IMPACT OF EMOTIONAL BIASES ON INVESTMENT PERFORMANCE OF RETAIL INVESTORS

BY

Swornim Lama

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Recommendation

Certification

Declaration of Authority

I, Swornim Lama, declare that this GRP is my original work and that it has been fully and specifically acknowledged wherever adapted from other sources. I also understand that if at any time it is shown that I have significantly misrepresented material presented to SOMTU, I will be fully responsible for my entire work. I ensure that this work has not been submitted or presented anywhere else before.

Signature:

Name: Swornim Lama

Date:

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Abbreviations

AVE:	Average Variance Extracted
CAPM:	Capital Assets Pricing Model
CFA:	Confirmatory Factor Analysis
EMH:	Efficient Market Hypothesis
H:	Herding
IP:	Investment Performance
LA:	Loss Aversion
LC:	Locus of Control
NEPSE:	Nepal Stock Exchange
OC:	Overconfidence
OLS:	Ordinary Least Square
PLS:	Partial Least Square
RA:	Regret Aversion
SC:	Self-Control
SEM:	Structural Equation Modeling
SPSS:	Statistical Package for the Social Sciences

Executive Summary

The standard financial theories use mathematical models to analyze financial markets with the assumption that investors are rational. Behavioral Finance theory, however, states the irrationality of investors causes biases (errors) while decision making. It attempts to understand how the cognitive and emotional aspect of investors affects their investment behavior.

The main objective of the study is to examine the emotional biases that influence the investment performance of retail investors with the moderation of locus of control. The descriptive and causal-comparative research design was used for the study and the target population was all the retail investors who trade in the secondary market.

Primary data were gathered for this study. Print, electronic, and social media distribution methods were all used to distribute the questionnaires. Convenience sampling has been employed as the sampling method. 391 investors were taken as a sample for this survey. SPSS software has been used for the normality test and descriptive study whereas SmartPLS software was used for Confirmatory Factor Analysis of construct, hypothesis testing and model fit.

The findings revealed that retail investors' investment behavior is influenced by emotional biases. Among the emotional biases, overconfidence bias had the highest negative impact on investment performance followed by regret aversion and self-control bias both negatively influencing investment performance. Similarly, there was a significant moderation effect of internal locus of control between regret aversion and investment performance and between overconfidence bias and investment performance.

Thus, financial advisors should consider the emotional biases that their customers are prone to when providing advice. Furthermore, by appropriate stock policy development and regulations, financial organizations and policymakers can remedy stock market distortion caused by emotional biases. Retail investors should be self-aware of the emotional errors they commit while making an investment decision in the secondary market.

Chapter I
Introduction

1.1 Background of the study

Investor decisions and their performance have a significant impact on the market trend, which influences a country's economy (Shabgou & Mousavi, 2016). Since the 1950s, the traditional finance model has dominated the field of finance, with people assumed to behave rationally when making investment decisions and their optimal choice of investments that bring them maximum returns. Fama (1970) proposed the Efficient Market Hypothesis (EMH) based on the same assumption, stating that stock prices quickly adjust and reflect all information, making it impossible to consistently beat the market and create abnormal profits. Investors evaluate the price of financial assets and maximize expected utility accurately after processing all available information. Such models in the past were actively used to assess investors' investment decisions and performance.

However, despite the availability of these classic models and theories, market anomalies remained unsolved. By the 1980s, solutions to this problem were searched, and the notion of behavioral finance, which has origins in psychology, sociology, and finance, had evolved. The concept of behavioral finance proposes that humans, as social and intellectual beings, use their minds and emotions to make decisions. Thus, they can be irrational at times, and their judgments can be skewed because of their incapacity to handle complex information and absence of mental capacity (Keswani, Dhingra, & Wadhwa, 2019). Moreover, Thaler (1980) contends that investors are influenced by behavioral biases, which often lead to less optimal decisions. These biases are psychological errors caused by sentiment-driven behavior that is influenced by a variety of cognitive and emotional factors.

Cognitive biases and emotional biases are two types of behavioral biases identified by Pompian (2006). Whereas the former occurs as a result of basic statistical flaws, information processing errors, or memory errors, the latter occurs as a result of irrational reasoning triggered by various emotional intuitions or impulses. Thus, cognitive biases can be remedied with improved information and assistance, while emotional biases are more difficult to rectify.

Investors are the real player in the stock market. They have various investment goals, such as income, security, growth, avoiding inflation, and so on. Investors must have an investment plan, as well as good analytical skills and strategies, to achieve optimal investment returns (Kubilay & Bayrakdaroglu, 2016). Institutional and retail investors are the two main categories of stock market investors. Because of their expertise and knowledge, institutional investors appear to be rational and make sound investment decisions. Retail investors, on the other hand, are more likely to be less informed, biased, and noisy traders in the stock market than institutional investors (Kyle, 1985). Thus, people are guided by their emotions, feelings, and sentiments, which influences investment decision and performance (Statman, Fisher, & Anginer, 2008).

It is human nature to believe that one's involvement can influence the outcome (locus of control), yet in reality, there is always the possibility of inaccuracy (MacLeod and Daniels, 2000). Another element is that people believe that an event occurs as a result of their effort, which leads them to trust their intuition (Coleman & DeLeire, 2000), hence emotional biases are likely to arise.

Stock markets and economic functions represent a close interaction between savers and producers in social society (Masoud, 2013), creating a platform to mobilize the savings into investment in beneficial projects and raising the profitability of existing capital stock (Singh, 1999). Since the stock market and the economy are positively correlated (Bist, 2017; Regmi, 2018 & Baral, 2019), factors impacting stock market growth are crucial for the development of an economy (Purnamasari et al., 2020). As a result, stock market performance has a significant impact on defining market trends, which in turn influence the economy. This is why the government of many countries places a greater emphasis on stock market performance, as it is a key driver of growth in most developed economies (Ewah et al., 2009). Thus, the significance of the Nepal Stock Exchange (NEPSE) for Nepal's economic growth cannot be denied.

The security market has grown in Nepal, despite the country's limited capital market. The NEPSE Index has experienced significant fluctuation over time during its 23-year history. It could be related to "Fear of Missing Out," as the word is defined. The desire to participate in stocks may have risen and fallen to avoid missing out on the possibility to increase earnings. Investors are hence more likely to commit specific errors, some of which are minor and others disastrous (Shefrin, 2002). Investors who are prone to these

errors as a result of biases will incur risks they are unaware of, encounter unexpected outcomes, engage in unjustifiable trading, and may blame themselves or others when things go wrong (Kahneman & Riepe, 1998). Hence, this research investigates the moderating impact of internal locus of control on the relationship between emotional biases and retail investors' investment performance.

1.2 Statement of the Problem

Traditional theories such as the Markowitz portfolio theory and the CAPM are based on investors' risk-return calculations. Nevertheless, an investor's level of risk acceptance is determined by their traits and risk approach (Maditinos et.al., 2007). Similarly, the most traditional theory assumes investors as rational economic man., implying that investors consider new information while making an investment decision. However, in recent decades, behavioral finance theory has exposed investors' irrationality and demonstrated human frailty in competitive marketplaces (Waruingi, 2011).

Furthermore, investors can be irrational, and their decisions can be skewed due to a lack of mental capacities and the incapacity to understand complex data (Keswani et al., 2019). Behavioral finance, which is based on psychology, can be useful in this scenario since it explains why people purchase and sell stocks and the emotional and cognitive errors that influence investing decisions (Waweru et.al., 2008).

The majority of Nepalese literature (Kadariya, 2012; Joshi, 2018; Rana, 2019; Shrestha, 2020) has concentrated on accounting information, advocate recommendations, corporate image, demographic variables, and company-specific variables, and market information as factors influencing investment decisions. Moreover, prior studies have concentrated on only a few aspects of investor behavior, with the majority of studies focusing on cognitive biases. Similarly, literature (Awale et al., 2018; Risal & Khatiwada, 2019) has found the presence of herd mentality in the Nepali Stock Market. Although studies of loss aversion and regret aversion under prospect theory can be found, study is needed to be conducted that includes all relevant aspects of investors' emotional biases. It will be useful for individual investors to understand their behavioral biases and justify their investment performance. Similarly, institutional investors and portfolio managers may use this study to better understand the investors' behavior or sentiment and make accurate forecasts and provide better recommendations to their clients.

During the research, various questions are raised to obtain the research objectives. The supporting research questions for the study of horizontal fit are highlighted below:

i. What emotional biases influences decisions made by retail investors at the Nepal Stock Exchange?
ii. Is the performance of retail investors at the Nepal Stock Exchange affected by emotional biases?
iii. Does Locus of Control moderate the relationship between emotional biases and investment performance?

1.3 Research Objectives

The prime objective of this research is to analyze the influence of emotional biases affecting retail investors' investment performance. The specific objectives of the study are:

i. To analyze the emotional biases influencing the investment decisions of retail investors at NEPSE.
ii. To measure the impact of emotional biases on retail investors' investment performance.
iii. To examine the moderating role of locus of control on the relationship between emotional biases and investment performance.

1.4 Research Hypothesis

Loss Aversion and Investment

Loss aversion is defined by Kahneman and Tversky (1979) as a point-of-reference-based assessment of gains and losses. The term "loss aversion bias" comes from the prospect theory, which states that people prefer to evade losses rather than seek financial gain. Shiller (2000) the mental cost of a loss is larger than the mental gain of a similar size. Furthermore, a loss that follows a gain is less painful than normal, whereas a loss that follows a loss seems to be more painful than normal (Barberis & Huang, 2001). Loss aversion bias causes investors to stay on to a bad investment even if there is little likelihood of it rising in value again. When analyzing returns, also leads to risk avoidance; investors would prefer to pick a specific low return than a risky

investment that could end in a loss, so restricting possible returns of an investor's investment portfolio.

H_1: ***Loss aversion has a significant negative impact on investment performance.***

Self-control and Investment

Due to a lack of self-control, people are more likely to spend more now and not save for the future (Thaler & Benartzi, 2004). This happens because people's short-term wants to become so powerful, that they are not able to sustain the self-control essential to achieve their long-term objectives (Pompian, 2006). For instance, someone might require to save for the future but find it difficult to give up current spending owing to a lack of self-control. As a result of this bias, investors will prioritize short-term utility over long-term rewards. Due to investors' propensity to concentrate on present income from assets rather than future growth and returns, it may also result in an uneven asset allocation, which could significantly hurt long-term wealth.

H_2: ***Self-control bias has a significant negative impact on investment performance.***

Regret Aversion and Investment

Individuals with regret-aversion bias experience regret pain when they make mistakes, and in an attempt to avoid this pain, they engage in irrational behavior (Odean, 1998; Shiller, 2003). People experience twice the agony when they lose than when they win due to this bias (Kahneman & Tversky, 1979; Shiller, 2000). Investors to avoid regret are thus eager to sell growing shares while refusing to sell decreasing ones in order. Likewise, holding losing equities for too long is more often regretted by investors than selling winning stocks too soon (Fogel & Berry, 2006).

H_3: ***Regret aversion has a significant negative impact on investment performance.***

Overconfidence and Investment

Overconfidence is the self-perceived ability to be more adept and predictive while making investment decisions (Evans, 2006). It exhibits both emotional and cognitive biases but is still seen as having an emotional bias because it derives from emotions in the first place. Three types of overconfidence bias exist i.e. Certainty overconfidence, Prediction overconfidence and self-attribution bias. Overconfidence in both prediction and certainty displays a flawed cognition and emotional facet like hope (Akinkoye & Bankole, 2020). Overconfident investors ascribe their investment success to their skill,

resulting in increased volume of trade, momentary momentum (De Bondt & Thaler, 1995; Barber & Odean, 2001), and under-diversification (Goetzman & Kumar, 2008), and reflects optimism (Bouteska & Regaieg, 2020).

H_4: ***Overconfidence has a significant negative impact on investment performance.***

Herding and Investment

Herding is the collective irrational behavior of investors who frequently imitate others in the stock market (Zahera & Bansal, 2018). Instead of their independent analysis, they are mostly guided by instinct and emotion. It exists in both rising and declining market conditions, as well as in general and specific market conditions, such as bull and bear markets and high-low trade volume levels. Rational stock market investors make their decisions based on their information analysis and do not follow the crowd. When they don't have enough knowledge or facts to make a decision, investors, on the other hand, imitate the group. Waweru et al. (2008) identified six stock investment decisions that can influence an investor: buying, selling, selection of stocks, time of holding a stock, and volume of stock trading.

H_5: ***Herding has a significant positive impact on investment performance***

The moderating role of Internal Locus of Control

Internal control locus occurs when a person believes the intended outcome is attributable to his or her efforts. When a person feels that a good outcome is attributable to external variables such as luck, destiny, or others, it is referred to as the external locus of control (Selart, 2005). Due to the investor's hesitation to admit their errors, they may make biased decisions (Davis & Bobko, 1986). Biased investors as a result make incorrect investment selections.

According to Heckman, Stixrud, and Urzua (2006), diverse characteristics of personality play a significant role in many financial outcomes, and one of these factors is the locus of control. Some people exaggerate their abilities and think they can influence market conditions, while others are oblivious of their abilities and take unnecessary risks (Gervais & O dean, 2001). Such investors are prone to self-control, framing, the illusion of control, optimism and overconfidence (Lather, Jain & Anand, 2020), which leads to irrationality in investment decisions and performance. Therefore, the following hypotheses are proposed:

H_6: ***Internal locus of control moderates the relationship between loss aversion and investment performance.***

H_7: ***Internal locus of control moderates the relationship between self-control and investment performance.***

H_8: ***Internal locus of control moderates the relationship between regret aversion and investment performance.***

H_9: ***Internal locus of control moderates the relationship between overconfidence and investment performance.***

H_{10}: ***Internal locus of control moderates the relationship between herding and investment performance.***

1.5 Scope and Significance

This research focuses on emotional biases that may affect individual investors' investment decisions and performance, with the locus of control as a moderator. Individual investors, institutional investors and security organizations, portfolio managers, stock market regulators and policymakers will all significantly benefit from this research.

This research not only helps investors uncover behavioral aspects and biases when investing, but it also serves as a reference point for re-examining the behavioral component and considering the analysis of stock market trends before making appropriate investment decisions. The identification of biases will allow investors to learn and overcome the factors to gain profit from the market. Similarly, the research provides institutional investors and security organizations with a firm foundation for predicting future stock-market trends by better understanding investor behavior and feelings, as well as providing more trustworthy consultant information to investors. Portfolio managers can use the findings to better understand the dynamics of emotional biases that their clients are prone to improve portfolio management and wealth maximization.

Furthermore, this research will aid stock market regulators and policymakers in developing programs that will correct any stock market distortions through policy formulation and regulation. This will serve to lessen the market's reflection of biases

and irrational behavioral patterns, allowing the stock market to stabilize and become easier to regulate.

As a result, this research can be beneficial at all levels of the economy, from the individual to the national level, implying that it can be used at both the micro and macro levels. This research not only adds an explanation for/against the theories that have been developed but it may also be used for practical purposes, such as reducing the risk of a stock market crash based on investor attitudes about hot stocks in the market and supporting investors in overcoming biases.

1.6 Operational Definition of Terms

Emotional Bias

An emotion might be thought of as a natural response rather than deliberate thought. An emotional bias is a psychological condition that develops from making decisions out of intuition rather than rational decision-making. These biases are difficult to manage or rectify in investors because of incorrect reasoning brought on by various emotional instincts or impulses (Pompian, 2006), which investors may try to control but are not able to. In the world of investing, emotions can cause investors to make bad decisions since they are connected to perceptions or beliefs about items and relationships.

Loss Aversion Bias

Loss-averse investors recognize that the mental cost of loss is typically higher than the mental benefit from a comparable gain (Shiller, 2000). Tversky and Kahneman (1991) describe this bias as investors taking precautions to prevent losses and weighing losses more heavily than gains. This shows that losses are more likely to cause investors to react negatively than gains (Benartzi & Thaler, 1995; Barberis & Huang, 2001). In this study, loss aversion is measured with five items developed by Nada (2013) and Ritika and Kishor (2020).

Self-Control Bias

Self-control bias is a psychological tendency that makes people consume now rather than save for the future. Pompian (2006) asserts that this lack of self-control is the result of an emotional human-behavioral propensity that makes people fail to take immediate action in support of their long-term overriding goals. This tendency at the macro level

can multiply among a large number of people, with disastrous consequences. Five items developed by Nada (2013) and Ritika and Kishor (2020) are adopted to measure self-control bias.

Regret Aversion Bias

Regret is a feeling that people experience after making mistakes. It is the practice of avoiding regret by being willing to sell growing shares but refusing to sell those with a declining value. (Luong & Ha, 2011). People who suffer from regret aversion avoid taking decisive actions because they are afraid that whatever path they choose will be less than optimal in retrospect. Essentially, this bias seeks to avoid the agony of regret caused by poor decision-making (Pompian, 2006). Similarly, regret aversion was examined in this study using five items designed by Ritika and Kishor (2020)

Overconfidence Bias

Overconfidence is a well-known bias in which an individual's subjective confidence in their judgements is consistently larger than their objective correctness, particularly when confidence is strong. Pompian (2006) defines Overconfidence as, "an unfounded trust in one's intuition, judgements, and cognitive ability." This study has adopted five items developed by Ritika and Kishor (2020) to measure overconfidence bias.

Herding Bias

The propensity of investors to follow the actions of others is known as the herding effect in the financial market. Herding has been connected to home bias, gossip, and emotional biases like conformity, congruency, and intellectual conflict. If investors feel that herding may help them extract meaningful and accurate information, they may favour it (Luong & Thu Ha, 2011). This study has employed five items developed by Ritika and Kishor (2020) to measure herding bias.

Locus of Control

An internal control orientation is a perspective that holds that the outcomes of our actions are determined by what we do, as opposed to external events (external control orientation) (Gerrig & Zimbardo, 2002). Rasheed et al. (2018) developed eight items to measure the internal locus of control trait in investors and the same was adopted in this study.

1.7 Limitation of the Study

Due to time constraints, this study concentrates only on the emotional biases of individual investors of the Nepal Stock Exchange. This study also has some limitations mentioned below:

i. Even though the sample size (N = 391) is relatively sizable and satisfies the standards of statistical techniques, a bigger sample size would more properly reflect the genuine situation of the Nepalese stock market.
ii. The research utilizes convenient sampling (a non-probability sampling) so generalization for the whole population cannot be made.
iii. The measurement of investment performance is based on their self-assessment or perceptions of the investors on the return they achieved from their short-term and long-term investments. Moreover, it is an attitudinal measurement based on the investors' subjective awareness. Further, some investors may not know their predictable returns or the market's average returns.

1.8 Outline/Structure of the Report

The present study comprises three main sections with five chapters.

- Preliminary section
- Body of the report
- Supplementary section

The preliminary section consists of a title page, certification and declaration of authenticity, acknowledgement, table of contents, list of tables, list of figures, abbreviations, and executive summary. Similarly, the body of the report has five sections: introduction, review of the literature and theoretical framework, research methodology, data analysis and results, and discussions, conclusions, and implications. References and an appendix are included in the report's last section.

The first chapter contains the study's introduction, which outlines the theoretical underpinnings of the stock market and behavioral finance, is covered in Additionally, it contains the statements of the research problems, objectives of the study, its relevance, its scope and limitation, and the structure of this GRP.

Similarly, the second chapter comprises the literature review and theoretical framework. The literature review consists of reviews of empirical studies, research articles and thesis or dissertation and depicts the irrational investors and their emotional biases presenting an overall scenario of the study that relates to the objective of the study. A theoretical framework is for identifying the dependent and independent variables based on previous literature.

Likewise, the third chapter's research methodology section outlines the methods and tools employed in the study. The research approach, research strategy, study design, demographic, and sample are all covered in this chapter. It also describes the data collection method, design of measurements and questionnaire, data process and analysis of the study.

The fourth chapter describes the analysis and results of the study. It represents the analysis of quantitative data using statistical tools that define the various tables, and figures intended to answer the objectives and research questions of the research. Finally, the last chapter deals with the discussion, conclusion, and implications of the study.

Chapter II

Related Literature and Theoretical Framework

2.1 Literature Review

This chapter aims to review the relevant literature on behavioral finance. First, a comparison between behavioral finance and standard finance as well as some historical backdrops for behavioral finance is provided. Second, to get a comprehensive view of emotional biases and their effects on investment performance, the key behavioral finance theories of prospect and herding are included. Furthermore, the Literature matrix is constructed to summarize the past empirical works on this topic. Finally, a research model is proposed to follow during the research.

Standard Finance Theory (Traditional and Modern)

Traditional finance theory's main purpose is to use mathematical models to analyze financial markets, assuming that investors are rational. Mill (1836) proposed the concept of a "rational economic man," whose goal is to maximize utility while taking into account the limits he faces. A rational investor is one who:

i. constantly changes his views in response to new knowledge in a timely and suitable manner, and
ii. consistently makes normatively acceptable decisions. (Thaler, 2005).

Nofsinger (2001) asserts that during the past few decades, the science of finance has expanded based on the assumption that people make unbiased predictions and make rational decisions. Individual investors are seen as a sane group that routinely makes thoughtful economic decisions. Intending to maximize utility, the traditional finance theories have four foundation pillars:

i. Perfectly rational investors
ii. Efficient markets (Fama, 1970),
iii. Building portfolios following the classic Mean-Variance model's criteria (Markowitz, 1952),
iv. The risk-return trade-off (Sharpe, 1964).

Many financial ideas and trends, such as Expected Utility Theory, CAPM, and Modern Portfolio Theory, are part of the traditional and modern finance theoretical corpus.

- Expected utility theory is concerned with choosing between the options that have uncertain consequences. The goal is to realize a trade-off between risk and reward (Bernoulli, 1738; translated by Sommer, 1954)
- Modern Portfolio Theory: Markowitz's (1952) method assists an investor in achieving his optimal portfolio position and shows how diversity minimizes risk.
- CAPM model aids in finding the connection between a systematic risk of an asset and it's anticipated return. One investment or a whole portfolio of securities can be valued using it (Zahera & Bansal, 2018).

The efficient market hypothesis, on the other hand, is the most important theory that has defined the financial landscape for decades.

Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH), proposed by Fama in 1970, maintains that asset prices in financial markets fairly reflect all information that is currently accessible. (whether public or private). According to EMH, efficient markets are efficient because market prices absorb all sorts of information to the point that individual investors cannot beat or surpass the market. EMH is also known as the random walk hypothesis since prices are equally likely to grow or decrease, and no investor can forecast which way they will go. *'The market and equities might be just as random as tossing a coin,'* says Malkiel (2003). "An 'efficient' market is one in which a large number of rational, profit-maximizing players are actively competing, each attempting to forecast future market values of particular securities, and where significant current information is nearly freely available to all participants." As a result, if there are many investors in the financial market, we will obtain the best price. Other investors will join in if someone is earning extra income there." This means that the efficient market hypothesis is concerned with information efficiency and how quickly the market's share price reflects new information.

According to Nada (2013), "Fama convincingly advanced the point that securities will be adequately valued and represent all available information in an active market that includes many well-informed and intelligent investors." If a market is efficient, competition between numerous knowledgeable investors creates a situation where, at any given time, the true values of individual securities already take into account the impacts of knowledge-based on past and future occurrences. Thus, the actual price of

an asset will be a decent indication of its inherent worth in an efficient market at any given time." (Fama, 1995).

As a result, EMH asserts that all stocks are appropriately valued based on their intrinsic investing features, which all market participants have equal awareness of (Fama, 1970). Finally, the efficient market hypothesis assumes that financial markets integrate all sorts of information into stock values, that the market has no memory, and that fresh information introduces random fluctuation in share prices. As a result, when investors try to benefit by buying from inexpensive companies, EMH is likely to dismiss their efforts. To put it another way, a normal investor cannot anticipate regularly outperforming the market, and the substantial resources that these investors devote to evaluating, selecting, and trading stocks are squandered (Shleifer, 2002). In summary, EMH makes the following assumptions:

- Securities are valued rationally by investors, who are assumed to be rational.
- If any investors are irrational, their trades are random, and thus cancel each other out without altering prices.
- If investors are similarly irrational, they meet sensible arbitrageurs in the market who eliminate their effect on pricing.

The emergence of Behavioral Finance

The traditional standard theories assumed market efficiency and economic rational investors. As the various stock market anomalies go unresolved, the efficiency of the stock markets was however questionable. These anomalies that must be addressed were as follows (Zahera & Bansal, 2018):

- Why are there market bubbles?
- Why does the market crash?
- How can we avoid these bubbles and crashes?
- When do these market bubbles and collapses occur?
- What elements are to blame for these uncertainties?

In real stock markets, perfect market conditions, as defined in economics and finance literature, do not always occur. A solution to this problem had being sought by the 1980s. the end outcome was behavioral finance, a new branch of finance. It has answered and described some of the causes for behavioral changes in investors that

divert them from logical decision-making. The numerous reasons for the abrupt and untimely changes in the stock market and securities pricing which defies both rational investor theory and market efficiency have been explained. Kahneman and Tversky (1979) published a paper titled "Prospect theory: An analysis of decisions under risk.", which became renowned in the field of behavioral finance. It discusses how investors make decisions based on probable alternatives, including risk when the likely result of an investment decision is known.

Thaler (1980) made another significant support by explaining the prospect theory using an alternate descriptive theory. Instead of viewing investors as cold and unreasonable, he contends that they are influenced by behavioral biases, which often lead to suboptimal judgments. Through their research, De Bondt and Thaler (1985) criticized the EMH by demonstrating that the stock market is inefficient due to the market transmission inefficiency of investor emotions such as egotism, uncertainty, fear, and optimism. Additionally, they discovered that found that irrational investment behavior is brought on by the quick pace of events. Indeed, Investor sentiment drives market movements, which cause asset prices to rise or fall above or below their acceptable levels. Thus the premise of behavioral finance is that investor behavior is not entirely rational, and it offers the fundamentals of an alternative financial theory. Thaler (1999) described various circumstances when standard finance theories fail to explain and where behavioral finance assumptions kick in. He has chosen five situations where investor behavior in the stock market departs from what finance theories have advised. These include equity premium conundrum, volatility, dividends, unpredictability, and volume.

While traditional academic finance focuses on ideas such as modern portfolio theory and EMH, the burgeoning discipline of behavioral finance explores psychological and sociological aspects that influence individual, group, and organizational decision-making (Riccardo & Simon, 2000). Two fundamental assumptions underpin behavioral finance theory. The first is that investors are not completely rational in the sense that their desire for risky financial stock is impacted by both emotions and beliefs. However, economic realities do not support this, causing expectations to be heavily skewed. The second assumption is that arbitrage by fully rational investors has limited effectiveness. As a result, there is a disagreement between the EMH and the basics of behavioral finance.

Shefrin (2002) describes behavioral finance as a "rapidly growing area" that examines how psychology affects financial practitioners' behavior." Nair and Antony (2015) regard behavioral finance as a supplement to conventional finance ideas, rather than a replacement. Thus, Behavioral finance is built on an interdisciplinary approach that includes scholars from the social sciences and business schools. Psychology and sociology's behavioral aspects are important catalysts in this field of study with traditional finance remaining the central focus. While no real definition of Behavioral Finance yet exists, it continues to develop and refine helping to understand the stock market anomalies.

Prospect Theory

As a substitute for expected utility theory, prospect theory was proposed Kahneman and Tversky (1979). It is concerned with how decision-makers act when presented with two options. Decision-making under risk is described as a decision between prospects and gambles. Risky decisions provide a choice between various behaviors that are connected with a certain probability (prospects) or gambles. The model was later changed and expanded. Prospect theory, according to Goldberg et al. (2001), has arguably done more to integrate psychology into economic analysis than any other method.

Many economists still approach problems using the expected utility theory paradigm; nevertheless, prospect theory has acquired great popularity in recent years and now unquestionably has an important place on the research agenda for even some notable economists. Prospect theory, unlike psychology, has a strong mathematical foundation, making it easy for economists to work with. However, unlike expected utility theory, which is concerned with how decisions should be made in the face of uncertainty (a prescriptive approach), prospect theory is concerned with how decisions are made (a descriptive approach) (Montier, 2002). Kahneman and Tversky began their investigation by looking for apparent deviations and inconsistencies in human behavior.

One of the most important findings of Kahneman and Tversky's research is that people's attitudes regarding risks associated with profits and losses may be significantly different. When offered the option of receiving Rs. 500 with certainty or a 50% chance of receiving Rs, 1500, they may select the definite Rs. 1000 over the uncertain possibility of receiving Rs. 750, although the mathematical result of the uncertain

decision is Rs. 750. The attitude of risk-aversion is appropriate. When confronted with a guaranteed loss of Rs. 500 against a 50% possibility of no loss or an Rs. 1500 loss, Kahneman and Tversky discovered that the same people typically pick the risky option, known as risk-seeking. The subjective utility theory has been substituted with a value function that gives a value to a payoff. The magnitude of negative and positive payoffs is not equal, contrary to expected utility theory predictions; the negative section of the slope is steeper than the positive portion, thus the absolute value of a loss is larger than the absolute value of an equivalent gain. The investor sees each wager as a chance to modify his present position, which is where prospect theory gets its name.

To sum, the prospect theory suggests that people are risk-averse when it comes to benefits, but risk accepting when it comes to losses. It proposes that rational people value losses more than compatible gains and that people foucs their final decisions on the prospective worth of losses and profits instead of the ultimate result. Mental Accounting, Loss Aversion, and Regret are three essential elements in prospect theory. But this research focuses on studying the impact of emotional biases on investment performance concerning loss aversion, regret aversion and other biases caused by emotional intuition.

Loss Aversion Bias

Loss aversion states that the pain associated with an equal-sized loss is always greater than the joy associated with an equal-sized gain. According to Shiller (2000), the psychological cost of a loss is larger than the psychological benefit of a similar-sized gain. Individual investors who are afraid of losing money may be hesitant to take risks to avoid a loss (Nada, 2013). It leads to investors holding lost assets while selling successful ones (disposition effect), resulting in poor portfolio results.

Regret Aversion Bias

When investors want to prevent the feeling of regret that comes with a bad [investment] decision, they develop regret aversion. It represents more than simply the sorrow of money loss; it also represents the remorse of feeling accountable for the decision that caused the loss. Regret aversion may encourage investors to keep holding onto underperforming shares. The desire to prevent regret may influence future investing decisions. Investors may be hesitant to invest in firms or industries that have had a bad track record in recent years, fearing that they will be disappointed if they lose money.

Regret aversion may induce investors to engage in 'herd behavior,' such as investing in 'respected' or 'hot' stocks since these investments provide implicit 'insurance' against regret (if you lose money, so will a lot of other people, and so you will not feel as awful) (Singh, 2012).

Herd Behavior Theory

In the financial market, the herding behavior theory states that investors tend to mimic the activities of others. Because investors rely on shared knowledge more than private information, practitioners normally assess the occurrence of herding carefully. As a consequence, many attractive investment opportunities at the moment may be impacted. Academic scholars are also interested in herding since it can alter risk and return model characteristics by affecting stock price, which can affect asset pricing theories' opinions (Tan et al., 2008).

If investors feel that herding can assist them in extracting relevant and accurate information, they may prefer it. Financial professionals' performance, for example, fund managers or financial analysts, is frequently assessed on a relative basis and compared to their counterparts. Herding can help with professional performance evaluation in this scenario since low-ability people may emulate their high-ability coworkers' behavior to enhance their reputation. (Kallinterakiset al., 2010).

Herding investors make their investments based on the purchasing and selling decisions of the masses. Informed and reasonable investors, on the other hand, tend to ignore the herd mentality, which makes the market efficient. Herding, on the other hand, results in an inefficient market, as seen by speculative bubbles. Herding investors, in general, behave in the same way that primitive men did when they had limited knowledge of the environment and joined in groups to help one another and find protection (Caparrelli et al., 2004,). Overconfidence, investment volume, and other factors influence an investor's herding tendency. More confident investors rely more on their statistics when making decisions. Herding tendencies appear to be less appealing to investors in this scenario.

Herding, according to Waweru et al. (2008), can influence stock trading and build momentum but when herding intensifies, it becomes more expensive to follow the herd in order to get the increasing anomalous returns. Waweru et al. (2008) outline five stock investing decisions susceptible to outside influence: purchasing, selling, stock

selection, holding period, and trading volume. Waweru et al. argue that an investor's purchasing and selling decisions are influenced greatly by the actions of others and that herding behavior helps investors feel regret aversion for their decisions.

Investment Performance

Investment refers to making a financial commitment with an expectation of receiving a return in future. As a result, a number of indicators that represent the results of investment activities and gauge investment success define investment performance. Investment performance is often defined as the rate of return on stock investments, mostly determined by how investors perceive the discrepancy between the actual real rate of return and both their projected return rates and the average stock market rate of return. It can also mean the ability of an investment to generate positive yields. Both the objective measure of profit and the subjective measure of investor happiness can be used to quantify these returns. In this setting, both psychological and biological aspects influence investor decision-making and investment performance (Luong & Thu Ha, 2011; Patterson & Daigler, 2014).

Investors use several performance metrics when making investing decisions. Contemporary finance literature has continued to explore risk, ambiguity, and volatility in the stock market, particularly in light of the economic downturn in significant emerging economies (Kamwaro, 2013). Three fundamental demands drive these investments: income production, preservation of capital, and capital growth (Kamwaro, 2013). People invest in the hopes of meeting future income demands or predicted future wants. Investments are done to preserve capital.

The global financial crisis has forced investors to reevaluate their current approaches to investment. These are referred to as conservative investments since the investors put their money into a low-risk investment with the knowledge that the money will always be available to them for free. Choosing to invest in capital appreciation is based on the anticipation of achieving the maximum profit or value increase to meet future financial needs. Taxes and other macroeconomic factors cannot affect this increase in the value of the invested funds because it must be faster than inflation.

Some sceptics of behavioral finance believe that poor investor performance due to behavioral variables might lead to risk aversion in subsequent securities market investments (Luong & Thu Ha, 2011). Similarly, active investors may outperform

because of their overconfidence in their ability to correctly time mutual funds and asset classes resulting in a higher return rate (Dahlquist, et al., 2016).

Many past research have shown that overconfident and under-confident investors are unlikely to endure in the long run in the stock market, but that moderate overconfidence can endure and even outweigh sensible investor behavior. Lin and Swanson (2003) admit that high investment performance is obtained in part through short-term price manipulation instead of risk-taking, regardless of which of these two radical positions one accepts. This shows that increased performance is not a result of prior knowledge but rather the short-term effects of high demand for previously successful stocks and/or a large supply of previously unsuccessful stock investments. In short, investment performance indicators are critical in deciding investment decisions and investor preferences.

2.1.1 Empirical Review

This section is focused on the prior research work done by various scholars. This section focuses mostly on international work and also a few studies done in the national context. The empirical review is organized chronologically from the oldest to the newest.

Using brokerage data from China, Chen et al. (2004) investigated the investment behavior and trading performance of Chinese investors. The findings revealed that Chinese investors make trading errors (the sold stocks outperform the bought stocks), are hesitant to acknowledge their losses and are "overconfident" (they trade under-diversified assets frequently), and show a representativeness bias. They also ran a cross-sectional test on the investor, identifying people who are middle-aged, active, richer, and experienced, and from cosmopolitan cities are less prone to commit cognitive mistakes. They discovered that cognitive errors are not always lessened by experience. Such investors are susceptible to disposition effects, representativeness bias, and trading errors, which provides conflicting evidence that complexity reduces overconfidence.

Maditinos et al. (2007) discovered that individual investors' investment practices are dependent on non-financial sources such as newspapers/media, and market noise, resulting in considerable capital losses. Professional investors, on the other hand, depend more on fundamental and technical analysis resulting in the best-perceived investment performance of all categories. Fundamental analysis was shown to be the

most extensively employed decision-making model at the Nairobi Securities Exchange in research done by Waweru et al., (2008). Heuristic processes and prospect theory, on the other hand, were shown to be prominent, with heuristics outnumbering prospect theory in explaining institutional investor behavior at the Nairobi Securities Exchange. Furthermore, institutional investors' investing decisions were found to be influenced most by market information and the fundamentals of the underlying company.

At the Ho Chi Minh stock exchange, Luong and Ha (2011) investigated the behavioral aspects influencing individual investors' decision-making and performance. Overconfidence, anchoring, representativeness, availability, and gambler's fallacy all have moderate effects on decision making, with availability having the most impact. Furthermore, only herding, prospect, and overconfidence have an impact on investing success, whereas, loss, regret aversion, and mental accounting hurt investment performance.

Iranian investors' performance was analyzed by Ghalandari and Ghahremanpour (2013) concerning the effects of market conditions and the herding effect on investment decision-making. The final analysis included 275 questionnaires, and the findings reveal that market factors positively impact investment choice; that herding positively impacts investment decisions, and that market factors have a greater impact. It shows that investment decisions have a beneficial impact on the Tehran stock market. Although the study solely addresses market factors, the results corroborate the behavioral approach to portfolio theory and provide fresh light on the conventional method.

Kamwaro (2013) used a multiple linear regression equation using the OLS method of estimation to determine the effect of investment portfolio choice on investment company viability in Kenya over five years (2007–2012). The choice of an investment portfolio affects the financial success of investment companies listed on the Nairobi Securities Exchange. Bond investments had a favorable effect on the financial performance of investment companies listed on the NSE. Additionally, the size of the organization, real estate investment and stock had a positive effect on their financial performance.

At the Colombo Stock Exchange, Kengatharan and Kengatharan (2014) performed research to investigate the behavioral aspects that influence individual investors'

decisions. Overconfidence and loss aversion have a moderate influence on investment decisions, according to descriptive statistics, however, Anchoring has a substantial-high impact on individual investor investment decisions. Furthermore, the findings revealed that overconfidence negatively impacts investment performance, whereas anchoring has a favorable impact, and prospect variables had no impact. Within the herding mentality, the choice of stock has a negative influence on investment performance.

Khan (2014) looked into the psychological factors that influence how investors view their performance at the Karachi Stock Exchange. Risk perception served as the study's mediating variable, while financial literacy served as the moderating variable. On the Karachi Stock Exchange, information was gathered from a sample of 150 potential investors. The results of the study demonstrate that framing and herding effects have a substantial positive association with perceived investment performance. Financial literacy demonstrates a moderating association between the framing effect and perceived investment performance, while mediation is not shown in this study.

In addition, Allie et al. (2016) investigated also researched if those who were professionally guided had a higher return on their assets than people who were not. For a period of ten years, from January 1, 2005, to December 31, 2014, a sample of unaffiliated and guided individual investors from a significant South African investing business were compared. According to the findings, there was no statistically significant between advised, non-advised, and the fund invested at the time in terms of returns. Further, advised and non-advised investors made statistically different numbers of trades, with advised clients making statistically more trades. However, they did not examine whether behavioral traits could be responsible for the difference in return on investment between people who receive financial advice and those who do not.

Mahmood et al. (2016) used data from a structured questionnaire and a sample of 477 individual investors from the Pakistani stock market to examine the impact of heuristics, prospects, and herding on the individual investor's investment performance. By applying regression analysis, the study found a modest but statistically significant correlation between these variables and performance. Prospect is negatively correlated with investment success, but Heuristics and Herding are positively correlated. The influence of agents' illogical behavior on investment success is demonstrated in this research.

Anum and Ameer (2017) in their research discovered a positive relationship between heuristics and investing performance and a negative correlation between prospects and investment success in the Pakistan stock market. Ibrahim and Umar (2017) collected 160 samples from 225 employees of active stock brokerage companies in Abuja to study the influence of behavioral characteristics on investing success in the Nigerian market. The findings show that heuristics, herding, and market variables have a positive, whereas prospect has a negative impact on investing performance.

In Sri Lanka's Northern Province, Subramaniam and Velnampy (2017) looked at how demographic factors affected household investment success. The study's participants were 1810 household investors chosen using a proportional stratified random selection approach. The data were evaluated using analytical procedures such as the independent t-test and one-way ANOVA test. Investment performance is impacted by an investor's gender, age, level of education, work position, and income, however their marital status has no effect.

Pahlevi and Oktaviani (2018) used modern investment theory to explore drivers of individual investor behavior in stock investing choices, and the results demonstrated that overconfidence has a strong positive influence on investor attitudes. Baker et al. (2019) looked at the connections between behavioral biases and financial literacy in relation to demographic factors. The disposition effect and herding bias are negatively correlated with financial literacy, but the mental accounting bias and overconfidence are not significantly correlated. Age, employment, and investment experience are the demographic factors that have the most impact on how individual investors in the sample behave. The findings also revealed that more experienced investors are more prone to overconfidence, anchoring, and representativeness biases. However, Metawa et al., (2018) discovered that while experience does not have a substantial effect on investment decisions, investors prefer to disregard emotional elements as they acquire experience.

Dhungana (2018) investigated the behavioral elements that influence individual investors' investing decisions and outcomes. There was an association between age and investment length, gender and investment duration, and marital status and investment duration, according to the study. Gender has no significant influence on the research variable and study variables except investment performance. ANOVA between age and

study variables. Similarly, marital status and education did not affect study variables other than herding.

In Pakistan, Rasheed et al. (2018) looked at factors that affected investors' choices, using locus of control as a moderator. 227 samples were taken following the convenience sampling technique. The study used Structural Equation Modelling and found that both representative and availability bias had a significant positive association with the irrationality of decision making, moderation did not take place. Similar results were found in Dangol and Manandhar's (2020) research conducted on Nepalese investors. On anchoring and adjustment bias, they discovered that locus of control had a considerable moderating effect. while no moderation effect was observed between representativeness and availability bias with an investment decision. Further, Baral and Pokharel (2020) examined the investor's behavior and their impact on investment performance. The findings exhibited that only market variables have a significant effect on investment success whereas prospect, heuristic, and herding variables have no significant relationship with investment performance.

Aldahan, Hasan, and Jadah (2019) analyzed the emotional and cognitive biases that investors suffer when making financial decisions on the Iraq Stock Exchange. The study was done using a sample size of 80 investors. The author employed Average, Variance and T-statistics for data analysis. The study found the presence of Overconfidence, availability, confirmation, the illusion of control, endowment, and regret aversion biases are present in Iraq Stock Exchange.

In research conducted at the National Stock Exchange of India, Keswani et al. (2019) discovered that behavioral elements such as heuristics, prospects, market, and herding had a favurable impact on individual investors' investing decisions. The study used a cross-sectional design with 361 participants. The data study revealed that investment decisions as mediators positively influence individual investors' investment performance.

Rana (2019) looked into the factors affecting individual investors' stock investment choices in Nepal and found that the most frequent ones were income and image variables, governance and placement aspects, goodwill and market dominance aspects, competitive landscape and size variables, fundamental market variables, and choice factors were the most prevalent. Furthermore, the findings revealed that among the six

criteria, fundamental market factors are regarded as having a high relative relevance by investors. Shrestha (2020) discovered that investors make investment decisions based on company-related criteria such as the company's management, recent financial performance, firms with big shares, and the company's growth and size. Risal and Khatiwada (2019) investigated the attitudinal aspects that influence herding behavior in the Nepalese stock market. The findings demonstrated a strong association between hasty decision-making and herd behavior, but an insignificant relationship between choice correctness and herd behavior. Furthermore, the existence of age or investing experience had no meaningful influence on the association.

Kartini and Nahda (2020) investigated the impact of various psychological elements (both cognitive and emotional) on investing decision-making. A quantitative methodology is applied, using 165 questionnaires from individual investors in Yogyakarta obtained by a survey method and snowball sampling. Further, the study utilizes Bivariate Pearson correlation (Pearson Product Moment) and a One-Sample t-test for the data analysis. The research revealed that herding behavior, overconfidence, optimism, loss aversion, anchoring bias, and representativeness bias all significantly influence investing choices.

Bouteska and Regaieg (2020) investigated loss aversion and overconfidence in the US firm's performance. The influence of loss aversion on corporate outcome was first evaluated. Then the impact of overconfidence on market performance. From 2006 to 2016, this study used 6,777 quarterly data of the US industrial and service firms which were insured. The study assumptions were tested using OLS regression in two-panel data models. The results show that loss-aversion bias has a detrimental impact on businesses' financial health. Overconfidence has a good impact on the market performance of industrial enterprises but a negative one on service firms.

Rajeshwaran (2020) investigated how behavioral variables affect the investment performance of CSE investors in Sri Lanka's Eastern Province. The sample was drawn from the districts using a proportionate stratified random sampling procedure. 374 CSE investors in the province completed surveys. The study used standard deviation, mean, correlation, and multiple regression for data analysis. The study found that loss aversion, regret aversion, market, and herding variables are negatively related to

investment performance, whereas positive relation exists between heuristic and investment performance.

Mahmood et al. (2020) studied the influence of behavioral variables on investors' decisions and investment performance by using financial literacy as a moderating variable between behavioral characteristics and investment decision making, using 268 responses from individual investors through brokerage companies. Prospect and herding have a positive influence on investment performance, but heuristic and market factors harm investment performance. Financial literacy also improved the association between behavioral components (heuristic, prospect, market) and investment decision-making while decreasing the relationship with the herding variable. However, in the study conducted by Quddos et al. (2020), it was found that herding and loss aversion behavior had no impact on investor performance.

Akinkoye and Bankole (2020) conducted a study on the effect of emotional biases on investment decisions in Nigeria. The population is comprised of clients of the Nigerian Stock Exchange's top ten stockbroking firms. The information was gathered via a standardized questionnaire that was distributed to 30 clients of each stockbroking business, for a total of 300 samples size. to examine the data, percentages and logistic regression analysis was utilized. The findings revealed that overconfidence and aversion to regret had a significant negative impact whereas, loss aversion and herding had a significant positive impact on investment decisions.

Lather et al. (2020) conducted a study on the impact of locus of control on investor behavioral biases comprising 618 responses. The study employed explorative factor analysis, mean square and f-test for data analysis. The result found that investors with a high score on individual control were more likely to exhibit mental accounting, self-control, framing, the illusion of control, regret aversion, recency, availability, anchoring and adjustment, optimism, confirmation bias, overconfidence, and endowment biases.

Kunwar (2021) examined factors influencing investor behavior and how they relate to stock market performance in Nepal. The findings showed that investors in Nepal had behavioral biases such as heuristics, prospects, market factors, and herding impact. Heuristics and market conditions have the greatest impact on investor success. Heuristic actions have the greatest and most favorable impact on investing performance.

Furthermore, the findings revealed that imitating the herd and prospect does not result in enhanced investment performance.

Table 1

Literature Review Matrix

S.N.	Author	Variables	Methodology	Findings
1.	Chen et al. (2004)	-Investment Experience -Investor Behavior -Trading Performance	-Univariate Analysis -Regression Analysis	Experienced investors are more prone to make trading errors, be influenced by the disposition effect, and suffer from representativeness bias.
2.	Maditinos et al. (2007)	-Portfolio evaluation -Investor types -Investment performance	-ANOVA	Individual investors rely on newspapers/media and market noise, resulting in significant capital losses. Proficient investors place greater emphasis on fundamental and technical analysis.
3.	Luong and Thu Ha (2011)	-Heuristic -Prospect -Market -Herding -Trading decision -Investment Performance	- Descriptive Statistic - SEM	Herding, overconfidence and gambler's fallacy have a positive impact whereas loss, aversion to regret, and mental accounting harm investment success.
4.	Ghalandari and Ghahremanpour (2013)	-Market Variables -Herding effect -Investment Decision - Investment Performance	-SEM analysis -Correlation matrix	Both market and herding have a positive influence on investment decision and investment decision, in turn, has a positive impact on performance.
5.	Kamwaro (2013)	-Investment Portfolio -Financial performance	-Multiple regression -OLS	Bond investments, investments in real estate and stock as well as the size of the organization had a positive impact on their financial performance.
6.	Kengatharan and Kengatharan (2014)	-Market -Herding -Heuristic -Prospect -Investment Performance	-Descriptive Statistics, -Factor Analysis -Multiple Regression Analysis.	Loss aversion has a moderate impact on investment decisions while the herding factor's stock selection has little influence on investors' decisions. Within the herding mentality, the choice of stock has a negative influence on investment performance.
7.	Khan (2014)	-Framing Effect -Herding Effect -Risk Perception -Financial Literacy -Investment	-Descriptive Statistics -Correlation Analysis -Regression	Perceived investment success is significantly positively correlated with framing and herding effects. Financial literacy demonstrates a moderating

		Performance	Analysis	association between the framing effect and perceived investment performance, while mediation is not shown.
8.	Allie et al. (2016)	-Advisory accessibility -Investment performance	-Mann Whitney U-Test -Spearman Rho correlation	The returns produced by advised, non-advised, and the fund financed did not differ statistically. But advised and non-advised investors made statistically different numbers of trades, with advised clients making statistically more trades.
9.	Mahmood et al. (2016)	-Heuristic -Prospect -Herding -Investment Performance	-PLS SEM	Prospect has a negative correlation with investment performance, but Heuristics and Herding have positive correlations.
10.	Anum and Ameer (2017)	-Behavioral Factors -Investment Decision -Investment Performance	-Descriptive Statistics -Multiple Regression	Heuristic, Market, and Herding have a positive impact, whereas, the prospect has a negative impact on investment performance.
11.	Subramaniam and Velnampy (2017)	-Demographic Factor -Investment Performance	-Independent t-test -One-way ANOVA test.	Except for marital status, all other demographic factors impact investment performance,
12.	Pahlevi and Oktaviani (2018)	-Attitude -Subjective Norms -Behavioral Control Perception -Overconfidence -Excessive Optimism -Herd Behavior	-PLS SEM	All the variables have a strong positive influence on investor attitudes.
13.	Dhungana (2018)	-Demographic Variable -Investment decision -Investment Performance	-Independent sample t-test -One-way ANOVA	There was an association between age and investment length, gender and investment duration, and marital status and investment duration. gender does not have a significant impact on study variables except investment performance. marital status and education did not affect study variables other than herding.
14.	Rasheed et al. (2018)	-Representative Bias -Availability Bias -Locus of Control -Investment decision making	-SEM	Representative and availability bias had a significant positive association with the irrationality of decision making, moderation did not take place.

15..	Aldahan, Hasan, & Jadah (2019)	-Cognitive biases -Emotional biases -Investors decision	-Average -Variance -T-stat	Overconfidence, availability, confirmation, the illusion of control, endowment, and regret aversion biases are present in Iraq Stock Exchange.
16.	Keswani et al. (2019)	-Heuristics -Prospects -Market -Herding -Investment decision -Investment performance	-Cronbach alpha -EFA Multiple regression	Investment decisions as mediators positively influence individual investors' investment performance.
17.	Rana (2019)	-Demographic Factors -Investment decision factors	-Descriptive statistics -One way ANOVA -Independent sample t-test	The most prevalent elements included those related to earnings and image, corporate governance and positioning, goodwill and market share, industry competitiveness and scale, basic market dynamics, and decision-making. Among the six, fundamental market factors are regarded as having a high relative relevance by investors.
18.	Kartini and Nahda (2020)	-Anchoring -Representativeness -Loss Aversion -Overconfidence -Optimism -Herding -Investment decision	-Bivariate Pearson correlation (Pearson Product Moment) -One Sample t-test	All the factors have a significant impact on investment decisions.
19..	Bouteska and Regaieg (2020)	-Loss Aversion - Overconfidence - Market performance (ROA and Tobin's Q)	-Descriptive statistics -Pearson Correlation -Fixed-effect regression	Loss-aversion bias has a detrimental impact on how well businesses operate financially. Overconfidence has a good impact on the success of industrial enterprises in the market, but has a detrimental impact on service firms.
20.	Rajeshwaran (2020)	-Herding Variable -Heuristic Variable -Prospect Variable -Market Variable -Investment Performance	-Descriptive Statistics -Correlation Analysis -Regression Analysis	Loss aversion, regret aversion, market, and Herding variables are negatively related to investment performance, whereas positive relation exists between heuristic and investment performance.

21.	Mahmood et al. (2020)	-Heuristic -Prospect -Market -Herding -Financial Literacy -Investment Performance	-Confirmatory Factor Analysis -SEM (AMOS)	Prospect and herding have a positive impact on investment performance, whereas market variables and heuristics have a negative impact. Financial literacy reduced the association between herding variables and investment decisions while increasing the relationship between behavioral factors (prospect, market, heuristic) and investment decisions.
22.	Akinkoye and Bankole (2020)	-Loss aversion -Overconfidence -Regret aversion -Herding -Status Quo -Self-control -Investment Decision	-Percentage -Logistic Regression	Overconfidence and regret aversion had a significant negative impact whereas, loss aversion and herding had a significant positive impact on investment decisions.
23.	Lather, Jain, and Anand (2020)	-Locus of control -Emotional Biases -Cognitive Biases	-EFA -Mean Square -F-test	Investors who scored high on individual control were more prone to behavioral biases.
24.	Kunwar (2021)	-Prospect -Heuristics -Market -Herding -Investment performance	-EFA -CFA -Correlation analysis	Investors in Nepal had behavioral biases such as heuristics, prospects, market factors, and herding impact. Heuristics and market conditions have the greatest impact on investor performance. Heuristic actions have the greatest and most positive impact on investing performance. Furthermore, the findings revealed that imitating the herd and prospect does not result in enhanced investment performance.

2.1.2 Research Gap

Upon the empirical review, it can be noted that behavioral factors have been extensively studied in the international market and only a handful of research can be found in the context of the Nepalese stock market. Among this handful of research are studies conducted by Kunwar (2021) and Silwal and Bajjracharya (2021), but only 203 and 167 investors respectively were considered as the sample for their study. In addition, these studies were conducted during a bullish cycle in the Nepalese stock market were experienced. Furthermore, from the methodological perspective, most of the previous researchers used first-generation data analysis tools for their study. However, most of

the recent studies have employed second-generation data analysis tools and methods such as CB-SEM and PLS-SEM for examining complex relationships. Moreover, a comprehensive study of the dimensions of emotional biases and their impact on the investment performance of retail investors is not yet done. Thus, this study attempts to examine the same with the further addition of an internal locus of control as a moderator.

2.2 Theoretical Framework

The purpose of this study was to examine the effects of emotional biases on retail investors' investing performance. The investment performance is the dependent variable and the independent variables are loss aversion, self-control, regret aversion, overconfidence, and herding bias, with an internal locus of control as moderating variable. The theoretical framework of this study is adapted from the study of Luong and Ha (2011) and Akinkoye and Bankole (2020). The locus of control as moderating variable has been taken by considering studies by Rasheed et al. (2018) and Dangol and Manandhar (2020) among other studies. The influence of behavioral elements on investment decision-making and performance has been examined by the researchers in their study. They also evaluated the influence of behavioral variables on investing choices by synthesizing the respondents' evaluations of influence degrees and examined the impact of behavioral factors on investment performance by using SEM (Structural Equation Modeling). In this research, changes have been made in the theoretical framework per the research objectives.

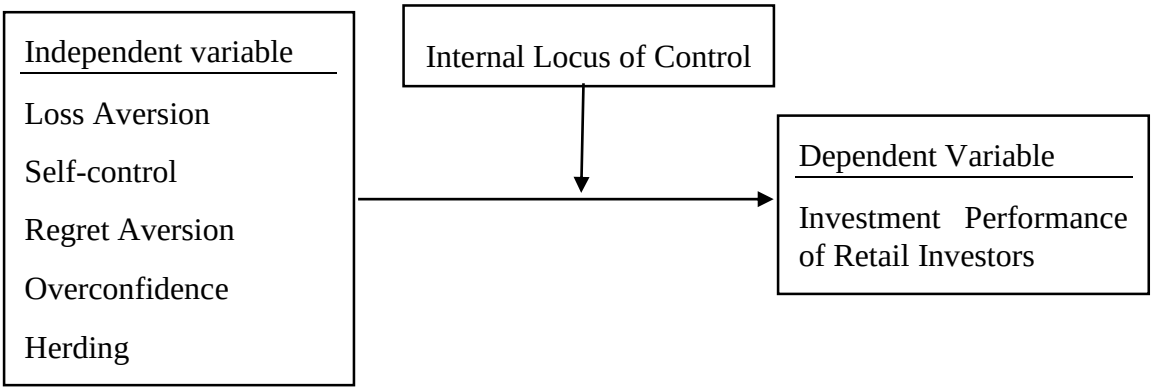

Figure 1 Theoretical Framework (Source: Luong & Ha, 201; Akinkoye & Bankole 2020)

Chapter III

Research Methods

This chapter presents the methodologies used in this research to meet the objectives of the study. It shows the overall research design in detail that has been adopted by the researcher. This chapter is structured into research design, population and sample, sources and methods of data collection, instrumentation, and data analysis.

3.1 Research Design

Based on the objective to explore the influence of emotional biases on retail investors' investment performance with moderating role of the internal locus of control, the researcher has carried out a quantitative cross-sectional research design. In a cross-sectional design, data is collected and analyzed from several cases at a single point in time. After then, the patent of association is analyzed utilizing the quantitative or measurable data that has been acquired (Saunders et al., 2009). Descriptive research was used to describe emotional biases that affect the investment performance of retail investors. Similarly, a causal research design has been implemented to test the degree of impact of those independent variables on the dependent variable. To help the reader understand the precise relationship between the variables, it offers a model.

3.2 Population and Sample

All retail investors who trade on the secondary market and are older than 17 are included in the study's population. Since the population size is unknown, the sample size is based on the sample required to estimate a proportion with an approximate 95% confidence level that generates a sample size of 384 (Godden, 2004). However, data were collected from 391 retail investors satisfying the sampling adequacy.

Further, the convenient sampling technique has been used in the study. Students typically choose it since it is affordable, simple to use, and has a high response rate compared to other sample techniques (Ackoff, 1953). Convenience sampling alone, however, cannot offer a representative sample due to possible estimate bias, hence the findings cannot be extended to the entire population.

3.3 Sources and methods of data collection

The research has adopted the primary method of data collection. The data has been collected by distributing a structured questionnaire to 500 retail investors through both

online as well as physical mediums. However, out of 500 respondents, 391 responded to the questionnaire which shows a response rate of 78.2 per cent. 270 responses were collected through an online medium after the questions were developed with the help of Google Forms and 121 responses were collected with the help of printed questionnaires.

3.4 Instrumentation

Four major sections made up the questionnaire. Eight items in the first section, measured on nominal and ordinal scales, collected demographic information from respondents. The second section comprises 25 items seven-point Likert scale to measure independent variables (Emotional Biases) adapted from the scale developed by Nada (2013) and Ritika and Kishor (2020) which consists of five dimensions to the Emotional biases. Some of the items were reverse scored. The third section consisted of eight items and seven points Likert scale, relating to the measurement of internal locus of control in investors adapted from Rasheed et al. (2018). The last section consists of five items (a seven-point Likert scale), to measure investment performance adapted from Siraji (2019) who has developed an attitudinal scale for investment performance based on risk, return, and satisfaction.

3.5 Data Analysis

First, the collected data has been coded through MS-Excel and later analyzed through IBM SPSS and Smart PLS. The study used IBM SPSS to perform descriptive analysis to assess the emotional biases among retail investors. Similarly, the normality of data has been analyzed through Shapiro-Wilk and Kolmogorov-Smirnov test using IBM SPSS.

Furthermore, the study employed structural equation modelling (SEM) because of its ability to develop complex path models and run them simultaneously. Moreover, partial least square (PLS-SEM) is utilized in the study since the main goal is to analyze the relationship, direction, and strength of variables, and PLS-SEM is an appropriate method. Comparing PLS-SEM to CB-SEM, researchers gain from the latter's higher statistical power (Reinartz et al., 2009; Hair et al., 2017 which increases the likelihood that connections will be recognized as significant (Sarstedt & Mooi, 2019). Moreover, When the goal is to advance theoretical ideas and the study is meant to anticipate, the application of PLS is pertinent (Hair et al., 2012).

The PLS-SEM consists of analyzing the measurement models, assessing the structural models and finally assessing the path models (Hair et al., 2014). As per Hair et al. (2019), the requirements for a reflective measurement model are the following:

i. Outer Loadings must be equal to or greater than 0.7.
ii. Internal Consistency reliability should be assessed through Cronbach alpha and composite reliability whose minimum threshold is 0.70 and should not exceed 0.95.
iii. Average Variance Extracted (AVE) measures the convergent validity which should be greater than or equal to 0.5.
iv. Heterotrait-Monotrait ratio (HTMT), which assesses discriminant validity, requires a value of less than 0.90 for conceptually identical constructs and less than 0.85 for conceptually distinct constructs.

To assess the structural model, the coefficient of determination (R^2), as well as the statistical significance and relevance of the path coefficient, is to be considered (Hair et al., 2019). Similarly, collinearity must be examined since the coefficient of structural models for relationships between constructs is produced by estimating a series of regressions. For such, Variance Inflation Factor (VIF) criterion is used which ideally should be closer to 3 or lower.

Moreover. bootstrapping is used to evaluate the statistical significance and relevance of the path coefficient. Path coefficient values fall between -1 and +1, signifying respectively, a strong negative link and a strong positive relationship.

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Chapter IV

Analysis and Results

This chapter presents the statistical data analysis, presentation and interpretation of the results. In the first part, the socio-demographic profile of the respondents is analyzed to have an overview of the surveyed sample. In the second part, descriptive statistics of the latent variable are examined. Then the measurement and structural model assessment is done and the hypothesis is tested.

4.1 Demographic Profile of the Respondents

From more than 450 questionnaires distributed to retail investors through the mail, social media, and printed forms, 391 respondents are reported, so the response rate for the survey is higher than 85%. The 391 sample respondents' demographics, including their gender, age group, academic qualification, average monthly income, stock market experience, course attended on the stock market, the total amount of investment, and purpose of investment are exhibited in Table 2, Figure 2, 3, and 4.

Table 2,
Demographic Profile

Demographic Characteristics		Frequency	Percent
Gender	Male	211	54
	Female	180	46
Age	18-25 years	162	41
	26-35 years	146	37
	36-46 years	50	13
	46 & above	33	9
Academic Qualification	SEE & below	8	2
	Intermediate (+2)	51	13
	Bachelors	119	30
	Masters	192	49
	M. Phil./Ph.D.	21	6
Average Monthly Income	Below Rs. 50,000	220	56
	Rs. 50,000 – Rs. 100,000	104	26
	Rs. 100,001 – Rs. 150,000	54	17
	Rs. 150,001 – Rs. 200,000	7	2
	Above Rs. 200,000	6	2

Out of 391 respondents, the number of male and female investors is 211 (54%) and 180 (46%) respectively. This indicates the active participation of both male and female investors in the Nepalese Stock Market. Thus, gender bias is less of an issue in this study. 162 respondents (41%) are between the ages of 18 and 25; 146 respondents (37%) are between the ages of 26 and 35; 36 to 45 respondents (13%) are next, and the final 9% of respondents are over the age of 46. This demonstrates the significant share of young adult retail investors who participate in the secondary market, and the study strongly reflects the investment behavior of these individuals. Similarly, academic qualification has been separated into four different segments. The sample has a sizable fraction of investors with a Master's degree (49% of the respondents), followed by 30% of the respondents with a Bachelor's degree, 13% of the respondents with a high school degree, 6% of the respondents with M.Phil./Ph.D., and only 2% of the respondents with SEE qualification & below. This indicates the presence of academically sound, educated, and literate investors thereby enabling them to intelligently respond to the questions. The majority of the investors (56% of the respondents) earn below Rs. 50,000 either from employment, share trade, or family income. This is followed by 26% of the investors with monthly income from Rs. 50,000 – Rs. 100,000, 14% of the respondent with monthly income ranging from Rs. 100,000 – Rs. 150,000, and investors earning monthly income from Rs. 150,000 – Rs. 200,000 and Above Rs. 200,000 is equal at 2%. Since the majority of the investors are young (18-25), their income of below Rs. 50,000 is justifiable in the study.

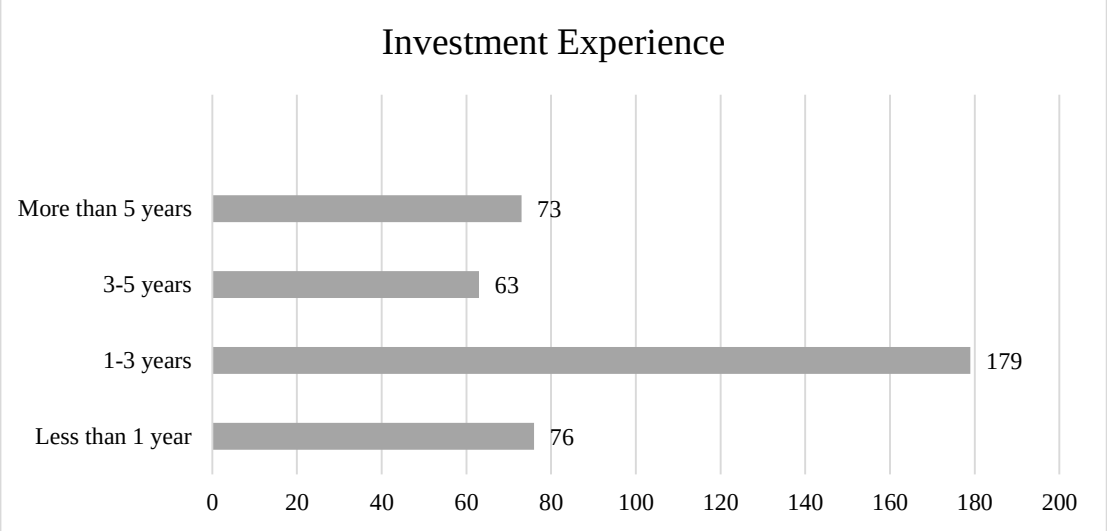

Figure 2 Investment Experience in Stock Market

Figure 2 shows that a significant portion of the sample consists of individuals who have participated in the stock market for 1-3 years (46% of the respondents) followed by 19% of the investors having investment experience of less than 1 year as well as more than 5 years, and 16% of the respondents have attended more than 5 years.

Figure 3 Proportion of respondents attending Stock Market course

Figure 3 shows that 72% of retail investors have not participated in taken any formal stock market trainings/courses and 28% of the investors account for those who have not taken any training or courses on the stock market.

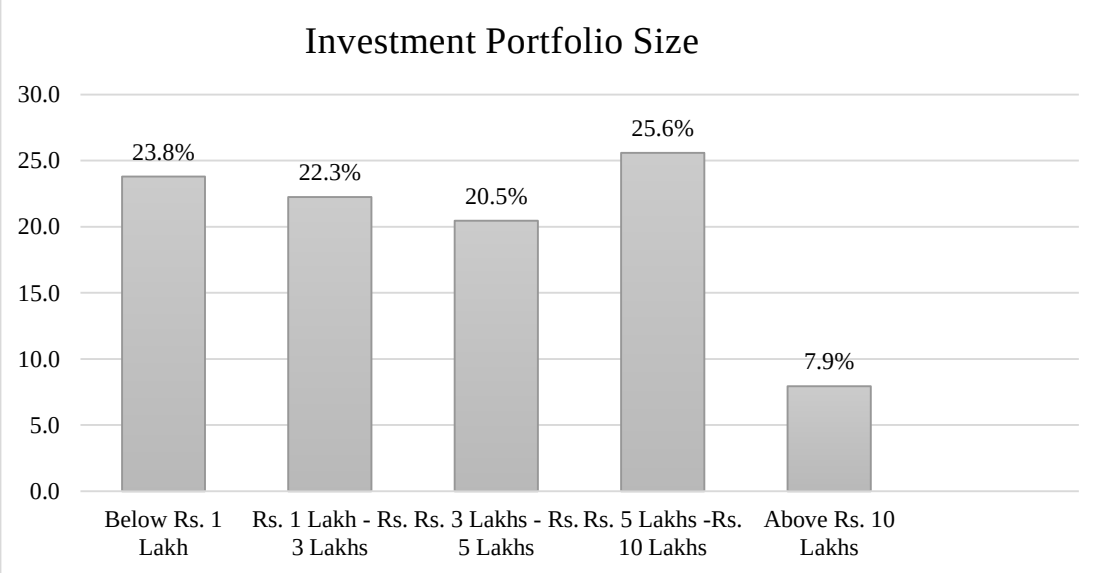

Figure 4 Investment Portfolio Size

Figure 4 shows that the respondents' investment ranges span from less than 100,000 (NRs.) to more than 10,00,000 (NRs.). A higher percentage (25.6% of the respondents) of individual investors in the surveyed sample have invested Rs. 5,00,000 to Rs. 10,00.000. Similarly, 23.8% respondents investing below Rs. 100,000, 22.3% investing from 100,000 to 300,000, 20.5% investing from Rs. 300,000 to Rs. 500,000 and only 7.9% investing above Rs. 10,00,000.

In sum, respondents from the survey are the investors who mostly fall in the age group of18 to 25 and 26 to 35, usually, are the investors who had entered the market during COVID 19 pandemic, a bull cycle of NEPSE where the increasing trend of issuing IPO was seen. Similarly, NEPSE also faced a bear cycle after the pandemic resulting lower proportion of investors with a portfolio size of above Rs.10 Lakhs.

4.2 Status of Emotional Biases, Locus of Control, and Investment Performance

This part deals with descriptive analysis of the data acquired through the questionnaires. It includes the computation of statistical measures such as mean and standard deviation. Such measures quantify and describe the characteristics of the data collected, thus, summarizing the sample.

4.2.1 Descriptive analysis of Loss Aversion bias

Table 3

Descriptive analysis of Loss Aversion

Code	Item	Mean	S.D.
LA1	I never sell a loss-making investment in the hope that it would someday improve.	4.85	1.87
LA2	A 1,000 rupee loss hurts more than a 1,000 rupee gain in happiness.	5.14	1.73
LA3	I avoid making decisions out of fear of suffering losses.	4.05	1.65
LA4	Large price declines in my invested stocks make me anxious.	4.70	1.68
LA5	When the market is performing poorly, I will not raise my investment.	4.48	1.85
LA	Overall Score	4.64	1.39

Table 3 exhibits the descriptive statistics of the items for loss aversion. Five items were adapted to measure the loss aversion bias in retail investors. All the items have a mean value of more than 4 indicating the agreement to the biases and presence of loss aversion among retail investors of Nepal. Individual investors suffer more from pain rather than the happiness of equal gain, as measured by LA2 at a mean of 5.14. Similarly, LA1 has the highest standard deviation (1.87) indicating the maximum deviation of responses from the respondents.

4.2.2 Descriptive Analysis of Self-control bias

Table 4

Descriptive analysis of Self-control

Code	Items	Mean	S.D.
SC1	Once I make a decision, I can easily stick to difficult saving goals.*	4.43	1.497
SC2	Maintaining my savings objectives is quite challenging for me.	4.32	1.522
SC3	I am successful in meeting my savings and investing objectives.*	4.68	1.487
SC4	I lack the discipline needed to achieve my long-term financial goals.	4.40	1.603
SC5	Saving for the future is less important to me than fulfilling my daily obligations.	4.29	1.778
SC	Overall Score	4.43	1.29

*Items are reverse coded

Table 4 shows that all the items have a mean score of more than 4 indicating the presence of self-control bias and moderate impact on investment decisions of retail investors of Nepal. Five items were used to measure self-control bias and two of them were reverse coded. The highest mean was recorded for SC3 at 4.68 indicating the disagreement with the item. The lowest mean of 4.29 is shown by the table3 for SC5 but still exhibits agreement with the item, but the highest standard deviation is also recorded in the same item. Retail investors are not able to achieve their saving and investment goals and the reason may be the bearish phase of the Nepal stock market.

4.2.3 Descriptive analysis of Regret Aversion bias

Table 5
Descriptive analysis of Regret Aversion

Code	Items	Mean	S.D.
RA1	In light of my prior bad choices, I revised my investment strategy.	5.21	1.356
RA2	Holding losing investments for a longer period causes greater pain than selling winning ones.	5.24	1.406
RA3	I started taking risks since I had previously profited.	4.77	1.434
RA4	I became risk-averse as a result of previous losses.	4.76	1.254
RA5	I regret missing out on good investment opportunities.	5.60	1.436
RA	Overall Score	5.12	1.08

Table 5 illustrates the descriptive statistics of the items for regret aversion. Five items were used to measure regret aversion bias among retail investors of Nepal. The mean of all the items scores above 4 and three of the items i.e. RA1, RA2, and RA5 all score above 5 indicating a moderate impact of regret aversion on investment decisions. It shows that retail investors make an error(bias) while averting feelings of regret.

4.2.4 Descriptive Analysis of Overconfidence bias

Table 6
Descriptive analysis of Overconfidence

Code	Items	Mean	SD
OC1	I cannot foresee the future pricing of my investments better than others.*	4.11	1.513
OC2	I am always positive about the future profits of my assets.	5.04	1.365
OC3	I am confident in my capacity to make better investment selections than others.	4.64	1.388
OC4	I have complete knowledge of various types of investments	3.90	1.486
OC5	I have the ability to select stocks whose performance will outperform the market.	4.51	1.443
OC	Overall Score	4.44	1.09

*Item is reverse coded

Table 6 exhibits the descriptive statistics of the items for overconfidence. Five items were used to measure the presence of overconfidence bias among retail investors. OC5

has a mean score of 3.90 indicating that retail investors do not believe they have a complete understanding of equity investment. Similarly, investors are optimistic about their investment decision. OC1 is reverse coded where a mean score of 4.11 signifies the disagreement towards the statement. Retail investors are highly confident in their investment selection and analysis skills.

4.2.5 Descriptive Analysis of Herding Bias

Table 7
Descriptive analysis of Herding

Code	Items	Mean	S.D.
H1	When buying or selling securities, I watch social blogs and forums.	3.81	1.794
H2	I follow others in my investment decisions.	3.75	1.621
H3	If other investors suffered the same loss as me when I invest and lose money, my disappointment is lessened.	4.22	1.729
H4	I favor making investments in the securities that other investors are purchasing.	4.16	1.443
H5	After hearing different opinions from analysts, I changed my decision about investing in security.	4.21	1.556
H	Overall Score	4.03	1.28

Table 7 indicates that retail investors at NEPSE highly follow others and prefer to buy stocks which have a high buy rate. Similarly, the conflicting view of experts regarding stock investment tends to change retail investors' opinions. Likewise, the H1 and H2 score at a mean value of less than 4 indicates disagreement with the statement and has a moderately low impact on investment decisions. The highest mean score is recorded for H3 implying that investors moderately feel less disappointed when other investors also have suffered losses.

4.2.6 Descriptive Analysis of Internal Locus of Control

Table 8
Descriptive analysis of Internal Locus of Control

Code	Items	Mean	S.D.
LC1	The key to being wealthy is careful investing.	5.75	1.438
LC2	People suffer investment losses due to their own idleness.	5.20	1.314
LC3	My abilities determine whether or not I receive the desired returns on my investment.	5.05	1.511
LC4	People who take care of their investments will remain prosperous in the long run.	5.66	1.302
LC5	I virtually always succeed in executing my financial strategies.	5.15	1.325
LC6	The outcome of my investments is something I can very much predict.	4.68	1.358
LC7	Usually, I can safeguard my investment interests.	4.82	1.276
LC8	If I get anything I want, it's typically because I strived for it.	5.13	1.394
LC	Overall Score	5.18	0.92

Table 8 depicts the descriptive analysis of the items for the internal locus of control which used eight items for measurement. All the items score above the mean value of five except LC6 and LC7, but still indicate agreement with the statement. Retail investors of Nepal believe that the intended outcome (gain/loss) in their investment is the result of their own internal control orientation and effort. The maximum mean value was recorded for LC4 indicating investor sacrifice of time and effort in present will lead to profitable returns in the future. Whereas, item LC3 has the highest standard deviation indicating the maximum deviation of responses from the respondent.

4.2.7 Investment Performance Scores

Table 9
Descriptive analysis of Investment Performance

	Items	Mean	S.D.
IP1	My stock investment has shown higher returns and cash flow.	3.05	1.409
IP2	I am satisfied with my investing selections (including stock selection, trading and deciding the stock volumes).	3.21	1.424
IP3	My return rate is on par with or greater than the market's average return rate.	3.40	1.362
IP4	My recent stock investment's return rate fulfils my expectations.	3.72	1.564
IP5	My stock investment is quite secure.	3.50	1.505
IP	Overall Score	3.378	1.08

Table 9 shows that investment results have not satisfied the investment expectation of retail investors in Nepal. The investment portfolio has shown decreased return and they do believe their stock investment has a moderately low level of safety. Similarly, retail investors' rate of return is moderately low than the average rate of return.

4.3 Normality Test

Table 10
Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
LA	.148	391	.000	.919	391	.000
SC	.156	391	.000	.937	391	.000
RA	.168	391	.000	.885	391	.000
OC	.097	391	.000	.978	391	.000
H	.077	391	.000	.974	391	.000
LC	.116	391	.000	.944	391	.000
IP	.090	391	.000	.979	391	.000

a. Lilliefors Significance Correction

Table 10 exhibits the data's normality as determined by the Kolmogorov-Smirnov test and Shapiro-Wilk test. The result of the analysis shows that the p-value of all the scales used in the study is less than 0.05, and the null hypothesis of data normality is rejected. Hence, the use of PLS-SEM is even more justifiable.

4.4 Measurement Model Assessment

The measurement model utilizes the outer models to evaluate the relationship between the items and the constructs they represent (Hair et al., 2014). Based on the examination of the measurement model, the study's construct quality is evaluated. Confirmatory Factor Analysis was utilized in the study, and outer model specifications were examined using the model's internal reliability and convergent validity test.

4.4.1 Factor Loadings, Construct Reliability, and Validity

The extent to which each of the items in the correlation matrix correlates given the principal component is referred to as factor loading. The range of factor loadings is -1.0 to +1.0, with greater absolute values suggesting a stronger association between the item and the underlying factor. As per Hair et al. (2019), the outer loadings should be equal to or greater than 0.7, although social science studies usually obtain lower outer loadings (<0.70). Instead of merely eliminating indicators, their effects on composite reliability and convergent validity should be examined. Only if removing an item (0.40 <outerloading<0.70) raises composite reliability or AVE above the threshold level should it be removed (Hair et al., 2016). LC5, LC6, LC7, LC8, IP4, and IP5 were eliminated from this analysis because doing so significantly increased the composite reliability and AVE.

Cronbach's alpha and composite reliability, as per Hair et al. (2019) should be above 0.70 and not exceed 0.95, were used to assess reliability. The latent variables' composite reliability and Cronbach alpha both meet the requirements. As a result, the construct reliability is established.

Convergent validity describes how well different measures of the same notion agree with one another. The idea is that if two or more items are a valid measure of concept, they should converge or co-vary if they are measuring the same construct (Hair et al., 2014). The AVE scored above the threshold value of 0.50, thus convergent validity was established (Hair et al., 2019). in Table11 shows the results of internal reliability and convergent validity.

Table 11

Quality Criterion for reflective model assessments

Construct	Items	Loadings	Cronbach's Alpha	CR	AVE
Loss Aversion	LA1	0.839			
	LA2	0.81			
	LA3	0.737	0.855	0.893	0.626
	LA4	0.767			
	LA5	0.798			
Self-Control	SC1	0.786			
	SC2	0.873			
	SC3	0.73	0.874	0.907	0.661
	SC4	0.828			
	SC5	0.842			
Regret Aversion	RA1	0.792			
	RA2	0.772			
	RA3	0.768	0.841	0.887	0.611
	RA4	0.774			
	RA5	0.803			
Overconfidence	OC1	0.703			
	OC2	0.753			
	OC3	0.782	0.813	0.868	0.569
	OC4	0.771			
	OC5	0.761			
Herding	H1	0.79			
	H2	0.799			
	H3	0.798	0.846	0.887	0.61
	H4	0.741			
	H5	0.778			
Locus of Control	LC1	0.821			
	LC2	0.783	0.789	0.863	0.612
	LC3	0.785			
	LC4	0.739			
Investment Performance	IP1	0.822			
	IP2	0.807	0.749	0.854	0.661
	IP3	0.81			

4.4.2 Discriminant Validity

The extent to which measures of constructs are different from other constructs is known as discriminant validity (Hair et al., 2014). The idea is that if two or more constructs/concepts are unique, then the measures of each should not highly correlate. Thus, ensuring the reflective construct in the PLS path model has the strongest relation with its own indicators (Hair et al., 2022). The following three are the most practiced criteria for establishing discriminant validity:

i. Cross-Loadings

The discriminant validity is established when a construct's indicator loading is larger than all of its cross-loadings. In this study, the loading of each indicator is greater than all of its cross-loadings thereby suggesting the establishment of discriminant validity. The findings of cross-loading are depicted in Table 12.

Table 12

Cross Loadings

	LA	SC	RA	OC	H	LC	IP
LA1	**0.839**	0.023	0.112	0.09	0.158	0.118	-0.123
LA2	**0.81**	-0.084	0.125	0.022	0.161	0.167	-0.137
LA3	**0.737**	-0.016	0.068	-0.019	0.13	-0.015	-0.108
LA4	**0.767**	0.009	0.121	-0.085	0.292	0.062	-0.047
LA5	**0.798**	0.092	0.128	0.015	0.244	0.092	-0.093
SC1	0.086	**0.786**	0.206	0.22	-0.012	0.118	-0.231
SC2	-0.045	**0.873**	0.034	0.134	-0.068	-0.014	-0.191
SC3	0.04	**0.73**	0.053	0.215	-0.036	0.042	-0.128
SC4	-0.106	**0.828**	0.061	0.174	-0.06	0.066	-0.144
SC5	-0.024	**0.842**	0.049	0.122	-0.12	0.023	-0.138
RA1	0.059	0.113	**0.792**	0.211	0.283	0.382	-0.289
RA2	0.222	0.115	**0.772**	0.163	0.337	0.352	-0.293
RA3	0.057	0.123	**0.768**	0.244	0.224	0.286	-0.328
RA4	0.074	0.04	**0.774**	0.345	0.235	0.439	-0.312
RA5	0.139	0.046	**0.803**	0.275	0.271	0.451	-0.265
OC1	-0.016	0.147	0.186	**0.703**	-0.036	0.118	-0.223
OC2	0.011	0.169	0.322	**0.753**	0.016	0.45	-0.364
OC3	0.019	0.132	0.246	**0.782**	-0.073	0.255	-0.283
OC4	0.114	0.103	0.245	**0.771**	-0.065	0.29	-0.349
OC5	-0.061	0.266	0.173	**0.761**	-0.016	0.233	-0.304
H1	0.212	0.012	0.288	0.007	**0.79**	0.145	-0.082
H2	0.161	-0.061	0.188	-0.016	**0.799**	0.086	-0.054
H3	0.206	-0.107	0.262	-0.08	**0.798**	0.176	-0.097
H4	0.129	-0.048	0.249	-0.048	**0.741**	0.069	-0.043
H5	0.14	-0.05	0.347	-0.023	**0.778**	0.109	-0.06
LC1	0.096	0.077	0.407	0.302	0.161	**0.821**	-0.359
LC2	0.064	0.011	0.304	0.295	0.074	**0.783**	-0.278
LC3	0.061	0.095	0.376	0.322	0.16	**0.785**	-0.357
LC4	0.145	-0.001	0.422	0.257	0.103	**0.739**	-0.313
IP1	-0.216	-0.258	-0.389	-0.314	-0.132	-0.353	**0.822**
IP2	-0.026	-0.11	-0.228	-0.223	-0.019	-0.305	**0.807**
IP3	-0.066	-0.134	-0.287	-0.438	-0.054	-0.359	**0.81**

ii. Fornell-Lacker Criterion

Fornell and Lacker (1981) proposed developed this criterion to measure discriminant validity The correlations of latent variables are compared to the square root of AVE. A construct's square root of AVE has to be higher than its correlation with every other construct. The correlation with other constructs is lower than the square root of AVE (Bold and Italic), as seen in Table 13.

Table 13
Fornell-Lacker Criterion

	H	IP	LC	LA	OC	RA	SC
H	***0.781***						
IP	-0.093	***0.813***					
LC	0.164	-0.422	***0.782***				
LA	0.227	-0.139	0.117	***0.791***			
OC	-0.044	-0.413	0.377	0.023	***0.755***		
RA	0.344	-0.383	0.486	0.138	0.318	***0.782***	
SC	-0.067	-0.216	0.063	-0.003	0.216	0.113	***0.813***

iii. Heterotrait-Monotrait Ratio (HTMT)

Henseler, Ringle, and Sarstedt (2015) used simulation experiments to show that the Heterotrait-Monotrait (HTMT) ratio, which they devised, is the best way to detect a lack of discriminant validity. However, the HTMT criterion has been debated; Kline (2011) indicated a threshold of 0.85 or less, whereas Henseler et al. (2015) suggested a more liberal cut-off point of 0.90 or less for discriminant validity.

Table 14

Heterotrait-Monotrait Ratio (HTMT)

	H	IP	LC	LA	OC	RA	SC
H							
IP	0.115 $CI_{.95}$ (0.053;0.167)						
LC	0.177 $CI_{.95}$ (0.092;0.283)	0.536 $CI_{.95}$ (0.383;0.661)					
LA	0.278 $CI_{.95}$ (0.173;0.389)	0.162 $CI_{.95}$ (0.094;0.215)	0.156 $CI_{.95}$ (0.092;0.24)				
OC	0.082 $CI_{.95}$ (0.05;0.09)	0.497 $CI_{.95}$ (0.36;0.625)	0.443 $CI_{.95}$ (0.337-0.547)	0.115 $CI_{.95}$ (0.069;0.129)			
RA	0.403 $CI_{.95}$ (0.296;0.504)	0.462 $CI_{.95}$ (0.343;0.577)	0.595 $CI_{.95}$ (0.479;0.7)	0.173 $CI_{.95}$ (0.107;0.263)	0.373 $CI_{.95}$ (0.237;0.507)		
SC	0.1 $CI_{.95}$ (0.052;0.158)	0.241 $CI_{.95}$ (0.13;0.358)	0.094 $CI_{.95}$ (0.045;0.12)	0.113 $CI_{.95}$ (0.076;0.126)	0.253 $CI_{.95}$ (0.15;0.368)	0.123 $CI_{.95}$ (0.072;0.178)	

4.5 Structural Model Assessment

The evaluation of the structural model is the subsequent phase in PLS-SEM once the constructs' validity and reliability are confirmed. This section examines the connection between the constructs and predictive relevance (Hair et al., 2017). Ensuring that there are no collinearity issues is the first step, and then the significance and relevance of the structural model relationship is evaluated. Third, the level of R^2 is assessed.

4.5.1 Collinearity Test

The Variance inflation factor (VIF) measures the collinearity issues in the model. As per Hair et al. (2021), the VIF value should be lower than 5 to establish no collinearity assessed. Table 15 shows the inner VIF values in the current study, where all the construct's VIF is less than 5, indicating the absence of collinearity among predictors.

Table 15

Collinearity Statistics (VIF) for Indicators

	VIF
Herding	1.223
Locus of Control	1.42
Loss Aversion	1.063
Overconfidence	1.279
Regret Aversion	1.526
Self-Control	1.06

4.5.2 Path Coefficients

The process was conducted with bootstrapping process with recommended 10,000 bootstraps to find the required p-values and confidence interval for the hypothesis framed in the study (Hair et al., 2022). Figure 5 presents the structural model assessment with moderating variable.

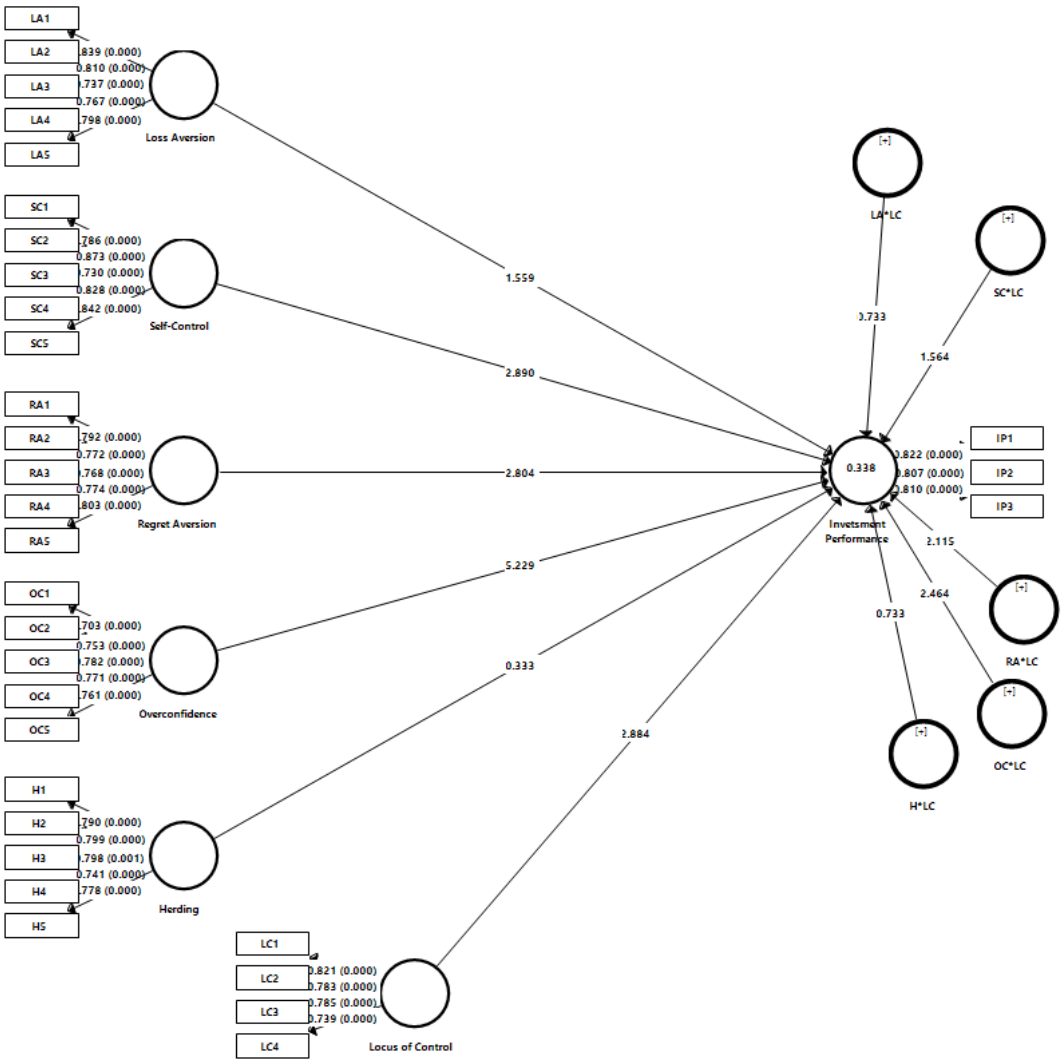

Figure 5 Structural model assessment with moderating variables

A confidence interval difference from zero indicates a significant relationship. In this study 10,000 resamples generate 95% confidence intervals as presented in Table 16, which summarizes hypothesis testing results.

- H1 evaluates whether Loss aversion bias has a significant negative impact on investment performance. The results revealed that LA has an insignificant negative impact on IP (β = -0.076, t = 1.559, p>0.05), and there is a presence of positive and negative confidence intervals. Hence, H1 was not supported.

- H2 evaluates whether the Self-control bias has a significant negative impact on investment performance. The result showed that SC significantly had a negative impact on IP (β = -0.133, t = 2.89, p<0.05), and there is the presence of negative confidence

intervals, where the beta coefficient lies between the upper and lower confidence intervals. Hence, H2 was supported.

- H3 evaluates whether Regret aversion bias significantly had a negative impact on investment performance. The result showed that RA has a significant negative impact on IP (β = -0.149, t = 2.804, $p<0.05$), and there is the presence of negative confidence intervals, where the beta coefficient lies between the upper and lower confidence intervals. Hence, H3 was supported.

-H4 evaluates whether Overconfidence bias has a significant negative impact on investment performance. The result showed that OC significantly had a negative impact on IP (β = -0.274, t = 5.299, $p<0.05$), and there is the presence of negative confidence intervals, where the beta coefficient lies between the upper and lower confidence intervals. Hence, H4 was supported.

- H5 evaluates whether Herding bias has a significant negative impact on investment performance. The result revealed that H has an insignificant positive impact on IP (β = -0.018, t = 0.333, $p>0.05$), and there is a presence of both positive and negative confidence intervals. Hence, H5 was not supported.

- H6 evaluates whether the Internal locus of control significantly moderates the relationship between loss aversion bias and investment performance. The result revealed that LC insignificantly moderates the relationship between LA and IP (β = 0.032, t = 0.733, $p>0.05$), and there is a presence of both positive and negative confidence intervals. Hence, H6 was not supported.

- H7 evaluates whether the Internal locus of control significantly moderates the relationship between self-control bias and investment performance. The result revealed that LC insignificantly moderates the relationship between SC and IP (β = 0.094, t = 1.564, $p>0.05$), and there is a presence of zero confidence interval. Hence, H7 was not supported

- H8 evaluates whether the Internal locus of control significantly moderates the relationship between regret aversion bias and investment performance. The result revealed that LC significantly moderates the relationship between RA and IP (β = -0.109, t = 2.115, $p<0.05$), and there is a presence of negative confidence intervals,

where the beta coefficient lies between the upper and lower confidence intervals. Hence, H8 was supported.

- H9 evaluates whether the Internal locus of control significantly moderates the relationship between overconfidence bias and investment performance. The result revealed that LC significantly moderates the relationship between OC and IP (β = 0.162, t = 2.464, $p<0.05$), and there is the presence of positive confidence intervals, where the beta coefficient lies between the upper and lower confidence intervals. Hence, H9 was supported.

- H10 evaluates whether the Internal locus of control significantly moderates the relationship between herding bias and investment performance. The result revealed that LC insignificantly moderates the relationship between H and IP ($\beta = 0.041$, t = 0.733, $p>0.05$), and there is the presence of both positive and negative confidence intervals. Hence, H10 was not supported.

Table 16.

Path Coefficients Assessment

	Path Relationships	Std. Beta	STDEV.	T Stat.	P Values	CI 5%	CI 95%	Decision
H1	LA -> IP	-0.076	0.049	1.559	0.06	-0.136	0.023	Not Supported
H2	SC -> IP	-0.133	0.046	2.89	0.002	-0.201	-0.05	Supported
H3	RA -> IP	-0.149	0.053	2.804	0.003	-0.243	-0.07	Supported
H4	OC -> IP	-0.274	0.052	5.229	0	-0.358	-0.185	Supported
H5	H -> IP	0.018	0.054	0.333	0.369	-0.046	0.146	Not Supported
H6	LA*LC -> IP	0.032	0.044	0.733	0.232	-0.042	0.1	Not Supported
H7	SC*LC -> IP	0.094	0.06	1.564	0.059	0	0.191	Not Supported
H8	RA*LC -> IP	-0.109	0.052	2.115	0.017	-0.191	-0.021	Supported
H9	OC*LC -> IP	0.162	0.066	2.464	0.007	0.065	0.277	Supported
H10	H*LC -> IP	0.041	0.055	0.733	0.232	-0.051	0.129	Not Supported

4.5.3 Models Predictive Capability

The coefficient of determination (R^2) was assessed to determine the model's predictive capability. The R^2 of endogenous construct investment performance was found at 33.8%. In behavioral science, R^2 value of 0.20 and above is regarded as high

(Rasoolimanesh et al., 2017). It means that 33.8% of the variance in Investment Performance can be attributed to the emotional biases of this model. Hence the predictive capability of the model is established.

Table 17

Coefficient of Determination of Structural Model

	R Square	R Square Adjusted
Investment Performance	0.338	0.319

4.5.4 Model Fit Assessment

In this study, SRMR is used to assess the goodness of the fit model. For PLS-SEM, Hair et al. (2014) presented SRMR as a goodness of fit metric that compares the observed correlation to the suggested correlation matrix of the model. Table 18 indicates that the model's SRMR value, which is 0.071 and is below the cutoff value of 0.08, has a good explanatory power (Henseler et al., 2016).

Table 18

Measure of Model Fit

	Saturated Model (SM)	Estimated Model (EM)
SRMR	0.071	0.071

4.6 Major Findings

The major findings of the study are as follows:

- Both males (54%) and females (46%) actively participate in the Nepalese stock market.
- A large number of young adult retail investors (78%) invest in the secondary stock market.
- Academically sound, educated, and literate investors (85% have a Bachelor's degree or more) are present, allowing them to intelligently respond to questions.
- Most of the retail investors have not taken any formal stock market training/courses (72%) and utilize their experiential knowledge to make an investment decision.

- All five dimensions of emotional biases had a mean value above the neutral point of 4, indicating the presence of loss aversion, self-control, regret aversion, overconfidence, and herding biases in Nepalese retail investors.
- Among the emotional biases, regret aversion scored the highest mean (5.12) indicating they fear making decisions which they later regret.
- Similarly, the majority of investors believe they are responsible for the outcomes they gain as indicated by the internal Locus of control mean score of 5.18.
- Furthermore, investment result has not demonstrated increased return (Mean = 3.05 for retail investors. They are not able to achieve a return rate above the market rate (Mean=3.40). It can be attributed to the recent bearish cycle in the Nepalese stock market for below-average investment performance.
- Self-control bias has a significant negative effect on the investment performance of retail investors ($\beta = -0.133$). It means those who lack self-control are not able to get returns that meet their expectations.
- Regret aversion bias has a significant effect on the investment performance of retail investors (($\beta = -0.149$) It indicates that those who make an irrational decision to minimize regret pain are not able to get returns that meet their expectations.
- Overconfidence bias has a significant negative effect on investment performance ($\beta = -0.274$).
- Locus of control (internal) significantly strengthens the negative association between regret aversion bias and investment performance of retail investors.
- Whereas, locus of control (internal) significantly weakens the negative association between overconfidence bias and investment performance.
- The overconfidence bias had the strongest negative impact on investment performance($\beta=-0.274$), followed by regret aversion ($\beta=-0.149$), and self-control ($\beta=-0.133$). Similarly, loss aversion ($\beta =-0.076$) had a negative impact on investment, however, herding had a positive impact on investment performance but both were statistically insignificant.

Chapter V

Discussion, Conclusion, and Implications

This chapter discusses the findings obtained from the data analysis section (Chapter IV) and compares these with other literature findings highlighting the similarities and differences. In addition, this chapter also presents the conclusion and explains the implications of the research.

5.1 Discussion

The primary purpode of the study was to analyze the impact of emotional biases on the retail investors investment performance along with the moderation effect of internal locus of control. Various scholars were able to establish the relationship between behavioral factors and irrational investment decisions. Similarly, conflicting results are found evidencing the impact of behavioral factors on investment performance. Pompian (2006) segregated the behavioral biases into two: cognitive and emotional biases, on the same alignment emotional bias, was studied. Both the biases introduce irrational decision-making that can harm investment performance.

The findings of the study showed the presence of emotional biases among Nepalese retail investors which are supported by Nepalese literature (Awale et al., 2018; Risal & Khatiwada, 2019). Similarly, the empirical findings of the current study revealed that self-control bias has a significant negative impact on investment performance. The findings are similar to Riaz and Iqbal (2015), who found that Pakistani investors are biased both logically and emotionally which contributes to irrational investment decisions. Investors may overlook fundamental financial concepts like compound interest and averaging of cost, and other behavioral disciplines as a result of such bias, which can lead to an imbalance in asset allocation (Pompian, 2006). Furthermore, Lucks (2016) suggests that self-control bias increases framing effects, which can result in poor investment performance.

Similar findings indicated that regret aversion bias has a significant detrimental influence on investing success.These results are exactily in agreement with the resultsof Chen et al. (2004), Luong & Thu Ha (2011), Mahmood et al. (2016), Anum and Ameer (2017), Rajeshwaran (2020) and Akinkoye and Bankole (2020). Investors fear selling declining shares but are prepared to sell growing ones, demonstrating regret aversion. These practices have a detrimental impact on investment success (Luong &

Thu Ha, 2011; Rajeshwaran, 2020). Investors desire to prove their ability by profiting when the stock price rises. When the price is down, on the other hand, they do not want to loose, and hold on to the stocks, hoping that the trend would converse (Luong & Thu Ha, 2011). Kunwar (2021) and Silwal and Bajjracharya (2021) had similar findings and stated that following prospects does not result in improved performance since investors make hasty decisions that result in poor decisions.

Likewise, overconfidence bias was found to have a significantly negative influence on investment performance. It is congruent with Kengatharan and Kengatharan (2014), Mahmood et al. (2020), Bouteska and Regaieg (2020), and Akinkoye and Bankole (2020) findings. Overconfident investors over exaggerate their investment ability and skills, they think they have better information and undervalue market realities (Pompian, 2006), and hold riskier portfolios (Odean, 1998). Furthermore, overconfident investors trade much higher and are likely to sell their winners and hold their losers, which affects investment returns (Kim & Nofsinger, 2003). Thus, overconfident investors underestimate the downside risks and hold under-diversified portfolios which leads to poor investment performance over time.

Other studies' findings, on the other hand, contradict these conclusions. Overconfident investors trade significantly higher than reasonable investors, according to Luong & Thu Ha (2011), impacting trading volume, market depth, and wealth distribution (Allens & Evans, 2005). Because overconfidence is a common tendency (Allens & Evans, 2005), a larger number of transactions will almost certainly yield a better return than fewer transactions (Anderson et al., 2005).

However, in the case of loss aversion and herding, no significant impact on investment performance was found. A similar insignificant impact of loss aversion and herding was found in earlier research by Kengatharan and Kengatharan (2014) and Pratiwi et al. (2020) suggesting the insignificant effect of loss aversion and herding in the South-Asian nations such as Sri Lanka and Indonesia where economic fluctuations are rampant and equity market is still in the emerging trend.

Similarly, the Locus of control generally acts as a trait of internal or external control orientation and is a significant moderator as shown from various literature. When studying the link between behavioral biases and investing choices, Ikram (2016) provided the existence of locus of control as a moderator. Similar research work was

done by Rasheed et al. (2018) but provided conflicting results as compared to Ikram's work. On the same alignment, Dangol and Manandhar (2020) examined the moderating role of the internal locus of control between heuristics and investment decision-making.

The findings of the current study reveal that the association between regret aversion and investment performance is significantly moderated by locus of control (internal). Moreover, it significantly strengthens the negative relationship between regret aversion and investment performance. Regret implies culpability (Pompian, 2006), and investors who have a high internal locus of control feel dreadfully accountable for their misfortune or failure. This magnifies investors' commission and omission errors, resulting in more irrational investment decisions. Lather et al. (2020) reaffirm the findings revealing that high internal control orientation is more prone to regret aversion bias.

Similarly, this study also found that the association between overconfidence and investment performance is significantly moderated by locus of control (internal). Contrary to the above findings, the locus of control (internal) significantly weakens the negative association between overconfidence and investment performance. A higher internal locus of control makes investors perceive to appreciate the returns and gains more deeply (Arifin et al., 2018). Such investors became more responsible for managing their finance (Hery et al., 2021) and attempt to conduct rational financial management behavior (Perry & Morris, 2005) by reanalyzing their overestimated abilities, and skills and reconsidering theirs under diversified risky portfolios.

However, in the case of herding, loss aversion, and self-control, the relationship between these predictors and perceived investment performance is not moderated by locus of control(internal). The findings reaffirm the earlier findings of Rasheed et al. (2018) where locus of control(internal) had no moderating effect on the association between heuristics and irrational investment decisions. Moreover, in this study, there was no significant impact of loss aversion and herding on investment performance, and this might have disrupted the moderation relationship to gain significance.

5.2 Conclusion

This study sought to get a better understanding of the many mistakes that investors make and how they relate to their performance as investors in the Nepali stock market. Retail investors in Nepal exhibit emotional biases such loss aversion, self-control, regret aversion, overconfidence, and herding, which is in line with results from related research. Even though most Nepalese retail investors are educated; they are guided by their emotions, feelings, and sentiments which leads to intuitional errors while making decisions related to investment.

Similarly, hey think they can choose investments more effectively than others, outperforming the performance of the market. These thoughts and sentiments of confidence cause investors to act quickly and hastily without conducting thoughtful analysis. They feel the pain of mental regret higher than the pain of joy. Moreover, they find it difficult to stick to difficult saving objectives and are not able to achieve investment objectives. The recent bearish cycle of the Nepalese stock market might have induced less experienced investors to switch between different investment avenues resulting in frequent anxiety-filled buying and selling of losing and winning stocks respectively.

Among the emotional biases, certainty overconfidence has the greatest negative impact on investment performance, followed by self-control and regret aversion bias. Herding, however, has a very low positive influence on performance but is statistically insignificant. In contrast, loss aversion negatively impacts investment performance but again is statistically insignificant.

Furthermore, the degree of locus of control that Nepalese investors have influenced their investing behavior and performance. Thus, the moderation effect of internal locus of control between emotional biases and investment performance was assessed. Internal locus of control significantly strengthens the negative relationship between regret aversion and investment performance. Contrastingly, the negative correlation between overconfidence and investment success is greatly attenuated by presence of locus of control(internal). Whereas, a significant moderation effect between other emotional biases and investment performance was not attained.

5.3 Implications

The findings of this research have various implications for retail investors, institutional investors and security organizations, portfolio managers, stock market regulators and policymakers. Broadly, these implications can be divided into three parts: practical implication, social implication, and future implications.

5.3.1 Practical Implications

The conclusions of this study can help financial organizations and policymakers build programs to correct stock market distortions through policy formulation and regulation. This study could also aid financial service providers in developing investment profiles based on their clients' personalities and psychological traits. They can understand the errors their clients are prone to and satisfy their client's needs through better portfolio management and wealth maximization services. Similarly, security organizations can predict future stock market trends by better understanding investors' sentiments and feelings allowing them to deliver more reliable advice to their clients.

5.3.2 Social Implications

Investors can recognize their emotional biases and internal control traits and make rational investing selections to overcome these biases. This greater self-awareness will prevent people from making judgments that could harm their investing performance and will help them manage their portfolios more effectively. As Shefrin (2002) advise, Practitioners studying behavioral finance should learn to detect their own and others' mistakes, understand them, and take efforts to avoid making them.

5.3.3 Implication for Future Research

It is important to conduct more research with a considerable sample size and a variety of respondents in order to verify the conclusions of this study. Similarly, future research can be conducted on institutional investors and make a comparative analysis with retail investors at NEPSE. Moreover, factors such as investment experiences, and financial literacy could be considered to broaden the scope of this field.

Finally, conducting studies of the emotional biases of retail investors at different periods of the NEPSE cycle (bull cycle and bear cycle) can also be considered.

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Appendices

Impact of Emotional Biases on Investment Performance of Retail Investors

Dear Sir/Madam,

This research entitled "Impact of Emotional Biases on Investment Performance of Retail Investors" is a Graduate Research Project (GRP) as partial fulfilment of the requirements for the Masters in Business Administration (MBA) at the School of Management, Tribhuvan University. The main objective of this research is to analyze the influence of emotional biases affecting the investment performance of retail investors like yourself, with the role of the internal locus of control as a moderator.

I humbly request you to participate in this study and spare a few minutes of your valuable time. All the information provided by you will be kept confidential and will be used for the stated purpose only. So it is suggested that you fill out the questionnaire based on your own conscience. In case of any queries or feedback, please feel free to contact the researcher at the address below.

Sincerely,
Swornim Lama
MBA Research Scholar
swornim.lama19@gmail.com
9861869041
School of Management, Tribhuvan University

SECTION A: Respondents' Details (please tick mark ✓ the appropriate option)

1. **Name:** …… (optional)
2. **Gender:**
    a. Male
    b. Female
3. **Age:**
    a. 18-25
    b. 26-35
    c. 36-45
    d. 46 & above
4. **Education:**
    a. Intermediate
    b. Bachelors
    c. Masters
    d. M. Phil/Ph.D.
    e. Others…….

5. **Average Monthly Income:**
    a. Below Rs. 50,000
    b. Rs. 50,000 – Rs. 100,000
    c. Rs. 100,001 – Rs. 150,000
    d. Rs. 150,001 - Rs. 200,000
    e. Above Rs. 200,000
6. **Investment Experience in NEPSE:**
    a. Less than 1 year
    b. 1-3 years
    c. 3-5 years
    d. More than 5 years
7. **Have you taken any stock market courses/training?**
    a. Yes
    b. No
8. **Your investment portfolio size:**
    a. Below Rs. 1 Lakh
    b. Rs. 1Lakh – Rs. 3 Lakhs
    c. Rs. 3 Lakhs – Rs. 5 Lakhs
    d. Rs. 5 Lakh – Rs. 1 Crore
    e. Above 1 Crore

SECTION B: Questionnaire regarding Emotional Biases and Perceived Investment Performance

Please tick mark(√) the appropriate responses that best describe your attitudes towards various aspects of Emotional Biases.

Construct 1: Loss Aversion

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
LA1	I never sell a loss-making investment in the hope that it would someday improve.							
LA2	A 1,000 rupee loss hurts more than a 1,000 rupee gain in happiness.							
LA3	I avoid making decisions out of fear of suffering losses.							
LA4	Large price declines in my invested stocks make me anxious.							
LA5	When the market is performing poorly, I will not raise my investment.							

Construct 2: Self-Control

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
SC1	Once I make a decision, I can easily stick to difficult saving goals.*							
SC2	Maintaining my savings objectives is quite challenging for me.							
SC3	I am successful in meeting my savings and investing objectives.*							
SC4	I lack the discipline needed to achieve my long-term financial goals.							
SC5	Saving for the future is less important to me than fulfilling my daily obligations.							

Construct 3: Regret Aversion

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
RA1	In light of my prior bad choices, I revised my investment strategy.							
RA2	Holding losing investments for a longer period causes greater pain than selling winning ones.							
RA3	I started taking risks since I had previously profited.							
RA4	I became risk-averse as a result of previous losses.							
RA5	I regret missing out on good investment opportunities.							

Construct 4: Overconfidence

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
OC1	I cannot foresee the future pricing of my investments better than others.*							
OC2	I am always positive about the future profits of my assets.							
OC3	I am confident in my capacity to make better investment selections than others.							
OC4	I have complete knowledge of various types of investments							
OC5	I have the ability to select stocks whose performance will outperform the market.							

Construct 5: Herding

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
H1	When buying or selling securities, I watch social blogs and forums.							
H2	I follow others in my investment decisions.							
H3	If other investors suffered the same loss as me when I invest and lose money, my disappointment is lessened.							
H4	I favor making investments in the securities that other investors are purchasing.							
H5	After hearing different opinions from analysts, I changed my decision about investing in security.							

Locus of Control

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
LC1	The key to being wealthy is careful investing.							
LC2	People suffer investment losses due to their own idleness.							
LC3	My abilities determine whether or not I receive the desired returns on my investment.							
LC4	People who take care of their investments will remain prosperous in the long run.							
LC5	I virtually always succeed in executing my financial strategies.							
LC6	The outcome of my investments is something I can very much predict.							
LC7	Usually, I can safeguard my investment interests.							
LC8	If I get anything I want, it's typically							

	because I strived for it.							

Investment Performance

SN	Items	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
IP1	My stock investment has shown higher returns and cash flow.							
IP2	I am satisfied with my investing selections (including stock selection, trading and deciding the stock volumes).							
IP3	My return rate is on par with or greater than the market's average return rate.							
IP4	My recent stock investment's return rate fulfils my expectations.							
IP5	My stock investment is quite secure.							