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Confluence of Financial Literacy, Risk Tolerance and Behavio ural Biases Towards Investment Behaviour of Individual Investors (Valsad District, Gujarat)

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Abstract

Purpose – This study examines the combined influence of financial literacy, risk tolerance, and behavioural biases (herd behaviour, loss aversion, overconfidence, and locus of control) on the investment behaviour of individual investors in Valsad District, Gujarat.

Methodology – A descriptive research design was adopted with a sample of 206 individual investors selected through non-probability convenience sampling. Primary data was collected using a structured questionnaire incorporating Likert scales and objective financial literacy questions. Data analysis employed SPSS software, including descriptive statistics, factor analysis (KMO and Bartlett's test), chi-square tests, and ANOVA.

Findings – Financial literacy significantly influences investment behaviour ($\chi^2 = 1040.067$, $p = 0.000$). Risk tolerance demonstrates a significant positive relationship with investment behaviour ($\chi^2 = 950.559$, $p = 0.000$). Behavioural biases collectively exert significant influence on investment decisions ($\chi^2 = 1454.700$, $p = 0.000$). Age significantly affects risk tolerance ($p = 0.014$) and investment behaviour ($p = 0.008$). However, education level showed no significant relationship with financial literacy ($p = 0.966$), and income level did not significantly influence investment behaviour ($p = 0.056$). The reliability analysis yielded Cronbach's alpha of 0.892, indicating high internal consistency.

Originality/Value – This study provides empirical evidence from a semi-urban regional context in Gujarat, contributing to the limited body of research examining the simultaneous confluence of cognitive (financial literacy), psychological (risk tolerance), and behavioural (biases) factors affecting individual investor behaviour in emerging Indian markets.

Keywords – Financial Literacy, Risk Tolerance, Behavioural Biases, Investment Behaviour, Herd Behaviour, Loss Aversion, Overconfidence, Locus of Control, Individual Investors, Valsad District

1. Introduction

In the contemporary financial environment, individual investors play an increasingly significant role in mobilizing savings and contributing to the development of financial markets and the overall economy. With the rapid expansion of financial services and technological innovations, individuals now have access to a wide range of investment opportunities including equity shares, mutual funds, bonds, insurance-linked investment products, pension schemes, real estate, and digital investment platforms. These developments have encouraged greater participation of retail investors in the financial system. However, merely participating in financial markets does not necessarily guarantee sound investment outcomes or financial security.

Investment decisions are complex and require careful evaluation of financial information, market conditions, and individual financial goals. The effectiveness of these decisions depends on several important factors, among which financial literacy, risk tolerance, and behavioural biases play a crucial role. Financial literacy refers to the knowledge and understanding of financial concepts such as savings, interest rates, inflation, diversification, risk-return trade-offs, and financial planning. Individuals with higher levels of financial literacy are better equipped to evaluate financial products, compare investment alternatives, and make informed decisions that align with their long-term financial objectives.

Risk tolerance refers to the degree to which an individual is willing and able to accept uncertainty, volatility, and potential financial loss while making investment decisions. Investors differ significantly in their attitudes toward risk based on factors such as age, income, financial goals, past investment experiences, and personal preferences. Behavioural finance suggests that investors do not always act rationally when making financial decisions. Instead, their decisions may be affected by behavioural biases such as herd behaviour, overconfidence, loss aversion, and locus of control.

Considering the growing importance of individual investors in financial markets, this study focuses on examining the combined influence of financial literacy, risk tolerance, and behavioural biases on the investment behaviour of individual investors in Valsad District, Gujarat. By analysing the relationships among these variables, the study aims to provide insights that may help financial institutions, policymakers, and educators design effective financial literacy programs and investor awareness initiatives.

2. Literature Review

2.1 Financial Literacy and Investment Behaviour

Dr. Soumya R and Dr. Padmavathi S. M. (2023) examined the influence of financial literacy on investment behavior and found it to be a crucial factor in informed investment decision-making and long-term economic security. Their study showed that financially literate individuals demonstrate better risk assessment, diversified asset allocation, and greater confidence in managing debt. Lusardi and Mitchell (2011) established that financial literacy significantly improves saving behavior, retirement planning, and long-term financial stability. Van Rooij et al. (2011) confirmed that higher financial literacy increases stock market participation and portfolio diversification.

Asri Jaya et al. (2023) examined the impact of financial literacy and investor behavior on investment decision-making in the capital market, emphasizing that financial literacy plays a crucial role in helping investors understand financial instruments, assess risk, and make rational investment decisions. Hussain et al. (2022) examined the impact of financial literacy on investment decisions in Pakistan and found a significant positive relationship, indicating that financially literate individuals make more informed and rational investment choices.

2.2 Risk Tolerance and Investment Behaviour

Ahmad Rizky et al. (2025) examined the role of financial behavior and risk tolerance in shaping investment decision-making among young adults in urban Indonesia. Using SEM-PLS analysis, the study found that financial behavior has a significant positive effect on investment decisions, and risk tolerance plays a crucial mediating role. Oehler, Horn, and Wendt (2023) investigated whether financial literacy influences households'

participation in the financial market and found that higher financial literacy lowers risk aversion, which in turn increases participation in financial markets.

Nath and Bhuin (2025) examined financial risk tolerance across demographic segments among women investors in Kolkata, finding that work status and educational qualifications play a significant role in determining risk tolerance. Kannadhasan (2015) analyzed retail investors' financial risk tolerance and risk-taking behaviour in India, finding that gender, age, education, and occupation significantly influence risk tolerance.

2.3 Behavioural Biases and Investment Behaviour

Divakara Reddy Narasaraju et al. (2025) investigated the influence of behavioral biases on investment decision-making in the Indian stock market, finding that heuristics have a significant positive impact on investment decisions, while financial literacy and investor experience significantly moderate the relationship between emotions and market impact with investment decisions.

Kahneman and Tversky's (1979) Prospect Theory explains that psychological factors such as loss aversion and risk perception significantly shape investment behavior. Statman (2014) emphasized that behavioral finance explains how psychological biases affect financial decisions. Charlotte Robert Joseph and Shruti Jose (2023) examined determinants of Generation Z's investment decisions and found that financial literacy plays a significant role in enhancing investment confidence, with risk tolerance acting as a moderating factor.

Raut (2020) investigated Indian retail investors and found that financial literacy positively affects investment decisions and reduces the influence of social pressure and herd behaviour. The study highlighted that while literacy is important, it is not sufficient; investors also need confidence and access to appropriate products.

Bhushan (2014) studied financial literacy among Indian households and found significant gaps, particularly in understanding risk-return trade-offs, compounding, and the impact of inflation on long-term savings. The study called for targeted educational interventions.

Kaur and Vohra (2012) examined investment behaviour in Punjab and found that financial literacy varied by demographic factors, with younger, more educated, and urban respondents displaying higher literacy. Literacy was positively associated with diversified investment portfolios.

Savalia (2024) conducted a study of 100 investors and found that those with higher financial literacy demonstrated better investment behaviour, made more informed choices, and achieved greater satisfaction. Interestingly, demographic factors such as age, gender, and income did not show significant effects, suggesting that knowledge trumps demographics.

2.4 Research Gap

Despite extensive research, limited empirical evidence exists on the combined effect of financial literacy, risk tolerance, and behavioural biases among individual investors in smaller and semi-urban regions of India, particularly in Gujarat. This gap highlights the need for localized studies examining both cognitive and behavioural dimensions of investment behaviour.

3. Research Methodology

3.1 Problem Statement

Individual investors often face difficulty in making sound investment decisions due to inadequate financial literacy, improper assessment of their risk tolerance, and the influence of behavioural biases such as locus of control, herd behaviour, loss aversion, and overconfidence. These factors collectively lead to irrational decision-making, inappropriate selection of investment instruments, poor diversification, and inconsistent investment outcomes.

3.2 Research Objectives

1. To assess the impact of financial literacy on the investment behaviour of individual investors.
2. To examine the influence of risk tolerance on the investment behaviour of individual investors.
3. To analyse the influence of demographic factors on financial literacy, risk tolerance, and investment behaviour.
4. To analyse the influence of behavioural finance factors (herd behaviour, loss aversion, overconfidence, and locus of control) on investment behaviour.
5. To examine the relationship between financial literacy and risk tolerance among individual investors.

3.3 Research Hypotheses

Hypothesis	Statement
H_{11}	Financial literacy has a significant positive impact on investment behaviour
H_{12}	Risk tolerance has a significant positive influence on investment behaviour
H_{13_a}	Education level significantly influences financial literacy
H_{13_β}	Age significantly influences risk tolerance
H_{13}□	Income level significantly influences investment behaviour
H_{14}	Behavioural finance factors significantly influence investment behaviour
H_{15}	There is a significant positive relationship between financial literacy and risk tolerance

3.4 Research Design and Sample

The study follows a descriptive research design. The target population consists of individual investors in Valsad District, Gujarat. A total of 206 respondents were selected using non-probability convenience sampling. Primary data was collected through a structured questionnaire incorporating Likert scales and objective financial literacy questions. Secondary data was collected from research papers, academic journals, books, and websites.

3.5 Data Analysis Tools

Data was analysed using SPSS software with descriptive statistics (frequency and percentage), factor analysis (KMO and Bartlett's test), chi-square tests, and ANOVA.

4. Data Analysis and Results

4.1 Demographic Profile

Characteristic	Category	Frequency	Percentage
Age	Below 20	8	3.9%
	21-30	128	62.1%
	31-40	34	16.5%
	41-50	29	14.1%
	51-60	3	1.5%
	Above 60	4	1.9%
Gender	Male	95	46.1%
	Female	111	53.9%
Education	10th-12th	10	4.9%
	Graduate	67	32.5%
	Post Graduate	119	57.8%
	PhD/Professional	10	4.9%

The majority of respondents (62.1%) belong to the age group of 21-30 years. Female respondents constitute 53.9% of the sample. Most respondents (57.8%) are postgraduates.

4.2 Reliability and Validity

Test	Value
Cronbach's Alpha	0.892
KMO Measure of Sampling Adequacy	0.766
Bartlett's Test of Sphericity (Approx. Chi-Square)	4755.781
Bartlett's Test (df)	1485
Bartlett's Test (Sig.)	0.000

The Cronbach's alpha value of 0.892 indicates high internal consistency. The KMO value of 0.766 indicates adequate sampling adequacy, and Bartlett's Test is statistically significant ($p < 0.05$), confirming that variables are correlated and suitable for factor analysis.

4.3 Financial Literacy Assessment

Question	Correct Response	Percentage
Inflation meaning	Prices rise over time, money buys less	83.0%
Interest calculation (₹10,000 at 5%)	Exactly ₹10,500	77.7%
Inflation impact on purchasing power	Less than today	64.6%
Diversification reduces	Risk	72.8%
Mutual fund definition	Pooling money from many investors	84.0%
Highest short-term fluctuations	Equity shares	67.0%
Higher risk guarantees higher return	False	65.0%
Bond prices when interest rates rise	Fall	52.4%
SIP meaning	Systematic Investment Plan	90.8%
Best for long-term wealth creation	Equity mutual funds	83.5%

The results indicate that respondents possess moderate to good levels of basic financial literacy, with particularly strong understanding of mutual funds (84-90.8%) and inflation concepts (83%).

4.4 Hypothesis Testing Results

Hypothesis 1: Financial Literacy and Investment Behaviour

Test	Value	df	Sig.
Pearson Chi-Square	1040.067	520	0.000

Result: H_{11} is accepted. Financial literacy has a significant positive impact on investment behaviour.

Hypothesis 2: Risk Tolerance and Investment Behaviour

Test	Value	df	Sig.
Pearson Chi-Square	950.559	572	0.000

Result: H_{12} is accepted. Risk tolerance has a significant positive influence on investment behaviour.

Hypothesis 3a: Education and Financial Literacy

Test	Value	df	Sig.
Pearson Chi-Square	41.663	60	0.966

Result: H_{13a} is rejected. Education level does not significantly influence financial literacy.

Hypothesis 3b: Age and Risk Tolerance

Test	Value	df	Sig.
Pearson Chi-Square	145.166	110	0.014

Result: $H_{13\beta}$ is accepted. Age significantly influences risk tolerance.

Hypothesis 3c: Income and Investment Behaviour

Test	Value	df	Sig.
Pearson Chi-Square	98.749	78	0.056

Result: H_{13}□ is rejected. Income level does not significantly influence investment behaviour ($p > 0.05$, though approaching significance).

Hypothesis 4: Behavioural Biases and Investment Behaviour

Test	Value	df	Sig.
Pearson Chi-Square	1454.700	1144	0.000

Result: H_{14} is accepted. Behavioural finance factors significantly influence investment behaviour.

Hypothesis 5: Financial Literacy and Risk Tolerance

Test	Value	df	Sig.
Pearson Chi-Square	830.287	440	0.000

Result: H_{15} is accepted. There is a significant positive relationship between financial literacy and risk tolerance.

4.5 ANOVA Results

By Age:

Variable	F-value	Sig.
Investment Behaviour	3.212	0.008
Risk Tolerance	2.831	0.017
Behavioural Bias	2.683	0.023
Financial Literacy	1.811	0.112

Age significantly affects investment behaviour, risk tolerance, and behavioural biases, but not financial literacy.

By Income:

Variable	F-value	Sig.
Investment Behaviour	5.614	0.019
Risk Tolerance	2.432	0.120
Behavioural Bias	0.258	0.612
Financial Literacy	0.625	0.430

Only investment behaviour showed significant variation across income groups.

By Gender and Education: No significant differences were found for any variables across gender or education groups.

5. Findings

5.1 Major Findings

1. **Financial literacy significantly influences investment behaviour** (χ^2 = 1040.067, p = 0.000). Respondents with higher financial knowledge demonstrate more informed and rational investment choices.
2. **Risk tolerance has a significant positive relationship with investment behaviour** (χ^2 = 950.559, p = 0.000). Individuals with higher willingness to take financial risks are more likely to engage in active investment behaviour.
3. **Behavioural biases collectively exert significant influence on investment decisions** (χ^2 = 1454.700, p = 0.000). Herd behaviour, loss aversion, overconfidence, and locus of control affect investment rationality.

4. **Age significantly affects risk tolerance** ($p = 0.014$) and investment behaviour ($p = 0.008$). Younger investors show higher risk tolerance and more active investment behaviour.
5. **Education level does not significantly influence financial literacy** ($p = 0.966$), suggesting that formal education alone may not guarantee financial knowledge.
6. **Income level does not show a statistically significant relationship with investment behaviour** ($p = 0.056$), though approaching significance.
7. **A significant positive relationship exists between financial literacy and risk tolerance** ($\chi^2 = 830.287$, $p = 0.000$).

5.2 Additional Findings

- 83% of respondents correctly understood inflation concepts
- 77.7% demonstrated basic financial calculation ability
- 84% understood mutual fund operations
- Herd behaviour was moderately present among respondents
- Loss aversion was evident, with investors preferring guaranteed returns
- Most respondents preferred balanced portfolios (50% mutual funds + 50% equity)
- Traditional investment options (fixed deposits, gold, savings accounts) remain popular
- Information sources include both professional advice and informal social networks

6. Suggestions

6.1 For Financial Institutions and Advisors

1. **Conduct targeted financial education programs** focusing on investment diversification, risk-return trade-offs, and long-term financial planning.
2. **Implement investor profiling tools** to assess individual risk tolerance accurately before recommending investment products.
3. **Provide behavioural coaching** to help investors recognize and mitigate biases such as herd behaviour and loss aversion.
4. **Develop personalized investment advisory services** that consider individual financial goals, risk capacity, and behavioural tendencies.

6.2 For Policymakers and Regulators

5. **Strengthen financial literacy initiatives** at the regional level, particularly in semi-urban areas like Valsad District.
6. **Integrate financial education into school and college curricula** to build foundational financial knowledge from an early age.
7. **Enhance investor protection mechanisms** to increase trust in formal financial markets.
8. **Promote transparency in financial product information** to help investors make informed comparisons.

6.3 For Individual Investors

9. **Conduct self-assessment of financial literacy** and actively seek to improve knowledge gaps.
10. **Recognize personal behavioural biases** and implement decision-making checklists to reduce their influence.
11. **Diversify investment portfolios** across multiple asset classes rather than concentrating in traditional options only.
12. **Develop long-term investment perspectives** rather than focusing on short-term gains or market timing.

6.4 For Educational Institutions

13. **Introduce practical financial literacy courses** covering budgeting, saving, investing, and risk management.
14. **Organize investor awareness workshops** in collaboration with financial institutions and regulatory bodies.
15. **Leverage digital platforms** to provide accessible financial education resources for young investors.

7. Conclusion

This study examined the confluence of financial literacy, risk tolerance, and behavioural biases on the investment behaviour of individual investors in Valsad District, Gujarat. The findings establish that all three factors significantly influence investment decisions, though their relative impact varies across demographic segments.

Financial literacy emerged as a critical determinant of informed investment behaviour. Respondents with better understanding of financial concepts demonstrated greater confidence, portfolio diversification, and long-term planning. However, the finding that education level does not significantly correlate with financial literacy suggests that formal qualifications alone do not guarantee financial capability—targeted financial education is essential.

Risk tolerance showed significant variation across age groups, with younger investors displaying higher risk appetite. The significant relationship between financial literacy and risk tolerance indicates that financial knowledge enhances investors' capacity to take calculated risks. This has important implications for financial advisors designing age-appropriate investment strategies.

Behavioural biases—particularly herd behaviour, loss aversion, overconfidence, and locus of control—significantly affect investment decisions. Even knowledgeable investors may make suboptimal choices when influenced by psychological biases, especially during market volatility. This underscores the need for behavioural interventions alongside financial education.

The study contributes empirical evidence from a semi-urban regional context in Gujarat, addressing a research gap in localized studies of investor behaviour in emerging Indian markets. The findings have practical implications for financial institutions, policymakers, educators, and individual investors seeking to improve investment outcomes.

Future research should explore longitudinal changes in investor behaviour, the role of digital financial platforms, and cross-regional comparisons across different Indian states. Additionally, experimental studies examining the effectiveness of behavioural interventions in reducing investment biases would provide valuable insights.

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