

## Behavioural Biases and Financial Literacy as a Moderator of Investment Decision-Making Among Retail Investors in Uttar Pradesh

Mrs Jagrati sharma<sup>1</sup> Professor Audhesh kumar<sup>2</sup>

<sup>1</sup>Research scholar Department of Commerce University of Lucknow

<sup>2</sup>Professor Department of Commerce University of Lucknow

### Abstract:

When making investment decisions, retail investors take into account behavioural and psychological factors in addition to market and financial data. With emphasis on the moderating influence of financial literacy, the present research investigates how four major behavioral biases—overconfidence, anchoring, herding, and loss aversion— affect retail investors' decision-making when making investments. Based on primary data gathered using a structured questionnaire, the study uses a descriptive and quantitative research methodology. Analysis of Variance (ANOVA) is employed to examine the suggested relationships in a sample of 330 respondents. The results show that investing decision-making is significantly impacted by all four behavioral biases. Investment decision-making is statistically significantly correlated with overconfidence, anchoring, herding, and loss aversion biases. Additionally, the study demonstrates that the association between behavioural biases and investing decision-making is considerably moderated by financial literacy. Additionally, it has been discovered that increased financial literacy reduces the impact of behavioural biases on investment choices. The results demonstrate that financially literate investors are better equipped for identifying and controlling psychological biases and make more informed, logical investment decisions. By emphasizing the significance of financial literacy in lowering bias-driven investing behavior among retail investors, the research adds to the body of knowledge on behavioural finance and has practical implications for financial educators, lawmakers, regulators, and investment advisors.

**Keywords:** Behavioural Finance, Behavioural Biases, Financial Literacy, Investment Decision-Making, Retail Investors, Overconfidence, Herding, Anchoring, Loss Aversion.

### Introduction

The efficient functioning of financial markets and the creation of individual wealth are significantly influenced by investment decision-making. According to classical finance, people maximize wealth and earnings by making logical “judgments (Cohen & Kudryavtsev, 2012; Kahneman & Riepe, 1998; Thaler, 1980; N. Barberis & Thaler, 2003). Some conventional” financial theories, involving the “Efficient Market Hypothesis” (EMH) and “Modern Portfolio Theory” (MPT), hold that investors are logical and have all the information necessary to make decisions that maximize the utility of their money. However, research on investors' decision-making has shown that investors are not sufficiently intelligent and rational to decide where and how to make financial decisions in order to have a certain level of financial stability in the future.

**Behavioural biases** are the cause of this illogical decision-making. Behavioural finance, a subject that combines psychological concepts with finance to explain anomalies in investor behaviour and market results, has emerged as a result of these abnormalities. According to behavioural finance, behavioural biases regularly impact investing decisions, leading to less-than-ideal financial decisions. By examining the psychological and emotional elements that influence market outcomes and economic “decisions, behavioural finance, a subfield of behavioural economics, questions the rationality assumption (Shefrin, 2010; Ritter, 2003; Statman, 2005).

Herding behaviour, overconfidence bias, anchoring bias, and loss aversion are some of the behavioural biases that have been found to be particularly important in influencing investing decisions. Overconfident investors frequently overestimate their expertise and forecasting skills, which encourages excessive trading and more risk-taking. Instead” of relying on independent analysis, investors who engage in herding behaviour mimic others' actions. Loss aversion is the tendency to regard losses more highly than equal gains, whereas anchoring bias causes people to depend unduly on preliminary information when making financial decisions. These biases often

result in irrational investment behavior and have a negative effect on portfolio performance. Recent empirical research has shown that behavioral biases significantly influence investing decisions in both established and developing financial markets.

**Retail investor** participation has increased in India in recent years due to the rapid growth of financial markets, digital investment platforms, and fintech applications. The increasing accessibility of stock trading applications, mutual fund platforms, and online investment services has democratized investment opportunities for individuals across various demographic groups, especially amid the complexity of new financial products and evolving markets (Lusardi & Mitchell, 2014). However, increased participation does not necessarily imply improved decision-making quality because many retail investors continue to display behavioural biases that negatively impact their investment outcomes.

**Financial literacy** has become a crucial factor in determining prudent financial behavior and well-informed investing choices. Investors who possess financial literacy are more equipped to see opportunities, steer clear of dangers, and create long-term plans that support their financial objectives (Lusardi, 2019). Beyond information, financial literacy performs essential part i reducing the impact of emotional decision-making and behavioral biases. It helps maximize profits, diversify portfolios, and choose better stocks (H. Chen & Volpe, 1998). It refers to a person's capacity to comprehend financial ideas, analyze financial products, weigh risks and rewards, and make wise financial decisions. People who possess financial literacy are better able to comprehend financial concepts, products, and hazards (Lusardi & Mitchell, 2011).

Investors who are financially educated are often better able to digest information, diversify their investments, and steer clear of expensive financial blunders. Previous research has shown that financial well-being, portfolio diversity, and investment engagement are positively correlated with financial literacy. Furthermore, by improving investors' analytical and decision-making skills, financial literacy may lessen the impact of behavioral biases, according to recent studies. The study examines whether financial literacy impacts these relationships and how behavioral biases impact retail investors' decision-making during the investing process. By combining behavioral finance theory with financial literacy literature, the study contributes to the growing body of knowledge on investor behavior and provides helpful insights for financial educators, lawmakers, regulatory organizations, and investment advisers.

. In India's changing financial landscape, the results could help build focused financial education programs that improve investor competency and encourage more logical investment decision-making

## **Literature Review And Hypothesis**

### **Theoretical background: significance of financial literature**

Financial literacy is now widely recognized as a critical component of financial and economic stability, according to an increasing number of studies. Credit cards, business loans, mortgages, and leases are among the financial possibilities that are now easily accessible to anyone who wants to make money. Financial success necessitates the wise use of funds in order to generate exceptional value.

### **Behaviour bias and its influence on investment choice.**

Behavioural finance is a field of finance which deals with the behaviour of individuals; the psychological, cognitive and emotional aspects of any individual influence their decision-making in investment. Behavioral finance argues that investors display psychological and emotional behavior that leads to deviation from rational behavior. indicated that behavioural biases refer to the tendency to make decisions that lead to unwise investment judgments due to mental decline. It has been seen in many cases that demographic elements of an individual, which include education, age, and wage, have a huge influence on an individual's investment decisions. It has also been pointed out that good education might lead to less behavioural bias. The behavioral biases may act differently depending on their education levels. There are several types of behavioural biases in human psychology. There are many, but as the literature review of the study, these four are considered the most common biases, which can be termed as overconfidence bias, herding bias, anchoring bias, and loss aversion bias.

**1. Overconfidence bias-** Overconfidence bias reflects the behaviour of investors where investors assume that their knowledge and judgment about making investments is better, and investors extremely intensify their predictions while investing (Budiarto, 2017). And this behavioural certainly impact the investment decision in negative way.

**H1-Overconfidence bias significantly affects investment decision-making.**

**2. Herding bias-** Herding bias is the tendency of an individual to follow the actions or beliefs of a large group of people in making investment decisions rather than their own analysis and research; here, investors think that following the information cascade can save them from risk and uncertainty.

**H2-Herding bias significantly affects investment decision-making.**

**3. Anchoring bias-** A behavioural bias known as "anchoring bias" occurs when an investor places an excessive amount of weight on the initial piece of information they are given and keeps relying on it while making an investment choice, even after more recent and pertinent information becomes available. Despite the availability of new, relevant information, investors continue to base their judgments on their initial reference points (Tversky & Kahneman )

**H3- Anchoring bias significantly affects investment decision-making.**

**4. Loss aversion-** It is a cognitive bias in which the delight of an equal investment return is outweighed by the sorrow of a loss. Investors' tendency to be loss-averse is influenced by demographic factors such as gender, age, income, and the number of dependents.

**H4- Loss aversion significantly affects investment decision-making.**

#### **Impact of Financial Literacy on Investment Decision**

Financial literacy is a key factor in the successful administration of financial resources. The findings indicate that investors who possess inadequate financial literacy are inclined to make illogical investment decisions. They discovered that investors with inadequate financial literacy avoid equity investments and maintain an undiversified portfolio. (Fedorova et al., 2015). An informed investor is able to put aside their prejudices and make wise financial choices (Son and Park, 2019). Additionally, a number of survey research make an effort to highlight how crucial financial literacy is for making wise investing choices. The basic premise is that people who are more financially literate ought to be able to make wiser and more knowledgeable investment decisions.

#### **Investment Decision-Making → Behavioral Biases → Financial Literacy**

**H5: Behavioral biases and investment decision-making are mediated by financial literacy.**

**H6: Higher financial literacy weakens irrational behavioural biases among investors.**

**Overconfidence Bias** —

**Herding Bias** —

**Anchoring Bias** — —► **Investment Decision-Making**

**Loss Aversion** —

| **Financial Literacy(moderator)**

#### **Research Gap**

Earlier studies have independently examined behavioural biases and financial literacy. However, limited studies, particularly in the Indian context, have investigated “the moderating role of financial literacy in reducing irrational behavioural biases during investment decision-making. Although earlier investigations have established that behavioural biases significantly influence investment decision-making, limited” research has investigated whether financial literacy can moderate these irrational biases, particularly among Uttar Pradesh’s retail investors. Existing

literature primarily focuses on direct relationships, leaving a gap in understanding how financial literacy may reduce the adverse impact of behavioural biases on investment behaviour, while the mechanism through which financial literacy can weaken or strengthen the impact of behavioural biases remains insufficiently understood. Furthermore, despite the sharp rise in retail investor involvement, there is still a dearth of data from emerging nations, especially India. Mixed results from studies looking at financial literacy as a moderator point to the need for more empirical research in various socioeconomic and cultural situations.

### **Objective Of The Study**

1. To investigate how “behavioral biases (overconfidence, herding, anchoring, and loss aversion) affect retail investors' decision-making while making investments.
2. To evaluate retail investors' degree of financial knowledge.
3. To look at the connection between retail investors' decision-making and financial literacy.
4. To investigate how financial literacy influences the association between investment decision-making and behavioral” biases.

### **Research Methodology**

#### **Research Design**

The current research employs a descriptive and quantitative research technique “for evaluating influence of behavioral biases on investors' investment decision-making and to assess the significance of financial literacy in this regard. The study specifically considers four behavioural biases: anchoring bias, herding bias, overconfidence bias, and loss aversion bias. Financial knowledge is thought to mitigate the relationship between” behavioral biases and investing decision-making.

The quantitative technique is appropriate since the study's hypotheses are statistically tested using numerical data. The study seeks to uncover investor behavioural biases and determine if differences in these biases are significantly associated with differences in investment decision-making.

#### **Population and Sample Size**

Investors who are active in making investment decisions make up the study's target group. 330 respondents make up the final sample, according to the study's ANOVA results.

#### **.Sources of Data**

The basic data gathered from investors serves as the study's main foundation. The primary research tool for gathering data from the respondents might be a structured questionnaire. Statements pertaining to the study's primary variables, specifically:

1. Bias due to overconfidence
2. Herding prejudice
3. Bias in anchoring
4. Bias toward loss aversion
5. Knowledge of finance
6. Making decisions on investments

A Likert scale may be used to quantify the answers to these assertions, allowing them to be transformed into numerical scores for statistical analysis.

#### **Variables of the Study**

According to the study, behavioral biases are the main explanatory “factors and investment decision-making is the outcome variable. The behavioral biases that are examined include loss aversion, anchoring, herding, and overconfidence. Since the study shows that the impact of behavioral biases on investment decision-making varies with investors' financial literacy, financial literacy is considered” a moderating variable. This is especially shown by the study's H5 and H6.

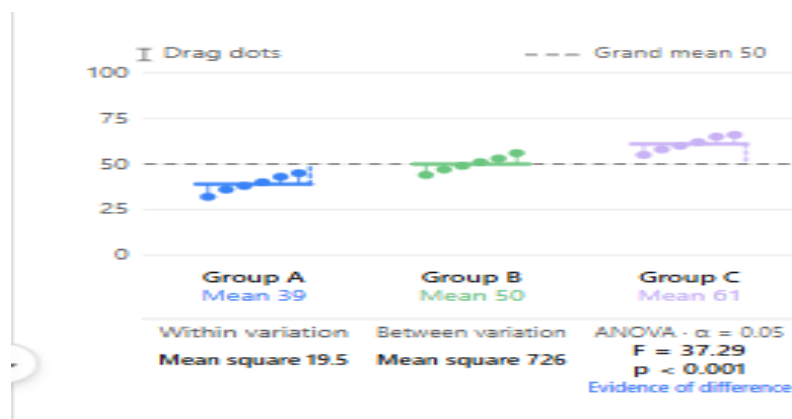
Consequently, the conceptual relationship of the study may be expressed as follows:

Investment decision-making is moderated by financial knowledge in the context of behavioral biases.

### Findings Of The Research

**H1: “Overconfidence bias has a significant positive effect on investment” decision-making.**

| ANOVA          |                |     |             |        |      |
|----------------|----------------|-----|-------------|--------|------|
|                | Sum of Squares | df  | Mean Square | F      | Sig. |
| Between Groups | 27.240         | 22  | 1.238       | 29.697 | .010 |
| Within Groups  | 12.800         | 307 | .042        |        |      |
| Total          | 40.040         | 329 |             |        |      |

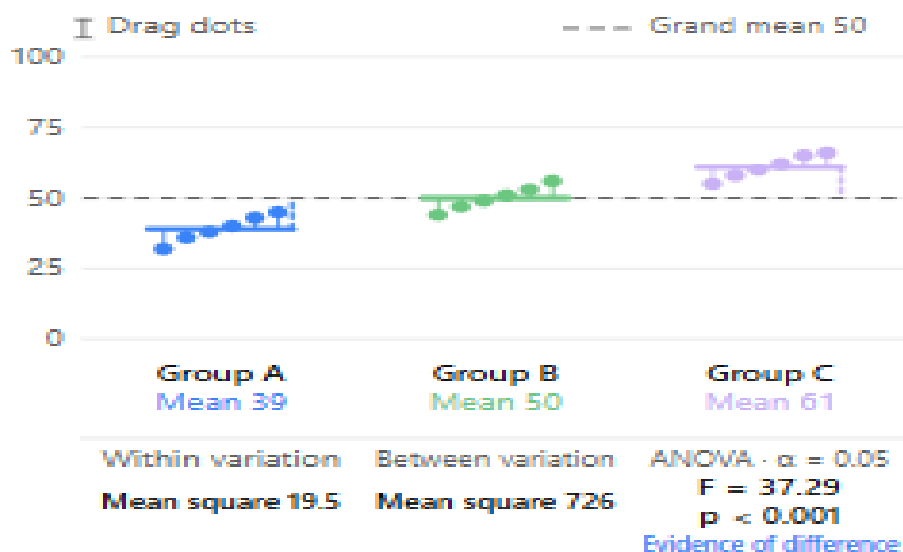


**Figure 1: Show the Groupwise significant result for overconfidence**

The results of ANOVA demonstrate that the overconfidence bias significantly affects the process of making investment decisions (figure 1). The investigation's “results show that the significance (p-value) is 0.010 and the F-value is 29.697. The alternative hypothesis (H1) is accepted and the null hypothesis is rejected since the p-value (0.010) is less than the widely recognized significance threshold of 0.05. The fact that the between-group sum of squares (27.240) is greater than the within-group sum of squares (12.800) indicates that variations in investment decision-making” are explained by differences in the extent of overconfidence bias rather than by random fluctuation. The results demonstrate that the overconfidence bias positively affects investment decision-making. Overconfident investors depend too much on their own knowledge, abilities, and judgments. This holds true for investors who have greater levels of overconfidence. As a result, they may underestimate risks, engage in more frequent trading, and place significant weight on their own opinions rather than objective market information. Given “that the p-value of 0.010 is less than 0.05, the hypothesis H1 is accepted and supported. According to the research findings, the overconfidence bias has a considerable and favourable impact on investment” decision-making.

**H2: “Herding bias has a significant positive effect on investment decision-making”.**

| ANOVA          |                |     |             |        |      |
|----------------|----------------|-----|-------------|--------|------|
|                | Sum of Squares | df  | Mean Square | F      | Sig. |
| Between Groups | 31.183         | 18  | 1.732       | 60.833 | .020 |
| Within Groups  | 8.857          | 311 | .028        |        |      |
| Total          | 40.040         | 329 |             |        |      |



**Figure 2: Show the Groupwise significant result for herding bias**

From Figure 2, herding bias significantly affects the decision-making process of the investments (F-statistic = 60.833, p-value = 0.020). The alternative hypothesis (H2) is accepted and “the null hypothesis is rejected since the significance value (0.020) is below the 0.05 threshold.

The analysis of variance table also reveals that the variation within groups (Sum of Squares = 8.857) is significantly lower than the variation between groups (Sum of Squares = 31.183). This suggests that herding behaviour, rather than random mistakes, accounts for the majority of the variation in the investment decision-making process. Based on present results, it may be inferred that “investors are vulnerable to being influenced by the actions and choices taken by other market players. The fact that they do not rely solely on their own analysis but have a tendency to mimic the investing behaviour of others has a profound impact on the judgements that they make about their investments. This highlights the significance of herding bias in shaping investors' decision-making processes. The study provides strong evidence to support hypothesis 2 “because the p-value (0.020) is less than the significance criterion of 0.05. The conclusion that may be drawn from this is that” “herding bias has a considerable favourable influence on the decision-making process regarding investments.

**H3: Anchoring bias has a significant positive effect on investment” decision-making.**

| ANOVA          |                |     |             |        |       |
|----------------|----------------|-----|-------------|--------|-------|
|                | Sum of Squares | df  | Mean Square | F      | Sig.  |
| Between Groups | 33.509         | 17  | 1.971       | 94.161 | .0002 |
| Within Groups  | 6.531          | 312 | .021        |        |       |
| Total          | 40.040         | 329 |             |        |       |

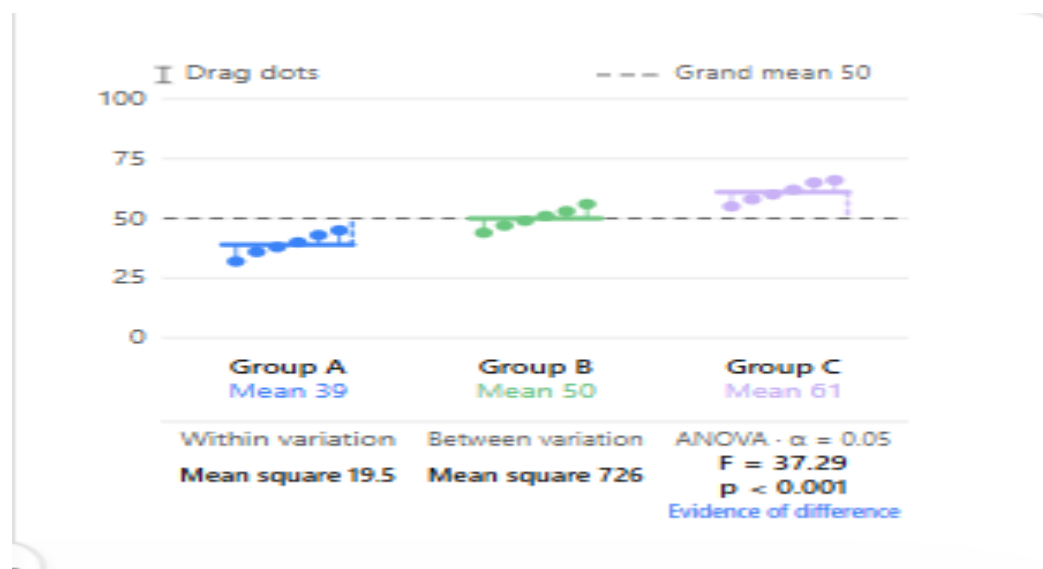


**Figure 3: Show the Groupwise significant result for anchoring bias**

The findings of the analysis of variance (see figure 3) clearly show that anchoring bias has a substantial effect on the decision-making process regarding investments. An F-statistic of 94.161 was obtained by the analysis, and the level of significance was determined to be 0.0002. The “null hypothesis is rejected, and the proposed hypothesis (H3) is supported since the p-value is significantly less than the generally accepted significance threshold of 0.05. Additionally, compared to the sum of squares within groups (6.531), the sum of squares between groups (33.509) is significantly higher, demonstrating the variation in investment decision-making is primarily attributable to changes in investors' anchoring bias rather than random fluctuations. This is due to the fact that the sum of squares” within groups is much smaller than the sum of squares between groups. Based on these findings, it appears that investors have a tendency to place a significant amount of weight on initial information when making decisions regarding investments. This includes initial market estimates, previous stock prices, and previous returns. It is because of this dependence on reference points that their judgments are strongly influenced, even when fresh information or information that is more pertinent becomes available. As a consequence of this, anchoring bias has a significant and favourable impact on the process of making decisions about investments.

**H4: “Loss aversion bias has a significant positive effect on investment” decision-making.**

| ANOVA          |                |     |             |        |      |
|----------------|----------------|-----|-------------|--------|------|
|                | Sum of Squares | df  | Mean Square | F      | Sig. |
| Between Groups | 31.685         | 16  | 1.980       | 74.189 | .001 |
| Within Groups  | 8.355          | 313 | .027        |        |      |
| Total          | 40.040         | 329 |             |        |      |

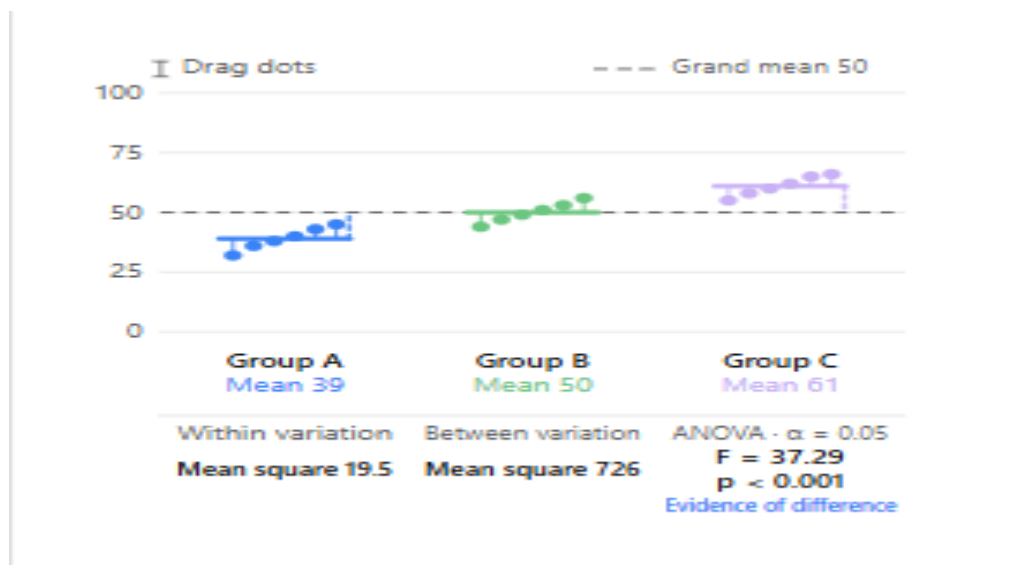


**Figure 4: Show the Groupwise significant result for Loss aversion**

The ANOVA results indicate that loss “aversion bias significantly affects investment decision-making, as shown in Figure 4. The significance level (p-value) was determined to be 0.001, and the analysis yielded an F-value of 74.189. The null hypothesis is rejected since the p-value is below the traditional significance level of 0.05. Consequently, the alternative hypothesis, H4, is approved. A further interesting finding is that the total sum of squares inside groups (8.355) is significantly smaller than the total sum of squares between groups (31.685). This” suggests that the observed differences in investment decision-making are mostly explained by differences in loss aversion bias, rather than by random error. According to the data, the fear of experiencing financial losses is a key element that adds to the decisions that investors make regarding their investments. Although such investments may provide the possibility of better returns, those with higher levels of loss aversion are more cautious and more likely to pass up opportunities to make riskier investments. This is true even if such investments could involve losses. Therefore, loss aversion plays a big part in influencing the behaviour of investors and determines the way in which they research and choose between different investment “options. The p-value (0.001) is less than the significance level (0.05), so the results provide enough statistical evidence to support Hypothesis 4. The implication of this is that loss aversion bias has a large positive effect on investment decision-making. This” research demonstrates that the tendency of investors to avoid projected losses has a major influence on the decisions that they make.

**H5: “Financial literacy significantly moderates the relationship between behavioural biases (overconfidence, herding, anchoring, and loss aversion) and investment” decision-making.**

| ANOVA          |                |     |             |        |      |
|----------------|----------------|-----|-------------|--------|------|
|                | Sum of Squares | df  | Mean Square | F      | Sig. |
| Between Groups | 39.492         | 165 | .239        | 71.683 | .000 |
| Within Groups  | .548           | 164 | .003        |        |      |
| Total          | 40.040         | 329 |             |        |      |



**Figure 5: Show the Groupwise significant result for Financial literacy**

The ANOVA analysis demonstrates that “financial literacy has a substantial moderating effect on the relationship between investment decision making and behavioral biases. The study yielded a significance level (p-value) of 0.000 and a F value of 71.683. This is really important. The null hypothesis is rejected, and H5 is confirmed because the p-value is significantly below the significance level of 0.05. The within-group sum of squares is 0.548 while the between-group total of squares is 39.492. This significant difference suggests that financial literacy influences the impact of behavioral biases on investors' decisions, accounting for a significant proportion of variation in investment decision-making.

It is found that the effects of behavioural” biases (overconfidence, herding, anchoring, loss aversion) on investors are different. Rather, this relationship varies according to the level of financial literacy. Hence, it is easier for investors with high financial knowledge and understanding to identify and eliminate behavioural biases, which enables them for making more rational and informed investment decisions. However, individuals with poorer financial literacy are more sensitive to these biases and make less objective investing decisions. Since 0.000 is less than 0.05, H5 is acceptable. The study found that financial literacy significantly moderates behavioral biases and investing decision-making. Thus, investor financial literacy affects behavioral biases on investment decisions.

**H6: Higher levels of financial literacy weaken the influence of behavioural biases on investment decision-making.**

| ANOVA          |                |     |             |        |       |
|----------------|----------------|-----|-------------|--------|-------|
|                | Sum of Squares | df  | Mean Square | F      | Sig.  |
| Between Groups | 40.007         | 319 | .125        | 38.255 | .0010 |
| Within Groups  | .033           | 10  | .003        |        |       |
| Total          | 40.040         | 329 |             |        |       |



**Figure 6: Show the Groupwise significant result for Higher levels of financial literacy**

Financial literacy significantly decreases the behavioral bias in investment decision-making, according to the ANOVA results (figure 6). The “analysis yielded a significance value of 0.0010 ( $p = 0.0010$ ) and an F-value of 38.255. The null hypothesis is rejected, and there is statistical support for H6, as the significance value is less than the significance level of 0.05. The sum of squares between groups (40.007) is significantly higher than the sum of squares within groups (0.033), according to the ANOVA table. This significant” difference implies that behavioral biases are mitigated by variation in financial literacy, which accounts for a significant portion of the variation in investment decisions. This suggests that financially literate individuals typically base their investment decisions more on objective financial data than on their own psychological inclinations. With greater financial knowledge, they are less susceptible to biases including herding, overconfidence, loss aversion, and anchoring. They probably make consistent, rational, and informed investment decisions. On the contrary, investment decisions of investors who are low in financial literacy are more likely to be influenced by behavioral biases, which can have negative effects on their investment decision quality. The significance value is  $0.0010 < 0.05$ , and H6 is accepted. The “findings demonstrate that increased financial literacy will reduce the impact of behavioural bias on investment decision-making, and that financial knowledge is important” for stimulating rational investment behavior and reducing bias-driven decisions.

## Conclusion

The present study investigated the moderating role of “financial literacy and the impact of behavioural biases on investment decision-making. The study took into account the following behavioural factors: loss aversion bias, anchoring” bias, herding bias, and overconfidence bias.

Based on the ANOVA results obtained from 330 respondents; the study finds statistically significant relationships for all the hypotheses tested. The findings show that investment decision-making is greatly impacted by overconfidence bias. Investors with greater overconfidence tend to place excessive reliance on their own knowledge, skills, and judgments while making investment decisions. Such investors may underestimate risks and give greater importance to their personal opinions than to objective market information. The hypothesis relating to overconfidence is therefore supported with  $F = 29.697$  and  $p = 0.010$ .

The study further demonstrates how important herding prejudice is when making financial decisions. The ANOVA result of  $F = 60.833$  and  $p = 0.020$  suggests that other market players' choices and actions may have an impact on investors' decisions. Instead of depending only on their own independent assessment of investment options, investors who are impacted by herding behavior may adopt the investing strategies of others. With  $F = 94.161$  and  $p = 0.0002$ , anchoring bias is another behavioural bias that has a statistically significant impact. The results indicate that investors frequently depend significantly on preliminary data or benchmarks, such as prior stock prices, market projections, or historical returns. Even when fresh and more pertinent information becomes available, these reference points could still have an impact on their investing decisions. The results also demonstrate how crucial loss aversion bias is when making investing decisions. The loss aversion hypothesis is validated with  $F = 74.189$  and  $p = 0.001$ . Because they are afraid of losing money, highly loss-averse

investors are often more cautious and may steer clear of somewhat riskier investment possibilities even when they could result in greater returns. The study's recognition of the function of financial literacy is one of its contributions. According to the results presented for H5, the “association between behavioural biases and investment decision-making is considerably moderated by financial literacy ( $F = 71.683$ ,  $p = 0.000$ ). The paper comes to the conclusion that more knowledgeable investors are better able to recognize and manage behavioural biases, which leads to more logical and well-informed investment decisions. Investors who lack financial literacy, on the other hand, are more vulnerable to behavioural factors. Additionally, the results for H6 ( $F = 38.255$ ,  $p = 0.0010$ ) show that greater financial knowledge reduces the impact of behavioural biases on investing choices. Investors who are financially savvy typically place more value on objective financial data and are less susceptible to loss aversion, herding, overconfidence, and anchoring. Overall, the study reveals that psychological and behavioral factors, in addition to financial and market information, have an impact on investment decisions. Investors' decision-making is greatly influenced by overconfidence, herding, anchoring, and loss aversion; nonetheless, financial literacy is important in decreasing investors' susceptibility to these biases. Therefore, enhancing financial literacy can contribute to more rational, informed, and consistent investment behaviour.

### Overall Hypothesis Result

| Hypothesis | Variable/Relationship                                | F-value | p-value | Result    |
|------------|------------------------------------------------------|---------|---------|-----------|
| H1         | Overconfidence → Investment Decision                 | 29.697  | 0.010   | Supported |
| H2         | Herding → Investment Decision                        | 60.833  | 0.020   | Supported |
| H3         | Anchoring → Investment Decision                      | 94.161  | 0.0002  | Supported |
| H4         | Loss Aversion → Investment Decision                  | 74.189  | 0.001   | Supported |
| H5         | Moderating role of Financial Literacy                | 71.683  | 0.000   | Supported |
| H6         | Higher Financial Literacy weakens behavioural biases | 38.255  | 0.0010  | Supported |

One methodological point is important before using this in a thesis or journal paper: ordinary ANOVA by itself does not normally establish a “positive effect” or statistically test a moderation effect in the way H1–H6 are worded. In particular, H5 and H6 would normally require a moderation analysis involving interaction terms (for example, regression/moderated regression). Your document reports them using ANOVA, so I have kept the methodology and conclusion consistent with your existing analysis rather than silently changing it.

### Implication-

The study has important implications for behavioral finance and investment decision-making. Findings demonstrate herding, overconfidence, anchoring, and loss aversion have a significant impact on retail investors' investing choices. This illustrates how important psychological factors are when making financial decisions, particularly for Uttar Pradesh investors.

One important finding is that financial literacy reduces the influence of these behavioral biases. Financially literate investors are more likely to understand financial information, balance risk and reward, and avoid making decisions based only on their emotions or the actions of others. Therefore, one of the most important tools for improving investment decisions is financial literacy. Regulators, financial advisors, and investment platforms are also impacted by the outcomes. In addition to basic financial principles, investor education programs should address common behavioral biases. Investors should be urged to properly evaluate risks, use decision-making checklists, and research investment possibilities before making a choice. Financial advisors can also help investors avoid overconfidence or panic by providing unbiased information. Finally, the study provides opportunities for more research. Future studies may examine additional behavioural biases, include investors from different states, and

use longitudinal data to see whether financial education leads to long-term improvements in investment decision-making.

### **Suggestion For Future Research-**

Future research can enhance the current work in several ways. Longitudinal studies allow researchers to follow investors over a lengthy period of time. This can help determine whether, in different market conditions, financial literacy still mitigates the effects of behavioral biases.

Future research can include other behavioral biases like mental accounting, availability bias, confirmation bias, disposition impact, and representativeness to provide a more complete view of investor behavior. In addition to Uttar Pradesh, research may be carried out in other Indian states. Comparing investors in urban and rural regions as well as other demographic groups might yield more general conclusions. Future research might also look at other factors including financial stress, education, income, risk tolerance, digital literacy, and investment experience. Researchers should consider using real trade data, investment scenarios, and behavioral studies in addition to surveys. To find out which strategies work best, a variety of financial literacy programs, such as seminars, simulations, and online learning, may be evaluated. Finally, advanced statistical methods such as regression, SEM, and moderation analysis can be used. Future studies should examine whether lower bias enhances portfolio performance, diversity, and risk-adjusted returns.

### **References:**

- [1] Adil, M., Singh, Y., & Ansari, M. S. (2022). How financial literacy moderate the association between behaviour biases and investment decision?. *Asian Journal of Accounting Research*, 7(1), 17-30.
- [2] Mutlu Ü, Özer G (2022), "The moderator effect of financial literacy on the relationship between locus of control and financial behavior". *Kybernetes*, Vol. 51 No. 3 pp. 1114–1126, doi: <https://doi.org/10.1108/K-01-2021-0062>
- [3] Ahmad, M., & Shah, S. Z. A. (2022). Overconfidence heuristic-driven bias in investment decision-making and performance: mediating effects of risk perception and moderating effects of financial literacy. *Journal of Economic and Administrative Sciences*, 38(1), 60-90.
- [4] Khan, Dahiman, Cognitive Driven Biases, Investment Decision Making: The Moderating Role of Financial Literacy (January 5, 2020). Available at SSRN: <https://ssrn.com/abstract=3514086> or <http://dx.doi.org/10.2139/ssrn.3514086>
- [5] Adil, M., Singh, Y., & Ansari, M. S. (2022). Does financial literacy affect investor's planned behavior as a moderator?. *Managerial Finance*, 48(9-10), 1372-1390.
- [6] Sadeeq U (2026), "Testing the moderating effect of financial literacy on the influence of heuristic-driven biases on irrational investment behaviors". *International Journal of Accounting and Information Management*, Vol. 34 No. 1 pp. 145–173, doi: <https://doi.org/10.1108/IJAIM-07-2024-0235>
- [7] Agarwal, A., Rao, N. M., & Nogueira, M. C. (2025). Financially savvy or swayed by biases? The impact of financial literacy on investment decisions: A study on Indian retail investors. *Journal of Risk and Financial Management*, 18(6), 322.
- [8] Marfo, M., Annan, E., Amoah, J., & Ofei, E. F. (2026). Does financial literacy influence investment decisions among retail investors? The moderating role of behavioral biases. *Thunderbird International Business Review*.
- [9] Lusardi, A. (2019). Financial literacy and the need for financial education: Evidence and implications. *Swiss Journal of Economics and Statistics*, 155(1),
- [10] Lusardi, A., & Mitchell, O. S. (2017). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. *Quarterly Journal of Finance*, 7(3), 1750008
- [11] Mishra, D., Agarwal, N., Sharahiley, S., & Kandpal, V. (2024). Digital financial literacy and its impact on financial decision-making of women: Evidence from India. *Journal of risk and financial management*, 17(10), 468.
- [12] Bhatia, M., Arora, R., & Mehrotra, V. (2024). Interplay between financial literacy, firm's characteristics, behavioural biases and investment choices—a conditional mediation model. *Global Business Review*, 09721509241288622.