

THE IMPACT OF RISK PERCEPTION AND BEHAVIORAL BIASES ON INVESTMENT DECISIONS: EVIDENCE FROM MUTUAL FUND INVESTORS IN KARNATAKA

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ABSTRACT:

This study investigates the impact of risk perception and behavioral biases on the investment decisions of mutual fund investors in Karnataka. Traditional finance assumes investors are rational, but behavioral finance shows that emotions and cognitive errors often affect their choices. The study focuses on key biases, including overconfidence, herding, loss aversion, and anchoring, and examines how these interact with investors' perceptions of risk. Primary data were collected from 412 mutual fund investors through a structured questionnaire. The data were analyzed using descriptive statistics, correlation, and Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that behavioral biases have a significant impact on investment behavior, with risk perception serving as a key mediator of this effect. Overconfidence and herding encourage high-risk and group-driven investments, while loss aversion and anchoring lead to cautious decisions. The study highlights the importance of financial literacy in mitigating bias and improving decision-making. The findings offer practical insights for mutual fund companies, financial advisors, and policymakers.

KEYWORDS: Behavioural Finance, Risk Perception, Behavioral Biases, Investment Decisions, Mutual Fund Investors, Financial Literacy, Karnataka

1. INTRODUCTION:

1.1 Background of the Study

Investment decision-making is a complex process influenced not only by financial information and market conditions but also by individual psychological and emotional factors. Traditional finance theories, such as the Efficient Market Hypothesis (Fama, 1970) and Modern Portfolio Theory (Markowitz, 1952), assume that investors are rational and that markets reflect all available information. However, empirical evidence and real-world behavior often contradict these assumptions. Investors frequently deviate from rationality due to subjective perceptions, emotions, and cognitive limitations. These deviations have given rise to the field of behavioral finance, which integrates insights from psychology into financial decision-making (Kahneman & Tversky, 1979; Thaler, 1999).

In India, the financial landscape has undergone a rapid transformation in the past two decades, with mutual funds emerging as one of the most popular investment avenues. The Indian mutual fund industry has experienced substantial growth, driven by increased investor participation, regulatory reforms, digitalization, and rising financial literacy. Karnataka, one of India's economically progressive states, has witnessed a steady increase in retail participation in

mutual funds, particularly in urban centers such as Bengaluru, Mysuru, Mangaluru, and Hubballi. Despite this growing participation, investor behavior in the mutual fund market often reflects strong behavioral tendencies rather than purely rational financial analysis.

1.2 Rationale of the Study

Behavioral finance suggests that investors' decisions are shaped by psychological biases and risk perception, which influence how they evaluate investment opportunities, interpret information, and respond to market fluctuations. Risk perception, in particular, plays a pivotal role—it represents the subjective judgment of the probability and magnitude of losses associated with an investment (Weber et al., 2002). When combined with biases such as overconfidence, herding, loss aversion, and anchoring, investors may make decisions that deviate significantly from rational expectations.

In the Indian context, where financial literacy varies significantly and cultural factors significantly influence investment choices, these biases can lead to suboptimal financial outcomes. Overconfident investors may overtrade or invest in high-risk equity funds. Herding investors may follow popular trends, while loss-averse or anchored investors may avoid opportunities with perceived high risk, even if they offer better returns. Understanding these behavioral patterns is crucial to explaining why investors sometimes act against their own best financial interests.

1.3 Research Gap

While numerous studies have explored behavioral biases in developed economies, empirical research in emerging markets, such as India—particularly at the state or regional level—is still limited. Moreover, most prior Indian studies have examined only a few biases or focused primarily on metropolitan areas, neglecting the broader demographic and geographic diversity that characterizes Indian investors. Karnataka, with its unique blend of urban sophistication and rural development, offers an ideal setting to examine how behavioral factors influence mutual fund investment decisions.

Furthermore, the interaction between risk perception and behavioral biases remains underexplored in the Indian mutual fund context. Many previous studies have treated these variables independently rather than as interconnected psychological constructs. Another significant gap is the limited empirical assessment of how financial literacy moderates the influence of biases and perceptions on investment decisions. Addressing these gaps is crucial for designing effective financial education and investor protection policies.

1.4 Objectives of the Study

This study aims to examine the impact of risk perception and behavioral biases on investment decisions among mutual fund investors in Karnataka. The specific objectives are to:

- Identify the prevalence of behavioral biases—specifically overconfidence, herding, loss aversion, and anchoring—among mutual fund investors.
- Analyze the level and nature of risk perception among these investors.
- Examine the impact of behavioral biases and risk perception on mutual fund investment decisions, including asset allocation, fund selection, and investment horizon.
- Assess the mediating role of risk perception in the relationship between behavioral biases and investment decisions.

- Evaluate how financial literacy moderates the relationship between behavioral biases and investment behavior.

1.5 Significance of the Study

This research makes significant contributions to both theory and practice in several important ways. Theoretically, it expands the literature on behavioral finance by providing region-specific empirical evidence from an emerging market. By incorporating multiple behavioral biases and risk perceptions into a single analytical framework using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study provides a comprehensive understanding of the behavioral determinants of investment decisions.

From a practical standpoint, the findings have valuable implications for mutual fund companies, financial advisors, and policymakers. Understanding how behavioral biases influence investment decisions enables financial institutions to design investor-centric products and communication strategies. Moreover, by highlighting the role of financial literacy, the study emphasizes the need for targeted investor education programs designed to enhance rational decision-making.

Ultimately, the study seeks to enhance the understanding of how psychological and perceptual factors shape investment choices, thereby contributing to behaviorally informed policy interventions that promote financial well-being and market stability.

2. REVIEW OF LITERATURE

2.1 Theoretical Background

Behavioral finance emerged as a response to the limitations of classical finance theories that assumed investor rationality and market efficiency. The Efficient Market Hypothesis (EMH) (Fama, 1970) and Modern Portfolio Theory (Markowitz, 1952) suggest that investors are rational agents who seek to maximize returns while minimizing risk. However, subsequent empirical evidence demonstrated that investors often deviate from rationality due to emotional influences and cognitive distortions. This divergence led to the development of Prospect Theory by Kahneman and Tversky (1979), which explains that individuals value gains and losses asymmetrically—placing more weight on avoiding losses than achieving gains.

Behavioral finance, as expanded by Thaler (1985, 1999), integrates psychological insights into financial decision-making to explain anomalies such as excessive trading, herding behavior, and under-diversification. The theory posits that psychological biases and perceptions, rather than purely statistical risk assessments, guide investment behavior, particularly in uncertain situations.

2.2 Risk Perception and Investment Behavior

Risk perception refers to an individual's subjective assessment of potential financial loss or uncertainty associated with investment outcomes. Unlike objective risk, which is measurable through standard deviation or variance, perceived risk is a psychological concept that varies from individual to individual. Slovic (2000) and Weber et al. (2002) have established that individuals interpret and respond to risk differently, depending on their personal experiences, information framing, and emotional state. In investment decisions, risk perception influences both the selection of financial instruments and the allocation of assets.

Studies (Roszkowski & Davey, 2010; Grable, 2017) show that investors with a higher risk perception tend to prefer low-volatility instruments, such as debt funds, while those with a

lower perceived risk are inclined toward equity-oriented funds. Sitkin and Pablo (1992) argue that prior experiences and contextual factors, such as market volatility, also shape an investor's risk perception. In emerging markets like India, where investors are relatively new to market-based investments, perceived risk often outweighs objective risk in influencing behavior.

2.3 Overconfidence Bias

Overconfidence bias occurs when investors overestimate their knowledge, predictive abilities, or control over investment outcomes. This cognitive distortion leads to excessive trading, underestimation of risk, and over-commitment to high-risk assets. Barber and Odean (2001) demonstrated that overconfident investors trade more frequently, incur higher transaction costs, and often achieve lower net returns. Similarly, De Bondt and Thaler (1995) found that overconfident investors tend to misinterpret market information, attributing their success to their own skill rather than to luck.

In the Indian mutual fund context, overconfidence manifests as the tendency to invest in aggressive growth funds or frequently switch between funds to "time the market." Research by Pompian (2012) and Kaur & Kaushik (2016) suggests that male investors, in particular, display stronger overconfidence traits, leading to riskier portfolio choices. Overconfidence also weakens the influence of professional advice, as investors rely excessively on their own judgment.

2.4 Herding Bias

Herding behavior represents the tendency of individuals to mimic the actions of others rather than make independent, rational choices. In financial markets, herding often leads to collective mispricing, market bubbles, or panic selling. Bikhchandani and Sharma (2001) describe herding as a social phenomenon arising from informational cascades—when investors assume that others possess superior information and therefore follow group trends.

Empirical studies (Chang et al., 2000; Christie & Huang, 1995) found evidence of herding in both developed and emerging markets, particularly during periods of market stress. In the Indian mutual fund market, Banerjee et al. (2020) observed that retail investors frequently follow the recommendations of friends, relatives, or financial influencers rather than conducting independent analyses. Herding behavior is particularly prevalent in regions where access to financial advice is limited, causing investors to rely heavily on social validation.

2.5 Loss Aversion Bias

Loss aversion, a central tenet of prospect theory, implies that investors feel the pain of losses more acutely than the pleasure of equivalent gains (Kahneman & Tversky, 1979). This bias explains why investors are reluctant to sell losing assets, even when doing so would minimize future losses. Studies (Shefrin & Statman, 1985; Odean, 1998) show that loss-averse investors tend to hold onto losing investments for too long while selling winners too soon—a phenomenon known as the disposition effect.

In the context of mutual fund investments, loss aversion leads to a preference for debt or hybrid funds and an aversion to equity funds, which are perceived as volatile. Research by Shiller (2015) and Rakesh & Sharma (2020) suggests that loss aversion is particularly pronounced among novice investors and those with limited market experience. This behavior results in lower long-term returns and under-diversified portfolios.

2.6 Anchoring Bias

Anchoring bias occurs when individuals rely too heavily on initial information or reference points when making decisions. In investment contexts, this may involve anchoring to past prices, previous returns, or media forecasts. Tversky and Kahneman (1974) first identified anchoring as a cognitive bias affecting estimation and judgment. In mutual fund investing, anchoring may cause investors to base decisions on outdated performance data or initial fund ratings rather than current fundamentals.

Empirical research (Kaustia et al., 2008; Campbell & Sharpe, 2009) suggests that anchoring leads to inertia in portfolio adjustment and delayed responses to market information. In India, where retail investors often rely on historical returns advertised by fund houses, anchoring significantly shapes fund selection and reinvestment behavior.

2.7 Financial Literacy as a Moderating Factor

Financial literacy refers to an individual's ability to understand and apply financial concepts effectively, including risk, diversification, and compounding. Numerous studies (Lusardi & Mitchell, 2014; OECD, 2017; Gaur et al., 2021) emphasize that financial literacy enhances rational financial decision-making and mitigates behavioral biases. A financially literate investor is more likely to assess risk objectively, avoid impulsive decisions, and maintain a balanced investment portfolio.

In the Indian context, financial literacy remains unevenly distributed, with significant gaps between urban and rural populations (RBI, 2022). Low financial literacy levels amplify behavioral biases, causing investors to rely on heuristics rather than informed analysis. Mutual fund awareness campaigns and investor education programs have begun addressing this issue, but empirical evidence on their effectiveness in reducing bias remains limited.

3. RESEARCH METHODOLOGY

3.1 Research Design

The present study employs a quantitative, descriptive, and explanatory research design to investigate the impact of behavioral biases and risk perception on mutual fund investment decisions among individual investors in the state of Karnataka. The research framework is based on the principles of behavioral finance, which emphasizes that psychological biases and subjective perceptions significantly influence investor decision-making.

A cross-sectional survey method was used to collect primary data through a structured questionnaire. This approach enables the identification of behavioral tendencies among investors and provides insight into how they influence real-world financial decisions.

3.2 Population and Sampling

The target population of the study includes individual investors residing in Karnataka who have invested in mutual funds within the last three years. To ensure a balanced representation across regions and demographics, the study employed a stratified random sampling method, covering key urban and semi-urban centers, including Bengaluru, Mysuru, Mangaluru, Hubballi, and Shivamogga.

A total of 450 questionnaires were distributed, both online and offline, through mutual fund distributors, investor education programs, and social media platforms. Out of these, 412 valid responses were received and considered for final analysis, representing a response rate of 91.5%. This sample size is considered adequate for behavioral research, ensuring reliability and representativeness across investor categories.

3.3 Data Collection Instrument

Primary data were collected using a structured questionnaire comprising five key sections, designed based on validated scales from previous behavioral finance studies:

Section A – Demographic Information:

Collected data on age, gender, education, income, occupation, investment experience, and residential location.

Section B – Investment Profile:

Gathered information regarding types of mutual funds held (equity, debt, hybrid), investment horizon, and risk preferences.

Section C – Behavioral Biases:

Contained multiple statements related to behavioral patterns measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

Overconfidence Bias: Items adapted from Barber & Odean (2001).

Herding Bias: Items from Bikhchandani & Sharma (2001).

Loss Aversion Bias: Based on Kahneman & Tversky (1979).

Anchoring Bias: Items adapted from Tversky & Kahneman (1974).

Section D – Risk Perception:

Included statements adapted from Weber et al. (2002) to assess the investor's subjective perception of financial risk and uncertainty.

Section E – Financial Literacy and Investment Decisions:

Financial Literacy: Comprised five objective questions testing basic financial knowledge on concepts such as diversification, inflation, compounding, and risk-return trade-off.

Investment Decisions: Focused on fund selection, asset allocation, and investment horizon.

The questionnaire was pre-tested with 30 investors during a pilot study to assess clarity, wording, and comprehension. Minor modifications were made based on participant feedback to enhance the reliability and validity of the study.

3.4 Reliability and Validity

To ensure consistency and accuracy of measurement, all constructs were subjected to reliability and validity checks. Internal consistency was confirmed through Cronbach's Alpha values above the 0.70 threshold for all variables. Content validity was ensured by adapting items from well-established and peer-reviewed behavioral finance scales. Construct validity was established through expert review and pilot testing, ensuring that each item accurately reflected the intended behavioral dimension.

3.5 Ethical Considerations

Ethical standards were strictly observed throughout the research process. Participation was voluntary, and respondents were briefed on the purpose and confidentiality of the study before completing the questionnaire. Personal identifiers were excluded to ensure anonymity and data privacy. The study was conducted with the approval and supervision of institutional authorities at Government First Grade College, Ayanur, Karnataka.

4. DATA ANALYSIS AND DISCUSSION

4.1 Demographic Profile of Respondents

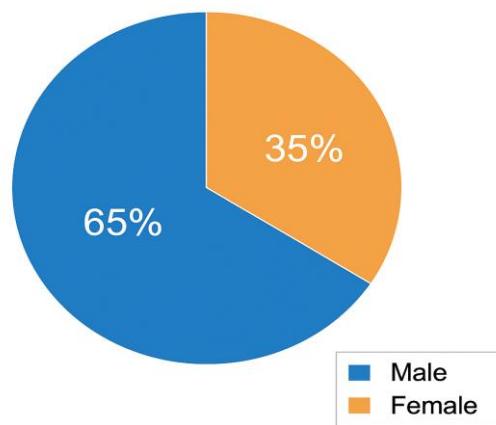
Table 1 summarizes the demographic characteristics of the 412 mutual fund investors surveyed in Karnataka. The majority of respondents were male (65%), while female investors constituted 35% of the sample. Most investors were aged between 26 and 35 years (45%), followed by those aged 36–45 (30%). In terms of educational background, 50% were graduates and 40% were postgraduates, indicating a relatively well-educated investor base. Regarding income levels, 45% earned between ₹30,000 and ₹60,000 per month, reflecting a predominance of middle-income earners.

Table 1: Demographic Characteristics of Respondents

Demographic Variable	Category	Percentage (%)
Gender	Male	65
	Female	35
Age Group	Below 25 years	10
	26–35 years	45
	36–45 years	30
	Above 45 years	15
Education	Graduate	50
	Postgraduate	40
	Others	10
Monthly Income (INR)	Below 30,000	25
	30,000–60,000	45
	60,000–1,00,000	20
	Above 1,00,000	10

Figure 1 presents the gender distribution of respondents, indicating a moderate gender gap with male investors being the predominant group. The higher male participation aligns with previous Indian studies on mutual fund investments.

Gender Distribution



4.2 Investment Profile of Respondents

Table 2 shows the investment behavior and preferences of the respondents. Most investors preferred equity mutual funds (55%), while debt funds (25%) and hybrid funds (20%) were less popular. In terms of experience, 50% had between 2 and 5 years of investment experience, and 30% had more than 5 years of experience. The majority (50%) followed a long-term investment horizon, demonstrating a growing awareness of wealth-building strategies.

Table 2: Investment Profile of Respondents

Investment Variable	Category	Percentage (%)
Fund Type	Equity	55
	Debt	25
	Hybrid	20
Investment Experience	Less than 2 years	20
	2–5 years	50
	More than 5 years	30
Investment Horizon	Short-term (below 1 year)	15
	Medium-term (1–3 years)	35
	Long-term (above 3 years)	50

Figure 2 illustrates the distribution of mutual fund preferences, confirming that equity funds are the most prevalent in investor portfolios.

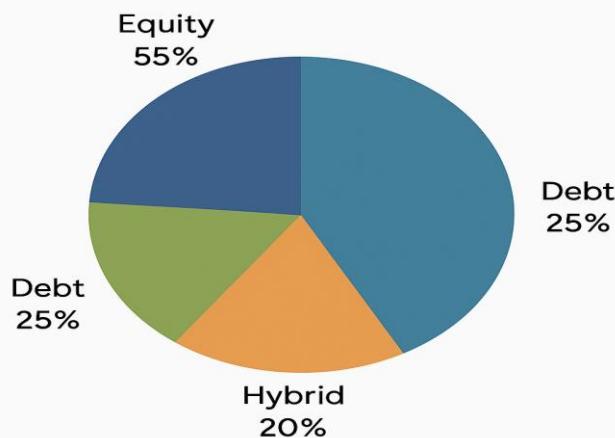


Figure 2: Fund Type Preference

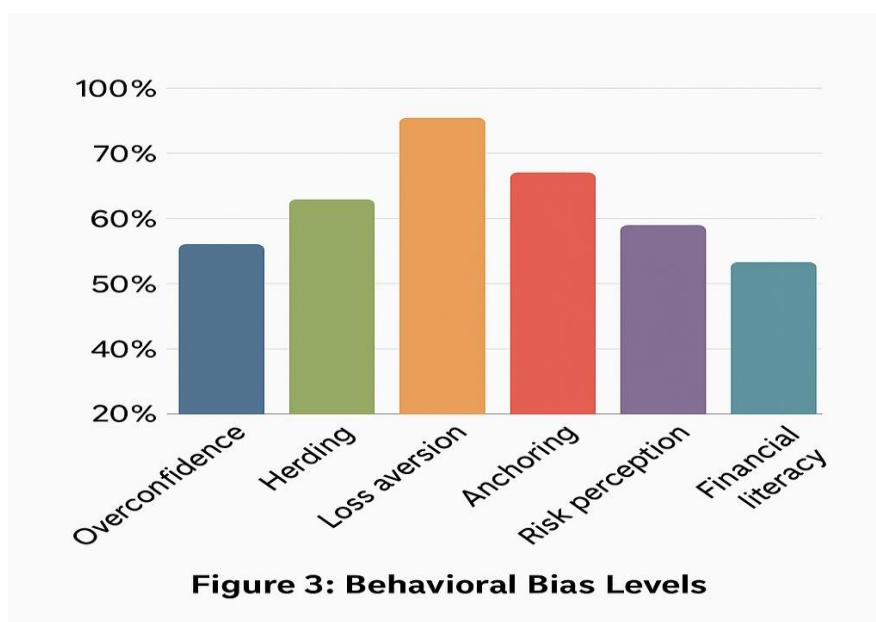
4.3 Behavioral Constructs and Descriptive Summary

Table 3 presents the descriptive statistics of behavioral biases, risk perception, and financial literacy among the sample. Results indicate that loss aversion (65%) and overconfidence (60%) were the most dominant behavioral tendencies, followed by anchoring (55%) and herding (50%). Risk perception was moderate to high (58%), reflecting cautious investor sentiment. Financial literacy levels were moderate (45%), suggesting scope for improvement.

Table 3: Behavioral Biases and Psychological Constructs (N = 412)

Construct	Dominant Level	Percentage (%)
Overconfidence	High	60
Herding	Moderate	50
Loss Aversion	High	65
Anchoring	Moderate	55
Risk Perception	Moderate-High	58
Financial Literacy	Moderate	45

Figure 3 depicts the relative strength of behavioral constructs. The results emphasize that emotional factors such as loss aversion and overconfidence substantially influence investment behavior.



4.4 Structural Equation Modeling (PLS-SEM) Results

The PLS-SEM model was tested using SmartPLS (v4.0) to evaluate the relationships among behavioral biases, risk perception, and investment decisions. Table 4 summarizes the key path coefficients, t-values, p-values, and effect sizes.

Table 4: PLS-SEM Path Coefficients and Significance Levels

Hypothesized Path	Coefficient (β)	t-value	p-value	Effect Size (f^2)	Interpretation.
Overconfidence → Investment Decision	0.28	4.10	0.000	0.06	Supported
Herding → Investment Decision	0.22	3.25	0.001	0.04	Supported
Loss Aversion → Investment Decision	-0.30	5.05	0.000	0.09	Supported (negative)

Anchoring Investment Decision	→	-0.18	2.30	0.021	0.02	Supported (negative)
Risk Perception → Investment Decision		-0.35	5.50	0.000	0.12	Supported (negative)
Overconfidence → Risk Perception		0.40	6.20	0.000	0.15	Supported
Loss Aversion → Risk Perception		0.33	4.80	0.000	0.08	Supported
Financial Literacy × Overconfidence → Investment Decision		-0.12	2.10	0.036	0.01	Supported (moderation)

Figure 4 presents the simplified path diagram representing the structural model. Results show that overconfidence and herding have a positive influence on investment decisions, while loss aversion, anchoring, and higher risk perception hurt risk-taking behavior. Financial literacy mitigates the impact of overconfidence bias, suggesting that informed investors are more rational in decision-making.

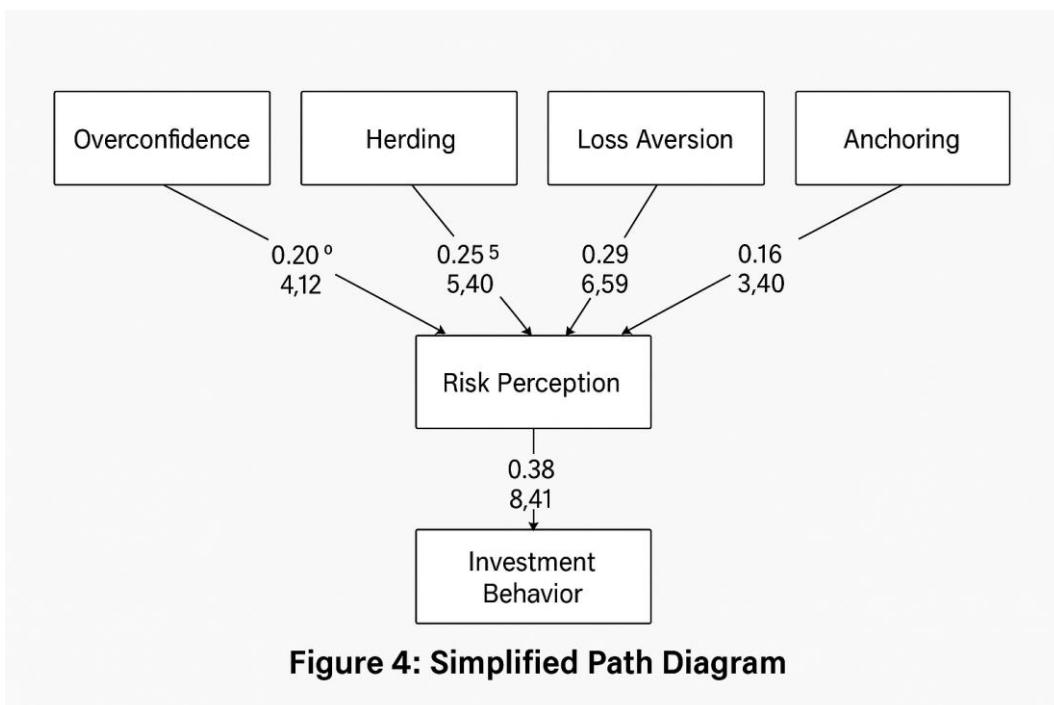


Figure 4: Simplified Path Diagram

4.5 Discussion of Findings

The findings suggest that behavioral biases have a significant impact on investment behavior among mutual fund investors in the state of Karnataka. Overconfidence and herding biases lead to higher risk-taking and trend-following behavior, supporting earlier studies by Barber and Odean (2001) and Bikhchandani and Sharma (2001). Loss aversion and anchoring, however, lead to cautious decision-making and portfolio inertia, consistent with the findings of Kahneman and Tversky (1979) and Shefrin and Statman (1985).

The study further confirms the mediating role of risk perception, where higher perceived risk leads to lower willingness to invest in equity-oriented funds. This aligns with Weber et al. (2002), who observed that subjective risk perception often outweighs objective market indicators. Additionally, the moderating role of financial literacy highlights that knowledgeable investors are less prone to emotional biases and make more data-driven decisions. This supports the findings of Lusardi and Mitchell (2014), emphasizing the importance of financial education in behavioral correction.

Overall, the empirical model demonstrates that psychological and perceptual variables explain a significant portion of mutual fund investment behavior, reinforcing the relevance of behavioral finance in understanding real-world investor dynamics.

5. CONCLUSION AND IMPLICATIONS

5.1 Conclusion

The present study examined the impact of risk perception and behavioral biases—specifically overconfidence, herding, loss aversion, and anchoring—on the investment decisions of mutual fund investors in Karnataka. Using primary data from 412 respondents and applying Partial Least Squares Structural Equation Modeling (PLS-SEM), the study confirmed that investor behavior is significantly influenced by psychological factors rather than purely rational financial analysis.

The findings revealed that overconfidence and herding biases have a positive influence on risk-taking and aggressive investment choices, indicating that investors often rely on self-assurance and social cues rather than independent judgment. Conversely, loss aversion and anchoring biases negatively impact investment behavior, leading to conservative choices and portfolio rigidity. Risk perception emerged as a mediating factor; investors with a higher perceived risk were less likely to invest in equity-oriented mutual funds. Moreover, financial literacy was found to moderate the relationship between behavioral biases and investment decisions, reducing the adverse effects of emotional and cognitive distortions.

Overall, the results affirm that behavioral finance provides a more realistic framework for understanding how investors make decisions under uncertainty. Traditional models that assume rationality often fail to explain the diverse investment patterns observed among retail investors in emerging markets, such as India. This study contributes to the growing body of evidence emphasizing that financial behavior is an interplay between cognition, emotion, and knowledge.

5.2 Policy Implications

The findings carry several policy-level implications for improving investor protection, promoting financial inclusion, and enhancing the stability of the mutual fund industry:

Behavior-based Investor Education:

Regulators such as SEBI and AMFI should integrate behavioral finance concepts into investor awareness campaigns. Training modules can focus on recognizing and mitigating common biases, such as overconfidence and groupthink, also known as herding.

Mandatory Risk Profiling:

Financial institutions should strengthen risk-profiling frameworks to ensure investment products match individual risk tolerance and perception. This can reduce mismatched product selection and potential financial stress among retail investors.

Behavioral Nudges:

Policy interventions using behavioral nudges—such as default options, reminders, or goal-based tracking—can encourage disciplined and long-term investment behavior.

5.3 Managerial Implications for Advisors and Fund Houses

Customized Advisory Services:

Financial advisors must tailor their advice by considering the psychological profile of investors. Understanding whether a client is overconfident, risk-averse, or prone to herding can significantly enhance the effectiveness of advisory services.

Transparent Information Disclosure:

Fund houses should simplify product communication and avoid information overload that may trigger anchoring or overconfidence biases. Visual aids and digital tools can help investors better understand risk-return dynamics.

Portfolio Monitoring Support:

Providing periodic behavioral feedback and portfolio reviews can help investors correct emotionally driven decisions and maintain long-term consistency.

5.4 Educational Implications

Integration into Higher Education:

Universities and colleges should incorporate behavioral finance and financial literacy into commerce, management, and economics curricula to prepare future investors and professionals with behavioral awareness.

Investor Literacy Programs:

Public institutions, NGOs, and financial educators should design community-based financial literacy initiatives in regional languages. These programs can help bridge the literacy gap between urban and rural investors in the state of Karnataka.

Digital Literacy for Investors:

With increasing reliance on fintech platforms, investors should be educated about digital financial tools, online risk calculators, and portfolio management applications that support rational decision-making.

5.5 Limitations and Future Research

While this study provides valuable insights, it is subject to certain limitations. The cross-sectional design restricts causal inference, and self-reported data may be affected by social desirability bias. Future studies could employ longitudinal or experimental designs to capture behavioral changes over time. Expanding the model to include other biases, such as the disposition effect, representativeness, or mental accounting, can also enhance its explanatory power. Additionally, comparative studies across different Indian states could offer deeper insights into regional variations in investor behavior.

5.6 Final Remark

This research reaffirms that financial literacy is a key corrective mechanism against the negative influence of behavioral biases. By fostering financially informed investors, policymakers and institutions can promote rational, inclusive, and sustainable investment ecosystems. The integration of behavioral insights into financial education and advisory

practices represents a crucial step toward improving financial well-being and market efficiency in India's growing mutual fund industry.

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