

Financial Literacy and Investment Behaviour among Retail Investors: Examining the Mediating Role of Risk Tolerance through Structural Equation Modeling

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Abstract

The research investigates how financial literacy affects retail investors' investment behavior in Uttarakhand by analyzing how risk tolerance functions as an intermediary factor. The growth of financial market participants during the previous years has demonstrated that financial knowledge serves as a crucial factor which determines how investors make rational investment choices. The available research from Uttarakhand presents a major knowledge gap because of its limited empirical studies which focus on the region. The researchers gathered primary data through structured questionnaires which they distributed to 300 retail investors for their study. The researchers used exploratory factor analysis and structural equation modelling to examine the data. The results demonstrate that financial literacy creates a positive effect which helps people understand risk better and make investment decisions. Investors who possess advanced financial expertise achieve higher levels of confidence when assessing financial products and they tend to take calculated risks. The research demonstrates that risk tolerance positively impacts investment activities through its significant connection to investment behavior. The mediation analysis results show that risk tolerance functions as a partial mediator which links financial literacy with investment behavior. The measurement and structural models demonstrate adequate reliability and validity together with acceptable model fit indices. The research findings demonstrate that financial literacy development enables investors to make better decisions while they participate in financial markets with greater understanding. The study offers new evidence about developing state contexts which helps academic research while providing financial institutions and policymakers and educators with practical tools to advance financial inclusion and responsible investing.

Keywords: Financial Literacy, Risk Tolerance, Investment Behaviour, Retail Investors, Structural Equation Modelling, Uttarakhand.

Introduction

The fast growth of financial markets together with the rising number of investment options has made retail investors become more important for economic development. Retail investors create capital which helps markets operate better thus their involvement becomes vital for maintaining financial system stability and driving financial system development. The quality of investment decisions that people make depends on their financial literacy level which includes their ability to understand financial concepts and use that knowledge for financial planning and investment decisions. Financial literacy enables individuals to evaluate investment alternatives, manage financial risks, and make informed choices that improve their financial well-being (Lusardi & Mitchell, 2014). People choose to invest their savings through different financial products which include mutual funds and stocks and fixed deposits and insurance products. The behaviour of individuals is shaped by both economic conditions and their psychological and behavioural traits. Risk tolerance serves as a fundamental behavioural element because it determines how much risk people can tolerate while they pursue their financial goals. People who can handle high levels of risk will choose market-linked investments while people who can handle low levels of risk will choose secure traditional investment methods (Grable, 2000). Financial literacy shapes risk tolerance because people with financial knowledge can better understand how to balance risk and return while they build their investment portfolios (Van Rooij, Lusardi, & Alessie, 2011).

Governments in emerging economies such as India need to improve financial literacy because it serves as a vital policy goal that enables citizens to access financial services while increasing their capacity to invest. The growth of financial markets in India during the last decade has not increased financial knowledge among most people which prevents them from making proper investment choices (Agarwalla et al., 2015). The Reserve Bank of India together with the Securities and Exchange Board of India has launched multiple programs to enhance public financial knowledge throughout India. The implementation of financial literacy programs has resulted in different literacy outcomes because they affect various regions, especially between semi-urban areas and developing states. Uttarakhand state has achieved permanent social and economic growth which has resulted in wider banking access and better digital financial service availability during the last few years. The financial markets have attracted more retail investors from Uttarakhand because of this development. The investors will make their investment choices based on their financial expertise and their ability to manage investment risks. The understanding of financial literacy needs to be studied because it determines how investors handle their investments and their ability to invest in various financial products which creates the need for effective financial education programs that help people make better investment choices. Previous studies have examined the relationship between financial literacy, risk tolerance, and investment behaviour in different contexts; however, limited research has focused specifically on retail investors in Uttarakhand. The relationships between these two parties require sophisticated analytical methods to understand their intricate interdependencies. Structural Equation Modelling (SEM) provides researchers with a valuable tool which enables them to study how hidden variables interact with each other while they investigate both direct and indirect impacts (Hair et al., 2019). The research investigates how financial literacy affects investment behavior while risk tolerance affects investment decisions of retail investors from Uttarakhand through structural equation modeling. The study results will deliver valuable information to policymakers financial institutions and educators which they can use to enhance financial knowledge and help people make better investment choices.

Review of Literature

People need financial literacy because it serves as a key element that shapes their financial choices and their investment patterns. Investors use the knowledge that financial literacy provides to assess financial products and to determine investment risks and benefits for their decision-making process. Annamaria Lusardi and Olivia S. Mitchell (2014) showed that people who understand financial concepts tend to create financial plans and trade in financial markets which helps them build their wealth over time. People who lack understanding about financial matters make bad money choices and they do not invest their money according to their potential. Van Rooij, Lusardi, and Alessie (2011) conducted research to investigate how financial literacy affects stock market participation and found that people who possess higher financial knowledge tend to invest in stocks and other market-based securities. The study showed that financial understanding helps investors deal with uncertain situations while building their confidence which leads them to enter financial markets.

The investment choices people make depend on risk tolerance because it serves as a vital element that guides their decision-making process. Grable (2000) defined risk tolerance as the maximum level of uncertainty that an individual is willing to accept when making financial

decisions. His study found that demographic factors such as age, income, education, and financial knowledge significantly influence risk tolerance. Investors with higher education and financial knowledge tend to exhibit higher risk tolerance and invest in more diversified portfolios.

Hallahan, Faff, and McKenzie (2004) also found that financial literacy positively influences investors' risk tolerance levels. Their findings showed that people who possess financial knowledge can comprehend market changes better than those without such knowledge, and they feel more confident about investing in high-risk securities. The results demonstrate that financial literacy functions as a critical factor, which determines how investors perceive and handle investment risks.

Numerous studies have investigated how financial literacy affects people's investment choices. Agarwalla et al. (2015) conducted a study among young working individuals in India and found that financial literacy significantly affects financial planning and investment decisions. The study revealed that individuals with higher financial literacy were more likely to invest in mutual funds, stocks, and retirement plans.

The study by Fernandes, Lynch, and Netemeyer (2014) showed that financial literacy impacts financial behaviour because financial education helps people make better financial decisions. Their findings suggested that financial literacy contributes to better financial management and long-term financial stability.

Chavali and Mohanraj 2016 conducted research in India to study how demographic factors and financial literacy affected investment choices, which showed that financial literacy had a major effect on investment decisions. Investors with higher literacy levels showed greater participation in equity and mutual fund investments compared to traditional investment options. Investors use their risk tolerance levels to create their investment strategies. Investors who can handle more risk prefer to invest in stocks according to the research findings of Kannadhasan 2015 while risk-averse investors choose to invest in fixed income securities which include bank deposits. The research demonstrated that investors use risk tolerance to select their investment portfolios. The research studied how financial literacy and risk tolerance together with investment behavior established direct links through unified models. Financial literacy has a positive effect on risk tolerance which subsequently determines investment choices according to Nguyen et al 2019 research. Risk tolerance serves as the link between financial literacy and investment behavior according to their research results.

The existing research has studied financial literacy together with risk tolerance and investment behavior across different fields but limited research has investigated regional patterns especially in developing areas such as Uttarakhand. The study found that different regional areas show variations in income and educational levels and financial literacy which affects how people make their investment decisions. The study needs to investigate these relationships because the result will help explain how retail investors in Uttarakhand manage their financial activities which will deliver valuable insights to both policymakers and financial institutions.

Research Gap

The research demonstrates that financial literacy plays a critical role in determining how people decide to invest and their choice of financial markets (Lusardi & Mitchell, 2014; Van Rooij et al., 2011). According to Grable (2000) research, risk tolerance functions as a major determinant that shapes how people make their investment decisions and distribution of their assets. Financial literacy research demonstrates that it affects investment choices by determining investors' ability to handle risk according to Nguyen et al. (2019). Most of the existing research focuses on developed countries and national studies however it does not consider regional research in India. There exists a lack of research that investigates how financial literacy and risk tolerance together affect retail investor investment behavior in Uttarakhand. The research demonstrates that only a few studies have used Structural Equation Modelling for investigating how risk tolerance functions as a mediator in their studies. The current research intends to fill these research gaps through its region-specific empirical evidence which will use SEM methodology.

Objective of the study:

- To examine the impact of financial literacy on investment behaviour of retail investors in Uttarakhand.
- To analyse the mediating role of risk tolerance in the relationship between financial literacy and investment behaviour of retail investors.

Hypothesis of the Study:

H1: Financial literacy has a significant positive impact on investment behaviour of retail investors in Uttarakhand.

H2: Financial literacy has a significant positive impact on risk tolerance of retail investors in Uttarakhand.

H3: Risk tolerance has a significant positive impact on investment behaviour of retail investors in Uttarakhand.

H4: Risk tolerance mediates the relationship between financial literacy and investment behaviour of retail investors in Uttarakhand.

RESEARCH METHODOLOGY

Research Design

The current research study uses a quantitative descriptive research design to investigate how financial literacy and risk tolerance affect the investment behavior of retail investors. The researchers selected a quantitative research method because it enables them to conduct statistical tests which will verify their research hypotheses through the assessment of relationships between different variables. The researchers use Structural Equation Modelling (SEM) to study how different constructs in their research establish direct and indirect relationships with each other.

Population and Study Area

The study examines retail investors who live in Uttarakhand India. Retail investors include individuals who invest their personal savings in financial instruments such as stocks mutual funds fixed deposits insurance and other investment avenues. The study area of Uttarakhand was chosen because more individual investors are starting to invest in financial markets while financial services become easier to reach across the region.

Sampling Technique and Sample Size

The study uses a non-probability convenience sampling technique, and Stratified Sampling technique to collect data from retail investors due to the ease of accessibility and availability of respondents. The research gathers information from Dehradun Haldwani and Haridwar which are the main cities of study. The sample size of 300 respondents meets the requirements for SEM analysis because it needs 200 minimum participants to produce trustworthy results (Hair et al. 2019).

Data Collection

The research uses primary data, which researchers collected through a structured questionnaire. The questionnaire consists of two distinct sections. The first section includes demographic information such as age, gender, education, income, and investment experience. The second section includes measurement items related to financial literacy, risk tolerance, and investment behaviour.

All items are measured using a five-point Likert scale which ranges from 1 Strongly Disagree to 5 Strongly Agree. The measurement scales use previously validated studies which will maintain both reliability and validity throughout the research process.

Variables of the Study

The study includes the following variables:

- Independent Variable: Financial Literacy
- Mediating Variable: Risk Tolerance
- Dependent Variable: Investment Behaviour

Data Analysis Tools

Researchers execute their data analysis through SPSS and AMOS software. The research team uses SPSS to conduct both descriptive statistical analysis and reliability testing. The researchers utilize AMOS to perform Structural Equation Modelling (SEM) for analyzing the connections between different variables.

The following analyses are performed:

- Reliability Analysis (Cronbach’s Alpha)
- Confirmatory Factor Analysis (CFA)
- Composite Reliability and Validity
- Structural Model Analysis
- Mediation Analysis

SEM is considered as an effective technique to analyse intricate relationships between variables and test mediation effect (Hair et al., 2019).

Ethical Considerations

The study requires voluntary participation from respondents who receive information about its research goals. The researchers maintain respondent confidentiality and anonymity while using data exclusively for academic research purposes.

DATA ANALYSIS

Table1: Demographic Profile of Respondents:

Gender		
	Frequency	Percent
Male	141	47.0
Female	159	53.0
Age		
Below 25	52	17.3
25–35	66	22.0
36–45	63	21.0
46–55	53	17.7
Above 55	66	22.0
Education		
Graduate	116	38.7
Postgraduate	75	25.0
Professional	109	36.3
Occupation		
Service	120	40.0
Business	58	19.3
Professional	63	21.0
Others	59	19.7
Monthly Income		
Below 25,000	68	22.7
25,000–50,000	70	23.3
50,000–100,000	80	26.7
Above 100,000	82	27.3
Investment Experience		
Below 2 years	98	Below 2 years
2–5 years	108	2–5 years
Above 5 years	94	Above 5 years

The study results indicate that 53% of female participants outnumber 47% of male participants. The majority of participants belong to two age groups which include 25 to 35 year olds and those who are 55 years or older (22% each). The majority of people working in this field hold university degrees (38.7%) and they work in the service industry (40%). The income distribution shows that 27.3% of respondents have incomes exceeding ₹100,000, which places them in the upper income bracket. The investment experience data shows that most respondents possess 2 to 5 years of investment experience, which demonstrates their moderate level of investment knowledge.

Table 2: Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.961	18

The Cronbach's Alpha value of 0.961 which tests 18 questionnaire items demonstrates that the questionnaire items show excellent internal consistency. The measurement scale shows high reliability because its value exceeds the recommended threshold of 0.70. The data from this study provides appropriate data for further analysis through Structural Equation Modelling (SEM) techniques.

Table 3: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		
	.962	
Bartlett's Test of Sphericity	Approx. Chi-Square	5979.246
	df	153
	Sig.	.000

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy shows a value of 0.962 which exceeds the minimum requirement of 0.60 and thus proves the dataset possesses excellent sampling capacity for factor analysis testing. According to Henry Kaiser, KMO values above 0.90 are considered "marvelous," which shows that factor extraction results are extremely trustworthy. The results of Bartlett's Test of Sphericity show significance through the following results ($\chi^2 = 5979.246$, $df = 153$, $p < 0.001$), which demonstrates that the correlation matrix does not represent an identity matrix and that the variables show sufficient correlation between them. The result validates the data suitability for factor analysis according to Maurice Bartlett's guidelines. The dataset currently fulfills all necessary conditions which allow researchers to perform factor analysis.

Table 4: Communalities

	Communalities	
	Initial	Extraction
FL1	1.000	.848
FL2	1.000	.810
FL3	1.000	.796
FL4	1.000	.805
FL5	1.000	.812
FL6	1.000	.816
RT1	1.000	.837
RT2	1.000	.839
RT3	1.000	.812
RT4	1.000	.825
RT5	1.000	.813
RT6	1.000	.815
IB1	1.000	.822
IB2	1.000	.857
IB3	1.000	.849
IB4	1.000	.829
IB5	1.000	.856
IB6	1.000	.858

Extraction Method: Principal Component Analysis.

The communalities values after extraction range from 0.796 to 0.858, which are all above the recommended minimum level of 0.50. The extracted factors explain a substantial proportion of variance which exists in each observed variable. High communalities confirm that all items are well represented in the factor structure and contribute meaningfully to their respective constructs. According to Henry Kaiser, communalities above 0.50 demonstrate that the variables fit well within the factor solution. The measurement model shows adequate performance through strong extraction values which apply to financial literacy, risk tolerance, and investment behaviour items. The results demonstrate that the data is suitable for further factor analysis and structural modelling because no item needs to be removed from the analysis.

Table 5: Total Variance Explained

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.908	60.601	60.601	10.908	60.601	60.601	5.041	28.007	28.007
2	2.373	13.183	73.784	2.373	13.183	73.784	4.995	27.752	55.759
3	1.618	8.990	82.774	1.618	8.990	82.774	4.863	27.015	82.774
4	.304	1.688	84.462						
5	.290	1.609	86.071						
6	.256	1.422	87.493						
7	.255	1.415	88.908						
8	.246	1.364	90.272						
9	.225	1.249	91.521						
10	.210	1.169	92.690						
11	.206	1.147	93.837						
12	.194	1.077	94.914						
13	.186	1.034	95.948						
14	.176	.979	96.927						
15	.162	.902	97.829						
16	.144	.798	98.627						
17	.134	.746	99.374						
18	.113	.626	100.000						

Extraction Method: Principal Component Analysis.

The results show that three factors have eigenvalues greater than 1 and together explain 82.774% of the total variance, which indicates a strong factor structure. The explained variance exceeds the recommended minimum of 60%, confirming that the extracted factors adequately represent the data. The rotation process resulted in three factors sharing equal variance distribution which enabled distinct model identification. According to Joseph F. Hair, higher cumulative variance indicates better construct validity. The factor solution establishes a correct basis for subsequent SEM testing.

Table 6: Rotated Component Matrix

	Rotated Component Matrix		
	Component		
	1	2	3
RT4	.851		
RT2	.851		
RT6	.847		
RT1	.845		
RT5	.836		
RT3	.823		
FL1		.853	
FL6		.845	
FL4		.839	
FL5		.833	
FL3		.818	
FL2		.815	
IB6			.838
IB2			.836
IB5			.822
IB3			.809
IB4			.807
IB1			.785

The rotated component matrix demonstrates that all items load strongly on their respective factors because their loadings exceed 0.70, which shows good factor clarity. The Risk Tolerance (RT) items load highly on Component 1, the Financial Literacy (FL) items load on Component 2, and the Investment Behaviour (IB) items load on Component 3. The absence of significant cross-loading shows that the different constructs maintain clear boundaries. Joseph F. Hair states that factor loadings above 0.50 are acceptable, while higher loadings indicate strong construct validity. The results verify that the measurement items possess validity, which makes them appropriate for advanced SEM evaluation.

Hypothesis Testing:

- H1:** Financial literacy has a significant positive impact on investment behaviour of retail investors in Uttarakhand.
- H2:** Financial literacy has a significant positive impact on risk tolerance of retail investors in Uttarakhand.
- H3:** Risk tolerance has a significant positive impact on investment behaviour of retail investors in Uttarakhand.

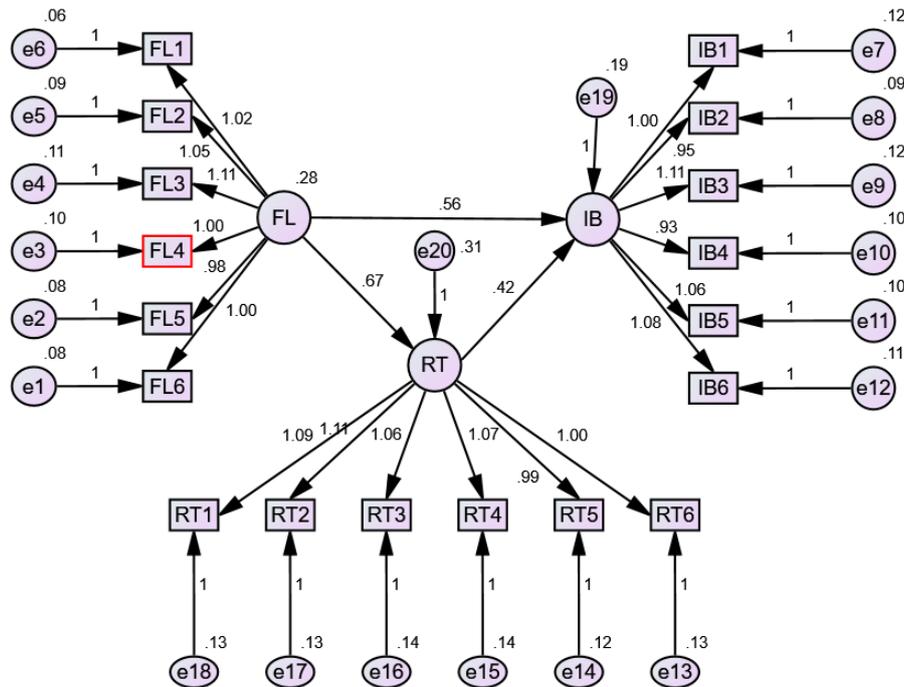


Fig. 1: Path model between financial literacy, investment behaviour, and risk tolerance.

Table 7: Composite Reliability and Validity

	CR	AVE	MSV	MaxR(H)	IB	FL	RT
IB	0.963	0.813	0.449	0.963	0.902		
FL	0.954	0.776	0.449	0.955	0.670	0.881	
RT	0.957	0.787	0.430	0.957	0.656	0.543	0.887

The results found that the measurement model demonstrated both reliable and valid measurement capabilities. The Composite Reliability (CR) values for Investment Behaviour (0.963), Financial Literacy (0.954), and Risk Tolerance (0.957) exceed the established standard of 0.70, which demonstrates their internal coherence. The Average Variance Extracted (AVE) values for all constructs range from 0.776 to 0.813, which exceed the minimum requirement of 0.50 and demonstrate strong convergent validity. The Maximum Shared Variance (MSV) values for all constructs exceed the AVE values, whereas the square root of AVE (diagonal values) exceeds the inter-construct correlations. This confirms that discriminant validity is established. The measurement model demonstrates both reliability and validity, which makes it appropriate for subsequent structural analysis.

Table 8: Model Fit Indices

Fit Index	Obtained Value	Recommended Value	Interpretation
CMIN/DF	1.263	< 3.00	Good Fit
GFI	0.944	> 0.90	Good Fit
AGFI	0.927	> 0.90	Good Fit
NFI	0.973	> 0.90	Excellent Fit
IFI	0.994	> 0.90	Excellent Fit
TLI	0.993	> 0.90	Excellent Fit
CFI	0.994	> 0.90	Excellent Fit
RMSEA	0.030	< 0.08	Excellent Fit
PCLOSE	0.997	> 0.05	Close Fit

The model fit results indicate that the proposed structural model has a good fit with the data. The Chi-square/df value (CMIN/DF = 1.263) is below the recommended limit of 3, indicating an acceptable fit. The goodness-of-fit indices such as GFI (0.944) and AGFI (0.927) are above the recommended value of 0.90, confirming good model fit. The incremental fit indices show excellent model fit because NFI (0.973) TLI (0.993) IFI (0.994) and CFI (0.994) all exceed 0.90. The RMSEA value (0.030) is below the threshold of 0.08 and the PCLOSE value (0.997) shows close model fit. The results show that the measurement and structural model provide a precise fit for testing hypotheses.

Table 9: Hypothesis Testing Results

Hypothesis	Relationship	Estimate (β)	C.R.	P-value
H1	Financial Literacy → Investment Behaviour	0.556	8.377	***
H2	Financial Literacy → Risk Tolerance	0.670	9.592	***
H3	Risk Tolerance → Investment Behaviour	0.419	7.866	***

The structural model outcomes demonstrate that financial literacy produces a substantial positive impact on risk tolerance with a measurement of β equals 0.670 and C.R. equal to 9.592 and a statistically significant result at $p < 0.001$. The research found that retail investors. Show increased risk tolerance. The hypothesis H2 receives support from the results.

The research findings demonstrate that financial literacy. Positively influences investment behaviour with a measurement of β equals 0.556 and C.R. equal to 8.377 and a statistically significant result at $p < 0.001$. The research shows that investors with better financial knowledge make more informed and active investment decisions. The hypothesis H1 receives support from the research results.

Risk tolerance. Shows a positive effect on investment behaviour with a measurement of β equals 0.419 and C.R. equal to 7.866 and a statistically significant result at $p < 0.001$. The research shows that investors who prefer to take risks. Tend to invest their money more often. The hypothesis H3 receives support from the research results.

The research findings demonstrate that financial literacy. Directly impacts investment behaviour. The research shows that financial literacy. Affects investment behaviour because it operates through the pathway of risk tolerance.

H4: Risk tolerance mediates the relationship between financial literacy and investment behaviour of retail investors in Uttarakhand.

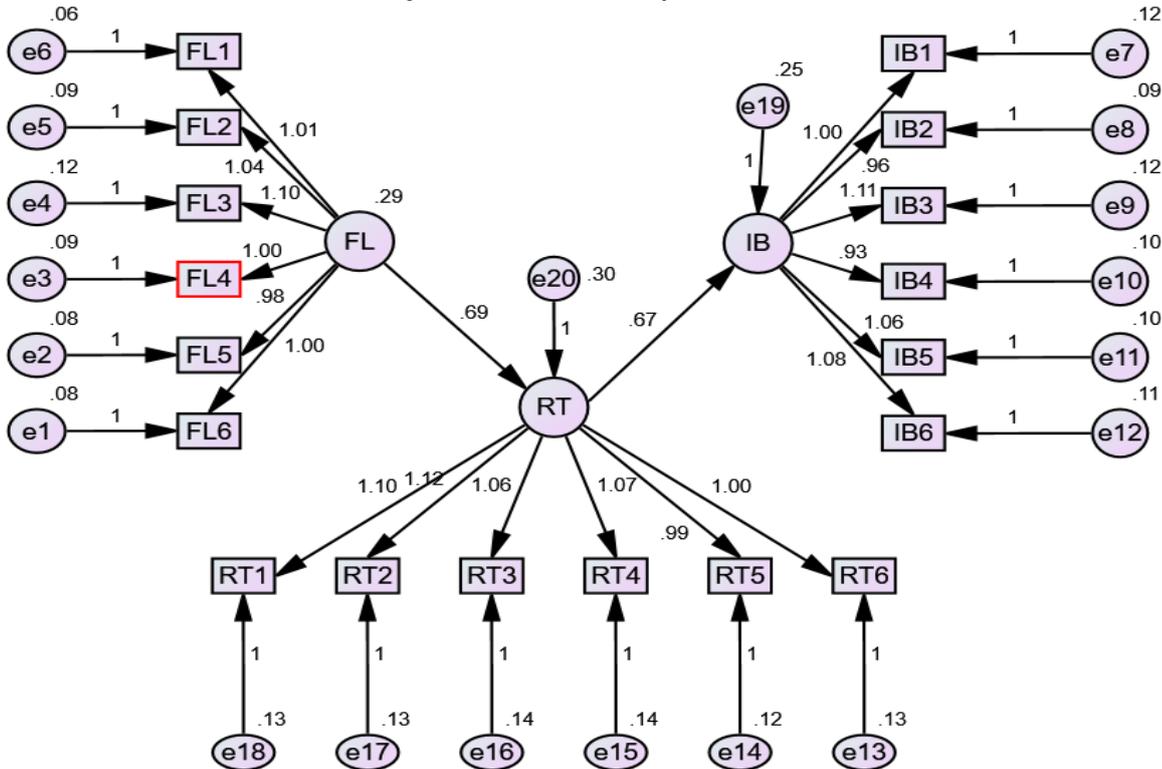


Fig. 1: Path model for Risk tolerance mediates the relationship between financial literacy and investment behaviour.

Table 10: Model Fit Indices

Fit Index	Obtained Value	Recommended Value	Interpretation
CMIN/DF	1.782	< 3.00	Good Fit
GFI	0.924	> 0.90	Good Fit
AGFI	0.903	> 0.90	Good Fit
CFI	0.983	> 0.90	Excellent Fit
TLI	0.980	> 0.90	Excellent Fit
NFI	0.961	> 0.90	Good Fit
RMSEA	0.051	< 0.08	Good Fit
PCLOSE	0.417	> 0.05	Acceptable Fit

The SEM results show that the model effectively matches the observed data according to the following measurement results (CMIN/DF = 1.782, CFI = 0.983, GFI = 0.924, RMSEA = 0.051). Financial Literacy has a significant positive effect on Risk Tolerance ($\beta = 0.558$, $p < 0.001$), and Risk Tolerance also has a significant positive effect on Investment Behaviour ($\beta = 0.667$, $p < 0.001$). The squared multiple correlations demonstrate that Financial Literacy accounts for 31.1% of Risk Tolerance variance while Risk Tolerance accounts for 44.5% of Investment Behaviour variance. All factor loadings exceed 0.86 which demonstrates strong construct validity of the model. The model demonstrates statistical significance while confirming all proposed relationships.

Table 11: Mediation Effect of Risk Tolerance between Financial Literacy and Investment Behaviour (H4)

Path	Estimate	S.E.	C.R.	P Value	Result
Financial Literacy → Risk Tolerance	0.687	0.069	9.913	***	Significant
Risk Tolerance → Investment Behaviour	0.675	0.055	12.376	***	Significant
Indirect Effect (FL → RT → IB)	0.464	—	—	Significant	Mediation Supported

The study results demonstrate that financial literacy establishes a positive relationship with risk tolerance ($\beta = 0.687$, $p < 0.001$), which subsequently leads to improved investment behavior ($\beta = 0.675$, $p < 0.001$). Financial literacy influences investment behavior through risk tolerance, which creates a mediation effect that operates at 0.464. The relationship between financial literacy and investment behavior gets mediated through risk tolerance, which provides support for Hypothesis H4.

Discussion

The current research used Structural Equation Modelling to study how financial literacy and risk tolerance affect investment behavior of retail investors in Uttarakhand. The study discovered that financial literacy significantly boosts both risk tolerance and investment behavior of investors. Investors who possess more financial knowledge demonstrate greater confidence in their ability to understand financial products while their investment decision-making capabilities increase. Financial literacy enables investors to assess risk-return trade-offs which allows them to invest in multiple investment options.

The study discovered that risk tolerance positively impacts investment behavior according to its research results. Investors who prefer to take financial risks display a higher tendency to invest in market-linked instruments which include stocks and mutual funds and other growth-oriented assets. The mediation analysis showed that risk tolerance serves as a partial mediator between financial literacy and investment behavior according to its findings. Financial literacy affects investment behavior through two pathways: it directly impacts the behavior and it enhances investors' ability to bear risk which leads to behavioral changes.

The findings show their highest applicability to Uttarakhand because the region needs to enhance financial literacy and formal investment market participation which has been increasing since the past two decades.

Practical Implications

The research provides key findings which are relevant to policymakers and financial institutions and investors. The research findings demonstrate that financial literacy programs need to be developed and implemented as essential educational activities. Government agencies should work with educational institutions and financial regulators to conduct workshops and awareness campaigns and training programs which will enhance financial knowledge of people. The ability to read financial materials will enable investors to make better informed investment choices. Financial service providers who include banks and mutual fund companies and investment advisors can develop personalized financial solutions after evaluating investor financial knowledge and risk assessment abilities through their study results. The research demonstrates how risk assessment procedures directly affect investment decision-making processes. Financial advisors should evaluate investors' risk assessment abilities before they recommend specific investment opportunities which will provide suitable options for investors and maintain their contentment with investment results. Financial literacy development will help people in Uttarakhand achieve better access to formal financial services which will lead to economic growth for the region.

Future Research Directions

This research study creates multiple pathways for upcoming investigations.

The first study needs to include financial attitude, financial self-efficacy, behavioral biases, and financial well-being as additional variables for building a comprehensive model.

The second study needs to test investment patterns that exist throughout distinct states and their rural and urban zones as well as different population segments.

Researchers can use longitudinal data to study how financial literacy and investment behavior transform across different time periods.

Investors' decision-making processes and their perceptions can be studied through qualitative research methods like interviews.

The upcoming research should expand its participant base by including various professional fields and income levels to achieve better results.

REFERENCES:

- Agarwalla, S. K., Barua, S. K., Jacob, J., & Varma, J. R. (2015). *Financial literacy among working young in urban India*. *World Development*, 67, 101–109.
- Bartlett, M. S. (1954). *A note on the multiplying factors for various chi-square approximations*. *Journal of the Royal Statistical Society: Series B*, 16(2), 296–298.
- Chavali, K., & Mohanraj, M. P. (2016). *Impact of demographic variables and risk tolerance on investment decisions*. *International Journal of Economics and Financial Issues*, 6(1), 169–175.
- Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). *Financial literacy, financial education, and downstream financial behaviors*. *Management Science*, 60(8), 1861–1883.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics (5th ed.)*. Sage Publications.
- Grable, J. E. (2000). *Financial risk tolerance and additional factors affecting risk-taking in everyday money matters*. *Journal of Business and Psychology*, 14(4), 625–630.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning.
- Hallahan, T., Faff, R., & McKenzie, M. (2004). *An empirical investigation of personal financial risk tolerance*. *Financial Services Review*, 13(1), 57–78.
- Kaiser, H. F. (1960). *The application of electronic computers to factor analysis*. *Educational and Psychological Measurement*, 20(1), 141–151.
- Kaiser, H. F. (1974). *An index of factorial simplicity*. *Psychometrika*, 39(1), 31–36.
- Kannadhasan, M. (2015). *Retail investors' financial risk tolerance and their risk-taking behaviour: The role of demographic and socio-economic factors*. *Journal of Economics and Behavioral Studies*, 7(5), 99–109.
- Lusardi, A., & Mitchell, O. S. (2014). *The economic importance of financial literacy: Theory and evidence*. *Journal of Economic Literature*, 52(1), 5–44.
- Nguyen, L., Gallery, G., & Newton, C. (2019). *The influence of financial literacy on investment decisions and financial well-being*. *International Journal of Bank Marketing*, 37(3), 706–726.
- Van Rooij, M., Lusardi, A., & Alessie, R. (2011). *Financial literacy and stock market participation*. *Journal of Financial Economics*, 101(2), 449–472.