Impact of Psychological factors on Investors Decision-Making with the Mediating role of Financial Anxiety

By:

Noor-ul-Eman   01-321231-034

Supervisor:

Dr.Lubna Maroof

Department of Business Studies

Bahria University Islamabad

Spring 2024

FINAL PROJECT/THESIS APPROVAL SHEET

Viva-Voce Examination

Viva Date __/__/____

Topic of Research: **Impact of Psychological factors on Investors Decision-Making with the Mediating role of Financial Anxiety**

Names of Student(s):   Enroll #

Noor-ul-Eman   01-321231-034

Class: MBA-1.5 years

Approved by:

_____

Dr.Lubna Maroof

Supervisor

_____

Dr.Abdullah Hafeez

Internal Examiner

_____

Dr.M.Naeem

External Examiner

_____

Dr.Syed Haider Ali Shah

Research Coordinator

_____

Dr.Khalil Ullah Mohammad

Head of Department

Business Studies

Abstract

This study examines the effects of psychological factors on the investment decisions with a focus on the mediating role of financial anxiety. The study is based on behavioral finance framework and examines the impact of loss aversion, financial literacy, and herding on investment decisions. In the present study, a structured questionnaire was employed to gather data from 250 investors in Islamabad and Rawalpindi, Pakistan. The study adopts a quantitative research design to analyses the relationship between the various variables using reliability analysis, regression analysis, and mediation analysis. The results show that psychological biases play an essential role in determining investment choices. This is because loss aversion makes people become cautious in their investment decisions, and they end up not investing in projects that can give them better returns. Financial literacy helps in making improved decisions on investments while on the other hand herding behavior depicts investors copying the decisions of other investors. This paper finds that financial anxiety acts as a significant moderator, amplifying the influence of loss aversion and herding behavior and reducing the beneficial influence of financial literacy on investment choices. The study emphasizes numerous psychological factors that affect the investors in emerging markets such as Pakistan due to scarce resources and lack of market knowledge. This underlines the need to encourage financial literacy and provide coping mechanisms such as stress reducing measures to counter the effects of financial stress. Overall, this study enhances understanding of the psychological factors that influence investments and provides suggestions for enhancing decision-making in this area. Finally, the dissertation offers directions for future research, insisting on the further identification of other psychological biases and on replication of the research across different samples and countries

Acknowledgement

"To Him belongs the dimensions of the heaven and the earth, it is He who gives life and death and He has the power over all things."

First of all I would like to thank Allah Almighty who is our creator, the one to whom we shall return. Allah is the only one who guides us in the dark. Who takes our hand and lead us to success. Who answer us whenever we call him. Who loves us the most. I would like to express my sincere and humble gratitude to Almighty whose blessings, help and guidance has been a real source of all the achievements. His guidance helped me to complete my research work. This work helped me to learn a new and the most important chapter of life. I would like to say thanks to my parents who have always been my strength. I would like to admit that the prayers of my beloved parents helped me a lot to complete the research. I also wish to express my appreciation to my supervisor who introduced my mind to the new dimensions of life and bought me to this stage. I would like to mention that Dr. Lubna Maroof has been very kind toward me and supported me at all levels.

Dedication

Thanks to the efforts of the researchers, this work is happily and proudly dedicated to the people who inspire me. I express my gratitude to my research supervisor, Dr. Lubna Maroof, for her tireless efforts and significant support throughout the study. From guardians and parents to classmates and friends who offered support when faced with challenges while doing this research. I would also want to thank the educational institute, BUIC, for allowing me to carry out this research. I also want to thank my family and friends for inspiring me with this study project by dedicating it to them. Above all, to our Almighty God, who has showered us with His benefits in our daily lives, particularly for the strength, bravery, patience, wisdom, time, and direction in carrying out our mission.

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 Background of Study

New branches have emerged as a result of the growth and strengthening of the behavioral economy's position in the field of scientific development, including the term "Behavioral Finance," which focuses on financial choices and market dynamics in order to incorporate psychological factors into the decision-making process. Some researchers have developed the idea of behavioral finance to be considered from two perspectives: macro behavioral finance (which identifies deviations from the norm in market efficiency hypotheses and can be explained by behavioral models), and micro behavioral finance (which examines investor behavior and variations that set them apart from rational people and can be stated by statistical models (Kadhum & Saidi, 2022). Given that investing is a component of financial planning, the demand for investing has grown in priority. Everyone needs investments primarily because they may safeguard and increase the foundation of their wealth. Furthermore, it can provide a social certainty in the future through investing. The objective of each person has an own way of investing. 39.70% of people invest money to purchase a home, car, and other assets, like education costs. A third of consumers (35.30%) utilize their investments as emergency funds, whereas the remaining quarter (25%) use as a retirement account (Novianggie & Asandimitra, 2019). Economic players often use "mental shortcuts" or "heuristics" from their prior observations to streamline the decision-making procedure, according to studies by Tversky and Kahneman (De Arruda et al., 2015). These biases might include both emotional and mental biases. It is clear that financial literacy helps people avoid the problems caused by poor heuristics. The decision-makers can therefore raise their degree of financial performance as an outcome. According to Ricciardi and Simon (2000), the structure of several sciences led to the development of behavioral finance.

Psychology, a science that studies how the physical, psychological, and environmental context of a person affects behavior and thought, is one such study. Finance is a system for resource creation, distribution, and usage. Sociology is the systematic study of a person's or a group's social behavior with a particular focus on how social interactions affect people's attitudes and behavior. The psychology of investors and how it impacts the decision to make an investment are topics of behavioral finance. The most well-known instance of "The Dutch Tulip

Bubble," also known as "Tulip Mania," is the oldest example of investor folly. It happened when the tulip plant was first brought to the Netherlands during the "Dutch Golden Age." The exotic flower was so enticing to the Dutch that they started investing their money in the plant. Over time, investments in tulip plants began to decline, which caused prices to start to increase. The market soon started to decline as buyers recognized that a big percentage of their cash was going into a flower bulb that actually had a high value. The price of tulips then decreased as a result of individuals selling them, creating a market drop that is considerable. Tulip mania, for example, makes investors question their common sense (didwania & sharma, 2018).

In 1952, Harry Markowitz presented the "Modern Portfolio Theory" is the theory that deals with behavioral finance. He was in Chicago for school at the time. Modern Portfolio Theory (MPT) is a theory that demonstrates a connection between a portfolio's anticipated return, standard deviation, and correlation with the other funds in the portfolio. As a result, an effective portfolio (one that offers a high return at a particular risk) is created. Thus, results of the researches or the studies show that there are a lot of factors as discussed earlier biases, gender differences, literacy, behavior, information and psychological factors that shape or change an investor's attitude and way of thinking towards the investment decision making. There are a lot of theoretical frameworks related to behavioral finance but according to Robert Christopher Hammond popular theories include "Theory of Reasoned Action" (TRA) presented by Fishbein and Ajzen, 1975 and "Theory of Planned Behavior" (TPB) presented by Ajzen in approximately 1985 to 1991. These theories explain how decision making of investor regarding an investment gets affected. From viewing the history we can say that Behavioral finance is a new domain of finance which makes coalitions between behavioral and psychological theories and thus tries to discover the grounds of the decision-making by the investors. (Chira and Adams, 2008). In short we can say that this helps to understand how the investors manage their investments in different conditions (Akhtar, N., and Batool, I., 2012). Moreover behavioral finance shows how investor behavior is contented with the investment.

Unfortunately there has been a little work regarding loss aversion, financial literacy and herding behavior. So, the present study focuses to uncover these factors mainly the impact of loss aversion, financial literacy and herding behavior on the individual investor's investment decision and the moderating role of financial anxiety on these variables. Loss aversion is the

attitude that avoidance of losses is more likely than acquisition of benefits. The degree of loss aversion influences the one's own risk of risk. Someone often rejects the excessive loss, which causes them to concentrate on avoiding it the loss while earning a profit Losses might make someone overreact, thus in terms of When investing, he prioritizes preventing losses than pursuing financial gain (Nur Aini M, 2019). According to Zucchi (2018), investors from highly developed financial markets have also experienced financial losses as a result of inadequate preparation and a failure to recognize market uncertainties and risk connected to it. In times of financial crisis, these shortcomings can be illustrated of 2008 (Rasool & Ullah, 2020).While the herding effect, seen in the stock market, is understood to be the inclination of investors to follow other people's practices. According to the behavioral finance perspective, herding bias affects various enthusiasm biases, include resemblance, congruity, intellectual conflict, home bias, and idle conversation (Rasool & Ullah, 2020). According to Waweru (2008), offering and buying Investor decision-making is profoundly influenced by other investors' decisions and herding behavior promotes the avoidance of regret in investors' decision-making.

A person who has a poor attitude toward efficiently managing their finances may have financial anxiety, which is a psychological disorder that is different from general anxiety and sadness. There is a link between anxiety and financial conduct (Grable et al., 2020). This study's mediating variable is financial anxiety. There hasn't been much research done in investigating or examining the connection between financial behavior or financial performance in the past activity/behavior and worry about money. According to Hay hoe (2012), people with those who have less or less financial worry are more likely to participate in or engage in financial management actions include budgeting and setting long-term financial objectives.

1.2 Problem Statement

Now a day's investors are facing hurdles in making financial decisions either in business or other activities. Financial behavior/investment decisions are affected by several psychological factors like loss aversion, financial literacy and herding behavior (Strömbäck et al., 2017). Due to high waver in the economic conditions of Pakistan, investors are suffering from financial anxiety which is also affecting financial behaviors of investors. Strömbäck proposed that financial anxiety has a greater impact on financial decisions of investors. Therefore, in order to make better financial decisions and maximize revenues, it is necessary to comprehend and

resolve such problems. Investigating the psychological factors that affect people's financial decisions is crucial to improving our comprehension of how people make decisions. Hence this research/study investigates the impact of several psychological factors like loss aversion, financial literacy and herding behavior on decision making ability of investors while taking financial anxiety as a mediator.

1.3 Research Questions

- How does loss aversion influence the individual investor's investment decision?
- How does financial literacy influence the individual investor's investment decision?
- How does herding behavior influence the individual investor's investment decisions?
- How financial anxiety plays a mediating role between dependent variables (investment decisions) and independent variables (financial literacy, loss aversion, and herding behavior)?

1.4 Research Objectives

The Objectives of the study are:

- a) To analyze the impact of loss aversion on individual investor's investment decision.
- b) To analyze the impact of financial literacy on individual investor's investment decision.
- c) To analyze the impact of herding behavior on individual investor's investment decision.
- d) To analyze the impact of loss aversion (LA), financial literacy (FL) and herding behavior (HB) on investment decisions with mediating role of financial anxiety (FA).

1.5 Significance of Study

Investors' financial conduct is greatly influenced by psychological considerations. This study uses financial anxiety as a mediating variable to investigate the effects of many psychological aspects on investors' investing decisions. In order to determine its findings, this study also looks at novel and distinct approaches that are directly tied to financial literacy, herding behavior, and loss aversion. Previous researches have shown that psychological factors have a significant influence on investments decisions. This study will look at how psychological factors affect investor's financial decisions, with financial anxiety acting as a mediator. This

paper helps to find the decision making of investors investment and also communicate awareness related to biases, also promote them to make changings in these biases to improve profitability. This present study or paper has vital responsibility in the finance sector as it will allow investigating the association among diverse components that can influence the common investment decision and investment satisfaction of the investors. It will be useful in investigating the power of excellence and shortcomings of these variables. Investors in the global stock market pay close attention to how rational theories and behavioral finance principles are used (Hunjra and Khalid, 2015). Academic students, policymakers, the Pakistani stock exchange, businesses and their managers, researchers, the government, and professionals can all benefit from a better understanding of the factors that cause loss aversion, financial literacy, and herding behavior to influence an investor's ability to make investment decisions. The research could make it possible for experts to advise both individual investors and those who are considering making an investment (Fernando Tavares). For investors in the Rawalpindi and Islamabad region, this report is very significant. In 2014, Lusardi calibrated a stochastic life-cycle model in which people endogenously select the amount of money they invest in learning about finances. They demonstrate how variations in financial literacy are a significant factor in wealth disparity because they magnify variations in wealth accumulation patterns. More broadly, Lusardi and Mitchell (2014) examine theoretical perspectives on the use of financial knowledge as an investment in human capital.

1.6 Scope of Study

The focus of this study is to examine the impact of loss aversion, financial literacy and herding behavior on the investor's investment decisions (Rasool & Ullah, 2020). As was already indicated in the preceding phrase, the primary goal of this study is to determine the variables that affect an investor's investment behavior, particularly an investor from Pakistan. Pakistan is a developing nation with little resources. Due to his inadequate market expertise, an individual investor in Pakistan encounters several uncertainties and issues at the time of investment (Rasool & Ullah, 2020). The Population under concern is Islamabad and Rawalpindi. The study is restricted or limited to the twin cities only. The observations are based on the responses of the stock exchange of Pakistan, brokerage houses and potential investors.

1.7 Organization of study

The format of this paper is as: Section 2 covers the review of literature and hypothesis of study. The conceptual model and theoretical framework related to investment decision-making are presented in Section 3. Section 4 describes the research methodology. The analysis, findings, and implications of the major finding are illustrated in Section 5. And the last section 6 highlights the main conclusions and recommendations of the study for the practice.

CHAPTER 2: LITERATURE REVIEW

With an emphasis on the Pakistan Stock Exchange, this study investigates how financial anxiety functions as a mediator in the relationship between herding behavior, loss aversion, and financial literacy and how these factors affect individual investors' investing decisions. Additionally, it looked at how demographic variables including age, gender, education, experience, and marital status affected herding behavior, loss aversion, and financial literacy. According to a previous study by Simon (1991), restricted rationality causes stock market participants to act irrationally while making investment decisions. Even though behavioral finance gained popularity in academia in the late 1980s, there is still a dearth of study on how investors make decisions. The goal of the current study is to look at how loss aversion, financial literacy and herding behavior affect the trading behavior of individual investors.

2.1 Main variables

2.1.1 Loss aversion

The impact of loss aversion and availability bias on investing decision-making behavior was examined in this study by Khan, (2017). Decisions about taking and avoiding risks were greatly influenced by loss aversion bias, which is defined by behavioral biases influenced by prospect theory and the risk-return dilemma. This was especially true when decisions were made in reaction to losses or gains that were greater than intended. To investigate availability and loss aversion biases in investment decision-making behavior, a descriptive, cross-sectional approach was utilized. People who were at least eighteen years old, well educated, and had made decisions in the past were given a questionnaire-based survey in Islamabad. 230 of the 260 surveys that were initially sent were finished and returned. The participants came from a wide variety of backgrounds, including active stock investors and graduate and postgraduate students with in-depth financial knowledge. Established scales were utilized to measure a variety of structures. The questionnaire had satisfactory reliability (Cronbach's Alpha =.683). Correlation research revealed a favorable relationship with loss aversion bias, but a negative correlation with availability bias and investment decisions. Regression analysis verified that both biases had a significant impact. Risk perception was found to mitigate the biases' impact on decisions through moderation analysis (Khan, 2017).

Khan, (2017) identified potential areas for further investigation. The future works can generalize the study to more regions with higher sample sizes and explore new approaches, including the moderation of biases. Extended methods could provide deeper insights into the processes of forming investments. Additionally, analyzing the effects of different level of financial literacy on biases and investment outcomes may help expand our knowledge. Enhancing the knowledge about the financial matters could lead to better investments for the benefits of the economy and the people (Khan, 2017). In this study, the impact of loss aversion in the context of individual investors in Pakistan Stock Exchange is analyzed. It identified higher levels of loss aversion to be associated with a more conservative investment behavior. Such conservatism often leads to missed opportunities to earn higher revenues, thus decreasing general levels of financial profitability. The results had shown that psychological biases especially loss aversion significantly influence the behavior and performance of investors. Future research may explore the impact of this bias in the formation of stock market performance during the COVID-19 pandemic (Shafqat & Mohti, 2022).

In order to achieve these goals, the study looked at how risk tolerance influenced the association between female entrepreneurs' investment decisions and mental accounting, loss aversion, and overconfidence. Qamar and Lodhi (2023) employed a quantitative study approach to examine the impact of behavioral prejudice on the investment choices made by female entrepreneurs in the same Pakistani scenario. One hundred female entrepreneurs were the target audience, and information was gathered via a self-completed survey. The researchers employed a closed-ended questionnaire with two sections: the first table contained the demographic information, and the second table had the suggested conceptual framework. The survey items were measured using a five-point Likert scale (Qamar & Lodhi, 2023). According to Qamar & Lodhi, (2023), loss aversion bias had very little influence on the investment choices made by women business owners, although overconfidence and mental accounting biases did. A little mediating effect was provided by risk tolerance. In general, the model demonstrated a strong ability to forecast.

One of the study's shortcomings is that it solely examined female entrepreneurs in the setting of Karachi. Future research on individual, institutional investors, men, may use samples selected from other places and do comparison analysis using the same conceptual framework business owners and families. Additionally, the framework may be increased by using a

qualitative method to get more in-depth knowledge. The study's empirical results will assist professionals and business owners in recognize how risk tolerance and behavioral biases affect the investments made by women entrepreneurs choices. Empirical research has demonstrated that start-up marketplaces exhibit irrationality (Qamar & Lodhi, 2023).

2.1.2 Financial literacy

Raut (2020) investigated the significance of prior conduct and financial literacy in the investment decision-making of individual investors. In addition to examining the viability of the theory of planned behavior in this scenario. The study used a self-administered questionnaire and collected data by convenience sampling and snowball sampling from individual investors in each of India's four states. Raut, (2020) described the outcomes, which showed that each of the predicted factors had a substantial impact. Previous actions did not significantly influence investors' intentions directly, but they did have a strong indirect link that was mediated by investors' attitudes. The multiple squared correlation (R2) of the final model showed that it could explain 36% of the variation in investors' inclination to buy equities, proving that the TPB model could be successfully used with more external factors.

Furthermore, it was emerged that Indian financiers are more affected, primarily by social norms, which financial literacy could help to mitigate. More specifically, future research in this field needs to pay more attention to the stock market behavior of Indian investors. It is therefore important to establish how the Perceived Behavioral Control (PB) and Financial Literacy (FL) persist to influence their intentions. In fact, enhancing the understanding of socio psychological factors that affect decisions of individual investors is beneficial to developing nations. Future research on the impact of PB and FL on attitudes and intentions especially in mediating relationships is also recommended. The relevance of these factors is supported by the empirical evidence that underpins the TPB model's development. However, they also need to focus on the social factors that predetermine the participation of Indian investors in the market (Raut, 2020).

This research paper sought to determine the impact of Saudi investors' financial decision in relation to their financial literacy. The primary research question of the study was to assess the extent of Saudi investors' awareness of the financial term and how this knowledge influences their investment behavior. Thus, to uncover Saudi respondents' financial literacy and to understand how it influences their behaviours, this research adopts the descriptive and causal

research approach. A self-administered questionnaire was used to gather data from 300 participants; respondents were convenience samples with a 95% confidence level (Mian, 2014). The sample which was targeted at working professional and university students was collected from several Saudi Arabian cities. In addition to the features, such as financial literacy, retirement, stock market participation, and the necessity of professional financial advice, the survey tool also included demographic questions. The reliability analysis proved internal consistency with Cronbach's alpha for each variable being above 0. 6. This technique provides a good basis for evaluating financial literacy and the way it influences the respondent's behaviors in Saudi Arabia (Mian, 2014).

In terms of financial literacy, men scored somewhat higher than women. The 30- to 45-year-old age group showed better financial literacy than the 15–30 age group. Graduates had the lowest scores in the relationship between financial literacy and education level. It's interesting to see that respondents' financial literacy was unaffected greatly by their present condition. Mian, (2014) showed that the study discovered a favorable relationship between financial literacy and stock market involvement as well as retirement planning. Retirement planning benefited from financial knowledge to the tune of almost 28%. It did, however, have a detrimental effect on the need for financial guidance. These results demonstrate how important financial literacy is in influencing people's financial decision-making. According to Mian (2014) there are several avenues for further study in this field. Promising approaches include demographic comparison studies, longitudinal studies monitoring changes in financial literacy, and interventional studies putting on educational initiatives. It would be beneficial to investigate psychological biases, computer literacy, and cultural factors. The objective of this study to investigate, in the Tanzanian stock market, how heuristic biases affect investing decisions by means of a variety of mediation mechanisms, including tolerance to risk and financial literacy through the use of questionnaires. 316 individual stock market investors in Tanzania were included in the sample. Structural equation modelling was used to analyze the data (SEM) (Kasoga 2021).

Kasoga, (2021) explained that the results demonstrate the impacts of availability, anchoring, overconfidence, and representativeness heuristics on investing decisions were not significantly mediated by financial knowledge. Additionally, the level of financial literacy did not affect risk tolerance and investing decisions. This study has shown that when making investment decisions, risk

tolerance affects availability, anchoring, and representativeness heuristics as well as overconfidence. The study also shown that factors other than doe's overconfidence that affected investing decisions were financial knowledge, availability, representativeness, risk tolerance, anchoring, and overconfidence. Future research should duplicate the findings in different settings and think about including additional heuristic bias variables, such conservatism, gambler's fallacy, and illusion of control, which can have a significant impact on stock market investment decisions. Furthermore, the study's target audience is actual investors. By integrating or changing certain concepts and focusing on institutional investors, more research could investigate the impact of heuristic biases on investing decisions. (Kasoga, 2021).

2.1.3 Herding Behavior

According to Hassan, (2015) this research aimed to investigate Pakistani stock market participants' investing behavior, particularly in relation to their propensity for displaying herd behavior. To assess herd formation, the study used two distinct approaches recommended by Chang et al. (2000) and Christie and Huang (1995). The results were based on daily and monthly stock data for the KSE-100 index for the years 2002–2007. Results based on daily and monthly stock data from the Karachi Stock Exchange indicated that there was no herd behavior from 2002 to 2007. It was also demonstrated that investor behavior and the rational asset price model were inefficient. Because of the asymmetry in market volatility, high and low trading volume levels, and asymmetry in market returns, this research rejected conclusive evidence of herding. Therefore, macroeconomic fundamentals have no bearing on investors' decision-making processes and have no effect on herding behavior. But in March 2005, during the liquidity crunch, Pakistani stocks. Herding behavior is seen in the market because of investor knowledge asymmetry, the existence of questionable financing and speculators employ a local leverage financing strategy. In the future, a research can be carried out using sector-specific portfolio returns from the KSE-100 or stock returns portfolios determined by market capitalization. Moreover, it is possible to pinpoint the elements that define the layout. Of the trading activity of investors can render the market ineffective (Javaira & Hassan, 2015).

In the context of the Amman Stock Exchange, this study has intended to investigate the impact of behavioral finance principles on individual investors' choices. The main goals of this study were to present empirical data on investor behavior in this particular market and to

examine the ways in which psychological biases including herding behavior as well as heuristics influence investing decisions (Areiqat et al., 2019). Areiqat et al., (2019), incorporated a quantitative methodology and focuses on a particular sample of investors chosen according to predetermined standards, such as investment experience and demographics. Questionnaires or structured interviews meant to provide relevant information on investing behaviour, decision making processes and strategies are employed in data collection. Therefore, there is an opportunity to carry out regression and correlation analysis to determine the relationship between behaviour and investment processes. Prospect theory, loss aversion, overconfidence and framing effects are concepts that form part of the theoretical foundation of the study under the subject of behavioral finance. Referring to psychological heuristics and biases, the study by Areiqat et al., (2019) provides insight into the investor behavior in this particular market context. The above findings support other traditional behavioral finance theories such as the prospect theory and loss aversion by demonstrating the relationship between behavioral characteristics and investment decisions. These are some of the areas that future study in this area may focus on. First, broadening the sample to include a variety of financial markets or studying certain types of investors can be helpful for comparison (Areiqat et al., 2019).

Moreover, the author has provided information about how intervention or strategies that are likely to eliminate the effects of behavioural biases into the investment decisions may have implications to financial organisations and private investors also. However, if the outcome and efficiency of investments in the long run that are influenced by self-asserting tendencies are investigated, this may provide some useful knowledge regarding portfolio management approach. In conclusion, this paper serves as a base for future research in the field of behavioral finance and the implications it has to investment decision making (Areiqat et al., 2019). Hsieh et al., (2020) aimed at investigating the relationship between individual retail investor attention to a particular stock on herding behaviour. The study applies a very quantitative orientation to assess how herding behaviour in the financial markets relates to retail investor attention. The investigators used data from the financial markets specifically the trading volume data and the search volume data in relation to a particular stock. This information was important in understanding the amount of attention that each of the identified retail investors paid to various stocks. The measures of herding included cross sectional absolute deviation or price deviation from fundamentals. Regression analysis or correlation evaluations were used to establish the

statistical association between investor attention and the incidence of herding behavior (Hsieh et al., 2020).

Consequently, and in accordance with the results of the study, the herding phenomenon was described as positively related to the attention of the retails investors. More specifically, this analysis revealed that there is heightened likelihood of herding in the financial markets during high investor attention. There was therefore a likelihood of the retail investors exhibiting herding behaviour when they paid attention to specific shares and making investment decisions that are similar to those made by others. The study provided empirical evidence regarding the function of the attention dynamics in the market and gave new perspectives in the reaction of the retail investors in the financial markets. As highlighted by Hsieh et al., (2020), these papers established investor attention as a key factor in explaining patterns and dynamics in the market and contributed significantly to the field of behavioral finance. It also raises considerations regarding regulators and market players who would wish to examine and possibly correct the consequences of herding tendencies (Hsieh et al., 2020). As noticed by Hsieh et al., (2020), the future research in this area might be focused on some specific aspects of the behavior of ordinary shareholders. It might also be effective to examine how specific forms of information like financial news or social media affect the level of attention and herding among investors.

2.1.4 Financial anxiety

The authors wanted to find out whether individuals who are more emotionally intelligent would avoid risk while working and feel anxious about things other than their work. Hence, using a controlled experimental approach, Yip & Côté, (2013) sourced participants from diverse backgrounds. Specifically, they employed certain tasks to instill anxiety that is not work- related. To measure the ability to understand emotions, standardized tests were used. Following that, the participants were presented with risk-taking scenarios in an effort to measure their propensity to engage in high-risk behavior. Spearman's and multiple regression analyses were conducted to examine the relationship between emotion-understanding scores, induced anxiety levels, and risk-taking behavior controlling for any demographics. In the study by Yip & Côté, (2013), it was found that incidental anxiety and ability to understand emotions impacted on risk taking. When being confronted with unplanned worry, individuals with higher EI, especially regarding the understanding of feelings were less willing to take risks. This goes to show that for one to

minimize interference from unrelated emotions on judgment, there is the need to incorporate emotional intelligence.

As stated by Yip & Côté, (2013) these results highlighted the strategic function of EI in flexible decision making especially where the decision makers are feeling emotionally drained. Future research can focus on understanding the mechanisms through which the ability to understand emotions impacts the judgments. It would be worthwhile to examine a range of demographic and cultural contexts as well as consider the consequences going beyond risk-taking. It may help to consider the temporal aspect and learn how emotions influence this interaction. In addition, it is important to explore specific cases in such fields as finance or business management. In any case, additional studies might further elucidate the impact of emotional intelligence on the decision-making process (Yip & Côté, 2013). As stated by Hasler et al., (2021) the main objectives were to provide new research findings on the level of financial stress in different groups of the population and to indicate the likely causes of this stress. It also had the objective of exploring the influence of financial concern on financial decision and well-being. To conduct the study, data collected from the National Financial Capability Study (NFCS) that featured a diverse group of American families was used.

The relations between the financial behaviors, anxiety levels, and demographic factors were explored through the quantitative approach. The findings of focus groups produced more qualitative data that place the feelings of financial concern into a broader perspective. Using a mixed-method approach, financial concern in American households was established fully (Hasler et al, 2021). In this study, Hasler et al, (2021) highlighted the following important findings regarding the frequency of financial anxiety and its causes. The quantitative results revealed that a significant number of them reported being in a state of financial hardship. This was especially evident concerning some social groups, particularly those with lower income or less numeracy skills. Perceived problems include handling of debt, emergent costs, and financial sustainability as depicted by qualitative studies. In this context, the integrated method highlighted the importance of this approach for creating financial security and gaining a comprehensive understanding of complex processes associated with financial concern. Future research could further try to evaluate the efficacy of the attempted approaches targeting financial strain,

examine the sustained effects on financial practices, and ponder over the part of the financial institutions and regulation (Hasler et al., 2021)

Grable et al., (2020) aimed at understanding the correlation between psychological relatedness, planning propensity and financial stress. Particularly, the actual association between people's objective physiological arousal and their self-reported levels of financial stress, and how this association affected people's plans financially was examined. In the study, Grable et al., (2015) concentrated on the connection between planning intention, physiological arousal, and financial anxiety. They used biological tests and valid questionnaires for collecting data from a number of participants. While employing the regression and correlation analyses to determine the relationships, an attempt was made to consider other possible influences. Interviews provided additional qualitative information that enhanced the study. Self-reported physiological arousal was found to be positively correlated with financial anxiety thus identifying higher degrees of financial distress with higher physiological reactions. This result underscores just how much people with money issues are bothered, how their concerns transcend psychological distress and manifest in changes in the physical body. They also established that there was a negative correlation between planning intention and physiological arousal. This indicates that whenever people undergo high physiological activity due to financial stress, then it would be difficult for them to make efforts that would ensure that their finances are in order.

This discovery sheds light on the potential barriers that discomfort could pose to psychological and physical abilities of individuals to make sound financial decisions. These findings underscore the importance of attending to the somatic and affective aspects of financial health. The research finding on mediating elements opens up several research avenues that would enhance understanding of the complex facets that surround individuals' financial decision-making. Grable et al., (2015) noted that there is need for longitudinal approach in future research on financial treatment and planning to capture and track the impact of physiological arousal and financial anxiety in long-term financial behaviors. Interventional research can assess the efficacy of mindfulness exercises or cognitive-behavioral therapies in decreasing financial stress and increasing planning purpose (Grable et al., 2015).

CHAPTER 3: THEORITICAL STUDIES

3.1 Key Theories

3.1.1. Prospect Theory

This theory, which is regarded as one of the greatest in economic psychology, holds that people are more inclined to gamble when they stand to gain money than when they stand to lose money. Consequently, this theory clarified how people behaved in various contexts and one of the circumstances is uncertainty (Tabassum et al., 2021). Amos Tversky and Daniel Kahneman created prospect theory for the first time in 1979. It was later developed in 1992. Prospect theory holds that investors evaluate gains and losses differently, with perceived gains outweighing perceived losses. In 1979, Kahneman and Tversky challenged expected utility theory as a descriptive model of hazardous decision making and proposed prospect theory as a replacement model. According to prospect theory, investors are more inclined to assess prospects or expected outcomes in terms of profits and losses compared to a reference point rather than ultimate wealth states. People treat profits and losses differently, with people being risk-averse with regard to gains and risk-acceptant with respect to losses. Gains and losses are also perceived differently in that "losses loom greater than gains."

The idea behind prospect theory is that rational behavior is not always exhibited by people. This theory holds that people's decisions are influenced by enduring biases brought on by psychological factors when faced with ambiguity. Prospect theory expresses preferences as a function of "choice weights," which are predicated on the idea that likelihood is not always the same as choice. According to prospect theory, decision weights overvalue small probabilities while undervaluing middle and high probability. Barberis & Thaler, (2002) explained how individuals who experience financial losses appear unhappy than those who experience comparable advantages. Prospect theory demonstrates that people, particularly investors, undertake riskier actions in order to avoid loss. They occasionally refrain from investing entirely. They occasionally reverse their investments. Finally, this investing gaffe may result in huge losses in an investor's portfolio, such as an individual's investments in a mutual fund group. According to prospect theory, the marginal value of a loss is strictly larger than the marginal utility of the equivalent gain. Individuals are more risk averse when presented with potential advantages rather than losses, according to prospect theory. Risk aversion causes a dispositional

effect, in which investors sell winning stocks too fast and hold losing one's too long. According to prospect theory studies, there is a negative relationship between perceived risk and hazardous decisions.

3.1.2. Theory of Planned Behavior (TPB)

Compared to other behavioral models, TPB has been applied extensively and is thought to be among the most influential theories in a variety of research domains. The theory of reasoned action (TRA), first presented by, is the theoretical basis of TPB (Ajzen, 1985). TPB has been used in many behavioral domains and has gained prominence since its publication. It takes into account three components, which together help to generate behavioral objective: AT toward the behavior, SN, and PBC. The degree to which an individual views the acts of his or her interests favorably or unfavorably is referred to as AT toward behavior (Ajzen, 1980). PBC is defined as one's opinion of how simple or challenging it is of executing the behavior as a result of the presence or absence of necessary resources and chances, whereas SN is stated as perceived social pressure to perform or not execute the behavior. It has been substantiated by hundreds of studies and scientifically validated over the last 20 years (Ajzen, 2002)

3.2 Conceptual Framework

The interaction of psychological biases and psychological factors impacting individual investing decisions is the key concept of the conceptual framework for this study. Tversky & Kahneman (1992) recognized loss aversion bias as a potent mechanism that leads people to choose capital preservation over capital expansion. It is anticipated that this bias would have a major impact on investment decisions (H1). The capacity to handle financial resources efficiently is known as financial literacy, and it is considered essential for making educated investing decisions. Age, gender, and educational attainment are among the demographic factors that influence financial literacy (H2). Investment decisions are predicted to be significantly influenced by the herding tendency, which occurs when investors follow the activities of a bigger group without challenging their reasoning (H3). Demonstrating investment decision in which financial anxiety serves as a mediator (H4).
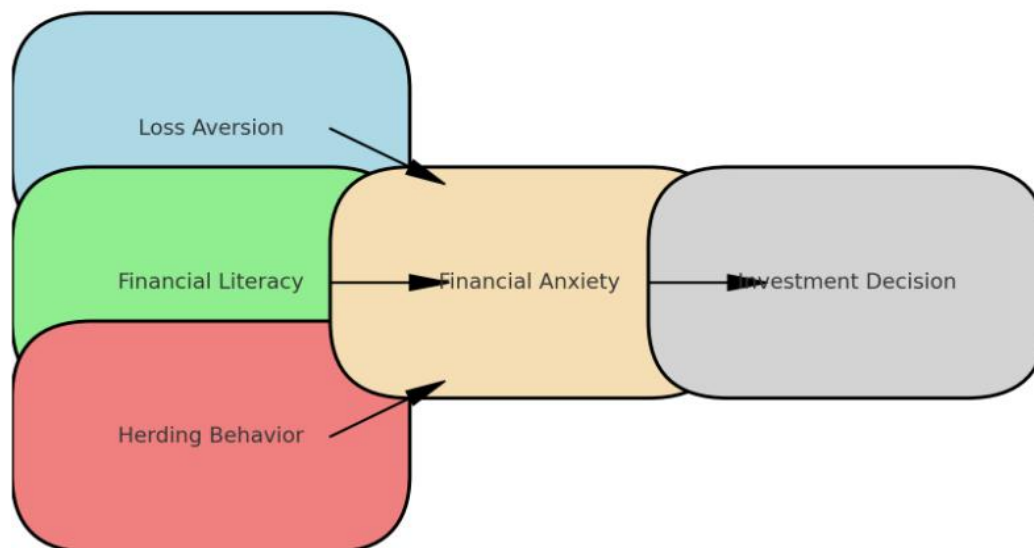
Fig 1 Research Conceptual Model

3.3 Operational Definitions

Variables	Definitions	Authors
Loss Aversion	Mindset of people is more affected by losses than by gains of the same magnitude. It has been argued that "Losses hurt about twice as much as gains make us feel good,"	(Gal & Rucker, 2018)
Herding Behavior	"Where everybody does what every other person is doing regardless of their private information indicates something opposite" is what is known as herding behavior.	(Ali et al., 2021)
Financial Literacy	"The capacity to apply knowledge and skills to manage monetary assets for a lifetime of financial wellbeing" is the definition of financial literacy.	(Adil et al., 2021)
Financial	A strong and perhaps severe worry about	(Ngui et al., 2022)

Anxiety	all financial things is known as financial anxiety. People who suffer from financial anxiety are constantly concerned about making their bills, and they may even become afraid to check their bank account or handle any personal financial matters. Similar to other forms of worry, financial anxiety is hazardous.	

3.4 Hypothesis

3.4.1 Loss Aversion and investment decision

It describes people's propensity to concentrate on saving capital from lessen rather than growing it. The basic principle underpinning this bias is people's differing responses to both positive and negative swings in the market value of their assets. Losses have twice the power of gains. After a previous loss, those who are prone to this bias often become risk averse and sell shares that have appreciated in value. Investors with loss aversion prioritize protecting their declining capital and experiencing a dread of losing their money above increasing their assets' growth (profit). The propensity of those who are more sensitive to a decrease in the value of their wealth than to rise in it. The actions of loss-averse investors cannot be evaluated in modest investments, and their decisions remain unaffected by environmental changes. Moreover, their parameters for loss aversion remain consistent across many decision-making contexts. Additionally, people could overanalyze gains and losses because they don't realize how fast they will adjust to these changes. Cultural norms also influence investors' cognitive biases; in Pakistan, women are more likely than males to be loss averse. Particularly, it is said that female investors are when making financial decisions, are likely to be more loss averse than men. When it comes to money management, older and jobless people are more loss averse than younger and working persons. According to Kahneman et al., (1991), investors who are more loss averse are more likely to act irrationally while making financial decisions.

H1: *Loss aversion bias positively affects the investment decision of individual investors.*

3.4.2 Financial literacy and investment decision

Mohd Adil, (2021) described that "the capacity to apply knowledge and skills to manage financial resources for a lifetime of financial wellbeing." A critical component in making educated investment decisions is financial literacy. Also, author indicated that age, having multiple children, marriage status, retirement status, family income, gender, and educational attainment are the demographic characteristics impacting financial literacy. Research indicates that males are more financially educated than females when it comes to socioeconomic aspects (such as kind of work and position, personal and household income), risk preferences, and investment features (such as number of investment possibilities, framing of investment options) (Lusardi et al., 2014).

H2: *Financial literacy positively affects the investment decision individual investors.*

3.4.3 Herding behavior and investment decision

The propensity of investors to follow the lead of a bigger group without questioning the rationality of such actions is known as herd bias. It has been noted on several occasions that investors who are afflicted with this bias do not come to their own investing decisions; instead, they seek guidance from brokers, friends, and coworkers (Jain et al., 2019). Durand et al., (2013) analyze that investors who lack confidence ought to take the suggestions of other. Clarke et al., (2011) examine the behavior of the herd within the premises. Studies examine the noteworthy instances of herd behavior in the Turkish, Indian, and Amman Stock Exchanges (ASE) stock markets (Cakan & Balagyozyan, 2016). Malik & Elahi, (2015) claimed that investors' judgments are significantly impacted by herding bias. Kamil & Abidin, (2017) described the stock market decision-making of equity investors and their herd mentality.

H3: *Herding bias positively affects the investment decision of individual investors.*

3.4.4 Financial Anxiety and investment decision

When two people experience the same amount of stress, they both respond to it in voluntary ways, but the majority of those responses are unintentional. Stressful reactions can also occur when someone is taken by unexpected or is caught off guard. Investment decisions are significantly impacted by /and play a crucial part in financial anxiety. One may contend that

worrying about money has a positive impact on financial decision-making. The authors claim that psychological factors significantly influence stock investing both directly and indirectly via mutual funds, retirement accounts, and direct and indirect market involvement. (Gaudence et al, 2018).

H4 (a): Financial anxiety significantly mediates between loss aversion and investment decision.

H4 (b): Financial anxiety significantly mediates between financial literacy and investment decision.

H4 (c): Financial anxiety significantly mediates between herding behavior and investment decision.

CHAPTER 4: METHODOLOGY

This chapter discusses or gives the methods for expressing the influence of loss aversion bias, financial literacy, and herding bias on individual investor investment decisions. The following chapter focuses on research methodologies such as the population of the study, sample size, and sampling strategy. This chapter also discusses quantitative and qualitative data collecting and analysis techniques such as study design, research instrument, population and sample size, data collection, data analysis, and so on.

4.1 Population of study

In this study the population is investors. In order to acquire the relevant information, the respondents were requested to complete a questionnaire. The 250 investors in Pakistan's twin cities were picked as the population size (Islamabad and Rawalpindi).

4.2 Sampling technique

According to Sekaran & Bougie, (2016) sampling method is the process of choosing a sufficient number of the right pieces from a population such that an analysis of the sample and a knowledge of its features enables to extrapolate such traits or characteristics to the population's constituent parts. According to Sekaran & Bougie, (2016) in statistics, there are two types of sampling techniques: random and non-random. The sampling method used in this study is nonrandom. As a result, the main method utilized to collect data for this study was a structured questionnaire distributed among Pakistani investors.

4.3 Sample size

According to Sekaran & Bougie, (2016) the sample is analyzed at as a subset of the entire population. Hair et al., (2005) suggested that the minimal sample size for sophisticated multivariate models, such as structural equations modeling, should be 250. Hence, 250 questionnaires were issued to investors in the instance, and all of them were reliable for data analysis.

4.4 Research design

This study employs primary data. As a result, this study employs the quantitative research approach. This study is of the causal research design, since it explains the cause and effect relationship between the variables mentioned above. According to Sekaran and Bougie

(2016), causal research design is a scientific technique of study that largely depends on causal investigations. This type of research investigates if one variable effects the behavior of another. The researcher does a causal study to identify the factors that are producing the problem

4.5 Data collection method

The questionnaire was carefully created and made as easy as possible to ensure that the technique for responding is simple enough to acquire trustworthy responses from data gathering participants. With such a streamlined questionnaire, the factors of ambiguity and suspension were quickly eliminated. The data was acquired from Pakistani investors using a standardized questionnaire that was distributed individually. The collected questionnaires are synchronized appropriately to use in the study's reasonable outcomes and conclusions.

4.6 Data analysis

Following the collection of data, it was evaluated using a variety of tests to complete the data analysis. After data has been collected, various statistical methods such as reliability and regression have been used to prepare it for analysis. These statistical methods and SPSS software were used to determine the amount and direction of the relationship between the independent and dependent variables. These statistical approaches have revealed a substantial link between, loss aversion bias, financial literacy, herding bias and investing decisions among Pakistani individuals.

4.6.1 Reliability analysis

The scales' items may be analyzed using reliability analysis, which is a statistical approach that reveals the qualities of measuring scales. The reliability analysis tool generates a number of widely used scale reliability indicators. Intraclass correlation coefficients can be used to compute estimates of inter-rater dependability.

4.6.2 Regression analysis

A rigorous statistical technique for examining the relationship between two or more variables is regression analysis. Regression analysis is a dependable method for figuring out what factors affect a particular case.

Regression analysis enables us to determine which elements are most essential, which are likely to be neglected, and how these factors interact.

4.7 Determination of variables

Loss Aversion Bias was measured by a scale with the 5 dimensions from (5=Strongly Agree to 1= Strongly Disagree) by (Jain, 2022). Financial Literacy was measured by using five-point Likert scale (Raut, 2020). The paper measures the Herding behavior from the Baker et al., (2018) using five-point Likert scale. Investment decision was adopted by (Malik et al, 2017). Financial anxiety was measured by A 5-point likert scale was used, with 1 being the lowest score and 5 indicating the highest tally (Shapiro & Burchell, 2012).

CHAPTER 5: DATA FINDINGS AND ANALYSIS

5.1. Demographic Analysis

Table 1

Gender of Respondent

	N	%
Male	184	73.6%
Female	66	26.4%
Total	250	100.0%

Note. N = Sample size; % = Percentage.

250 people participated in the study; 184 respondents, or 73.6% of the sample, identified as male, and 66 respondents, or 26.4%, as female.

Table 2

Age of Respondent

	N	%
18-22	33	13.2%
23-32	76	30.4%
33-42	100	40.0%
43 or above	41	16.4%
Total	250	100.0%

Note. N = Sample size; % = Percentage.

With no missing data, the age distribution of 250 survey participants is presented in the table. Ages 33 to 42 make up the largest age group in the sample, accounting for 40% (or 100 responses). The age group of 23 to 32 comes in second at 30.4% (76 respondents), followed by the group of 43 or older at 16.4% (41 respondents), and the age group of 18 to 22 at 13.2% (33

respondents). There are more responses in the medium age range than in the youngest or oldest age groups, according to this distribution.

Table 3

Education of Respondent

	N	%
Intermediate	11	4.4%
Bachelors	126	50.4%
Masters or above	113	45.2%
Total	250	100.0%

Note. N = Sample size; % = Percentage.

The education levels of 250 survey participants, all of whom submitted accurate data, are displayed in the table. 50.4% of respondents (126 people) have a bachelor's degree, while 45.2% (113 people) have a master's degree or above. These are the majority of respondents. Eleven people, or 4.4% of the total, have an intermediate level of education. The fact that nearly all the respondents had at least a bachelor's degree suggests that the sample is highly educated.

Table 4

Experience of Respondent

Experience	N	%
Less than one year	55	22.0
1-3 years	39	15.6
4-5 years	91	36.4
More than 5 years	65	26.0
Total	250	100.0

The table displays the work experience of 250 respondents, with all providing valid data. Among them, 36.4% (91 respondents) have 4-5 years of experience, making it the most represented group. This is followed by those with more than 5 years of experience at 26.0% (65 respondents), less than one year at 22.0% (55 respondents), and 1-3 years at 15.6% (39 respondents). This distribution shows a diverse range of work experience among respondents, with a notable concentration of individuals having moderate to extensive experience.

Table 5

Marital Status of Respondent

	N	%
Married	156	62.4%
Unmarried	94	37.6%
Total	250	100.0%

The table presents the marital status of 250 respondents, with no missing data. The majority, 62.4% (156 respondents), are married, while 37.6% (94 respondents) are unmarried.

5.1 Reliability Analysis

Table 6

Reliability Statistics

Cronbach's Alpha	No of Items
880	18

There are 250 valid cases that make up the dataset, having no missing values and ensuring that the analysis was conducted on the entire dataset. The measure of all 250 observations was used during its analysis. . Cronbach's Alpha, a measure of scale reliability over 18 items, is 0.880. A high degree of internal consistency among the items is suggested by a Cronbach's Alpha value of 0.880, which shows that the items are consistently measuring the same underlying concept. It is implied that the scale is reliable for research purposes by this level of reliability, which is typically regarded as extremely good.

5.2 Descriptive Analysis

Table 7

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
LA	250	1.00	5.00	3.7850	.94557	-1.421	.154	1.437	.307
HB	250	1.25	5.00	4.0840	.72460	-1.792	.154	3.457	.307
FA	250	1.00	5.00	3.9300	.82785	-1.796	.154	3.103	.307
FL	250	1.33	5.00	3.9440	.73993	-1.263	.154	1.257	.307
ID	250	1.00	5.00	3.9280	.84716	-1.487	.154	2.046	.307
Valid N (listwise)	250								

Descriptive Analysis

Note. N = Sample size; Min = Minimum; Max = Maximum; SD = Standard Deviation; SE = Standard Error.

A descriptive summary is used to check the behavior of the data. Table 5.2 shows that Loss aversion has a minimum value of 1.00, max is also 5.00 and a mean of 3.7850. The minimum value for the variable herding behavior is 1.25, maximum value if 5.00 and a mean of 4.0840 Here, the variable financial literacy has values that range from a minimum of 1.00 to a maximum of 5.00 with a mean value of 3.9300 And the variable Investment decision ranges from 1.00 to

5.00 with a mean of 3.9280. Values of kurtosis and skewness shows data is normally distributed and results are fined.

5.3 Correlation Matrix

Table 8

Correlation Matrix

		LA	HB	FA	FL	ID
LA	Pearson Correlation	1	.251**	.326**	.374**	.340**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	250	250	250	250	250
HB	Pearson Correlation	.251**	1	.550**	.479**	.465**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	250	250	250	250	250
FA	Pearson Correlation	.326**	.550**	1	.462**	.516**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	250	250	250	250	250
FL	Pearson Correlation	.374**	.479**	.462**	1	.495**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	250	250	250	250	250
ID	Pearson Correlation	.340**	.465**	.516**	.495**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	250	250	250	250	250

Note. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis table presents the Pearson correlation coefficients between five variables: Loss Aversion (LA), Herding Behavior (HB), Financial Literacy (FL), Financial Anxiety (FA), and Investment Decisions (ID), based on a sample size of 250 observations. Each correlation coefficient is significant at the 0.01 level (2-tailed), indicating statistically significant relationships between the variables. Loss Aversion (LA) shows a positive correlation with all other variables: Herding Behavior (HB) ($r = .251$), Financial Anxiety (FA) ($r = .326$), Financial Literacy (FL) ($r =$

.374), and Investment Decisions (ID) (r = .340). These values suggest that as individuals' loss aversion increases, there is a moderate increase in herding behavior, financial anxiety, financial literacy, and the impact on their investment decisions. The strongest correlation for LA is with Financial Literacy (FL) (r = .374), indicating a relatively more substantial relationship compared to other variables. Herding Behavior (HB) demonstrates a higher correlation with Financial Anxiety (FA) (r = .550), Financial Literacy (FL) (r = .479), and Investment Decisions (ID) (r = .465), compared to its correlation with Loss Aversion (LA). The strong correlation between HB and FA (r = .550) signifies that individuals who exhibit herding behavior tend to experience higher financial anxiety.

Financial Anxiety (FA) exhibits significant correlations with all other variables, with the highest correlation being with Investment Decisions (ID) (r = .516). This positive correlation indicates that an increase in financial anxiety is associated with a substantial impact on investment decisions. FA also shows a notable correlation with Financial Literacy (FL) (r = .462), reinforcing the strong relationship between these variables. Financial Literacy (FL) shows the highest correlation with Investment Decisions (ID) (r = .495) among the variables in the table, highlighting a strong positive relationship. This indicates that changes in financial literacy are strongly associated with changes in investment decisions. Finally, Investment Decisions (ID) shows significant correlations with all other variables, with the highest being with Financial Anxiety (FA) (r = .516), followed closely by Financial Literacy (FL) (r = .495). This suggests that ID is closely related to both financial anxiety and financial literacy. The correlation analysis reveals moderate to strong positive relationships between the variables, with the most notable relationships being between Herding Behavior and Financial Anxiety, Financial Anxiety and Investment Decisions, and Financial Literacy and Investment Decisions. These correlations suggest interconnectedness and potential predictive relationships among these variables. The findings indicate that loss aversion, herding behavior, financial literacy, and financial anxiety all significantly impact investment decisions, and their interrelationships warrant further investigation to understand the underlying causal mechanisms and implications for financial decision-making strategies.

5.4 Model Summary

Table 9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578[a]	.334	.326	.69567

Note. Predictors: (Constant), FL, LA, HB

With a multiple correlation coefficient (R) of 0.578 in the model summary, the relationship between the predictors (FL, LA, and HB) and the dependent variable is moderately positive. With a R Square of 0.334, the dependent variable's variance is 33.4% explained by the model. After adjusting for the number of predictors, the Adjusted R Square is 0.326, meaning that the model explains 32.6% of the variation. With a 0.69567 Standard Error of the Estimate, the fit appears to be moderate. All things considered, FL, LA, and HB are strong predictors that account for a sizable percentage of the variability in the result.

5.5 ANOVA

Table 10

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	59.650	3	19.883	41.084	.000[b]
Residual	119.054	246	.484		
Total	178.704	249			

Note. Dependent Variable: ID, Predictors: (Constant), FL, LA, HB

The regression model containing the predictors FL, LA, and HB is statistically significant, based to the ANOVA results (F = 41.084, p = 0.000). ID is the dependent variable. With a regression sum of squares of 59.650 and a residual sum of squares of 119.054, the model accounts for a sizable percentage of the variance in ID. This suggests that the predictors actually affect the result in a significant way.

5.6 Coefficients

Table 11

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
	.690	.296		2.327	.021
(Constant)	.140	.050	.157	2.782	.006
LA	.329	.070	.281	4.723	.000
HB					
FL	.346	.071	.302	4.865	.000

Note. Dependent Variable: ID

All three predictors—HB, FL, and LA—have a significant impact on the dependent variable (ID), based to the coefficients table. 0.690 is the constant (p = 0.021). HB, FL, and LA have the following coefficients: 0.329 (p = 0.000), 0.346 (p = 0.000), and 0.140 (p = 0.006). This indicates that increases in ID are significantly correlated with increases in LA, HB, and FL, with FL having the largest effect followed by HB and then LA.

5.7 Mediation Analysis

Table 12

Mediation Analysis

Relationship	Total effect	Direct effect	Indirect effect	Confidence interval		t-statistics	Conclusion
				Lower Bound	Upper Bound		
LA→FA→ID	0.5672	0.3741 (0.000)	0.1931 (0.000)	0.1049	0.3008	6.3039	mediation
HB→FA→	0.5438	0.3041	0.2397	0.1244	0.3859	5.9031	mediation

ID		(0.000)	(0.000)				
FL➤ FA➤ ID	0.5672	0.3741 (0.000)	0.1931 (0.000)	0.1049	0.3008	6.3039	mediation

Note. Values in parentheses indicate p-values

The mediation analysis provides insight into how Financial Anxiety (FA) mediates the relationships between Loss Aversion (LA), Herding Behavior (HB), and Financial Literacy (FL) with Investment Decisions (ID). For LA, the total effect on ID is 0.5672, with a direct effect of 0.3741 and an indirect effect through FA of 0.1931, indicating partial mediation. Similarly, HB's total effect on ID is 0.5438, with a direct effect of 0.3041 and an indirect effect of 0.2397, demonstrating FA's significant mediating role. The strongest mediation is observed in the FL to ID pathway, where the total effect is 0.5672, the direct effect is 0.3741, and the indirect effect through FA is 0.1931. The confidence intervals for all indirect effects do not include zero, reinforcing the statistical significance of the mediation. The t-statistics further support these findings, with values of 6.3039 for LA and FL, and 5.9031 for HB, confirming the robustness of the mediation. These results suggest that FA significantly influences how LA, HB, and FL affect investment decisions. Addressing financial anxiety could, therefore, moderate these impacts, promoting more rational investment behaviors and potentially enhancing financial decision-making.

5.8 Data Findings

Based on the results drawn from the previous sections following are the data findings:

Table 13 Data findings

Hypothesis	Statement	Accepted/Rejected
H1	*Loss aversion bias positively affects the investment decision of individual investors.*	*Accepted*
H2	*Financial literacy positively affects the investment decision individual investors.*	*Accepted*
H3	*Herding bias positively affects the investment decision of individual investors.*	*Accepted*
H4 (a)	*Financial anxiety significantly mediates between loss aversion and investment decision.*	*Accepted*
H4 (b)	*Financial anxiety significantly mediates between financial literacy and investment decision.*	*Accepted*
H4 (c)	*Financial anxiety significantly mediates between herding behavior and investment decision.*	*Accepted*

CHAPTER 6: CONCLUSION

6.1 Summary of the Findings

It is assumed that Investment decision is a difficult task as it can have long term effect on an investor ability to make decisions regarding an investment. There are a lot of factors like biases, gender differences, literacy, behavior, information and psychological factors that shape or change an investor's attitude and way of thinking towards the investment decision making. The study revealed that the majority of investors on Pakistan's stock exchange had behavioral biases that influenced their investment decisions. This study discussed and examined the key behavioral biases that investors on Pakistani stock markets suffer from, such as loss aversion, financial literacy, herding behavior and financial anxiety as a mediator. According to the findings and outcomes of several research, Pakistani investors make reasonable decisions but suffer from behavioral biases and a lack of basic understanding. So it could be said that there are two types of investors those who are rational towards their investment decisions and those who are irrational towards their investments. This behavior is due to several factors like loss aversion, financial literacy, herding behavior and financial anxiety. It triggered a need to identify their impact on the investment decisions. If these factors are sorted out or understood then there is a chance that investor could make rational decisions.

This present study or paper has vital responsibility in the finance sector as it will allow investigating the association among diverse components that can influence the common investment decision and investment satisfaction of the investors. It will be useful in investigating the power of excellence and shortcomings of these variables. This would then help the investor to weight each and every variable when making investment decisions. Financial anxiety acts as a mediating variable in this study's investigation of the effects of psychological variables loss aversion, financial literacy, and herding behavior on the decision-making of investors. The study emphasizes the substantial impact of psychological biases on investment behaviors and how this affects individuals' capacity to make sound financial decisions.

The research highlights the particular difficulties encountered in an emerging sector with limited resources and market expertise by concentrating on investors in Pakistan's twin cities. The literature study looks at the effects of financial anxiety, herding behavior, loss aversion, and financial knowledge on investing choices made on the Pakistan Stock Exchange. Loss aversion

causes cautious investing, which frequently results in lower returns. Decisions and actions related to investing are improved by financial knowledge. This study examined how investors in Rawalpindi and Islamabad make investment decisions and the impact of loss aversion bias, financial literacy, and herding biases. Using a questionnaire and purposive sampling to gather data from 250 investors, the study found a strong correlation between these variables and investing choices.

6.2 Recommendations

Pakistan is a growing country with three stock exchanges, including the Karachi Stock Exchange, the Islamabad Stock Exchange, and the Lahore Stock Exchange. The Pakistan Stock Exchange Commission regulates the stock exchanges (SECP). It is important to teach investors about potential risks of loss aversion and provide them tools to lessen its effects. In order to lessen the emotional impact of short-term losses, financial advisors and educational initiatives should emphasise the value of maintaining a balanced perspective on profits and losses. They should also promote long-term investment perspectives and diverse portfolios. Based on the foregoing, it is advised that the Capital Markets Authority of Pakistan, i.e. the Securities and Exchange Commission of Pakistan, implement a comprehensive financial education and government-funded training programs to encourage private investors. It is therefore proposed that research on a comparable issue be performed across Pakistan in various places, institutions, and age groups to establish the dependability of the link between financial literacy and behavioral biases of individual investors across Pakistan.

SECP should support individual investors in refining their own research and decision-making abilities. It is possible to arrange workshops and seminars to educate critical thinking and the risks associated with blindly following market trends. Instead of just copying the investment decisions made by others, financial institutions should offer guidance and resources that encourage making well-informed decisions. SECP should organize seminars like financial planning, stress management, and literacy education with the goal of lowering financial anxiety. In order to assist investors maintain composure and make logical decisions even under unstable market situations, financial advisors should offer counseling to address emotional reactions to market changes.

6.3 Practical Implications

Investors are vulnerable to societal pressure, which can have major consequences for their investing decisions. Individual investors' asset allocation is also influenced by external variables such as guidance from family members and peers, as well as information from the media and newspapers. A poor asset allocation might jeopardize an individual investor's investing goals. Individual investors must thus protect themselves against these societal effects in order to prevent investing losses. As described below, the findings of this research study have several ramifications for stakeholders such as individual investors. Investment decisions are influenced by social contacts with family and friends. Individual investors are typically confident in the kind of investments they make and the returns they get. Research would help individual investors understand their personality type allowing them to make efficient and effective financial selections that would ensure positive investment success. The first implications are essential for academicians since this study broadens the understanding of numerous external elements such as external social impact that may influence individuals' decision making. Another conclusion of the study is that corporations, governments, and securities issuers can consider investors' interests before releasing securities to the market. Investor performance may be improved by being more conscious of their behavioral factors and errors in judgement, resulting in a more efficient market. After being aware of the biases, investors can reduce their risk.

6.4 Limitations and Future Research

There are a few noticed limitations to this study that it was carried out in Pakistan, a less developed market; regardless of the time constraints for sampling, simple random or convenient techniques were used, limiting the sample size to 250 and only including individuals from Pakistan; additionally, the study targeted specific investors from Rawalpindi and Islamabad. Despite the promising findings on the favorable impacts of financial knowledge on biases, further study is needed. Future researchers are invited to use other approaches to assess the robustness of the patterns identified in this study. If they have more time, they may expand their sample size by researching other places like as Lahore and Karachi, which would help them, acquire more exact results. A future research might account for additional psychological biases like as overconfidence, cognitive bias, availability, ambiguity bias, mental accounting, anchoring, and so on that may impact individual investment decisions. As previously indicated, some fundamental financial literacy ideas are used in this study; nevertheless, there is a need to

apply more advanced financial literacy concepts in various parts of Pakistan. Future researchers can test the validity of this study using a qualitative technique with the same sample size and characteristics.

References

Adil, M., Singh, Y., & Ansari, M.S. (2021). How financial literacy moderate the association between behaviour biases and investment decision?. *Asian Journal of Accounting Research*, *7*(1), pp.17-30.

Ainia, N. S. N., & Lutfi, L. (2019). The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making. *Journal of Economics, Business, & Accountancy Ventura*, *21*(3), 401-413.

Ajzen, I. (1980). Understanding attitudes and predictiing social behavior. *Englewood cliffs*.

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology*, *32*(4), 665-683.

Ajzen, I., 1985. From intentions to actions: A theory of planned behavior. In *Action control: From cognition to behavior* (pp. 11-39). Berlin, Heidelberg: Springer Berlin Heidelberg.

Ali, M., Amir, D. H., & Shamsi, D. A. (2021). Consumer herding behavior in online buying: A literature review. *M Ali, H Amir, A & A. Shamsi (2021). Consumer Herding Behavior in Online Buying: A Literature Review. International Review of Management and Business Research*, *10*(1), 345-360.

Areiqat, A. Y., Abu-Rumman, A., Al-Alani, Y. S., & Alhorani, A. (2019). Impact of behavioral finance on stock investment decisions applied study on a sample of investors at Amman stock exchange. *Academy of Accounting and Financial Studies Journal*, *23*(2), 1-17.

Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2019). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance*, *45*(1), 124-146.

De Arruda, T. J., de Moraes, M. B., & Oliveira, E. D. A. Q. (2015). Behavioral finance: a study on investments decisions. *Business and Management Review*, *4*(7), 202-222.

DIDWANIA, M., & SHARMA, M. BEHAVIORAL FINANCE: DELINEATION AND
COALESCENCE OF HUMAN BEHAVIOR & INVESTMENT DECISIONS.

Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to
theory and research.

Gal, D., & Rucker, D. D. (2018). The loss of loss aversion: Will it loom larger than its
gain?. *Journal of Consumer Psychology*, *28*(3), 497-516.

Gaudence, M., Patrick, M., & Denys, M. (2018). Effects of financial literacy on loan repayment
among small and medium entrepreneurs of microfinance institutions: Case study of
Inozamihigo Umurenge Sacco in Nyaruguru District. *IOSR Journal of Business and
Management*, *20*(5), 19-37.

Grable, J. E., Archuleta, K. L., Ford, M. R., Kruger, M., Gale, J., & Goetz, J. (2020). The
moderating effect of generalized anxiety and financial knowledge on financial
management behavior. *Contemporary Family Therapy*, *42*, 15-24.

Grable, J., Heo, W., & Rabbani, A. (2015). Financial anxiety, physiological arousal, and
planning intention. *Journal of Financial Therapy*, *5*(2), 2.

Hasler, A., Lusardi, A., & Valdes, O. (2021). Financial anxiety and stress among US households:
New evidence from the national financial capability study and focus groups. *FINRA
Investor Education Foundation*.

Hsieh, S. F., Chan, C. Y., & Wang, M. C. (2020). Retail investor attention and herding
behavior. *Journal of Empirical Finance*, *59*, 109-132.

Jain, J., Walia, N., & Gupta, S. (2019). Evaluation of behavioral biases affecting investment
decision making of individual equity investors by fuzzy analytic hierarchy
process. *Review of Behavioral Finance*, *12*(3), pp.297-314.

Jain, N., & Kesari, B. (2020). The impact of behavioral biases on financial risk tolerance of
investors and their decision making.

Javaira, Z., & Hassan, A. (2015). An examination of herding behavior in Pakistani stock market. *International journal of emerging markets*, *10*(3), pp.474-490.

Kadhum, H. J., & Saidi, H. K. (2022). BEHAVIORAL BIASES AND THEIR IMPACT ON FINANCIAL PERFORMANCE IN THE CONTEXT OF FINANCIAL LITERACY: A LITERATURE REVIEW. *World Bulletin of Management and Law*, *11*, 38-49.

Kasoga, P. S. (2021). Heuristic biases and investment decisions: multiple mediation mechanisms of risk tolerance and financial literacy—a survey at the Tanzania stock market. *Journal of Money and Business*, *1*(2), 102-116.

Khan, M. U. (2017). Impact of availability bias and loss aversion bias on investment decision making, moderating role of risk perception. *Management & Administration (IMPACT: JMDGMA)*, *1*(1), 17-28.

Mallik, K. A., Munir, M. A., & Sarwar, S. A. L. M. A. N. (2017). Impact of overconfidence and loss aversion biases on investor decision making behavior: Mediating role of risk perception. *International Journal of Public Finance, Law & Taxation*, *1*(1), 13-24.

Mian, T.S. (2014). Examining the level of financial literacy among Saudi investors and its impact on financial decisions. *International Journal of Accounting and Financial Reporting*, *4*(2), pp.312-328.

Ngui, J. X., Tan, W. J., Tan, Z. Y., Tee, Q. W., & Wong, Y. J. (2022). *The subjective financial well-being of emerging adults in Malaysia: the role of expectation and value* (Doctoral dissertation, UTAR).

Novianggie, V., & Asandimitra, N. (2019). The influence of behavioral bias, cognitive bias, and emotional bias on investment decision for college students with financial literacy as the moderating variable. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *9*(2), 92-107.

Qamar, A., & Lodhi, S. (2023). Impact of Behavioral Biases on Women Entrepreneurs Investment Decision. *Pakistan Journal of Social Research*, *5*(01), 455-465.

Rasool, N., & Ullah, S. (2020). Financial literacy and behavioural biases of individual investors: empirical evidence of Pakistan stock exchange. *Journal of Economics, Finance and Administrative Science*, *25*(50), pp.261-278.

Raut, R. K. (2020). Past behaviour, financial literacy and investment decision-making process of individual investors. *International Journal of Emerging Markets*, *15*(6), 1243-1263.

Shafqat, I., & Mohti, W. (2022). The Role of loss aversion emotional bias in individual investors performance: Evidence from Pakistan Stock Exchange. *International Journal of Business and Management Sciences*, *3*(4), 141-163.

Shapiro, G. K., & Burchell, B. J. (2012). Measuring financial anxiety. *Journal of Neuroscience, Psychology, and Economics*, *5*(2), 92.

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being?. *Journal of behavioral and experimental finance*, *14*, 30-38.

Tabassum, S., Soomro, I. A., Ahmed, S., Alwi, S. K. K., & Siddiqui, I. H. (2021). Behavioral Factors Affecting Investment Decision-Making Behavior in a Moderating Role of Financial Literacy: A Case Study of Local Investors of Pakistan Stock Market. *International Journal of Management (IJM)*, *12*(2), 321-354.

Yip, J. A., & Côté, S. (2013). The emotionally intelligent decision maker: Emotion-understanding ability reduces the effect of incidental anxiety on risk taking. *Psychological Science*, *24*(1), 48-55.

APPENDIX 2

Questionnaire

"Impact of Psychological factors on Investors Decision-Making with the Mediating role of Financial Anxiety"

The study is being conducted by the Finance specialization student of MBA Bahria University, Islamabad campus. The primary objective of this study is to examine the impact of loss aversion, financial literacy and herding behavior with a mediating role of financial anxiety on investor's investment decisions. Your information will only be utilized for the purpose of the research itself, analyzed in an anonymous manner and in accordance with all standards to ensure utmost confidentiality. If you have any query, you can contact at E-mail: nooruleman2345@gmail.com

1. Gender?

   Male   (   )   Female   (   )

2. Age?

   18-26   (   )   27-35   (   )

   36-44   (   )   45 or above   (   )

3. Educational level?

   Matric   (   )   Intermediate   (   )
   Bachelors   (   )   Masters or above (   )

4. Experience in investment?
   Less than a year (   )   1-3   (   )
   4-5   (   )   more than 5 years (   )

5.   Marital status?

      Married   (   )   Unmarried   (   )

Please Tick (✓) your responses using the following scale:

(1= Strongly Agree, 2= Agreed, 3= Neutral, 4= Disagree, 5= Strongly Disagree)

Sr. #	VARIABLES	Rating				
		1	2	3	4	5
I	*LOSS AVERSION* (JAIN, 2022)					
6.	You would rather hold investments with negative returns instead of taking a loss.					
7.	You are more likely to invest more in those instruments which have given you higher returns earlier.					
8.	You are more likely to avoid risk than usual; after getting prior losses.					
9.	You generally adjust your investment instruments at the time of tax calculation in order to get tax benefits.					
II	*FINANCIAL LITERACY* (Raut, 2020)					
10.	The stock market helps to predict stock prices and earning.					
11.	Considering a long-term period (e.g. 10–20 years) stocks normally give the highest return.					

|						
12.	Normally, stocks display highest fluctuation over time.					
III	***HERDING BEHAVIOR*** (H. Kent Baker, 2018)					
13.	I rarely consult others before making stock purchases or sales.					
14.	I usually react quickly to the changes in other investors' decisions and follow their reactions to the stock market.					
15.	I consult others (family, friends or colleagues) before making a stock purchase.					
16.	I follow social blogs/ forums before making a stock purchase/sale.					
IV	***FINANCIAL ANXIETY*** (Gilla K. Shapiro, 2012)					
17.	I prefer not to think about the state of my personal finances.					
18.	I do not make a big enough effort to understand my finances.					
19.	Thinking about my personal finances can make me feel anxious.					
20.	I find opening my bank statements unpleasant.					
V	***INVESTMENT DECISION*** (Kiran Aziz Malik, 2017)					
21.	Money is the most important goal of my life.					
22.	Stock markets are unpredictable that's why I would never invest in stocks.					

final_doc NOOR.docx

14%   **10**%   **8**%   **5**%
SIMILARITY INDEX   INTERNET SOURCES   PUBLICATIONS   STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Postgraduate Institute of Management Student Paper	1%
2	www.cbmsbm.com Internet Source	1%
3	www.scielo.org.pe Internet Source	<1%
4	Pope, Angela D.. "Business intelligence: Applying the unified theory of acceptance and use of technology.", Proquest, 2014. Publication	<1%
5	Mohd Adil, Yogita Singh, Mohd. Shamim Ansari. "How financial literacy moderate the association between behaviour biases and investment decision?", Asian Journal of Accounting Research, 2021 Publication	<1%
6	Submitted to Higher Education Commission Pakistan Student Paper	<1%
7	scholarexpress.net Internet Source	<1%
8	Submitted to Maulana Azad National Institute of Technology Bhopal Student Paper	<1%
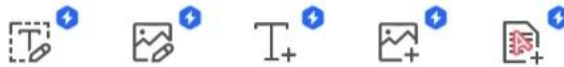
Edit   Annotate   Fill & Sign   Convert   All