opportunity of financing projects considering Investors seek for wealth expansion. Nevertheless, evidenced by investment behavior at Nairobi Securities Exchange motivated by behavioral biases particularly amid retail Investors exist. Investors often act on what others do. Examples include; Safaricom IPO of 2008 where Investors overran market in record oversubscription, a move occasioned by overconfidence and herding behavior basing on media influence and peer pressure, despite lack of proper research on sound financial performance of actual company (Okumu, Olweny, & Muturi, 2021). Almansour et.al, (2023) embrace market Investors continuously get exposed to loss aversion, sticking to poorly performing investments hoping of recovering money or influencing investment in given market without assessing financial outcome on market conditions.

Psychological factors are key on financial outcome, hence influence how Investors make decisions aligning with desired financial performance. Psychological factors drive individuals react irrationally (Yulianti, 2024). Jan and Rizwan, (2023) embrace Psychological factors entailing; self-control, overconfidence, herding, and mental accounting, hence Self-control positively influence on investment outcome since Investors with high self-control resist impulsive consumption, focusing more on long-term goals. Rani et.al, (2024) opine

overconfidence positively influence Investors with high self-confidence to aggressively make decisions.

Njenga (2018) examined how behavioral bias affects real estate values. Goal was to assess behavioral bias effect on Kenyan real estate values. Empirical studies predicted factors positively affected Kenyan real estate values. Behavioral bias factors influenced on Kenyan real estate prices, indicated by low p values. Regression model showed correlation of Kenyan real estate prices and behavioral bias variables. Investigation's conclusions indicated positive correlation between Kenyan real estate prices and parameters. Relevant conclusions can be developed thanks to insights gained from the data analysis and answers to the study's questions. Study emphasizes significance of using sound judgment on making commercial investment outcome, given influence of cognitive biases on investment behavior. Results showed psychological distortions had a major influence on property values in Kenya's real estate market. Study concluded behavioral patterns significantly influence results of market value.

1.1.2 Financial Performance

Statman (2019) emphasized, financial performance success relies on investment choices when operating within volatile market conditions such as the Nairobi Securities Exchange. Allocation of economic resources to equities, bonds, real estate and derivatives happens for expected future returns during investment choices on how to get improved financial performance. Modern Portfolio Theory by Markowitz (1952) had to show that rational Investors use diversification to achieve maximum returns and minimum risks and never relied on the psychological issues. Current Real-world investment financial performance deviate from pure rationality because psychological, emotional and behavioral factors actively affect how Investors perceive and behave in financial choices.

CMA (2024) emphasizes on overall decline in equity market capitalization at the NSE declined by 28% on a year-on-year basis to KES. 1.44 trillion, representing a loss of market

capitalization of KES. 550 billion. Foreign investor participation has shown a steady decline, dropping from 73.7% in December 2018 to 43.1% in the first half of 2023.Decline has been primarily driven by tightening of monetary policy in advanced economies, causing rise in interest rates and subsequent capital outflows from emerging markets. The trend of net foreign investor outflows has continued into 2024, further complicated by domestic business environment challenges and firm-specific issues. These persistent outflows have contributed to exchange rate depreciation and increased market volatility, creating a challenging environment for the local equities market despite some positive indicators in early 2024, including increases in total equity turnover and shares traded.

Investors demonstrate irrational behavior in their investment selection process because they experience numerous behavioral biases, hence, the distortions in judgment because of these biases result in poor investment financial outcome that include excessive risk-taking and irrational exuberance, panic selling and herd behavior (Nyakurukwa & Seetharam, 2023).

NSE Investors who lack financial knowledge and experience of speculative trading become easy targets for these biases. NSE Investors base their investment financial performance on various elements, which include macroeconomic conditions and firm performance, as well as interest rates, inflation, and regulatory policies. Behavioral factors, together with fundamental and technical elements, strongly influence how Investors form their market sentiment and trading behavior (Nyakurukwa & Seetharam, 2023).

Naik and Reddy (2021) emphasized market efficiency and liquidity, together with volatility at Nairobi Securities Exchange, experience effects from cognitive bias in investment choice Market bubbles and downturns becoming worse since Investors engage in herding behavior by following others than making independent choice. Market relying on Nairobi Securities Exchange indicated speculative trading surges since investor sentiments pushed up stock valuations and avoided fundamental market analysis, Investors exhibiting confirmation bias

choose investments based on selected facts confirming convictions. Behavioral bias entail disposition effects, encouraging Investors to sell winning stocks very fast securing small profits but keeping underperforming stocks during extended periods, hence damaging their portfolio performance.

Gupta and Shrivastava (2022) indicates retail Investors in emerging markets, Kenya inclusive, face challenges with behavioral bias considering investments emotionally and have trouble accepting losses. Representativeness bias makes incorrect assumption about current market trends persisting forever, hence results in overreaction during bull markets and pessimistic bear markets. Market equilibrium suffers from bias, leading to excessive price fluctuations in Nairobi Securities Exchange.

Joghee, Alzoubi, and Dubey (2020) conducted empirical study on Dubai smart city projects, hence focused on efficacy of FDI investment biases in real estate sector. Study used bivariate model and multi-stage approach to sample and analyze investor behavior. Findings demonstrated Dubai being less risky place to invest due to study's FDI inflow during last few years. Strong dividend yielding returns obtained by Investors from Saudi Arabia, Japan, United Kingdom, United States and other nations in Dubai's real estate market improves performance of real estate firms, hence study conclusion favors bias affecting performance.

Aqham, Eny Endaryati, Subroto, and Kusumajaya (2024) assert emerging research reveals behavioral bias influence dynamics of market, hence during volatile periods, concerned Investors pick-up herding behavior, hence resulting into large discrepancies among price Tiers. Bao and Li (2020) found overconfidence encouraging over trading increasing market fluctuations. Findings indicated anchoring bias distorting stock valuation making inefficient investment allocation. Financial choice in property investment is intrinsically shaped by psychological predispositions; hence one's behavioral bias influencing financial performance process can be extremely harmful to Investors' wealth. Due to biases that are built into our

bodies and minds, people often make judgments that are not the best for themselves. An investor in behavioral finance is presumed to be typical (Ruirui, 2022). Study focus on market-driven behavior, herding bias, prospect bias and heuristic bias, hence behavioral bias was selected since other scholars had similar support in real estate (Achieng, 2022; Kuria, 2019; Muriithi, 2021).

Heuristics are the methods by which individuals make investment choices by taking mental shortcuts. According to Hjeij and Vilks (2023), heuristics are straightforward techniques used by people, animals, organizations, and even machines to solve complicated issues, form opinions, and make snap judgments. Representativeness, over confidence, and availability were used to quantify heuristic biases.

In financial markets, herding refers to collective imitation that leads to a junction of action. One of the often used but poorly understood terms in the financial lexicon is herd behavior. People are influenced by their surroundings and have a tendency to fit in with what is expected of them (Frempong, 2021). It has been noted that those who converse frequently have a fundamental tendency to think alike. People who interact often share information and respond to the same information, which is one reason why their assessments are similar (Shah et al., 2019). Buying and selling, stock selection, and trading volume were all used to gauge herding bias.

Barno et al. (2020), prospect bias refers to the fundamental imbalance in human investment choice, whereby adverse outcomes are weighted more heavily than equivalent positive gains. It also highlights the distinct inconsistency in individual behavior when assessing risk in uncertain contexts. Gikonyo et al. (2018) state that as losses usually elicit a greater emotional response than profits of the same size, Investors can gain from being aware of their biases. This was measured using mental accounting, loss aversion, and regret aversion.

Market factors, which include elements of consumer behavior and economic trends, may have an effect on a particular sales market. This can comprise any factors or events that could affect the sales of a company. These variables can be more precise, like the demography of a particular area, or more general, like the economy of a nation (Gaca, 2018). Furthermore, market features can change over time, especially if a location's consumer base or demographics change in reaction to external events (Cherono, Olweny & Nasieku, 2019). This was measured by market factors driven behaviors which includes past information considerations, short term returns and market dynamics.

1.1.3 Commercial Bank Tier One

Kenya has only nine Tier one commercial banks, namely; Standard Chartered bank, Stanbic bank, Kenya commercial bank, Absa Bank, Diamond Trust Bank, I&M bank, Bank of Africa, Equity Bank and Cooperative Bank of Kenya. Tier one has interest from loans to mobile subscribers like Equitel, KCB Mpesa, and M-Shwari which is another source of income for Tier one banks (Mwangi, 2017).

CBK (2024) embraced, Kenya has three different categories of commercial banks hence, term ‘tiers’ is sometimes used to describe these three categories. Classification for every tier is determined by factors such as asset holding, market share, volume of customer deposits and capital base. Tier, one banks are those whose capital, assets, and customer deposits are in hundreds of billions of shillings. Considerably Tier one commercial banks could control 90.3% of deposit accounts, 66.7% of total deposits, 94.10% of loan accounts, and 49.9% of the financial sector (CBK, 2024). 16 commercial banks make up tier two that controls 41.7% of monetary market. The remaining 8.4% of financial bank market share is controlled by 21 banks in third tier (CBK, 2024).

1.2 Statement of the problem

Authors have investigated investor's behavior and contemplated behavioral bias covers Investors' judgment and as well uninsulated rules of rational economic financial choice for institution financial performance. Investors are irrational and enormously affected by social factors enhancing present predispositions in their choices which affect financial performance of organizations (Nakamya, 2020).

Securities Industry and Financial Markets Association (2025) embrace most global equity markets performed financially well. Global market capitalization in equities rose 13.4% in 2025 compared to 2022 amounting to USD 115 trillion. United States of America had Dow Jones index moving up by 13.7%, in the United Kingdom, by only 4% in the FTSE 100. In Asia, Japan, Nikkei rose by 44% and India, SENSEX had to rise to 13%. In Africa, both JSE Index and EGX30 index rose by 5.3% and 6.6% respectively, while the NGX's All Share Index grew by 46%. While in Kenya, the NSE 20, NSE 25 and NSE all share index declined by 27.74%, 10.44%, and 24.04%, respectively in 2025, while equity market turnover declined 6% on a year-on-year basis to KES. 88 billion (CMA, 2025)

Existence of some researchers having mixed reactions on whether behavioral biases can influence Financial Performance, among them; Ong'eta & Nasution, (2021) had least support on behavioral finance factors, while other researchers among them; Kuria (2024) fully supported the sentiments. Further, least studies in Kenya have been done concerning behavioral bias on Financial Performance Tie One Commercial Banks, hence such reactions from researchers raise research gaps that are contextual, conceptual, methodological and geographical that allow this study to be undertaken, see table 2.1, summery of research gaps.

1.3 Study Objectives

1.3.1 Overall Objective

This research evaluated effect of Behavioral Bias on Financial Performance of Tie one Commercial Banks in Kenya.

1.3.2 Specific Objectives

The Research was directed by subsequent objectives:

i. Evaluating influence of Overconfidence Bias on Financial Performance Tie one Commercial Banks in Kenya.
ii. Determining influence of Herding bias on Financial Performance Tier one Commercial Banks in Kenya.
iii. Examining influence of Anchoring Bias on Financial Performance of Commercial Banks Tie one in Kenya.
iv. Assessing influence of Loss Aversion Bias on Financial Performance Tie one Commercial Banks in Kenya.

1.4 Research Hypotheses

H_{01}: Overconfidence Bias cannot influence Financial Performance Tier one Commercial Banks in Kenya

H_{02}: Herding Bias cannot influence Financial Performance Tier one Commercial Banks in Kenya

H_{03}: Anchoring Bias cannot influence Financial Performance Tier one Commercial Banks in Kenya

H_{04}: Loss Aversion Bias cannot significantly influence Financial Performance Tier one Commercial Banks in Kenya

1.5 Study Significance

1.5.1 Policy makers

Study assists policy makers and controllers in financial sector to formulate important strategies that enables minimizing negative influence of behavioral biases on Tier one commercial banks on Financial Performance. This study therefore encourages government bodies to come up with policies that would have more investors to actively participate financial choices for better financial performance. It would support policy makers in commercial banks tier one and brokerage firms to have better clientele profile and create products that target a wider client by

creating policies that would increase in individual investor involvement in the financial market for the sake of improving financial performance.

1.5.2 Investors

Study outcome would provide valuable insights to aid investment managers and Investors in understanding how psychological, emotional and behavioral biases influence their financial performance.

1.5.3 Academicians

Study would enhance general body of knowledge in finance, hence serve as educational ground for future scholars / researchers wishing to deepen understanding of behavioral finance and utilize study to develop research questions.

1.6 Scope of the Study

Research was conducted among individual nine Tier one commercial banks for a period of one year. Kenya's Central Bank stratifies commercial banks into three categories, Tier one, Tier two, and Tier three. Central Bank Classifies commercial banks basing weighted index by consideration of; net assets, reserves of capital, deposits of customers, various types of loans and accounts of deposit accounts. Tier, one banks being considered safest by Central Bank, dominates nearly fifty percent of Kenyan banking market. Kenyan Central Bank encourages Tier one banks having weighted index five percent or higher, Tier two banks fall in bracket one percent to 5% and Tier three banks subjective index beneath one percent. Study considered Tier one commercial banks determined by Kenyan Central Bank basing on supervision annual report 2024.

1.7 Limitation of the study

Banks in Kenya require access to relevant data with inclusive of cooperation from bank's participants with caution. More so, obtaining a representative sample of participants and

ensuring their willingness to participate was somehow challenging, hence study's participants were made aware that data would be specifically for study purpose and would be treated with a lot of confidentiality.

The study faced accuracy limitation of measuring and quantifying behavioral biases, since behavioral biases are inherently subjective and often difficult to quantify precisely. However, research Assistants employed diverse data collection tools including questionnaires and interviews to evaluate distortion and use of likert scale to ensure data is quantifiable. Dependence on self-disclosed responses and the likelihood of participants portraying themselves in a socially favorable manner posed additional challenge, hence they were assured of anonymity and confidentiality and data was for academic purpose only.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The segment of part two analyses theories, concepts, empirical review, and research gaps summaries and concepts of framework.

2.2 Theoretical Review

Concepts that supported this study included; Prospect theory, Efficient Market Hypothesis and Modern Portfolio theory

2.2.1 Prospect Theory

Theory of Prospect was initiated by Kahneman and Tversky in 1979. Under theory there is postulation of investors' wants being against traditional utility function, hence, investments are evaluated basing on expected utility. Biggs and Pettijohn (2019) embrace individuals possess preferences differently referencing to gains / losses, creating irrational increment in risky investment choices, including loss aversion bias and frame effect.

Prospect theory assist and relate firmly on ability of investors' exhibition on negative shocks during periods of high volatility, example; loss aversion findings have disposition effect, with consideration of investors refusing to sell losing stocks for sake losses (Barberis, Jin & Wang 2019). Lekovid (2020) found Investors choices are irrational because of guiding themselves by cognitive biases and emotions, however, behavioral finance accounts for such patterns, like bubbles and crashes, by analyzing psychological influence on behavior.

Quasim, Hussain, Mehboob and Arshad (2019) considerably embraced herding bias and overconfidence bias being common on emerging markets, hence pronounced because of

information imbalance consideration of poor investor's education. Prospect theory suits well Herding Bias and Overconfidence Biases.

2.2.2 Hypothesis of Efficient Market

The founder of Efficient Market Hypothesis was Eugene Fama in 1970. Brown (2020) being Efficient Market Hypothesis proponent, emphasized all available information is included in prices of assets. Under such theory, is not likely to make above normal yields with consideration arbitrage works correct value deviations. Efficient Market Hypothesis entails both value and efficient value of object determined rationally by Investors who rely on controls instead of prejudgment. However, minding of behavioral finance contrast disrepute such sentiments, hence focuses on emotions behavior of Investors reflects in markets.

Bouattour and Martinez (2019) noted that market inefficiency such as bubbles and crashes are inconsistent with the EMH proposition because they stem from psychological factors and feelings. Even if efficient market hypothesis possess substantial worth as model describing effectual markets by strategy, leaves out complete portrait of how markets labor, specifically where illogicality is daily demand. Theory is suited to Overconfidence, Herding, Anchoring and Loss Aversion Bias.

Roche (2021) emphasize, a market is said to be efficient when prices always fully reflect information available, hence Prerequisites for a successful market includes absence of transaction costs in trading of securities, availability of free information to all market participants, then a complete agreement among market participants on implications of information currently available for stock prices, then distribution of stock prices in future. Lekovic (2021) assert Efficient Market Hypothesis explain returns on investments should be consistent with the Tier of risk that Investors perceive, and asset prices in the market at any one time should represent an objective reflection of all information.

Kovarsky (2019) points out influential critique on Efficient Market Hypothesis showing Investors' sentiment and psychological factors leading to bubble formation and collapse. Empirical findings show events of dot-com bubble and housing market collapse cannot be solely rationalized using available information, such arises from outcomes of overconfidence, herding, over sanguinity subsequent into over transacting and succeeding overpraising securities with momentous high-pitched shortcomings. Barakat and Barakat (2024) support critique on Efficient Market Hypothesis on investor overreaction, hence provide empirical evidence proving Investors are prone to herd behavior responding to good and bad news, leading to price fluctuations incongruent with true value of securities. Investors' large stock movements experience mean reversion during subsequent periods leading into market mispricing. Behaviorals contrary to Efficient Market Hypothesis view markets responding to new information rationally, reflecting availability of bias.

Akin and Akin (2024) assert real behavior of Investors and markets differ in many ways from assumptions underlying efficient market hypothesis. Global financial markets researchers reveal Investors' psychological and emotional characteristics influence behavioral actions, leading to irrationality, high volatility, bubbles, and crashes. Deviations leads emergence of behavioral finance aiming explanation of existing gap among classical finance theory and actual market behavior.

2.2.3 Modern Portfolio Theory

Modern Portfolio theory was found by Markowitz in 1952, hence major hypothesis placed forward was in constructing a portfolio with a consideration of Investors willing to optimize estimated return for any given Tier of risk and more so ideology aspect of higher risk with high returns for investments.

Investors assess investments depending on their contribution to overall portfolio risk and return not on individual gains or losses. Theory does not explain for the asymmetric preferences about

gains versus losses, an aspect that is fundamental in loss aversion bias (Filbeck et.al, 2017). Main essence of Modern Portfolio Theory was diversification of risk. Alcide (2024) embraced, investment portfolio being an efficient pooling of assets allowing Investors to achieve maximum return per given amount of risk.

Abideen, Ahmed, Qiu and Zhao (2023), emphasize conclusion on behavioral bias inclusive; overconfidence bias and herding bias affected formation of efficient portfolios unfavorably. Considerably, over confidentiality encourages Investors for under estimating risk vise encouraging investing more in specific stocks, hence getting losses as market turns unfavorable? Irrespective of abilities for provision of coherent approach on portfolio Modern Portfolio theory, it has some serious flaws, considering conceptual understanding of rational behavior of Investors.

2.3 Variables Conceptual Review

2.3.1 Overconfidence Bias

Bouteska, Harasheh and Abedin (2023) investigated the way stakeholder hubris spoils genuine concert by overconfidence in capacity to envisage actions in stock prices, hence leading to recurrent exchange and amplified operation expenses. Study showed stakeholders' trade more often due to high overconfidence Tiers, however encounter minor earnings considering costs of such trades being very high.

Jain, Walia and Walia (2019) found investor behavior normally disperse from logic, hence Investors exhibit various behavioral biases affecting investment financial performance. Baker and Yi (2016) asserted overconfidence bias had significant influence on Investors' decision making on Malaysian stock market. Research by Mascarenas and Yan (2017) in Europe found Investors carrying out investment activities only when their psychological need was taken care of. However, researchers concluded indicating not all Investors took risks for obtaining profits, as well not all Investors gave up profits considering fear risk.

2.3.2 Herding Bias

Effect of herding would be more pronounced when market experiences distress situations like market anomalies, price increases and innuendos, hence, Herding poses risk of uncoordinated actions by herding Investors since it involves imitation of actions of other Investors which leads to collective imitation and correlated motion (Mertzanis & Allam, 2018).

Wang et al., (2024), identified a different method of measuring herding in Asian money markets where it was discovered herding induced inverse feedback and asymmetry in relationships between risk and returns. This underlines general effect of an investor's sentiment on market forces. Current body of research comes off as having substantial support which indicates herding behaviors are not only existent but they can also increase market volatility on various financial regimes at the global Tier.

2.3.3 Anchoring Bias

Anchoring bias concerns an individual investor being seen to be heavily relying on their initial references points such as historical stock prices when arriving at financial performance Investors fail to adjust expectations with accounting to newly available information in market place (Ananda et al., 2024). Anchoring has a high influence on an investor behavior particularly in financial performance leading to mispricing in markets and irrational trading patterns. Individual Investors are fixed on having to hold on to overprice assets based on past high or undervalued value due to previous performance (Wang, 2024).

Kartini and Nahda (2021) postulated anchoring bias affected investment financial performance in Indonesia. Chen (2019) contemplated Investors read articles supporting their choices than articles opposing investment outcomes. Research conducted by Abdulrasool and Othman (2022) assert anchoring bias and herding bias influence financial performance of Malaysian retail Investors. Pollock et.al, (2023) embraced anchoring bias has no influence on Financial Performance. Quas et.al.,(2024) opine a person getting new information contrary to anchoring,

gets more conservative or under reacts, even though such an individual tends to adjust initial benchmark value as an anchor with latest data.

2.3.4 Loss Aversion Bias

Loss Aversion Bias strength varies with the investor's cultural background, for example, loss aversion is stronger in Investors from collective societies than in Investors from individualistic societies, likewise is the same with Asian markets such as the Chinese Markets where individual Investors are strongly influenced by loss aversion than those in American markets (Chen et al., 2017).

Ingalagi (2024) emphasize Loss Aversion may be reflected in various investment patterns, including excessive risk aversion and reluctance to realize losses, hence, loss aversion can lead to sub-optimal investment. In their meta-analysis, Brown et al. (2024) confirm the robust presence of loss aversion in various studies, contexts and emphasize its important role in economic financial performance.

While research on loss aversion in Africa is increasing, studies that focus specifically on Nigeria and take into account recent changes in its financial ecosystem are still limited. Wang (2024) embraced in many cases people overemphasize loss to equivalent gain as such making wrong choices. In addition, understanding the differences in loss aversion in these two markets can provide insight into the role of market development and investor sophistication in mitigating behavioral bias.

Research on Zimbabwean stock market agree loss aversion make Investors more reluctant in selling off declining stocks, contributing to prolonged market downturns, hence Investors follow markets and other Investors financial performance. Kaustia et.al. (2023) noted risk aversion is important factor affecting investor financial performance, failure to control lead to bias in other variables.

2.3.5 Financial Performance

Financial performance success relies on investment choice when operating within volatile market conditions such as the Nairobi Securities Exchange, hence, allocation of economic

resources to equities, bonds, real estate and derivatives happens for expected future returns and how to get improved financial performance (Statman, 2019).

Nyakurukwa and Seetharam, (2023) emphasizes Nairobi Securities Exchange Investors who lack financial knowledge and experience of speculative trading become easy targets for these biases. NSE Investors base their investment financial performance on various elements, which include macroeconomic conditions and firm performance, as well as interest rates, inflation, and regulatory policies. Behavioral factors, together with fundamental and technical elements, strongly influence how Investors form their market sentiment and trading behavior.

Nyakurukwa et.al, (2023) assert Investors demonstrate irrational behavior in their financial performance because they experience numerous behavioral biases, hence, the distortions in judgment because of these biases result in poor investment choices that include excessive risk-taking and irrational exuberance, panic selling and herd behavior. Choowan, Daovisan and Suwawong (2024) stipulated and noted a valuable stock being stock with minimum risks, in that, Investors should not lose resources because of poor judgment.

Classical economic and financial theories base assumptions on Investors' demonstration of complete rationality efficiently processing all available information to make optimal decisions. Considering Fama (1970), Efficient Market Hypothesis assumes securities prices reflect all available information, hence prevents systematic mispricing from occurring. On similar note Real-world Investors demonstrate irrational behavior in financial performance because of experiencing numerous cognitive biases. Nyakurukwa and Seetharam (2023) embrace distortions in judgment on bias finding of poor financial performance including excessive risk taking and irrational exuberance, panic selling, and herd behavior. Investors rely very much on first financial information due to anchoring bias. Consequently, loss and market ambiguity are systematically underestimated by optimism bias (Esubalew, 2024).

Kasoga (2021) examined behavioral bias including anchoring on Tanzanian stock market. Investors demonstrated for low risk tolerance and insufficient financial literacy, however they fall victims to anchoring when selecting stocks since reliance was based on past price points. Research findings match observations made at Nairobi Securities Exchange regarding how retail Investors frequently depend on past stock performance.

Yasmin and Ferdaous (2023) examined behavioral bias on Bangladeshi capital market Investors, hence found behavior bias influenced investment choices. Investors who displayed such bias depended on individual assessment and previous positive findings but not on fundamental market studies. Research showed Investors maintained losing stocks for longer periods thinking investment choices eventually produces positive financial performance. Investor behavior bias produced poor portfolio performance elevating financial dangers. Research by Dhungana et.al, (2022) examined behavioral bias on investment financial performance in Nepal published Quest Journal of Management and Social Sciences. Research indicated anchoring bias among inexperienced Investors on historical stock performance. Authors emphasized investment advisory services incorporate behavioral finance principles strategically for usefulness of retail Investors in the Nairobi Securities Exchange.

CMA (2024) pointed out foreign investor participation declined dropping from seventy three point seven percent in December, 2018 to forty three point one in first half of 2023. Declining was driven by tightening monetary policy in advanced economies, hence causing rising interest rates and subsequent capital outflows from emerging markets. Trend of net foreign investor outflows continued to 2024, however, complicated by domestic business environment challenges inclusive firm specific issues. Persistent outflows contributed to exchange rate depreciation and increased market volatility, hence creating challenging environment for local equities market despite positive indicators in early 2024, increasing in total equity turnover and shares traded.

In Kenya, survey done on behavior bias affect Investors indicating sixty seven percent of Investors continued holding onto loss making investment longer than rational investor. Looking at investor's experience and lifecycle, loss aversion is more effective in new Investors due to lack of experience on market cycle patterns and knowledge (Kirera & Mburungu, 2019). Investment experience is good moderator considering loss aversion effects over time, hence shown negative relationship existing among loss aversion and portfolio performance (Nyamute et. al., 2015).

Several ways measure firm's performance focusing on slightly different policy perceptions, examples being; cash flow and expected returns, many metrics evaluate growth in terms of solvency, liquidity, current activity ratio, profitability. Mwaniki (2019) embrace growth metrics, considering growth and market share implies makers of commercial success. However, profitability indicates signs of financial success. Chiang, Wachtel, and Zhou (2019) measured enterprise growth using profitability though others apply amount of sales as performing indicator. Wathegi (2019) claims measurement for performance uses non-monetary factors including rise in sales and staff, greater market share, customer happiness.

Bhatia, Bhat, and Tikoria (2024) embrace choosing investments make customers gain from financial literacy since boosts wealth returns, hence previous research shows Investment financial performance and behavior in market environments positively influenced by financial literacy. For example, investigating financial literacy affecting Kenya's commercial real estate market, implies gaining significant insights on how financial literacy influence financial performance in Kenya's commercial real estate market, hence degree of financial literacy among Investors shows important on influencing financial performance. More so moderating effect of financial literacy on financial performance has been extensively studied.

2.4 Empirical Review

2.4.1 Overconfidence Bias and Financial Performance

Berg and Rietz (2017) examined relationship of Overconfidence Bias on time horizons by simplifying a market to have two outcomes, hence arrangement was made to have liquidation at 1 and liquidation at 0, optionally it was dual or comparable betting, hence present stock price was dictated by market, objective price estimate maintained, probability of liquidation held as per polynomial logistic regression model, hence nonconformity of prices from probabilities indicated bias direction. Findings indicated markets express slight bias over appetite horizons however greatly bias over lengthy prospects.

Ludenyo (2021) examined influence of overconfidence bias on stock market investments among teachers in Vihiga Sub-County, Kenya. Investors experienced overconfidence bias reducing portfolio diversification, considering personal knowledge and previous investment success leading consistent profits. Excessive confidence led major financial losses for market conditions to shift in unexpected ways.

Van der Leeuw and Dirks (2024) found contrary to normal belief experience might mitigate bias, experienced Investors showed illusion of control particularly in favorable Market conditions. Findings indicated trading activities amplified significantly during Bull market phases signifying a positive outcome reinforced Investors' perception for Personal control irrespective of the fundamental market forces.

Merkel (2017) had a study on online brokerage clients highlighting overconfidence findings for increased trading activity. Research employed pane data approach involving gathering approximation statistics from 671 patrons, intending to establish Tiers of overconfidence and

how such affected trading patterns. Study findings showed clients' overconfidence engaging in increased trading activity, possibly due to optimistic earnings.

Koma and Jatiningsih (2024) showed positive effects of overconfidence on investment financial performance, hence, Investors' confidence investment choices achieve improved investment financial performance. Nurhardika et.al, (2025) embrace influencing overconfidence on investment financial performance. Mahardika and Asandimitra (2023) show overconfidence doesn't influence investment financial performance, hence indicates existence of inconsistent research findings.

Zhang (2024) opine overconfidence bias being exaggerated self-estimation of investor's knowledge or skill Tier which invariably leads to over trading, hence increased risk taking. Shah, Ahmad and Mahmood (2018) examined influence of overconfidence, representativeness, availability and anchoring on investment choices of retail Investors trading on Pakistan Stock Exchange, hence questionnaires were administered to one hundred and forty-three Investors, purposeful sampling technique was used, hence findings indicated negative correlation among heuristic biases, investment financial performance and perceived market efficiency.

2.4.2 Herding Bias and Financial Performance

Aduda et.al, (2017) examined correlation of individual Investors' herding irrationality on financial performance at Nairobi Securities Market listed shares. Quite good number of Investors were found irrational decision makers, hence made losses regularly on investment as outcome of herding and illogicality.

Murithi (2024) investigated investor behavior and portfolio performance on Nairobi Securities Exchange. Outcomes displayed a constructive effect on financial performance, more so it required a normal cue for Investors to practice herding and gain sufficient returns. Mungai and Ngugi (2021) examined relational behavior drivers having an effect on financial performance on

Nairobi Securities market while having a focus on investment banks, findings reflected all drivers had an effect on financial performance, consequently, herding had most effect, followed by prospecting, then anchoring and ultimately risk aversion biases had least effect.

Athoillah and Isbanah's (2024) implied herding behavior influence stock financial performance in Indonesia, hence Investors make choices by imitating others without thorough review. Leiwakabessy et.al, (2021) indicates herding bias affects financial performance among millennial Investors, hence increasing stock market's trading volume. Theressa and Armansyah (2022) argue herding bias refer to behavior when Investors follow investment choices of others without considering rational investment strategies.

Bintang and Sibarani, (2024) assert herding implies behavior in which Investors follow actions of other large Investors without carrying out their own analysis or exercising personal judgment. Bias is effective when markets get overheated due to individuals' tendencies to follow crowds. Rajesh (2025) argues Investors follow crowds to gain approval instead of using information or making a rational assessment.

Bett, Langat, and Kingori (2024) examined herding behavior alongside cognitive bias had influence on financial performance in Nairobi Securities Exchange. Research showed Investors base choices on current market patterns, peer actions which produce excessive price swings and speculative bubbles, hence research demonstrated anchoring bias drives market inefficiencies through herding behavior.

2.4.3 Anchoring Bias and Financial Performance

Anchoring biases surfaces when an individual investor largely relies on initial information when making financial choice despite the chance that the information may be irrelevant, hence arbitrary. According to Tversky and Kahneman, (1992) Investors start with anchoring value and make sufficient adjustment away from it hence, Investors believe that current prices are right and hold much importance on recent experiences. Further research in anchoring studies led to

the development of the selective accessibility model whereby it was found that anchors activate consistent information in memory hence biasing subsequent judgment (Rajesh, 2025).

Demonstration was done on how anchoring effects continue to persist even when decision makers are explicitly informed and financially incentivized them to avoid the practices (Brown, 2020). Recent studies further distinguish between self-generated anchors and externally provided anchors stating that both operate at a different Tier since anchors come from various sources such as historical prices, analyst forecasts or self-generated reference points (Das & Panja, 2022).

Barno, Cheboi, and Muganda (2021) investigated financial literacy role played on relationship among anchoring and investment financial performance among Small and Medium Enterprises in Nairobi County. Findings indicated financially literate Investors being less influenced by anchoring bias since they used detailed market analysis as opposed to relying on arbitrary reference points.

Shabarisha (2015) explains anchoring as cognitive bias where in individuals rely on initial reference points to formulate judgments, often leading to estimates leaning toward those starting values, as varying baselines generate differing outcomes, hence contextual real estate anchoring appears when estimation benchmarks get influence by current data movements. Investors regularly denote to primary acquisition amount throughout transactions and valuations. Pathak and Thapa (2024) embraced ancient pricing to disproportionately touch present assessments. Propensity stimulates real estate partakers establishing value ranges beached on previous forms, which obstructs openness to sudden market swings. Usman (2018) refers Anchoring being related to representativeness considering personalities frequently underscore current practices.

Njeru and Matanda (2023) examined behavioral factors affecting investment choices by observing individual Investors on real estate market in Nairobi County. In process of setting price expectations, initial listing price reference points was applied instead of undertaking independent market assessments. Findings indicated anchoring affected stock market and real estate market which could be of interest to Nairobi Securities Exchange Investors who are interested in diversifying their portfolios.

Bett, Langat, and Kingori (2024) investigated on herding behavior alongside behavioral biases such as anchoring in individual investor choices at the NSE. The research indicated Investors tend to base their choices on current market patterns and peer actions which produce excessive price swings and speculative bubbles. The study demonstrated that anchoring bias drives market inefficiencies through herding behavior which confirms the requirement for investor education about independent financial analysis.

Ayad et.al, (2024) investigated a conceptual analysis influence of heuristic techniques, including anchoring on investment decision making. Findings indicated anchoring being often reinforced by media reports and financial analysts' projections influencing Investors' expectations, hence resulting on persistent mispricing on stock market.

Gavrilakis and Floros (2022) examined investment choices shortcuts on crowd following tendencies influence design and outcomes of investment portfolios, using Greece as contextual setting. Researchers conducted survey targeting cohort of actively engaged private Investors. Analyzing connection between investor conduct, portfolio design and performance satisfaction, employed multiple regression analysis. Findings indicated heuristic tendencies positively influence how individual Investors shape portfolios and perceive performance outcomes. Validity understanding involve a second sample comprising institutional Investors demonstrating heuristic and herding bias influence portfolio related decision making.

Owusu and Laryea (2023) presented concrete evidence of anchoring bias in investment choices made by Ghanaian Investors through their Review of Behavioral Finance publication. Researchers found evidence Investors use past stock prices as anchors for their buy and sell even when new information indicates different valuations. The study proposed behavioral finance training as a solution to help Investors manage this bias which could benefit Nairobi Securities Exchange retail Investors.

2.4.4 Loss Aversion Bias and Financial Performance

Kahneman and Tversky (1979) emphasized loss aversion being considered as where an investor experiences losses equivalent to gains in financial markets. Blake (2022) assert Investors fail to sell poorly performing stocks because of beliefs during downturns on markets.

Kimani, Karanjah, and Kihara, (2024) opined, loss aversion bias having an influence on stock prices during IPO launching for Safari-com shares in Kenya, quite a good number of people invested in Safari-com basing on arithmetic of sentiment analysis but not on fundamentals.

Wang et al., (2017) examined 53 countries across worldly basing on sample of questions from Hofstede survey and cultural dimension on lottery questions on loss aversion effects. Findings indicated loss aversion increases with poor distance, individualism masculinity and less with uncertainty avoidance.

Hunguru et al., (2020) examined on Zimbabwean Investors who stated loss aversion significantly contributed to the prolonged market downside resulting from Investors refusing to let go of loss-making assets and realize losses. Looking at investor experience and lifecycle loss aversion was more significant in new Investors as they lack experience, market cycle patterns and knowledge.

2.5 Summary and Research Gaps

Behavioral biases and Financial Performance of various studies were examined, quite a number of knowledge gaps were noted. Findings from studies were as well indicated. Mixed results from the researchers on effect of the four predictors; herding, overconfidence, anchoring and Loss Aversion biases on financial performance necessitated for the study to be done. It was observed that earlier researchers were keen on investment decision making and little to do with financial performance. Lastly most studies were held in developed economies comparatively.

Conceptual gap emerges on consideration of researchers focusing on behavioral understanding with little isolation of cognitive bias, for example, Kimeu et.al, (2016), examined behavioral influences on investment choices irrespective of individual bias, Ong'eta & Nasution, (2021) investigated investment performance without researching on influencing cognitive bias on investment choice directly. Cheboi, and Muganda (2021) examined anchoring bias and Muriithi (2021) examined illusion control, hence didn't explore interactions to other biases.

Hunguru et.al, (2020) examined on Zimbabwe, Varshini and Vinayalaxmi (2024) investigated Indian market, with no consideration of Tier one commercial banks, hence such studies give in to conceptual gaps. Kirera and Mburugu (2019) profiled Nairobi Securities Exchange retail Investors demographically without linking to cognitive biases. Lawal and Sakariyahu (2024) examined contribution cultural factors toward stock market investment without cultural factors' interference to cognitive bias.

Common patterns were followed by researchers among them, Tuyon and Ahmed (2016) generalized statistical indicators with little segregation of financial performance correlated bias under strict classification, and hence methodological gap was indicated.

Ruirui (2022) investigated influence of psychological bias on investment choices of property agents operating in Shenzhen, China, hence research geographic focus showed contextual limitation, irrespective of other regions dynamics, however present analysis was situated in Kenya. Achieng (2022) explored influence of behavioral biases on interplay between property investment approaches and operational performance of real estate enterprises in Nairobi County, Kenya, hence cross-sectional survey methodology introduced a design related limitation to study. However present study employed descriptive research design. Njenga (2018) examined behavioral bias affecting Kiambu, Kenya, hence research omitted growth component resulting into conceptual gap. Check Table 2.1

Research gaps summary

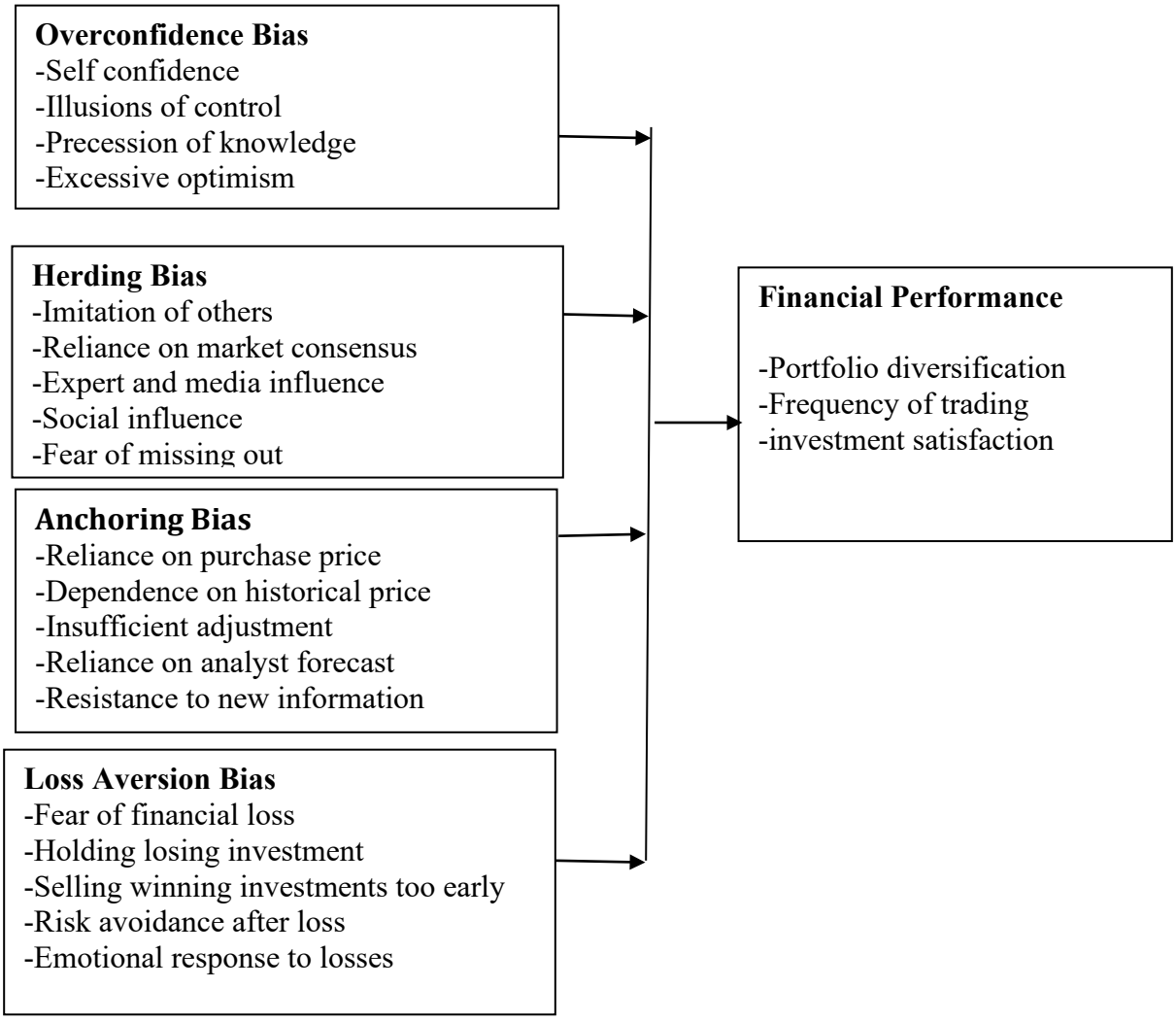
Initiator/Year	**Topic**	**Actual Results**	**Gaps**	**Present research**
(Ong'eta & Nasution , 2021)	Behavioral biases affecting Individual Investors at Nairobi Securities Exchange	There was a solid affiliation for investment performance and decision making	Based on performance out-comes, not on financial performance.	present study focus on behavioral biases and financial performance Tier one commercial banks
(Kimeu et al., 2016)	Behavioral factors effects on decision making for investment	Investment returns was affected by ; prospect, herding, heuristic biases	Behavioral factors discussed broadly, not specific isolated cognitive biases	present study focus on behavioral biases and financial performance Tier one commercial banks
(Kirera & Mburug u, 2019)	Behavioral factors and individual	Both anchoring, overconfidence affected decision making	Study Primarily demographic profiling, it did not link to	present study focus on behavioral biases and

	decision making		cognitive biases	financial performance of Tier one commercial banks
(Hungu ru et. al, 2020)	behavioral factors and decision making	Loss Aversion Biases leads to unwillingness to sell declining stocks causes unwillingness to sell declining stocks, more so it encouraged prolonged market .	Study done in Zimbabwe and is not showing the Kenyan Context.	present study focus on behavioral biases and financial performance Tier one commercial banks in Kenya
(Varshin i &. Vinayal axmi, 2024)	psychological effects on investor behavior, relationship with equity market dynamics .	Loss Aversion Biases affected investment performance, as well overconfidence Investment volume	Study was on Indian market and not Kenyan stock market Context.	present study focus on behavioral biases and financial performance Tier one commercial banks in Kenya
(Lawal & Sakariy a hu, 2024)	Investor heterogeneity and global market participation.	Cultural believes encouraged firms and individual to engage with NSE	Focused broadly on cultural factors without assessing specific cognitive Biases.	present study focus on behavioral biases and financial performance Tier one commercial banks
(Owusu & Laryea, 2023)	How anchoring affects decision making under mutual funds.	Investors are influenced by behavioral biases.	Focused on mutual fund Investors, specific to Ghanian context.	present study focus on behavioral biases and financial performance Tier one commercial banks in Kenya

2.6 Conceptual Framework

Conceptual frame work was emanated from literature review to reflect some light on the methodology applied. This study entails four independent variables, Overconfidence bias, herding bias, Anchoring Bias and Loss Aversion Bias, however the dependent variable is Financial Performance.

Fig 2.1 Conceptual framework



Independent Variables **Dependent Variable**

Source; Author, 2026

Independent variables, representing behavioral biases, were operationalized as overconfidence bias, herding, anchoring and loss aversion (Siddiqi, 2018). Dependent variable representing financial performance was examined in the framework of managers of Tier one commercial

banks and measured using Portfolio diversification, Frequency of trading, investment satisfaction.

Table 2.2 Present variable operationalization

Variables	**Operational Definitions**	**Measurements**	**Source**
Financial Performance	(Portfolio diversification, frequency trading, Investment satisfaction)	Scaling on 5-point likert	(Rant,2020; Becker, 2024; Gekonde et al., 2024).
Herding Effect	(Imitation of others, Reliance on market consensus, expert and media influence, social influence, Fear of missing out)	Scaling on 5-point likert	(Monica et al, 2020; Murithi,2024; Kaustia et, al.,2023)
Anchoring	(Reliance on purchase price, Dependence on historical price, Insufficient adjustment, Reliance on analyst forecast, Resistance to new information)	Scaling on 5-point likert	(Berg & Rietz., 2017; Becker, 2024; Nyabuto et. el., 2024)
Loss Aversion	(Fear of financial loss, Holding losing investment, Selling winning investments too early, Risk voidance after loss, Emotional response to losses)	Scaling on 5-point likert	(Hunguru et al.,2020) (Kirera & Mburungu, 2019).
Overconfidence Biases	(Self confidence Illusions of control Precession of knowledge Excessive optimism7)	Scaling on 5-point likert	Berg & Rietz (2017) Merkel (2017)

Source: Author, (2026)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology section reviews; research philosophy, research design, target population, sampling design, sampling procedure, collections of data instruments, analysis of data and ethical contemplations.

3.2 Research Philosophy

Research philosophy refers to broad basic norms guiding a researcher in inquiring about research and the process of scientific research, hence research can only be valid, if the researcher follows a research philosophy that helps researcher avoid following individual philosophy and know how to use the alternatives as recognized in the scientific world (Robinson, 2024). Considerably, it is important as it allows the reader to understand and interpret the research by knowing the biases and particulars stance taken by the researcher thus informing their understanding of the researcher's work (Creswell & Creswell, 2023).

Hughes and Sharrock (2016) embrace research philosophy details tenets considered by individual in investigating phenomenon, more so, how tenets dictate manner through how researchers go about addressing objectives of study. Study adopted positivism philosophy as researcher noted relationship among variables observed objectively, inferences being representative of data collected from objective analysis techniques (Hughes & Sharrock, 2016).

3.3 Research Design

Hirose and Creswell (2023) embrace descriptive research design being key to any study, hence acts as a plan for researchers to base on as a journey from initial process to completion. Considerably, descriptive survey research design was applied putting in mind it allows to examine situations without altering.

3.4 Target population

Hirose and Creswell (2023) asserted, population is all study's components having same characteristics. Tier one commercial banks formed study's target population. Kenya has nine commercial banks ranked first in the country (Central Bank of Kenya, 2025) (Appendix iii). According to CBK (2025) the phrase "tier-one banks" refers to a group of monetary institution that have the greatest resources of capital, properties, and market share and customer book deposits. The Banks entailed purposively 90 senior officers (managers) who are responsible for making investment choices within the Tier one Banks. Check table 3.1.

3.5 Sampling Design / Sampling Technique

Asenabi and Ikoha (2023) noted that taking the entire population is advised when the target participant is too low. The census technique method employed in this study, with the nine Tier-one banks serving as study units. Because of their greater Tiers of information disclosure and readily available information, the sampled banks were selected on the variables as stated in Annual Central Bank of Kenya financial reports, particularly from listed and government-owned banks. Therefore, the sample size was purposive for 9 commercial banks that was the unit of observation which entail 90 senior officers that were the unit of analysis who were in a position to make investment choices as Appendix iii indicate. In this study, the whole population of 90 managers were subjected to examination since the population is manageable. Check table 3.1

Table 3.1 Sample Size

Category of Staff	Number of Senior Management Staff (N)
Internal audit managers	9
Risk Managers	9
Compliance Managers	9
ICT managers	9
Loans managers	9
Finance managers	9
Debt Collection Managers	9
Credit Managers	9
Human Resource Managers	9
Personal Account Managers	9
Total	**90**

3.6 Data collection instruments

Hirose and Creswell (2023) emphasize better results of a study, arises from use of right instrument of data collection. Study applied structured questionnaire to be applied as for data collection. Hirose and Creswell (2023) assert a questionnaire allows for uniformity of responses to questions and is a fast way of obtaining data compared to other instruments.

3.7 Pilot study

Piloting allows researchers to ascertain effectiveness of questionnaire instrument making sure everyone affiliated to survey not only understands questions but understands well (Haque, 2022). Researcher tested research instruments for ascertaining validity and reliability. Researcher administered questionnaires to 10% of study sample to senior personnel responsible

for investment choice in Tier one commercial banks, who were deputies and not part of major study as supported by (Asenabi & Ikoha, 2023).

3.7.1 Research Instrument Validity

Validity is ability of an instrument to measure what is supposed to measure (Mugenda & Mugenda, 2009). Study measured instrument validity using content and factorial means, where content validity entailed notch to which instrument completely assesses or measures concept of attention. Researchers achieved content validity by exposing collection instrument to rational analysis to ratters familiar with experts on research subject.

3.7.2 Research Instrument Reliability

Reliability is consistency of degree to which an instrument measures same way each time it is used with same subjects (Sekeran & Bourgie, 2016). Testing reliability, researcher used retest correlation providing indicating stability over time. Reliability occurs when same scores could be obtained with repeated testing within same group of respondents. Researchers computed correlation among variables to get coefficient of stability. Acceptable reliability indicates a coefficient of stability ≥ 0.70 (Sekeran & Bourgie, 2016)

Pilot study information was used for determination of validity of research instruments. Content validity was ascertained by ensuring questions clarity in terms of words and adequacy considering study variables. Research instrument's reliability got verified by applying Cronbach alpha testing inner uniformity, hence findings on Table 3.3 indicate Cronbach alpha coefficient values 0.7 and above, reliability of study's research instruments was confirmed.

Table 3.2 Cronbach Alpha Coefficient values

Variable	Number of items	Cronbach Alpha
Overconfidence Biases	6	.810
Herd Biases	6	.823
Anchor biases	6	.830
Loss Aversion Biases	6	.803
Financial Performance	6	.811

3.8 Data analysis and Presentation

Respective data was collected, analysed, and then presented descriptively and inferentially; hence results were produced by using Statistical Package of Social Sciences (SPSS, version 27) software, presented in tables for ease of readability purpose. Correlation analysis and inferential statistical information on regression, was applied to find relationship among predictors and regressing variable. Both multiple regression and correlation analyses were solely inferred to variables of study.

Regression model;

$$Y=\beta_0+ \beta_1 X_1+ \beta_2 X_2+ \beta_3 X_3 + \beta_4 X_4 +\varepsilon$$

Y= Financial Performance

β_0 = Constant

X_1= Overconfidence Bias

X_2 = Herding Bias

X_3= Anchoring Bias

X_4= Loss Aversion Bias

$\beta_1 - \beta_4$ = beta Coefficients

ε = Error terms

3.9 Diagnostic Tests for Model;

3.9 .1 Normality

Normality test pre-empts whether a regressing or predicting value is distributed normally about existing mean. Essence of finding out is understanding whether a sample was selected from a population having normally distributed data. Variables under the study were tested by use Kolmogrovo-Smirnov test, since sample size was seventy-eight above fifty.

3.9.2 Multi-Collinearity Test

Establishing multi-collinearity is key under regression analysis. Essence for such test enables finding whether independent variables are related in any manner, hampering in achieving correct results for study. Lindner.et. al., (2022) emphasize multi-collinearity leads to skewing statistical findings, hence reduces model reliability. When Pearson correlation of coefficient is more than 0.8, such results indicate relational closeness affecting results. The study purposively applied SPSS version 27 software to find out the multi-collinearity.

3.9.3 Heteroscedasticity

Heteroscedasticity gives an implicational condition of change systematically in error terms over a given range of values. Relevant understanding of regression analysis takes in consideration of error terms within model not relating each other, hence avoiding heteroscedasticity. Gill and Biger (2013) embrace heteroscedasticity tend to produce too small p-values than they are supposed to be, ultimately reflecting the correlation within the error terms. Glesjser test was employed, hence no implication of heteroscedastity revealed on consideration of significance being greater than 0.05.

3.9.4 Ethical Consideration

Official communication was relayed to every participant to the study, where by participation was on voluntary basis. Considerably the names of the participants were not expressed anywhere on the collection instruments. Participants were notified of information being

confidential. All authorities affiliated to research were notified and permission was granted. Further, refereed materials were professionally handled with care.

CHAPTER FOUR

FINDINGS AND DISCUSSION

This chapter covers; rate of response, demographic data, descriptive and inferential statistics, multi- regression analysis, hypothesis testing and findings.

4.1 Response Rate

Predetermined population of study was 90 respondents in Tier one Commercial Banks employees. Exact number of 90 questionnaires were issued to respondents, however, only 78 questionnaires were collected from respondents, equivalent to 87% response rate, which was within the threshold of allowed bracket. Mugenda and Mugenda (2003) asserted fifty percent response rate is adequate for analysis; sixty percent is good and above seventy percent is very good for data analysis and reporting.

Table 4.1 Response

	Sample Size	**%ge**
Returned	78	86
unreturned	12	14
issued	**90**	**100**

4.2 Demographic Data

Collection of demographic data was inclusive of: gender, education Tiers and length of service in Tier one commercial bank. Check table 4.2

Table 4.2 demographic data

		Occurrence	Validity %
Sex	Males	52	67
	Females	26	33
	Totals	78	100
Tier of Education	diploma	12	15
	degree	41	53
	masters	25	32
	Totals	78	100.0
Experience(years)	One to five	18	23
	Six to ten	51	65
	0ver ten	9	12
	Totals	78	100.0

Concerning gender, 67% consisted of male respondents, 33% reflected female gender. Male gender was majority though quite a good number were females implying there was a good distribution of females in Commercial Bank Tier one.

Concerning education, quite a good number had bachelor's degrees that represented 53% as such they had information of financial performance and behavioral biases. Diploma Tier had a representation of 15% implying they were under tertiary Tier but still had proper information about Commercial Banks Tier one. 32% represented those employees of master's Tier. These employees were within the managerial cadre that could understand the behavioral biases and financial performance.

Experience as an art is always key in every organization. Considering Tier one Commercial banks, quite a number of respondents had worked for 6-10 years and were within cadre of 65%. Those who had worked for 1-5 years were 23% and those over 10 years were under the percentage of 12%. Implying most of the employees had knowledge of how commercial bank tier one worked as concerns financial performance and behavioral biases.

4.3 Descriptive Analysis

Descriptive analysis entails descriptive responses, both for predictors (Overconfidence Biases, Herd Biases, Anchor Biases and Loss Aversion Biases) plus regressing variable (financial performance) as Likert scale gets engaged.

4.3.1 Overconfidence Bias and Financial Performance

This shows a representation of findings of Overconfidence Bias influencing financial performance Tier one Commercial Banks. Check table 4.3

Table 4.3 Overconfidence and Financial Performance

	five	four	three	two	One	**Mean**	**Deviation**
Bank managers rely on self-confidence assumptions while making investment decisions for performance	52.7%	33.7%	8.6%	4.7%	0.4%	4.1	0.81
Illusions of control is normally employed in investment decision making processes for performance	2.4%	2%	6.3%	40.1%	49.2%	4.3	0.89
Precision knowledge is core in making investment decisions For performance	29%	36%	20.1%	7.1%	7.9%	3.69	1.26
Bank managers rely excessive optimism assumptions while making investment decisions for performance	38.4%	24.2%	21.7%	7.1%	8.7%	3.65	1.22
Better than the average is the slogan of trade within the Bank	3.1%	5.9%	21.9%	42%	27.1%	3.9	0.97
The Bank managers have been productive by applying the overconfidence sentiments	52.3%	33.3%	8.6%	5.1%	0.8%	3.71	0.87
Overall						**3.9**	**0.79**

Above table shows different perspectives and opinions of different respondents. Considering the first expression of bank managers relying on self-confidence, respondents' mean was 4.1 and standard deviation 0.81, hence shows irrespective of managers perceptions, there were still respondents who were not with such sentiments, though majority supported statement sentiment of bank managers. As concerns second statement reckoning illusions of control is normally enshrined in decision making for financial performance purposes, respondents' mean was 4.3 and standard deviation 0.89. Implication for respondents agreed highly managers value controls affiliated in decision making for improvement of performance, however there were respondents who were not with managers' perceptions due to reflection of standard deviation.

On the similar note, considering perception of precision of knowledge being relevant to decision making, quite a number supported sentiments where by respondents' Mean 3.69 and standard deviation 1.26. However majority support there was mistrust with other respondents leaning for dispersion leading to 1.26 standard deviation.

Concerning understanding of respondents on bank managers believing on optimism, respondents' mean 3.65 and standard deviation 1.22. Majority had supported sentiments though some respondents did not. Irrespective of such, those who supported the construct of overconfidence were the majority.

Better than average being the slogan of improved trading, respondents' mean 3.9 and standard deviation 0.97. Implicated majority supported sentiments, however minimum negatively responded. However, those who accepted supports relevance of overconfidence on financial performance. Similarly on the statement of managers being satisfied on overconfidence perception, response raised mean o 3.71 and standard deviation 0.87. Implication of concept overconfidence could not be taken for granted, it has relevance though some respondents negatively voted for it. Overall overconfident plays a role in financial performance.

Ruirui (2022) embrace Decision-making in property investment is intrinsically shaped by psychological predispositions, hence allowing one's overconfidence behavioral biases to influence one's decision-making process that can be extremely harmful to an investor's wealth. Due to biases that are built into our bodies and minds, people often make judgments that are not the best for themselves. An investor in behavioral finance is presumed to be typical.

Frempong (2021) focused on the effects of overconfidence bias and herding prejudice on entrepreneurs' performance. Findings of study showed overconfidence bias and entrepreneurial performance were positively correlated, indicating an increase in overconfidence bias may lead to improvement in performance of entrepreneurial firm. Study suggests Ghanaian business owners could enhance performance by: actively avoiding unfavorable biases; seeking professional guidance when making decisions; and going back to school to increase their knowledge.

4.3.2 Herding Bias and Financial Performance

This shows a representation of findings of Herding Bias influencing financial performance tier one Commercial Banks. Check table 4.4

Table 4.4 Herding Biases and Financial Performance

	Five	Four	Three	Two	One	Mean	Deviation
Bank managers normally imitate other competitors for survival.	49%	24.4%	12.6%	7.9%	6.3%	3.73	1.16
The Bank managers rely on market consensus while making investment decisions	57.4%	30.7%	6.6%	1.5%	3.9%	4.13	0.80
Experts and media influence the investment decision making of the bank managers	52.2%	33.2%	7.7%	3.8%	3.1%	4.09	0.93
Social influence affects the bank managers in decision making	37.1%	51.1%	9.2%	1.5%	1.1%	4.21	0.73
Fear of missing out has an effect on bank managers in making decisions	51.6%	23.1%	11.5%	7.1%	6.7%	3.79	1.11
The Bank to invest where their friends and family are	33.2%	52.2%	3.8%	7.7%	3.1%	4.08	0.91
Overall						**4.01**	**0.94**

In evaluating the influence of the Bank managers normally imitating other competitors for survival, half of respondents agreed bank managers normally imitate other competitors for survival, hence, giving a mean 3.73 and standard deviation 1.16. However, there were some variability in responses showing high standard deviation.

Moreover, majority of respondents noted bank managers rely on market consensus while making investment decisions for influence of performance, resulting mean 4.13 and a low standard deviation .08, hence indicates strong consensus focus on market processes. Additionally, over half of respondents believed Experts and media influence investment decision making of the bank managers for performance improvement , hence findings had mean

4.09 and standard deviation 0.93. The sentiments indicate response of herding bias being influential to performance on Tier one commercial banks.

Respondents also acknowledged existence of Social influence affecting the bank managers in decision making with respect to performance. A significant majority affirmed its effectiveness as the analysis provided less variability on standard deviation , findings gave mean 4.21, hence as well indicated low standard deviation of 0.73.

Respondents' consideration of fear of missing out in an event in making decisions had mean 3.79 and standard deviation 1.11. On ultimate view, majority of respondents held a generally positive perception of herding bias on financial performance, hence provided overall 4.01 and standard deviation 0.94.

In Bomet County Kenya, Naomi, Kiprop, and Tanui (2018) examined how herding behavior affected SMEs' investment decisions. Questionnaires were utilized to get necessary information from primary data. Herding behavior demonstrated positive association with dependent variable, according to correlation coefficient analysis. Findings were not significant because they showed herding tendency negatively influenced investing choices. Study concluded investment decisions of SMEs in Bomet County does not influenced decision making.

Shah et al. (2019) examined whether firm value is driven by herding bias; evidence from the stock market in China. The empirical findings show that IHR and MHR bias exist in both equity markets at the market, sector, and firm Tiers. These biases may influence the FV, and their effects are particularly noticeable during periods of severe activity. As study was done last out in China, this one was curried in Kenya.

4.3.3 Anchoring Bias and Financial Performance

This shows a representation of findings of Anchoring Bias influencing financial performance Tier one Commercial Banks. Check table 4.5

Table 4.5 Anchoring and Financial Performance

	Five	Four	Three	two	one	mean	Deviation
Bank stocks are normally assessed based on the initial purchase price	52.9%	17.2%	8.4%	10%	11.5%	3.58	1.20
The bank manager depends on the past stock prices when making investment decisions	52.7%	22.6%	11.7%	4.2%	8.8%	3.77	1.04
The Bank manager finds it hard to change investment prospects when new market information becomes presented	44.6%	18.2%	18.1%	8.5%	10.6%	3.57	1.17
Bank manager's initial investment research tends to significantly Influence her final investment outcome.	17%	43.8%	11.1%	7.6%	20.8%	3.44	1.31
The Bank managers frequently compare current stock prices to their historical performance when deciding to buy or sell.	50.8%	34.1%	10%	1.5%	1.7%	4.12	0.86
There is least complain as concerns anchoring culture	22.6%	52.7%	8.8%	11.7%	4.2%	3.91	0.78
Overall.						**3.14**	**1.06**

Examination on Anchoring Bias and financial performance gave varied perceptions from respondents. Firstly, a significant proportion (52.9%) acknowledged and believed that Bank stocks are normally assessed based on the initial purchase price. Findings indicated mean 3.58 and standard deviation 1.20. Findings showed average response of agreement and as well some

variability in perception. Half of respondents 52.7% believed bank managers dependent on past stock performance while making investment decisions for any influence of performance generated mean 3.77 and standard deviation 1.04 indicating a prevailing perception of anchoring influence on financial performance.

Concerning the bank manager finding it difficult to change investment prospects when new market information becomes present, 44.6% of respondents supported showing mean 3.57 and standard deviation 1.17. However, minority 17% of respondents expressed bank manager's initial investment research tends to Influence her final investment outcome. Statement achieved mean 3.44, standard deviation 1.31 showing variability on perception among respondents.

Half of respondents 50.8% agreed Bank managers frequently compare current stock prices to their historical performance, hence reflecting strong understanding mean 4.12, standard deviation 0.86, suggesting relatively low variability. Ultimately aggregate mean 3.70 shows an average Tier of understanding within statements among Anchoring Bias on financial Performance. However, sentiment of least complain as concerns anchoring culture was approached positively by respondents, over 52.7% supported. Findings indicated standard deviation 0.78 and mean 3.91.

Overall, there was an average mean 3.14 and standard deviation 1.06 showing different responses across different statements.

Khan et.al, (2017) examined anchoring as tendency of people evaluating size comparative to certain data point, hence dependance on sole metric characterized as anchoring bias, may result in mass dependance on flawed trading method considering anchoring bias presents error related with an predisposition to make assessments. Jetter and Walker (2017) embraced effect of anchoring bias indicating it has a significant effect on decision-making.

4.3.4 Loss Aversion Bias and Financial Performance

This shows a representation of findings of Loss Aversion Bias influencing financial performance Tier one Commercial Bank. Check table 4.6

Table 4.6 Loss Aversion Bias and Financial Performance

	five	four	three	two	One	mean	Deviation
Fear of financial loss affects the bank managers in making investment decision for performance	18.3%	51.1%	9%	9.7%	11.9%	3.47	1.11
Holding losing investments has an effect on bank managers on making investment decisions for performance	41.6%	28.1%	12.4%	4.1%	14%	3.76	1.13
Selling winning investment too early initiates un-stability in investment decision making by the managers	52.2%	19.4%	10.8%	7.1%	10%	3.66	1.12
Risks avoidance after losses affects the decision making of bank managers	37.7%	17%	18.1%	13%	14%	3.32	1.27
Emotional response to losses affects bank managers in making investment decisions	41.2%	14.6%	11%	13%	21%	3.49	1.25
The employees are always not joyed with the loss aversion biases	19.4%	52.2%	7.1%	10.8%	10%	3.2	0.98
Overall						**3.48**	**1.14**

On evaluating Loss Aversion Bias and financial Performance relationship, respondents expressed different views on their respective statements. Firstly, 51.1% of respondents agreed fear of financial loss affects bank managers in making investment decision ultimately affect the performance, resulting mean 3.47 and standard deviation 1.11. Concerning holding losing

investments having effect on bank managers on making investment decisions for performance, 41.6% respondents believed holding of losing investments influences behavior of managers on making decisions influencing performance. This statement had mean 3.76 and standard deviation 1.13. Over half respondents 52.2% agreed selling winning investment too early initiates instability in investment decision making by managers. This statement had mean 3.66 and standard deviation 1.12, suggesting prevalent belief in loss aversion bias influence on performance.

Opinions were divided concerning whether Risks avoidance after losses affect decision making of bank managers, 37.7% respondents supported. This statement obtained mean 3.32 and standard deviation 1.27, indicating disagreement among respondents.

Considering emotional response to losses affecting bank managers' perception in making investment decisions, 41.2% respondents agreed. This had a average 3.54 and a standard deviation 1.25.

Lastly the employees are always not joyed with loss aversion bias, sentiments raised mean 3.2 and standard deviation 0.98. Overall mean 3.48 and standard deviation 1.14 gave a reflection of average agreement among the respondents.

Wang et al., (2017) examined 53 countries across worldly using sample questions from Hofstede survey on cultural dimension of lottery questions on loss aversion. Results indicated loss aversion increases with poor distance, individualism masculinity and less with uncertainty avoidance.

4.3.5 Financial Performance

This shows a representation of findings of Loss Aversion Bias influencing financial performance Tier one Commercial Banks. Check table 4.7

Table 4.7 Descriptive Statistics of Financial Performance

	Five	Four	three	two	One	mean	Deviation
Bank managers frequently trade in stock market securities	31.2%	20.8%	16.3%	13.2%	18.5%	3.17	1.34
Bank managers tend to hold an investment portfolio that is well diversified with multiple stocks from different industries	35.6%	21.5%	20%	14.5%	8.5%	2.98	1.22
Banks managers primary investment objective is long term wealth creation	23.8%	15.5%	18.5%	28.7%	13.5%	2.95	1.37
When making investment decisions, the Bank managers rely on recommendations from professional associates	23%	14.5%	22.2%	26.3%	14.1%	2.86	1.33
Bank's managers performance is always rated in comparison to others	23%	15.2%	16.6%	34%	11.2%	2.81	1.34
Bank managers extensively do personal research before making investment Decisions	21.5%	35.6%	20%	14.5%	8.5%	2.72	1.11
Overall						**2.42**	**1.05**

Concerning bank managers frequently trading on stock market securities, respondents strongly agreed 31.2% and as well generally agreed 20.8 %, sentiments raised mean 3.17 and standard deviation 1.34. Secondly, 31.2% respondents agreed bank managers tend to hold an investment portfolio well diversified with multiple stocks from different industries. This statement indicated mean 3.17 and standard deviation 1.34. Concerning bank managers tending to hold an investment portfolio well diversified with multiple stocks from different industries, 35.6% respondents agreed, hence, gave mean 2.98, standard deviation 1.222. Concerning Banks manager's primary investment objective being long term wealth creation, respondents agreed

28.7% of respondents agreeing mean 2.95, standard deviation 1.37, hence indicating some variability among respondents. 26.3% respondents agreed when making investment decisions, Bank managers rely on recommendations from professional associates, hence mean 2.96, standard deviation 1.33.

Concerning Bank's managers' performance always rated in comparison to others, 23% respondents strongly agreed and 5.2% agreed, hence generated mean 2.96, standard deviation 1.34. Implication was majority respondents supported.

Ultimately respondents expressed varying opinions regarding whether the Bank managers extensively do personal research before making Investment Decisions, statement raised mean 2.72 and Standard deviation 1.11

Bhatia and Sharma (2024) embrace psychological behavioral factors being important determinants of business outcomes, hence should not be neglected while financial decision making for improved performance

4.4 Inferential Statistics

4.4.1 Diagnostic Tests

Diagnostic tests involve the areas tested and results presented including; Homoscedasticity, Normality and Multi-Collinearity Tests.

4.4.2 Normality

Testing normality was based on Kolmogorov-Smirnov test that was most appropriate considering sample size of study had 78 respondents. Check table 4.8

Table 4.8 Test for Normality

Kolmogorov-Smirnova

	Statistical values	Significance
Overconfidence Bias	.127	.015
Herding Bias	.118	.028
Anchoring Bias	.155	.002
Loss Aversion Bias	.206	.001
Financial Performance	.210	.033

Accordingly, there was normal distribution for null hypothesis data, since the p values (significance) for Kolmogorov-Smirnov test are less than $\alpha < .05$. Therefore, null hypothesis that the data was not normally distributed was rejected concluding data was normally distributed.

4.4.2 multi-collinearity

Lindner (2022) emphasizes researchers insist correlation coefficient (r) being close to 1 or -1, indicates multi-collinearity, however, if correlation coefficient (r) is not above 0.9 there is no multi-collinearity. Table 4.11, correlation analysis shows highest correlation coefficient among all pairs of independent variables (Overconfidence Biases, Herding Biases, Anchoring Biases and Loss Aversion Biases) being 0.479 considerably below threshold 0.9, hence no multi-collinearity.

4.4.3 Heteroscedasticity

Existence of heteroscedasticity produces very small p-values being not realistic, hence indicating correlation midst residual terms (Gill & Biger, 2013). Major indication of regression analysis error terms was not related in functional model giving a picture for homoscedasticity. Glejser test emphasizes significance greater than 0.05 shows homoscedasticity, however opposite applies. Moderate probability control, 0.811 for Overconfidence Bias, 0.995 Herding Bias, 0.599 for Anchoring Bias and for Loss Aversion 0.569, are greater than 0.05 being no heteroscedasticity. Check table 4.9

Table 4.9 Heteroscedasticity

	Coefficient	Standard Error	T	Sig
Constant	1.623	.423	3.837	.549
Overconfidence Bias	.206	.042	4.786	.599
Herding Bias	.368	.045	8.200	.811
Anchoring Bias	.356	.382	6.846	.995
Loss Aversion Bias	.305	.076	4.013	.569

a; Dependent variable: Financial Performance

b. Predictors :(Constant), Overconfidence Bias, Herding Bias, Anchoring Bias, and Loss Aversion Bias.

4.5 Correlation Analysis

Correlation analysis indicated various relationships midst different variables in study. Positive correlation was shown among Overconfidence Bias and Herding Bias r= .219, P < .01, hence improvements on Overconfidence Bias coincides Herding Bias. Similarly, positive correlation exists between Overconfidence Bias and Anchoring Biases r=.488, P< .01, indicating improvements in Anchoring Bias correspond increases in Overconfidence Bias.

Additionally, there exist a positive correlation between Anchoring Bias and Herding Bias r=.382 , P < .01, showing improvements in Anchoring Bias coincides enhancements in Herding Bias. Furthermore, there exist positive correlation between Loss Aversion Bias and Overconfidence Bias r = .341, P < .01 suggesting improvements in Loss Aversion Bias increases Overconfidence Bias.

Similarly, there is positive correlation among Loss Aversion Bias and Herding Bias r = .233, P < .01, implying improvements in Loss Aversion Biases correspond to increases in Herding Bias. Additionally, positive correlation exists among Loss Aversion Bias and Anchoring Bias r =.436, P <0.01, suggesting improvements in Loss Aversion Bias coincide enhancements in Anchoring Bias.

Moreover, there exist positive correlation between Overconfidence Bias and Financial Performance r = 0.375, P < 0.01, indicating improvements in Overconfidence Bias increase financial performance. Positive correlation was observed among Herding Bias and Financial Performance r = 261, P < 0.01, implying improvements in Herding Bias coincides Financial Performance. positive correlation exists among Anchoring Bias and Financial Performance r =.310, P < 0.01, implying improvements in Anchoring Bias increase Financial Performance.

Finally, positive correlation was observed among Loss Aversion Bias and Financial Performance r = 0.321, P < 0.01, indicating Loss Aversion Bias coincide on improvements in financial performance.

Table 4.10 Correlation analysis

		Overconfidence Bias	Herding Bias	Anchoring Bias	Loss Aversion Bias	Financial Performance
Overconfidence Bais	Correlation	1				
	Sig (2 tailed)	.000				
	N	78				
Herding Bias	Correlation	.219**	1			
	Sig (2 tailed)	.000	.000			
	N	78	78			
Anchoring Bias	Correlation	.488**	.382**	1		
	Sig (2 tailed)	.000	.000	.000		
	N	78	78	78		
Loss Aversion Bias	Correlation	.341**	.233**	.436**	1	
	Sig (2 tailed)	.000	.000	.000	.000	
	N	78	78	78	78	
Financial Performance	Correlation	.375**	.261**	.310**	.321**	1
	Sig (2 tailed)	.000	.000	.000	.000	.000
	N	78	78	78	78	78

** Correlation is significant at 0.01 Tier (2 tailed)

* Correlation is significant at 0.05 Tier (2 tailed)

4.6 Regression Analysis

Computation of multi-regression to examine multivariate effect of study's independent predictors (Overconfidence Bias, Herding Bias, Anchoring Bias, Loss Aversion Bias) on regressing variable (financial performance Tier one Commercial Banks). Check table 4.11

Table 4.11 multiple regression results

Model Summary

model	R	R^2	R^2 Adjusted	Standard error		
A	0.519	0.269	0.218	0.52312		
ANOVA a						
Model a		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	30.425	4	7.606	7.914	0.001
	Residual	71.107	74	0.961		
	Total	101.522	78			
Coefficients a						
Model		Un-standardized. Coefficients		Standardized Coefficients	T	Sig.
a		Beta	Std. Error	Beta		
	(Constant)	2.366	.275		4.985	0.001
	Overconfidence Biases	.088	.045	0.092	1.750	0.001
	Herding Biases	.289	.063	0.340	5.936	0.001
	Anchoring Biases	.257	.074	0.159	2.661	0.016
	Loss Aversion Biases	.201	.081	0.174	3.000	0.002

a. financial Performance

b. (Constant), Overconfidence Biases, Herding Biases, Anchoring Biases, Loss Aversion Biases

Multiple regression findings of combined influence of study's predictors (Overconfidence Bias, Herding Bias, Anchoring Bias, and Loss Aversion Bias). R^2 0.269 shows study explains 26.9%

of variation in financial Performance Tier one Commercial Banks in Kenya, 73.1% represents other factors not in conceptualized study Model.

Variance analysis indicates mean squares, F statistics significant F=7.914, Significant at P<0.001 hence, making a confirmation of fitness of study analysis model and as well implying study's predictors (Overconfidence Bias, Herding Bias, Anchoring Bias and Loss Aversion Bias) possess significant variations on affiliation to financial performance Tier one Commercial Banks.

Unstandardized regression coefficients values and standard errors show all study's predictors (Overconfidence Bias $\beta = .088$ (.045) at $P < 0.05$, Herding Bias; $\beta = .289$ (.063) at $P < 0.05$; Anchoring Bias; $\beta = .257$ (0.074) at $P < 0.05$, Loss Aversion Bias; $\beta = .201$ (.081) at $P < 0.05$, influence financial performance Tier one Commercial Banks in Kenya.

Multiple regression equation,

$Y = 2.367 + .088 X_1 + .289 X_2 + .257 X_3 + .201 X_4$

Y = financial performance

X_1 = Overconfidence Bias

X_2 = Herding Bias

X_3 = Anchoring Bias

X_4 = Loss Aversion Bias

4.7 Hypothesis of the study

Statistical inferential data was employed in estimation of correlation among the predictors and regressing variable. Hypotheses testing as well was done; **H_{01}** Stated Overconfidence Bias cannot influence financial performance Tier one Commercial Banks, **H_{02}** stated Herding Bias

cannot significantly influence Tier one Financial Performance, **H_{03}** stated Anchoring Bias cannot influence Financial Performance Tier Commercial Banks, **H_{04}** stated Loss Aversion Bias cannot influence Financial Performance Tier one Commercial Banks.

4.7.1 Overconfidence Bias and Financial Performance

Hypothesis **H_{01}** stated Overconfidence Bias cannot influence financial performance Tier one Commercial Banks. Findings indicate Overconfidence Bias influence Tier one Commercial Banks (β =.088 (.045) at $P < 0.05$). Hypothesis one is therefore rejected. Findings specify a single enhancement in actual Overconfidence Bias would influence .088 unit increase in financial performance.

Sari et al. (2024) embraced Overconfidence being a state in which individuals make decisions with high confidence due to sufficient information, hence, the accuracy of decisions made based on information is often uncertain. Overconfidence encourages excessive predictions about an event due to the high Tier of confidence possessed by individuals, hence, increases the risk of errors in estimating the potential return on investment. Investors' overconfidence in the information they possess makes them more likely to engage in excessive stock trading, but they maintain a tolerable risk limit despite the high risk.

4.7.2 Herding Bias and Financial Performance

Hypothesis **H_{02}** stated Herding Biases cannot influence financial performance Tier one Commercial Banks. Findings indicate Herding Bias influence Tier one Commercial Banks β = .289 (.063) at $P < .05$ Hypothesis two is therefore rejected. Findings show a solitary improvement in effective Herding Bias influence.289 unit increase in financial performance

Widyastuti and Murtanto (2024) confirms herding bias has an effect on investment decisions, causing Investors to easily seek quick solutions with the abundance of information available. Sugianto, et.al, (2024) emphasized herding bias is related to investment decisions making.

Limarus and Pamungkas (2023) investigated herding bias on decision making and concluded herding influence investment decisions because of tendency investors follow movements of other investors with good reputation.

4.7.3 Anchoring Bias and Financial Performance

Hypothesis **H_{03}** stated Anchoring Biases cannot influence financial performance tier one Commercial Banks. Findings indicate Anchoring Bias influence performance Tier one Commercial Banks $\beta = .257$ (.074) at $P < .05$). Hypothesis three is consequently rejected. Results show a single improvement in effective Herding Bias influences .257 unit increase in financial performance Tier one Commercial Banks.

Njeru and Matanda (2023) examined behavioral factors affecting investment decisions by observing individual Investors in real estate market in Nairobi County. In process of setting price expectations, Investors used initial listing prices as reference points instead of undertaking independent market assessments. Results indicated anchoring being not only a phenomenon in stock market but also in real estate market.

4.7.4 Loss Aversion Bias and Financial Performance

Hypothesis **H_{04}** stated Anchoring Bias cannot influence financial performance Tier one Commercial Banks in Kenya. Findings indicate Anchoring Bias influence Performance Commercial Banks $\beta = .201$ (.081) at $P < .05$). Hypothesis four is therefore rejected. Findings indicate a single improvement in effective Loss Aversion Bias influence .201 unit increase in financial performance.

Djaini et al.'s (2025) study revealed loss aversion biases influence investment decisions, higher Tier of loss aversion bias an investor possesses, greater their ability to resist impulsive behavior of being irrational in decision making. A study conducted by Suwono et.al, (2023) revealed a

high Tier of loss averse biases in individuals lead to positive lifestyle behaviors encouraging investing in stock market.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Entailment comprises study results summary, areas for further research, recommendations and study conclusions.

5.2 Study Findings Summary

Major objective was evaluation of influence of Behavioral Bias on Financial Performance Tier one Commercial Banks in Kenya. Evaluation based on four research hypotheses; **H_{01}:** Overconfidence Bias cannot influence Financial Performance Tier one Commercial Banks, **H_{02}:** Herding Bias cannot influence Financial Performance Tier one Commercial Banks, **H_{03}:** Anchoring Bias cannot influence Financial Performance Tier one Commercial Banks and **H_{04}:** Loss Aversion Bias cannot influence Financial Performance.

5.2.1 Overconfidence and Financial Performance

Majority respondents supported Overconfidence Bias influencing Financial Performance, evidenced by the analysis and a good percentage of most respondents, for example bank managers rely on self-confidence assumptions while making investment decisions for improved financial performance, illusions of control was normally employed in the investment decision making processes, Precision of knowledge was core in making investment decisions, Bank managers rely on excessive optimism assumptions while making investment decisions, and more Bank managers have been productive by applying the overconfidence sentiments. Findings are in tandem with earlier researchers who concluded Overconfidence Bias influenced Financial Performance.

5.2.2 Herding Biases on Financial Performance

Study findings assert Herding Biases influence Financial Performance of Commercial Banks Tier One of Kenya. Majority of respondents of Commercial Banks Tier One supported the sentiments between Herding Biases and Financial Performance relationship, as evidenced by the analysis done in the study. Herding Biases could carry on activities within stipulated constructs and the evidence of support included; Bank managers normally imitate other competitors for survival, Bank managers relied on market consensus while making investment decisions, Experts and media influence the investment decision making of the bank managers, Social influence affected the bank managers in decision making, Fear of missing out has an effect on bank managers in making decisions, and Banks prefer investing in those stock shares where their networks and families have done investment. Study findings support earlier researchers that found Herding Biases influences Financial Performance.

5.2.3 Anchoring Biases and Financial Performance

This tested influencing of Anchoring Bias on Financial Performance Tier one Commercial Banks in Kenya. It was found that Anchoring Bias influence Financial Performance of Tier one Commercial Banks. Majority defendants supported relevancy of Anchoring Bias on Financial Performance as evidenced through analysis and phrased sentiments, for example; Bank stocks are normally assessed based on the initial purchase price, bank managers depends on the past stock prices when making investment decisions, Bank manager find it hard to change investment prospects when new market information becomes presented, Bank managers initial investment research tends to significantly Influence her final investment decision, Bank managers frequently compare current stock prices on historical performance when deciding to buy or sell. The study results support earlier researchers who found Anchoring Bias influences Financial Performance.

5.2.4 Loss Aversion Biases and Financial Performance

This tested Loss Aversion Bias influencing Financial Performance Tier one Commercial Banks in Kenya. Findings showed Loss Aversion Biases influence Financial Performance. Majority respondents supported sentiments of Loss Aversion Biases on Financial Performance, as evidenced by study analysis, for example; descriptive sentiments had more support; Fear of financial loss affects bank managers in making investment decision, holding losing investments has an effect on bank managers on making investment decisions, selling winning investment too early initiates un-stability in investment decision making by the managers, risks avoidance after losses affect decision making of bank managers, emotional response to losses affects bank managers in making investment decisions and employees are always not joyed with loss aversion biases. Research findings are supported by other researchers who found Loss Aversion Bias influenced Financial Performance.

5.3 Conclusions

Study findings established existence correlation among Behaviour Bias and Financial Performance, hence Overconfidence Bias correlated Financial Performance Tier one Commercial Banks in Kenya. Findings indicate Overconfidence Bias is key to Financial Performance.

Herding Biases correlates with Financial Performance of Commercial Banks Tier One in Kenya, such indicates how flexible processes and components of Herding Bias enhances Financial Performance Tier one Commercial Banks in Kenya.

Anchoring Bias influences Financial Performance Tier one Commercial Banks in Kenya. This finding indicates Anchoring Bias is key and relevant to Financial Performance

Loss Aversion Bias influences Financial Performance Tier one Commercial Banks in Kenya. Loss Aversion Bias receipts attention of cost drivers of actions that majorly cause

disappointment in most organizations if not held correctly. Loss Aversion Biases is Key to Financial Performance.

5.4 Recommendations

Results of the study specify well-accepted Behavior Bias seem to be very useful on Financial Performance of the Commercial Banks Tier one, though, a part from anticipated effects being devastating, there be unsought effects in the whole course as regards Financial Performance. Subsequent commendations ought therefore to be well-thought-out;

Study endorses Commercial Banks Tier one should indulge in having a strengthened means of handling Overconfidence Biases for improvement of Financial Performance favoring of Banks.

Study recommends Herding Bias given priority when associated with Financial Performance, Herding Bias signifies how processes and components are applied by Tier one Commercial Banks as required by anchored regulations in banking sector.

Study recommends Anchoring Bias should be initiated with regard to anchored policies of banks and permit autonomous verdicts made for an achievement of Financial Performance within Tier one Commercial Banks in Kenya.

Study recommends for proper initiation of Loss Aversion Bias. This directly deals with Bank losses that is very sensitive on performance of banks.

5.5 Areas for further research

Researchers to have same research done using same variables though in different economic sectors apart from the service industry the study has handled.

Researchers should conduct studies to Tier two and Tier three so that findings can be assessed effectively under comparison.

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APPENDICES

Appendix i: Letter of Introduction

Dear Respondent,

I am a student taking Masters in Business Administration (MBA) finance and Investment option at Open University of Kenya. In order to fulfill the MBA degree requirements, I am undertaking a Research thesis on, "**Behavioral Bias and Financial Performance Tier one Commercial Banks, Kenya".**

Therefore, I kindly request you to assist me by filling the herein attached. Please note that, the information provided will strictly be for academic purpose only and will be treated with utmost confidence. Further, you are not supposed to indicate your name as a measure of enhancing confidentiality.

Thank you in advance

Philip Chabari

Appendix ii: Research Questionnaire

PART A: <u>DEMOGRAPHIC DATA</u>

1. Gender

Female [ ] Male [ ]

2. Tier of Education

Certificate [ ] Diploma [ ] Degree [ ] Masters [ ] PhD [ ]

3. Length of service

1-5 years [ ]

6-10 years [ ]

Above 10 years [ ]

PART B: Behavioral Bias

1. Overconfidence Bias and Financial Performance

According to your agreement or disagreement concerning influence of Overconfidence Bias on Financial Performance Tier one Commercial Banks in Kenya? Kindly tick your preferred answer.

5-Strongly Agree **4**-Agree **3**-Uncertain **2**- Disagree **1**-Strongly Disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The Bank managers rely on self-confidence assumptions while making investment decisions					
2	Illusions of control is normally employed in the investment decision making processes					
3	Precision of knowledge is core in making investment decisions					
4	Bank managers rely on excessive optimism assumptions while making investment decisions					
5	Better than the average is the slogan of trade within the Bank					
6	The Bank managers have been productive by applying the overconfidence sentiments					

2. Herding Bias and Financial Performance

According to your agreement or disagreement concerning influence of Herding Bias on financial performance Tier one Commercial Banks in Kenya? Kindly tick your preferred answer;

5-Strongly Agree **4**- Agree **3**-Uncertain **2**-Disagree **1**-Strongly Disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The Bank managers normally imitate other competitors for survival.					
2	The Bank managers rely on market consensus while making investment decisions					
3	Experts and media influence the investment decision making of the bank managers					
4	Social influence affects the bank managers in decision making					
5	Fear of missing out has an effect on bank managers in making decisions					
6	The Bank would like to invest in those stocks where their friends and family have done the investment.					

3. Anchoring Biases and Financial Performance

According to your agreement or disagreement concerning influence of Anchoring Biases on Financial Performance Tier one Commercial Banks, Kenya? Kindly tick your preferred answer.

5-Strongly Agree 4-Agree 3-Uncertain 2-Disagree 1-Strongly Disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	Bank stocks are normally assessed based on the initial purchase price					
2	The bank manager depends on the past stock prices when making investment decisions					
3	The Bank manager finds it hard to change investment prospects when new market information becomes presented					
4	Bank managers initial investment research tends to significantly Influence her final investment outcome.					
5	The Bank managers frequently compare current stock prices to their historical performance when deciding to buy or sell.					
6	There is least complain as concerns anchoring culture					

4. Loss Aversion Biases and Financial Performance

According to your agreement or disagreement concerning influence of Loss Aversion Biases on Financial Performance Tier one Commercial Banks in Kenya? Kindly tick your preferred answer.

5-Strongly Agree **4**-Agree **3**-Uncertain **2**-Disagree **1**-Strongly Disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	Fear of financial loss affects the bank managers in making investment decision					
2	Holding losing investments has an effect on bank managers on making investment decisions					
3	Selling winning investment too early initiates un-stability in investment decision making by the managers					
4	Risks avoidance after losses affects the decision making of bank managers					
5	Emotional response to losses affects bank managers in making investment decisions					
6	The employees are always not joyed with the loss aversion biases					

5. Financial Performance

The Likert scale below has statements to respond to according to your Tier of agreement or disagreement concerning Financial Performance Tier one Commercial Banks in Kenya. Kindly tick your preferred response.

5-Strongly Agree 4-Agree 3-Uncertain 2-Disagree 1-Strongly Disagree

	Statement	**5**	**4**	**3**	**2**	**1**
1	The Bank managers frequently trade in stock market securities					
2	The bank managers tend to hold an investment portfolio that is well diversified with multiple stocks from different industries					
3	Banks managers primary investment objective is long term wealth creation					
4	When making investment decisions, the Bank managers rely on recommendations from professional associates					
5	The Bank's managers performance is always rated in comparison to others					
6	Bank managers extensively do personal research before making investment Decisions					

Appendix iii: List of Tier one Commercial Banks in Kenya

1. Kenya Commercial Bank
2. ABSA ltd
3. Standard chartered Bank ltd
4. Cooperative Bank ltd
5. Equity Bank ltd
6. Stanbic Bank ltd
7. I&M Holdings ltd
8. NCBA Bank ltd
9. Diamond Trust Bank ltd