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Influence of Behavioral Biases on Investment Decisions: Moderating Role of Financial Literacy and Emotional Stability in The New Normal

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ABSTRACT
The study explores how six different behavioral biases affect investing decisions. It carefully looks at how these biases affect investment decisions while taking financial literacy and emotional stability into account as a moderating factors. The primary focus of this study is a study of 384 individuals who are active stock exchange traders. Smart PLS 4 is one of the tools used in the data analysis phase to examine the collected data. Interestingly, the results highlight the construct validity of every item used, all of which show loading values that are greater than or equal to 0.60, indicating the measures' resilience. First, reflecting measurement models determine the integrity of the measurement model, and Partial Least Squares (PLS) provides the analytical framework. Structural equation modelling (SEM) then breaks down the complex correlations between variables. The results of these analyses indicate that the combined variables explain 37.53% of the total variation, indicating a noteworthy lack of substantial problems or differences in the standard methods used. Behavioral biases have a significant influence on investment decisions, which is a crucial finding of the study. It also emphasizes how important emotional stability is in this complex interaction as a moderating factor. This confirms the complex relationship between human biases and investing decision-making, highlighting the need of financial literacy and emotional stability in minimizing the impact of these biases.

INTRODUCTION
The investments greatly influence a person's financial future, and various factors may influence these decisions. One of the factors that can affect investment decisions is behavioural bias (Singh & Kumar, 2021). Decisions made by people can become unreasonable because of BB, which are the cognitive and emotional elements that influence such decisions (Weixiang, 2022). These biases include swarming behaviour, anchoring, overconfidence, and loss aversion (Barber & Odean, 2001). Decisions can be made incorrectly as a result of BBs, such as cognitive and emotional biases. Some biases include herding, anchoring, overconfidence, and loss aversion. The unstable and erratic economic environment may make investors more susceptible to cognitive biases as the world adjusts to the "new normal" brought on by the COVID-19 epidemic (Septian, 2022). Therefore, this study will investigate the influence of BB on investing choices in the new normal.
Emotional stability and financial competence may also mitigate the impact of BBs on IDs. A person's knowledge and comprehension of financial terms and instruments, which can add in his ability to make more educated informed investment decisions, is referred to as financial literacy (Lusardi & Mitchell, 2014). The capacity for managing emotions and making judgements based on logic rather than feelings is referred to as emotional stability (Kuppens, Realo, & Allik, 2008). Researching the moderating effects of emotional stability (ES) and financial literacy (FL) on the association between behavioral biases and investment choices is crucial for informing investors. Psychological inclinations called behavioral biases may influence decision-making. These biases could be brought on by individuals attempting to simplify complex assessments via heuristics or mental shortcuts. Particularly in circumstances where ambiguity and uncertainty are common, these quick cuts might result in mistakes in judgement and decision-making (Thaler & Sunstein, 2008).
One area lacking this topic is research on the specific behavioural biases that affect investing choices in the new normal. The literature on the subject of how biases in human behavior affect financial decision-making is growing. Much of it, meanwhile, took place in more traditional investing settings. It can fall short of capturing the special opportunities and difficulties presented by the new norm, such as the rise of digital platforms and greater market volatility. Another area of research that may need improvement is the lack of studies on the moderating effects of emotional stability and financial knowledge in reducing the influence of behavioral biases on investing choices in the new normal. Although these characteristics' personal effects on investment decision-making have been studied in earlier studies, more study is required to analyse how the new normal moderates these aspects precisely. More study in this field may help us comprehend how behavioural biases affect investment choices in the new normal and how people might acquire the knowledge and skills required to make wise choices about their investments in this dynamic environment.
The study of behavioral and cognitive psychology concerning financial decision-making processes is known as behavioral finance. This field is still in development. Academic research on finance is the one that is expanding the fastest. The researcher

wants to investigate how Behavioral biases affect how people make investing decisions. The researcher found that these biases cause deviation from taking the right decision. On different occasions, the investor's investment gets wasted due to the adaptation of any of these biases. This study adds some moderators to check their moderation impact between Behavioral biases and investment decisions (IDs). So, this study will review the moderating role of financial literacy and emotional stability between Behavioral biases and IDs.

This research primarily aims to examine the impact of behavioral biases on investment choices (IDs). This study will contribute to the theory by investigating the effects of behavioral biases on IDs. The moderating effects of emotional stability and financial literacy on investment decisions and behavioral preferences would also not contribute much to the prior research. Because these biases must be researched in developing economies, this research will also provide context. Based on the study's findings, we might inform investors about these biases in an effort to reduce their impact on their decisions. This study identifies the causes of these biases. The study's findings will be useful and can be used by other writers in the future or by students planning to research behavioural biases. The financial industry will also benefit from this research in a new way. This study offers recommendations to investors, financial professionals, academics, and decision-makers involved in this industry.

LITERATURE REVIEW

Several factors influence investing decisions, including individual behavioral biases and personality traits. According to Gulzar and Ali (2023), there are several behavioural biases that might influence investment decisions, including lack of availability, lack of self-control, overconfidence, the illusion of control, and representational prejudice. All the more so during periods of extreme market volatility, these biases may lead to worse investment decisions and ID. The topic of behavioral biases and emotional stability has attracted the attention of researchers and investors who are keen on financial decision-making. Many people's sense of self has been severely shaken by the COVID-19 outbreak and the economic downturn. Given this, the present research seeks to understand the role of behavioural biases in investment choices, as well as the moderating impacts of emotional stability and financial literacy in the new normal.

According to Farooq and Sajid (2015), behavioral finance explains how investors' mental processes influence their investing choices. While some individuals let their emotions dictate their decision-making process, others consider a myriad of factors before settling on a course of action. The impact of behavioral biases on the ID of female investors was investigated by Singh and Jain (2021). Three hundred forty-five participants provided the data. The results showed a strong correlation between investing decisions and behavioral biases. Investor choices were examined by Kartini and Nadha (2021) in relation to the following biases: optimism, overconfidence, loss aversion, representativeness, and anchoring. Data was collected from 165 investors in Yogyakarta. The results indicated that all biases are AB, RB, LAB, OB, and optimism bias, significantly connected with ID. Investors anchoring bias affects decision-making procedures (Wright et al., 1989). Anchoring is a bias that describes the normal human being's propensity to rely particularly on the primary part of information while making decisions (Shin et al., 2018). Overconfidence is the difference between the individual's faith regarding their abilities and real capability in the financial field (Pikulina et al., 2017). Adebambo & Yan (2018) studied investors' overconfidence, firm valuation, and corporate decision.

Anchoring bias affects investor behavior and leads to poor identification, according to study from 2003 by Ariely et al. In the research, participants were asked to guess whether the value of the Dow Jones Industrial Average was more than or lower than a randomly chosen number. The researchers found that investors' responses were affected by the initial number, leading to incorrect identification. Furthermore, studies have shown that the size of the anchor determines the amount of the bias. The effect of anchoring bias on ID becomes more pronounced with increasing anchor size, according to research by Mussweiler and Strack (2000). Before having investors guess the worth of a company's stock, the researchers gave them a variety of anchors to use. Those who were given a lower anchor gave much lower estimations than those who were given a higher one, according to the data. Education and experience may also help reduce the severity of AB, according to the study. When forming an ID, anchors had less of an impact on investors who had undergone AB training, according to research by Weber and Johnson (2009). Investors were briefed about AB by the researchers, who also gave them examples of how AB may influence their choices. The findings demonstrated that trained investors were less prone to let anchors affect their ID decisions.

Overconfidence has been linked to excessive trading and poor performance in investment portfolios, according to a study by Barber and Odean (2001). The study's findings showed that overconfident investors were more likely to participate in excessive trading, which reduced their investment returns. Additionally, studies have demonstrated that ID can suffer from overconfidence. A study by Baker and Wurgler (2007) found that overconfident investors were more likely to invest in speculative stocks with a high potential for large returns and a high risk of loss. The researchers found that overconfidence led investors to overlook the risks of these investments and focus only on the potential for large returns.

The openness inclination is a psychological tendency wherein individuals go with choices or decisions considering the most quickly open or huge information instead of pondering every single reasonable datum (Tversky and Kahneman, 1973). In a similar vein, a study that was conducted in 2018 by Hartzmark and Sussman found that individual investors were more likely to purchase stocks if the company's financial performance was mentioned in the news. That recommends that financial backers might utilize the most accessible or striking data (news titles) to direct their ID, as opposed to zero in on factors more pertinent to the organization's monetary wellbeing.

Self-control bias is a peculiarity that can fundamentally influence ID. Self-control bias is the limit with regards to individuals to control their incautious way of behaving and settle on decisions reliable with their drawn out goals, in any event, while doing so implies renouncing quick satisfaction. As per the writing, discretion inclination can prompt sub-standard ID as financial backers center around quick satisfaction instead of long haul objectives. Research by Odean (1998) found that singular financial backers will quite often exchange all the more every now and again, which brings about lower returns because

of exchange expenses and unfortunate ID. The review credited this way of behaving to poise inclination, as financial backers might focus on the quick fulfillment of exchanging over the drawn out advantages of clutching a speculation.
The propensity for individuals with self-control bias to engage in hazardous ventures is a consequence of this underlying factor (McGreen et.al, 2022). This practice is implemented in order to get desired outcomes with less financial commitments. Nonetheless, the influence of their self-control bias is also evident in this context. Investors sometimes have a tendency to overestimate the short-term benefits derived from engaging in high-risk investments, while simultaneously underestimating the potential long-term consequences that the increased risk may have on their investment portfolio (Li et.al, 2015).
Goleman (2006) claims that investors who score high on the emotional intelligence quotient are more likely to make sound choices. Higher emotional IQ correlates with greater propensity for self-regulatory behaviors that foster growth in perspective and action, especially with regards to financial risk tolerance. Researchers Xu, et al., 2023 found that high levels of emotional intelligence were associated with a greater chance of success. Personal investors' cognitive decision-making about their investment portfolios might benefit from emotional intelligence since it helps them deal with the unpleasant feelings that develop when investments are perceived as risky (Reddy, 2019).

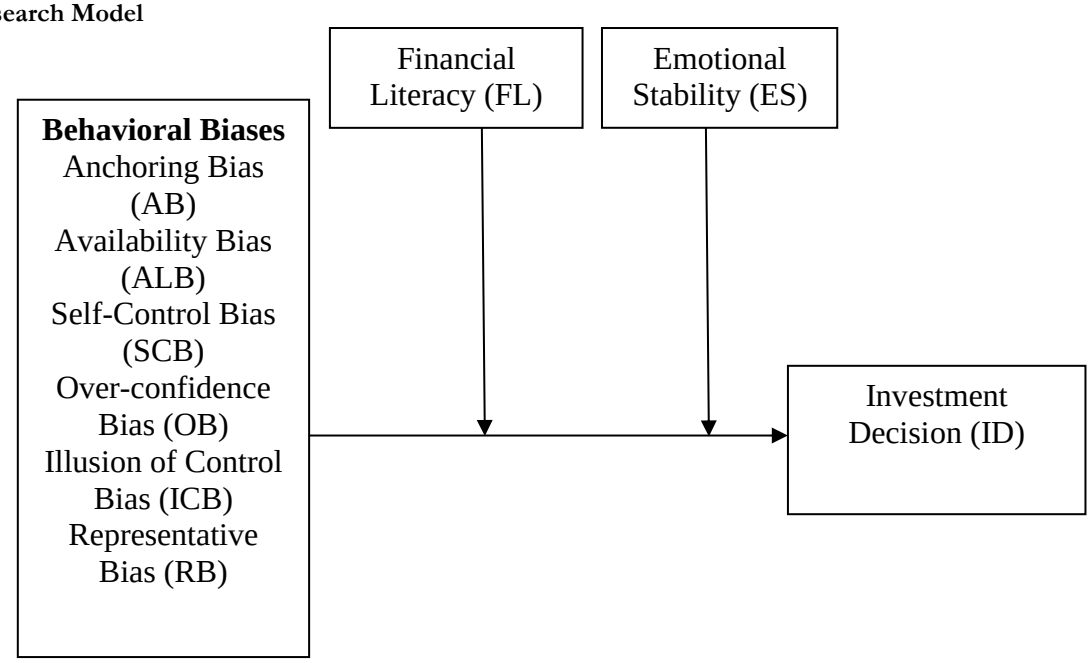
Moderating Role of Financial Literacy

Matey (2021) argues that a study of people's financial literacy is warranted. According to a 2013 study, "behavioral finance, risk diversification, inflation, and interest compounding" are among the most important aspects of economics and finance that the majority of investors do not know about. The individual high priority enough data and capacities to settle on a proficient choice (Van and others 2011), FL influence investment decision methods are discussed, and investors are encouraged to make a fair investment choice. They showed that people who don't have data about the speculation market avoid that and settle on choices in light of proposals (Ullah, 2015).
Adil et al. (2022) investigated conduct predispositions and ID among orientation. The author investigated the moderating effect of FL on ID and behavioral biases. Information was gathered from 235 financial backers. As indicated by the discoveries, the FL unequivocally directs the connection between hazard avoidance, grouping, and attitude, and ID well interfaces among carelessness and ID. The impact of FL on Sharia Bank customers' IDs was the subject of an investigation by HC and Gusaptono (2020). The findings demonstrated a positive and significant connection between ID and FL. Baihaqqy and co. (2020) explored monetary proficiency and ID. Discoveries showed a huge connection among FL and ID.

Moderating Role of Emotional Stability

Emotional stability allows the individual to develop an integrated and fair way of observing the issues of life (Abdel-Fattah, 2020). Pastorelli et al. (1997) perceived that emotional stability refers to the person's ability to stay stable and fair. Having emotional stability, or the ability to control negative feelings like anxiety, stress, and anger, is often cited as evidence of a person's inherent humanity. It has been commonly agreed that conscientiousness is the most important personality attribute to have in the workplace, as stated by Angrist et al. (2021). Furthermore, it is acknowledged as an important personal trait that shows an inverse link with stress-related characteristics such job burnout (Barokas, 2021).
Overall, the literature suggests that behavioral biases can significantly impact investment decision-making, leading to suboptimal ID. However, the moderating effects of financial literacy and emotional stability can help individuals make better ID. Therefore, it is essential to consider these individual factors when developing investment strategies, especially in the new normal, where market conditions are uncertain and unpredictable.

2.9 Research Model



RESEARCH METHODOLOGY

The theoretical framework that directs a researcher's method, presumptions, and ideas about the nature of reality, knowledge, and how learning can be acquired is known as the research philosophy (Akpan, 2022). This study used a positivism philosophy to comprehend the phenomena under research fully. The investors of the PSX make up the population for the current research study. There are 543 companies listed in PSX, and their market capitalization is about Rs. 8000 billion. The exchanges attract over 220,000 individual investors, 1,886 domestic and foreign institutional investors, and 883 domestic institutional investors. A questionnaire was used to collect the main data using the survey approach. Information was retrieved from PSX. The survey approach is practical and helps collect data from more respondents than other methods. Questionnaires provide more authentic information about investors' BB and ID. Total 384 respondents data was collected and used for analysis purpose.

This research study uses convenience sampling technique of non-probability sampling for data collection. The convenience sampling is basically a non-probability sampling technique. It entails picking volunteers who will be available and simple to reach for the researcher. Put another way, rather than being chosen randomly from the population of interest, the individuals or subjects are picked because it is convenient to include them in the study. This sampling will not bond to collect data only from specific investors (Alvi, 2016).

A five-point Likert scale is used to collect the data, with one denoting "strongly disagree" and five denoting "strongly agree." This research study uses the adopted instruments that contain a questionnaire to collect data. SmartPLS and SPSS were used to analyze the data. Data obtained from a survey questionnaire was analyzed using a variety of statistical approaches, such as descriptive statistics, reliability analysis, moderation analysis, correlation analysis, regression analysis, and confirmatory factor analysis. Multiple regression analysis allows one to examine how BB, FL, and ES impact investment decisions.

RESULTS AND DISCUSSION

Demographic Analysis

Table 1: Demographic profile of respondents

		Frequency	Percent
Gender	Male	347	90.4
	Female	37	9.6
Age	Less than 20	6	1.6
	21-30	75	19.5
	31-40	228	59.4
	41-50	73	19.0
	51 and above	2	.5
	Total	384	100

In the current study, 90.4% of males and 9.6% of females investors were respondents. The results show that male respondents responses more than female investors. This is likely because more men than women had invested in the stock market. The above table demonstrates that the respondents less than 20 years having 1.6% of the total sample whereas, people between 21 to 30 represent 19.5% of the sample. Correspondingly the respondents between 31 to 40 years and 41 to 50 years show 59.4% and 19.0% respectively. Out of 384 respondents, only 2 respondents have response in the current study. The results show that the sample is more representative of people in their 30 to 40 years.

4.1 Measurement Model Analysis

The below figure shows the results of Confirmatory Factor Analysis by using SmartPLS 4 software.

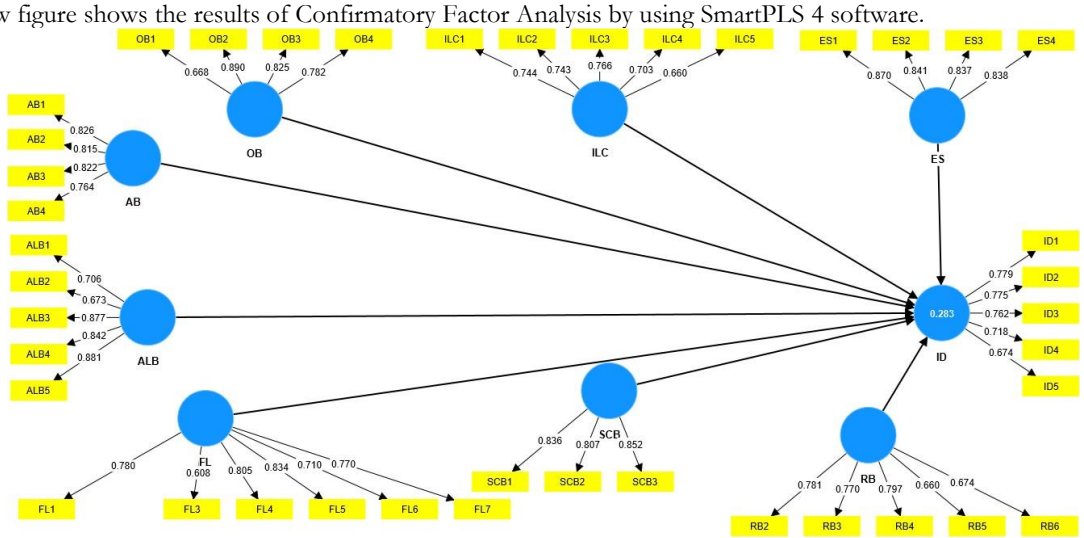


Figure 1: Measurement Model for CFA

In the above figure the loading of each item is generated by using SmartPLS software. Generally, the loading of each item should be >0.60 (Hair et al., 2017), in this study we have also used the criteria of >0.60 which is recommended by social sciences researchers. The results found that all items which loading value is greater than recommended (0.6) value.
In SmartPLS analysis, composite reliability is preferred over Cronbach's α, with scores above 0.70 indicating reliability and above 0.90 indicating possible multicollinearity (Hair et al., 2017). To evaluate convergent validity, AVE was utilized in this study, with scores above 0.50 indicating significant support. The below table demonstrates all Cronbach's α, composite reliability, and AVE scores, indicating the internal consistency and convergent validity of reflective constructs.

Table 2: Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AB	0.823	0.835	0.882	0.651
ALB	0.859	0.902	0.898	0.641
ES	0.869	0.881	0.910	0.717
FL	0.849	0.877	0.887	0.570
ID	0.796	0.802	0.860	0.551
ILC	0.776	0.791	0.846	0.524
OB	0.804	0.838	0.872	0.632
RB	0.796	0.822	0.857	0.546
SCB	0.778	0.782	0.871	0.692

Regression Analysis
After validating the measurement model, the SmartPLS analysis evaluates the significance of paths, effect size using f^2 size and relevance of endogenous constructs using R^2 and Q^2, and the hypotheses of the study.

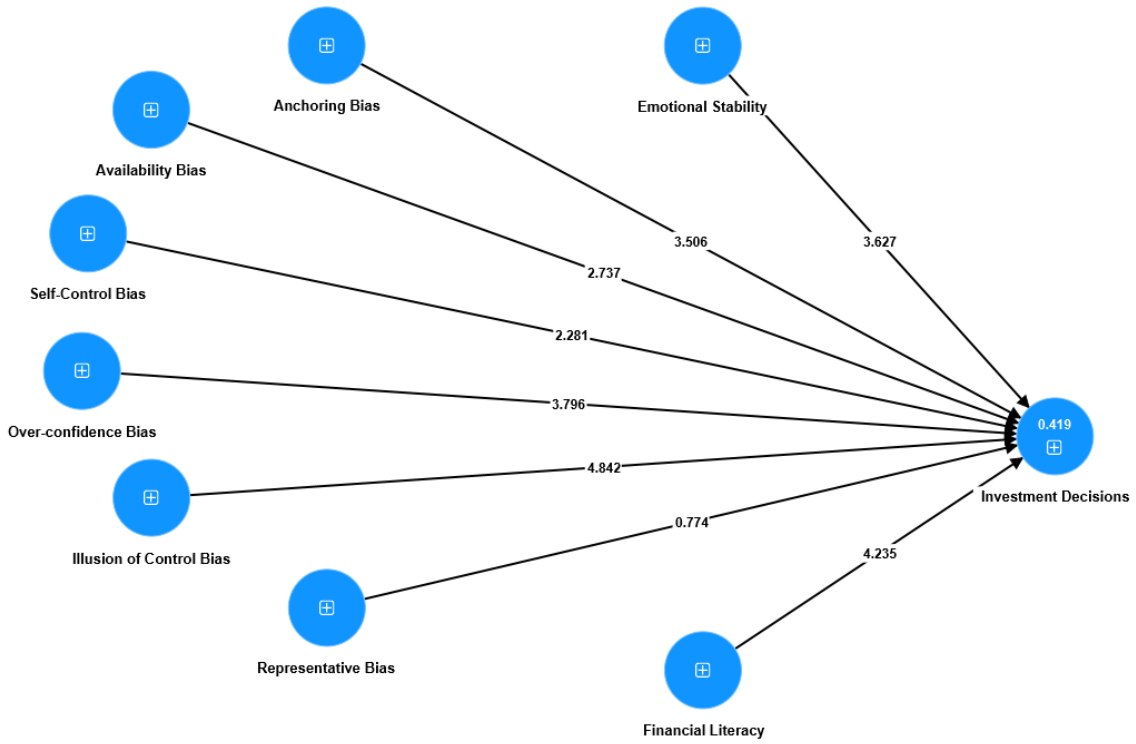


Figure 2: Regression Analysis

By analyzing the VIF values for the path model, it was founded that all values were below the threshold of 5, implying that there was no collinearity among the variables. The findings are displayed in the above table.
During the SmartPLS analysis, path model coefficients (β) were examined to evaluate the hypothesized relationships between the variables. These coefficients can range from -1 to 1, as described by Hair et al. (2017). Effect sizes (f^2) were computed to assess the impact of exogenous constructs on endogenous constructs in the structural model. Cohen (1992) has provided guidelines for interpreting f^2 values, with values less than 0.02 indicating no effect, 0.02 to less than 0.15 indicating a small effect, 0.15 to less than 0.35 indicating a medium effect, and 0.35 or greater indicating a large effect. These f^2 values are presented in table, along with two-tailed *t* values and corresponding *p* values.
The following table shows route model coefficients (β), two-tailed t-values, effect sizes (f2), and associated p-values for estimating relationships between dependent and independent variables. The path model coefficients quantify the change in the dependent variable in standard deviations for each standard deviation change in the independent variable (Hair et al., 2017).

Table 3: Hypothesis Testing

Hypo	Hypothesis	β	f²	t value	P value	Decision
H1	Anchoring Bias -> Investment Decisions	0.194	0.161++	3.506	0.000	Accepted
H2	Availability Bias -> Investment Decisions	0.176	0.110+	2.737	0.006	Accepted
H3	Illusion of Control Bias -> Investment Decisions	0.281	0.215++	4.842	0.000	Accepted
H4	Over-confidence Bias -> Investment Decisions	0.247	0.078+	3.796	0.000	Accepted
H5	Representative Bias -> Investment Decisions	0.048	0.005	0.774	0.439	Rejected
H6	Self-Control Bias -> Investment Decisions	0.118	0.181++	2.281	0.023	Accepted

+small, ++medium, +++large

The table above illustrates each relationship's beta, f2, t-statistics, p, and decision. The results show that only representative bias has insignificant impact on investment decisions, so all hypotheses are accepted except H5.

Table 4: R-square

	Investment Decision
R-square	0.419
R-square adjusted	0.406
Durbin-Watson test	2.917
Q^2	0.335

The results of this study indicate that the path model displayed a statistically significant but moderate coefficient of determination (R^2) for the endogenous variable of investment decision (0.414). Q^2 scores also suggest a moderate level of predictability, with scores of 0.419.

Moderation Analysis

In this study, the model tested the moderating variables (Emotional Stability and Financial Literacy) over independent variables (Anchoring Bias, Availability Bias, Illusion of Control Bias, Over-confidence Bias, Representative Bias and Self-Control Bias) and dependent variable (Investment Decision).

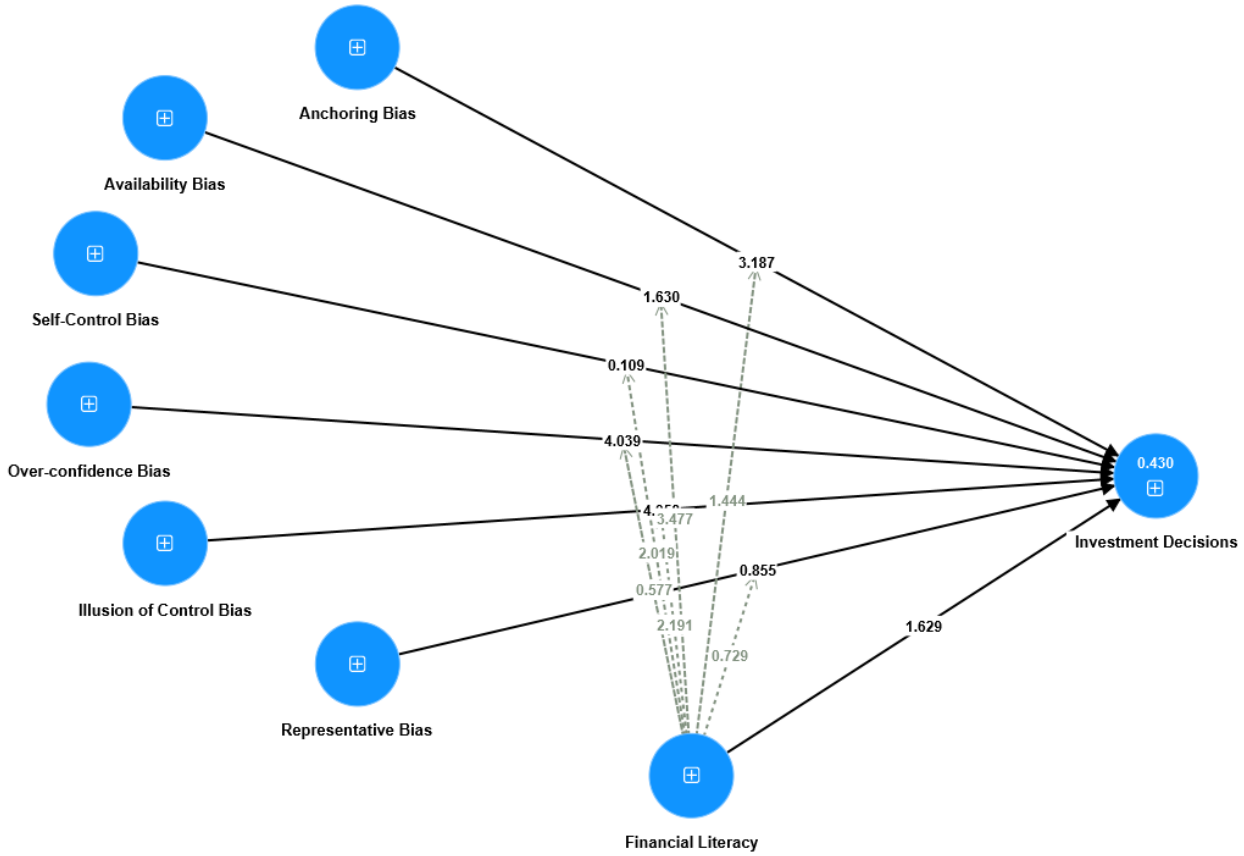


Figure 3: Moderation by Financial Literacy over Direct Relationship.

The above figure and below table illustrate each relationship's beta, t-statistics, p, and decision. The results show that representative bias and over confidence bias have insignificant moderating impact on investment decisions, so all hypotheses are accepted except H7 and H9.

Table 5: Path coefficients for Moderation by Financial Literacy

Hypo	Relationship	(β)	P Value	Decision
H7	Financial Literacy x Representative Bias -> Investment Decisions	0.049	0.466	Rejected
H8	Financial Literacy x Self-Control Bias -> Investment Decisions	0.094	0.044	Accepted
H9	Financial Literacy x Over-confidence Bias -> Investment Decisions	0.028	0.564	Rejected
H10	Financial Literacy x Illusion of Control Bias -> Investment Decisions	0.122	0.028	Accepted
H11	Financial Literacy x Anchoring Bias -> Investment Decisions	0.110	0.149	Accepted
H12	Financial Literacy x Availability Bias -> Investment Decisions	0.199	0.001	Accepted

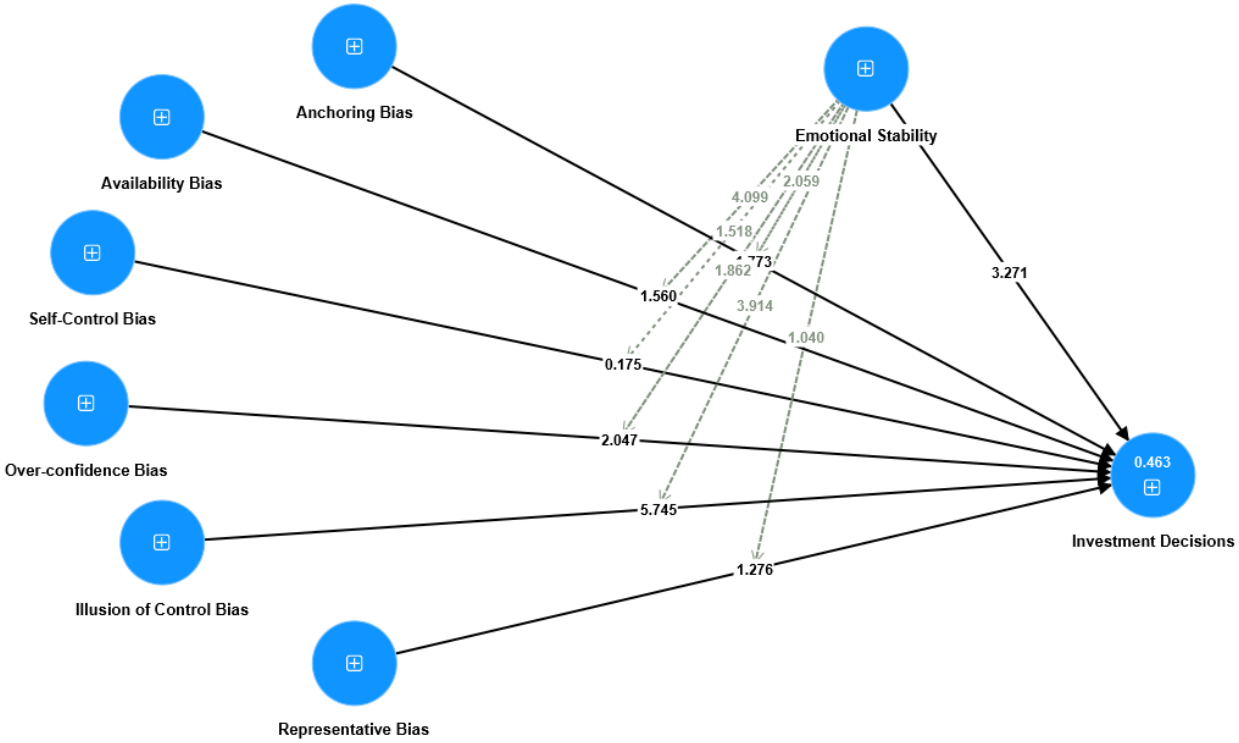


Figure 4: Moderation by Emotional Stability over Direct Relationship.

The above figure and below table illustrate each relationship's beta, t-statistics, p, and decision. The results show that representative bias and self-control bias have insignificant moderating impact on investment decisions, so all hypotheses are accepted except H15 and H16.

Table 6: Path coefficients for Moderation by Emotional Stability

Hypo	Relationship	(β)	P Value	Decision
H13	Emotional Stability x Illusion of Control Bias -> Investment Decisions	0.199	0.000	Accepted
H14	Emotional Stability x Anchoring Bias -> Investment Decisions	0.159	0.040	Accepted
H15	Emotional Stability x Self-Control Bias -> Investment Decisions	0.079	0.129	Rejected
H16	Emotional Stability x Representative Bias -> Investment Decisions	0.080	0.299	Rejected
H17	Emotional Stability x Over-confidence Bias -> Investment Decisions	0.099	0.043	Accepted
H18	Emotional Stability x Availability Bias -> Investment Decisions	0.236	0.000	Accepted

Discussion

The results of the regression analysis clearly demonstrate the causal relationship between the independent and dependent variables. Consider the impact of anchoring bias on investment decisions. It is proved that anchoring bias strongly affects an investor's choice of investment. The association is statistically significant (p.000). The conclusion of the testing of the hypotheses is consistent with the findings of the prior studies. Owusu and Laryea (2023) found that investors evaluate the accuracy of their calculations and estimations based on their past experiences. The effects of AB on ID are substantial, according to the literature.

Tversky and Kahneman (1974) found that individuals often base their estimations on the initial anchor, regardless of whether or not it is relevant to the context. Anchoring bias affects investor behavior and leads to poor ID, according to study by Ariely

et al. Participating investors were asked to classify whether the Dow Jones Industrial Average was higher or lower than a made-up number. According to the study findings, investors' responses were skewed because of the first digit. Furthermore, research have shown that anchoring bias affects both novice and seasoned investors. In a study conducted by Rabin and Schrag (1999) found that both inexperienced and seasoned traders were susceptible to AB. Researchers solicited stock price forecasts from investors using available data. The results confirmed the existence of AB by showing that the initial information had an effect on the investors' projections.

Individual investors are more likely to purchase stocks that have recently been in the news, according to research by Hartzmark and Sussman (2018), even if the news story has nothing to do with the company's financial performance. Rather of concentrating on aspects more directly related to the company's financial health, investors may be using the most accessible or prominent information (news headlines) to drive their ID. Investors may reduce the impact of availability bias by actively seeking and considering a variety of information. It might include doing in-depth analysis of a company's financial performance and future prospects, diversifying assets across asset classes and industries, and keeping an eye on the big picture rather than reacting to short-term market fluctuations.

Conclusions

The purpose of this study is to investigate the role that biases in human behavior play in financial investing choices. Additionally, it delves at how emotional stability and financial knowledge moderate the new normal. The study has made an effort to address the inquiries. How can emotional stability and financial knowledge minimize the impact of behavioral biases on investing decisions? Key study objectives, such as evaluating the impact of behavioral biases on investment decisions and the moderating role of financial literacy and emotional stability in this relationship, were developed from these research questions. By analyzing primary data collected from Pakistan Stock Exchange investors, the study questions and goals may be used to examine the underlying assumptions.

However, the correlation between lack of self-control and financial decision-making is mitigated by financial literacy. Similarly, there is a moderating effect of financial literacy on the relationship between illusion of control bias and investment decisions, as well as on anchoring bias, availability bias, self-control bias, overconfidence, and representative bias. Emotional stability also plays a role in moderating these relationships. Here are the rejected hypotheses: H6, H7, H10, H12, H15, and H18.

There clear and visible policy document by the government for the investors including the stock trends, investment opportunities, risks and prospects of investment projects. Such policy document may help the investors to invest in the projects the government consider it feasible. In this regard, seminars, workshops, public interest speeches and promotions in the print and electronic medias, are some of the tools which can be used by the government.

The current research has also managerial implications. The research is significant for managers as it would assist them to develop policies which would help the investors. Besides, the concept of training to investors and related HR practices are also the areas where managers can focus their attention while mapping out organizational strategies. Future researchers, hence, may conduct studies which should be based on cross culture scenarios to assess the changing pattern or differences in the behaviors of investors.

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