Exploring the Mediating Role of Financial Risk Tolerance between Heuristic Biases and Working Women Investors' Investment Decisions

Harshita Srivastava[1]*, Sana Moid[1], Naela Jamal Rushdi[2]

[1]Amity Business School, Amity University, Lucknow Campus, Uttar Pradesh, India, [2]IILM Academy of Higher Learning, Uttar Pradesh, Lucknow, India. *Corresponding Author's Email: srivastavaharshita7697@gmail.com

Abstract

The increasing financial independence of working women has contributed to their growing interest in investment to enhance their wealth. Working women investors are prone to psychological biases and have a conservative approach to risk, which can affect their investment decisions (ID). The study explores the role of financial risk tolerance (FRT) as a mediator in controlling the link between heuristic biases and working women investors' investment decisions. Three heuristic biases are investigated: representativeness, availability, and anchoring. A structured questionnaire has been used to procure data from 211 working women investors trading in the Indian stock market. PLS-SEM was used to determine the association between the constructs. According to the findings, representativeness has a positive impact on the women investors' investment decisions as well as their financial risk tolerance, anchoring has a detrimental impact on working women investors' investment decisions and their risk tolerance capacity, and availability positively influences women investors' risk tolerance. The ability to tolerate financial risk has a positive impact on the investment decisions of women investors. The results of the mediate study show that the risk tolerance ability of women investors partially mediates the interaction between heuristic biases and their investment decisions. This paper will assist women investors to become more aware of these heuristic biases and lessen their negative effects on their investment choices. Its further results in more precise evaluations of risk tolerance and, ultimately, more successful investment planning.

Keywords: Financial Risk Tolerance (FRT), Heuristic Biases, Investment Decisions (ID), Working Women Investors.

Introduction

Women investors are increasingly making their mark in the financial world, bringing unique perspectives and strategies to invest in the stock market. The growing participation of women in investing is a result of several factors, including higher educational attainment, increased financial independence, and a broader societal push toward gender equality. As women gain more control over their finances, they are seeking ways to grow their wealth and secure their financial futures (1). Research suggests that women are often more risk-averse than men. This theory posits that women tend to avoid risky investments, preferring safer, lower-return options. It aligns with evidence showing that women may prioritize stability and long-term security, especially in IDs (2, 3). However, working women investors often navigate a complex interplay of heuristic biases, personal risk tolerance, and socio-economic factors, which together shape their investment choices.

IDs are the act of allocating financial resources among multiple potential investments to attain certain financial goals. Conventional financial theories assume that people maximize their wealth by making rational decisions based on all available evidence (4), but behavioral finance theories challenge the assumption of rationality by introducing the psychological aspect of investors in influencing IDs. Prospect theory, a key concept in behavioral finance, suggests that investors do not fully leverage all available information; instead, their decisions are driven by their perception of the information's utility, often resulting in irrational choices (5). According to the prospect hypothesis, investors make choices based on possible gains and losses rather than the outcomes. Past literature on prospect theory

established that investors are susceptible to various heuristic biases that induce investors to deviate from rationality and lead to suboptimal IDs (6–8). Heuristic-driven biases, often referred to as cognitive shortcuts, are mental techniques or generalizations that people employ to simplify their IDs (9). The three categories of heuristic biases (5) are representativeness, availability, and anchoring biases, all of which are examined in this study. The propensity for investors to make judgments based solely on the initial piece of information they encounter is known as anchoring bias. The availability heuristic prompts investors to rely on easily accessible information. The representativeness heuristic may lead to categorizing investments based on past experiences (10). Behavioral finance investigates how investors assess and tolerate financial risk (11). FRT is the ability of investors to tolerate risk in the financial market (12). Assessing investors' willingness to take risks is critical for making informed IDs (13).

Many studies have shown that women exhibit distinct behavioral biases including anchoring, representativeness, disposition, herding, loss-aversion, and herding which impact their approaches to IDs (8, 14, 15). Women typically take a more cautious approach to investing, prioritizing wealth preservation over other considerations (14). Women investors imitate the investing strategies of their friends and relatives (16). Women investors have a low tolerance for financial risk (17) because they follow a conservative approach.

This study focused on an emerging market, the Indian Stock Exchange, primarily because it has surpassed Hong Kong to become the largest growing market in the world in regard to market value and ranks among the top four largest stock exchanges worldwide. The US has the biggest stock market in terms of market capitalization followed by China and Japan. Secondly, over the past few decades, India has experienced remarkable economic expansion, and its stock market has played a pivotal role in supporting this growth (18). Third, compared to established nations, emerging nations struggle with a lack of financial literacy (6, 19). Lastly, although many researchers have conducted research in India related to the behavioral finance domain (20, 21) it still urges to

study more about behavioral discrepancies of investors by taking their gender aspect.

This study investigates the impact of heuristic biases on working women investors' ID as well as their FRT capacity. The influence of FRT on women investors' ID is explored. Furthermore, the mediating analysis of FRT in impacting the link between heuristic biases and working women investors' ID is also examined. This research contributes to the corpus of knowledge about women's investment behavior. The findings of this study will help women investors mitigate the negative impact of heuristic biases and make more informed decisions by considering all the available information. Furthermore, by considering the risk tolerance level of women investors, academics, investment advisors, and regulators will be better able to decrease the effect of women investors' behavioral biases on their irrational ID. To the best of the author's knowledge, this study is the first kind of study to explore the mediating effect of FRT on heuristic biases and ID of working women investors.

Relationship between Heuristics Biases and ID

Heuristics are mental methods or generalizations used by investors to make decisions under risk and uncertainty. A heuristic is a simple decision rule that allows you to make decisions without considering all the relevant information. Individual investors utilize heuristics to reduce the mental effort in the decision-making process, but this leads to errors in judgment, and as a result, investors make wrong IDs, potentially leading to market inefficiencies. Heuristic biases lead investors to overtrade in the financial market resulting in poor investment performance (6). In this study, three heuristic biases i.e. representativeness, anchoring, and availability are taken.

When investors believe that a stock's historical performance helps in predicting the future value of the stock, they are engaging in representativeness bias (22). Typically, information is processed using prior experiences (10). Representativeness prejudice affects women investor's ID. When individuals make judgments, they tend to overestimate the importance of the first piece of information they come upon (also known as the "anchor"). Women are affected by anchoring bias while making stock IDs (23). Anchoring bias

positively influences the IDs of women entrepreneurs (15). Availability bias refers to the inclination of investors to depend on information that is readily available to them. Investors with an availability bias tend to choose local company's stocks suggested by well-known specialists (24). Women exhibit availability bias while making IDs (25). Thus:

H1- There is a significant impact of representativeness on the IDs of working women investors.

H2- There is a significant impact of anchoring on the IDs of working women investors.

H3- There is a significant impact of availability on the IDs of working women investors.

Relationship between Heuristic Biases and FRT

The emotional and cognitive aspect of investors influences the risk tolerance capacity of investors (11, 26). Representativeness bias-driven investors stand to gain from having a high tolerance for risk. Risk-tolerant investors use the historical trend analysis of a few representative equities (27). Findings of prospect theory indicate that people employ anchoring heuristics while making decisions to reduce the probability of losing money when faced with uncertainty (28). Anchoring bias leads people to be risk-averse, due to their inability to quickly assimilate new knowledge and cling to a single piece of information (11). Availability heuristics have a favorable effect on the risk tolerance ability of people thus significantly affecting their stock choice decisions (29). Thus:

H4- There is a significant impact of representativeness on FRT of working women investors

H5- There is a significant impact of anchoring on FRT of working women investors.

H6- There is a significant impact of availability on FRT of working women investors.

Relationship between FRT AND IDs

An investment yields a higher return when its portfolio risk increases. So, as investors increase their risk tolerance, they will be able to earn a greater amount of return, and it positively influences their IDs. As a result, they would be more interested in investing their money in the stock market (30). FRT is based upon stock price changes means that when the prices of the stock market go up and down it reflects a trend in the tendency of investors to tolerate risk. When there is a hike in stock market returns, it increases one's capacity to endure financial risk and with the decline in returns, the ability to tolerate risk decreases (31). Men and women have varying capacities for accepting danger (32). Women have a low capacity to tolerate risk in the financial market because of their conservative behavior (26). Therefore:

H7- There is a significant impact of FRT on the IDs of working women investors.

FRT as A Mediator

Anchoring, availability, and representativeness bias have a significant impact on the risk-taking capacity of investors (11, 29, 33). The risk tolerance ability of investors significantly affects their IDs (26). Heuristics biases have an impact on investors' ability to tolerate financial risk, and FRT has an impact on investor's decisions. Firstly, FRT acts as a dependent variable, and then in the second process, it acts as an independent variable, so it proves the fact that FRT works as a mediator between the other two variables. As a mediator, FRT modulates the strength of heuristic biases on investment choices. The findings indicate that persons with high-risk tolerance employ a heuristic approach, whereas those with low-risk tolerance adhere to a methodical decision-making process (34). Thus, FRT serves as a key factor that either mitigates or exacerbates the influence of heuristic biases on investment decisions, providing a bridge between behavioral tendencies and actual financial outcomes. Several studies have shown that FRT acts as a mediation of the relationship between anchoring, availability, representativeness, and investors' IDs (29, 35-37). Figure 1 illustrates the research model. The above discussion leads to the formulation of the following hypothesizes -

H8-FRT mediates the link between representativeness and working women investors' IDs.

H9- FRT mediates the link between anchoring and working women investors' IDs.

H10- FRT mediates the link between availability and working women investors' IDs.
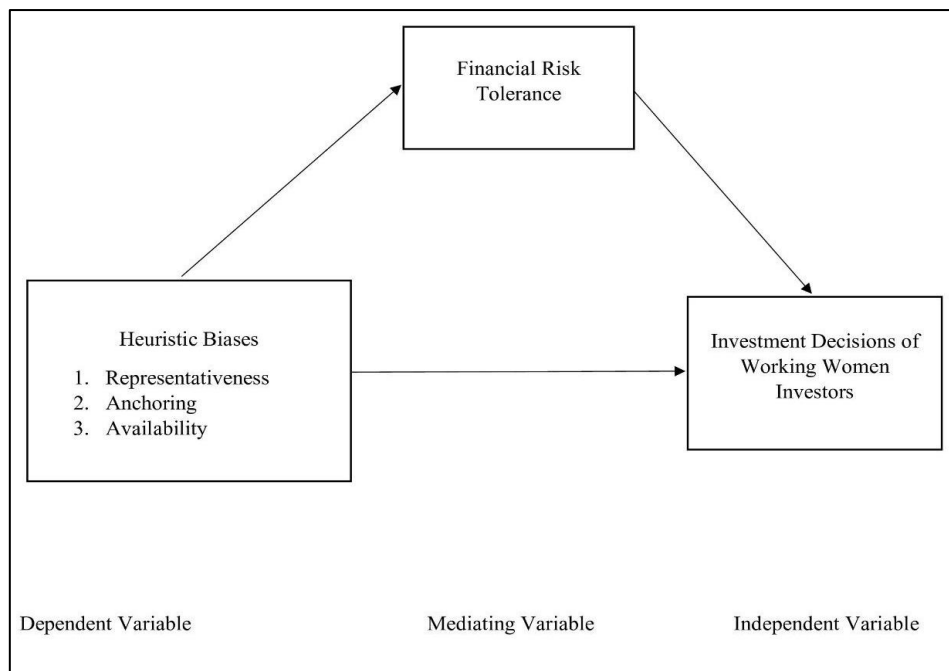
Figure 1: Conceptual Framework

Methodology
Sample and Data Collection Procedure

This research employs a cross-sectional study design, as it centers on beliefs and attitudes, enabling the investigator to directly engage with respondents' thoughts and feelings, hence facilitating precise generalization of the results. The study is based on a survey-based technique to obtain data from working women investors who reside in Uttar Pradesh and invest in the Indian Stock market directly and through brokerage houses. In the study, participants are fully informed about the aim of the study, the nature of the data being collected, and how the data will be used. The present study is conducted in Uttar Pradesh. With a population of almost 200 million, Uttar Pradesh (UP) is India's fourth-largest and most populous state. Census 2011 data shows that the literacy rate was 77.2 percent for men and 57.1 percent for women (38). The sampling technique used in this study is purposive sampling. Purposive sampling is a sampling method based on criteria related to the research objectives. The inclusion criteria for women investors are as follows:

- Self-employed and Salaried class working women investors of private, public, business, or professional sectors.
- Women investors investing in the various instruments (equity, mutual funds, and derivatives) of the Indian Stock Market.
- Women investors who have at least 2 years of experience in investing in the capital market (39).

A structured questionnaire was utilized to obtain information from the chosen population. The questionnaire was rotated to working women investors through online platforms i.e. email, WhatsApp, and LinkedIn. A total of 300 questionnaires were sent out; 211 of them were returned, yielding a 70 percent response rate. For multivariate studies using SEM to yield the best results, at least 200 samples are needed. As a result, 211 responses provide an appropriate sample size for this investigation. Table 1 illustrates the demographic details of the working women participants.

Table 1: Demographic Details of Working Women Investors

Profile	Group	%
Age	< 30 Years	21.4%
	31-40 Years	63.9%
	41-55 Years	14.7%
Education Qualification	Graduate	35.1%

	Post- Graduate	55%
	Professional Degree	9.9%
Occupation	Private Job	36%
	Government Job	38.9%
	Business	25.1%
Annual Income	< 10 lakhs	11.8%
	10-15 lakhs	24.2%
	15-20 lakhs	39.4%
	> 20 lakhs	24.6%
Stock Market Experience	2 Years	20.8%
	>2-5 Years	64.9%
	>5 Years	14.3%

Questionnaire Design

A questionnaire was developed for the research to gather primary data pertinent to the study's purpose. The questionnaire has 22 questions designed to gather information about women investors' heuristics biases, FRT, and IDs. The developed questionnaire is broken into four major sections. The first section contains information regarding the demographic details of the women investors. The second section includes indicators for quantifying the anchoring, availability, and representativeness bias of working investors adapted from the scale developed by (7, 24, 40). To measure anchoring, questions based on recent trading experience, price 52-week high/low, and reference point of stocks were included. To measure availability, questions related to purchasing local stocks, stocks evaluated by experts, and stocks in the news were included in the questionnaire. To measure representativeness, questions related to trading experience, purchasing "hot" stocks, and preventing investing in underperformed stocks were included. The third section includes the 5 questions used to measure women investors' FRT capacity, adapted from (41, 42). Questions related to financial risk, comfort with risk, taking risks to earn more, and the possibility of loss are included. In the last section, the 5-item scale provided by (8) is used to measure the IDs of women investors. Questions related to the rate of return, trading frequency, and satisfaction with investment, were a part of the questionnaire.

Analysis

To analyze the collected data, PLS-SEM software was used. Smart PLS is widely used in various social science research and provides several benefits. PLS proves better than other software, especially when using mediators to analyze the indirect impacts of variables, such as in the present study (37). Exploratory factor analysis is the first SEM phase and was carried out using the Smart PLS data set. The purpose of EFA is to verify whether, according to the suggested theory, the load of the items on their corresponding latent components. The EFA's findings showed satisfactory outcomes.

Results

Measurement Model Result

The measurement model is used to assess the discriminant and convergent validity. Convergent validity deals with Cronbach alpha, construct loading, and average variance extracted (AVE), and it assesses the degree of association among the same construct. The values of Cronbach's Alpha and construct loading are more than 0.70, as well as AVE values greater than 0.50, display the internal consistency of the construct (43). Table 2 presents the convergent validity findings.

Discriminant validity refers to how much the constructs truly differ from one another experimentally. Discriminant validity measurements, including the Fornell-Larcker test, cross-loadings, and the HTMT ratio, are used to assess reliability. According to Fornell Larcker, the value of the inter-construct correlations should be less than the square root of the average variance (44). The conditions were met and are presented in Table 3. The HTMT ratio results show that the ratios should be less than 0.85, indicating a low correlation between the variables (37). Table 4 illustrates HTMT ratio findings. The value of discriminant validity lies within the acceptable limit.

Table 2: Reliability, Outer Loading, and AVE values

AVE	Reliability	Outer Loading	Items	Construct
0.657	0.827	0.793	RP1	Representativeness
		0.789	RP2	
		0.851	RP3	
		0.808	RP4	
0.725	0.874	0.867	AN1	Anchoring
		0.865	AN2	
		0.818	AN3	
		0.855	AN4	
0.7	0.858	0.818	AV1	Availability
		0.855	AV2	
		0.839	AV3	
		0.834	AV4	
0.66	0.871	0.81	FRT1	Financial Risk Tolerance
		0.824	FRT2	
		0.854	FRT3	
		0.838	FRT4	
		0.731	FRT5	
0.665	0.873	0.775	ID1	Investment Decisions
		0.855	ID2	
		0.86	ID3	
		0.777	ID4	
		0.806	ID5	

Note: RP- Representativeness, AN- Anchoring, AV- Availability, FRT- Financial risk tolerance, ID- Investment Decisions, AVE- Average Variance Extracted

Table 3: Fornell Larcker Test

	Anchoring	Availability	Financial Risk Tolerance	Investment Decisions	Representative
Anchoring	0.851				
Availability	-0.498	0.837			
Financial Risk Tolerance	-0.504	0.62	0.813		
Investment Decisions	-0.435	0.44	0.541	0.815	
Representativeness	-0.369	0.302	0.447	0.375	0.81

Table 4: HTMT Criteria

	Anchoring	Availability	Financial risk tolerance	Investment Decisions	Representativeness
Anchoring					
Availability	0.579				
Financial Risk Tolerance	0.573	0.712			
Investment Decisions	0.493	0.504	0.616		
Representativeness	0.436	0.356	0.511	0.428	

Note: The acronym HTMT represents Heterotrait-Monotrait ratio

Table 5: Direct Path Analysis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decisions
RP->ID	0.139	0.143	0.061	2.290	0.022	Accepted
AN->ID	-0.166	0.166	0.074	2.247	0.025	Accepted
AV->ID	0.115	0.117	0.074	1.551	0.121	Rejected
RP-> FRT	0.233	0.239	0.059	3.964	0	Accepted
AN -> FRT	-0.199	-0.199	0.07	2.857	0.004	Accepted
AV -> FRT	0.453	0.453	0.06	7.565	0	Accepted
FRT-> ID	0.548	0.553	0.052	10.577	0	Accepted

Note: RP- Representativeness, AN- Anchoring, AV-Availability, FRT- Financial risk tolerance, ID- Investment Decisions
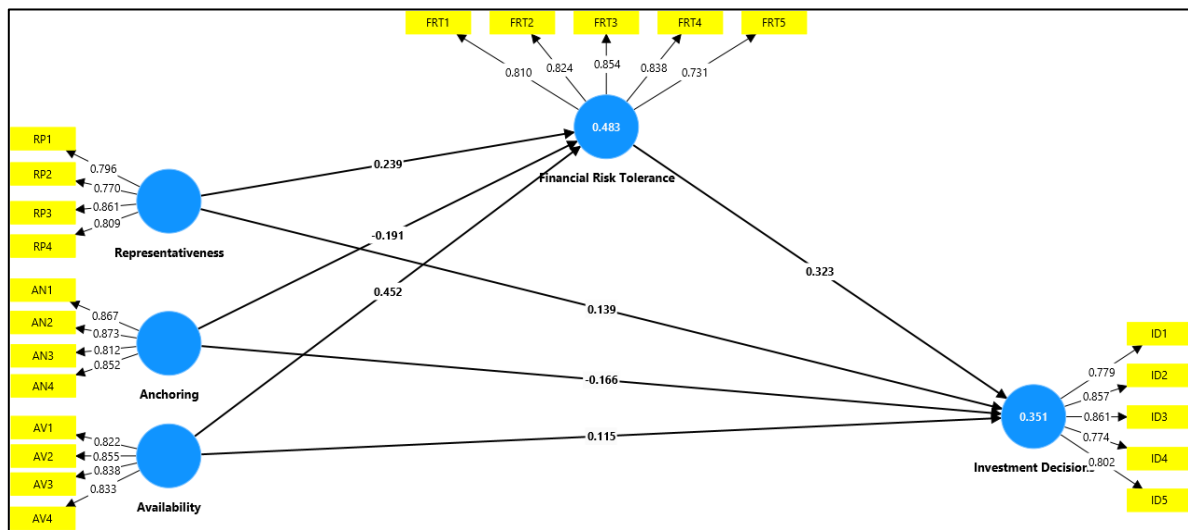
Note: RP- Representativeness, AN- Anchoring, AV-Availability, FRT- Financial risk tolerance, ID- Investment Decisions, PLS-SEM- Partial Least Square Structural Equational Modelling
Figure 2: PLS-SEM Model (Direct Effect)

Structural Model Result

The structural model shows the relationship among the variables, and the results of the direct path analysis show that all the hypotheses (H1, H2, H4, H5, H6, H7) are accepted with p values less than 0.5 and t statistics above 1.96 (Table 5) whereas H3 is not accepted. Representativeness has a positive impact on ID (β= -0.217, p=0.022, t= 2.290) and anchoring has a negative impact on ID (β= -0.217 p= 0.025, t=2.247). Representativeness (β= -0.217, p = 0.000, t = 3.964) and availability (β= -0.217, p = 0.000, t = 7.565) have a positive impact on FRT. Anchoring has a negative impact on FRT (β= -0.217, p = 0.004, t = 2.857). Furthermore, FRT and ID are positively correlated (β= -0.217, p= 0.000, t= 10.577). Figure 2 shows the model.

Mediation

SmartPLS software was utilized to test the association between the construct by calculating bootstrapping with 1000 interactions (37). The study was conducted at a significance level (alpha) of 0.05, and the t-statistics table value at the appropriate level is 1.96. Table 6 shows the result of indirect and total effects. The indirect path coefficient of RP< FRT< ID is significant (β= 0.077, p= 0.007, t = 2.699), and the total effect of representativeness and ID is also significant (β= 0.216, p= 0, t = 3.729). FRT positively mediates the relationship between Representativeness and ID providing support for H8. The indirect path coefficient of Anchoring< FRT< ID is significant (β= -0.062, p= 0.03, t = 2.176). The total effect of Anchoring and ID is also significant (β= -0.227, p= 0.003, t =2.979). FRT negatively mediates the relationship between anchoring and ID providing support for H9. The indirect path coefficient of Availability < FRT<ID is significant at (β= 0.146, p= 0.001, t = 3.331) and the total effect of Availability and ID is also significant (β= 0.261, p= 0, t = 3.351). FRT positively mediates the link between availability and ID providing support for H10.

Table 6: Result of Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decisions
RP-> FRT-> ID	0.077	0.077	0.029	2.699	0.007	Accepted
RP-> ID	0.216	0.22	0.058	3.729	0	Accepted
AN> FRT -> ID	-0.062	-0.061	0.028	2.176	0.03	Accepted
AN -> ID	-0.227	-0.227	0.076	2.979	0.003	Accepted
AV -> FRT -> ID	0.146	0.146	0.044	3.331	0.001	Accepted
AV-> ID	0.261	0.263	0.074	3.515	0	Accepted

Note: RP- Representativeness, AN- Anchoring, AV-Availability, FRT- Financial risk tolerance, ID- Investment Decisions

Discussion

The direct effect of representativeness on the ID of working women investors is significant and in line with earlier studies thus supporting H1 (45). Women investors frequently believe that an asset or stock that has historically performed well will also continue to better perform in the future. This anchoring bias negatively impacts women investors' ID supporting H2 (23). The result further shows that women investors prone to representativeness and availability prejudice have a greater capacity to tolerate financing risk as well as working women investors influenced by anchoring bias have less capacity to tolerate risk in the financial market supporting hypotheses H4, H5 and H6 (27, 29). Representativeness can positively influence the FRT of women investors by making investment opportunities appear more familiar and less daunting. Availability bias can positively influence the FRT of women investors by making successful investment examples more prominent and easily recalled, thereby boosting their confidence in taking financial risks. Anchoring can negatively influence the FRT of women investors by reinforcing conservative financial behaviors and risk aversion.

FRT significantly influences the ID of women investors, playing a pivotal role in shaping their portfolio allocation and approach to risk management supporting hypothesis H7. These outcomes are consistent with those of (26, 46). Research suggests that women who exhibit higher levels of risk tolerance are more likely to engage in equity investments and other growth-oriented assets. This willingness to accept risk enables women to pursue opportunities with the potential for higher returns, ultimately contributing to the growth of their investment portfolios (47).

The results of the mediation study show that the risk tolerance ability of women investors partially mediates the interaction between heuristic biases and their ID thus supporting hypotheses H8, H9 and H10. This suggests that heuristic biases influence how women investors' risk tolerance is associated with their IDs, subsequently affecting their rational IDs. FRT plays a positive mediating role in the connection between availability and representativeness biases and IDs of working women investors; however, it plays a negative mediating role in the connection between anchoring bias and IDs. Women investors influenced by representativeness bias have a high-risk tolerance capacity by utilizing the past trend analysis of some representative stocks to make an ID. Women investors exhibit availability heuristics and have high-risk tolerance by considering easily available information to make an ID. Women prone to anchoring bias are low-risk tolerant due to their inability to quickly assimilate new knowledge further affects their ID. Research conducted by (27, 29) shows that risk tolerance is the positive mediator of representativeness, anchoring, and availability in IDs. However, to the best of the author's knowledge, the mediating effect of FRT on influencing the relationship between heuristic biases and working women investors' IDs has not been studied so far.

The study's findings benefit women investors, policymakers, and financial advisors dealing in finance. The findings of this study shed light on the behavior of women investors and their ability to tolerate risk in the Indian financial market. Women investors are generally unaware of their bad decisions. To fully understand the market and investing they should be aware of their irrationality. The findings of this study will help women investors to know about various heuristic

biases that impact their ID. These heuristics are used to make quick decisions but they can also lead to error in judgment. Women investors should invest money according to their risk tolerance capacity. By embracing risk tolerance, women investors can cultivate resilience, confidence, and independence in their investment journey. Policymakers can leverage lessons from the study to enhance financial literacy, thereby improving the financial stability of women investors and the Indian economy. Financial advisors will be able to offer customized financial services based on the investors' individual needs and have a better understanding of how female investors make decisions.

Conclusion

The increasing financial independence of working women has contributed to their growing interest in investment to enhance their wealth. Working women investors are prone to psychological biases and have a conservative approach to risk, which can affect their IDs. The results provide significant evidence that heuristic biases impact working women investors' FRT and that they consider their risk tolerance when making ID (29, 33, 41, 48, 49). Previous studies have shown the association between all three constructs and taking FRT as a mediator in developed countries, but this study is particularly related to women investors in India and has shown some different results that can be used to fill the previous research gap.

The present study has certain constraints. Firstly, the research was conducted on the working women investors of Uttar Pradesh region, India only, these findings cannot be generalized to the women investors of other cities of India. Secondly, even though the sample size of 211 is appropriate for carrying out statistical calculations, it is based on a finite sample that was selected from a specific location and accurately reflects the whole population. Thirdly, the information gathered for this study is also subjective, meaning that it depends on each person's attitude, motivation, willingness, and consent. As a result, the information may not accurately reflect the genuine sentiments or beliefs of the respondents. Lastly, this research only included three heuristic biases but there are other heuristic biases like mental accounting, overconfidence, and gambler fallacy which need to be explored in further research. The limitation provides a vision for future research in the field of behavioral finance on gender differences in developing countries by taking other behavioral biases and studying their effect on women investors' decisions by taking risk tolerance as a mediator on a large sample.

Abbreviations

ID: Investment Decisions, RP: Representativeness, AN: Anchoring, AV: Availability, FRT: Financial Risk Tolerance, PLS-SEM: Partial Least Square Structural Equational Modelling, AVE: Average Variance Extracted, HTMT: Heterotrait-Monotrait ratio.

Acknowledgment

Author Contributions

All authors have equally contributed.

Conflict of Interests

The authors have no relevant financial or nonfinancial interests to disclose.

Ethics Approval

Not Applicable.

Funding

References

1. Maini N. Perceptions of Women Investors in Relation to Stock Market. Manag Labour Stud. 2017 Nov;42(4):316–38.
2. Kappal JM, Rastogi S. Investment behaviour of women entrepreneurs. Qual Res Financ Mark. 2020;12(4):485–504.
3. Baig U, Hussain BM, Davidaviciene V, Meidute-Kavaliauskiene I. Exploring investment behavior of women entrepreneur: Some future directions. Int J Financ Stud. 2021 Apr 1;9(2):20.
4. Fama EF. Stock market price behavior. J Finance. 1970;25(2):383–417.
5. Kahneman D, Tversky A. Prospect Theory: An Analysis of Decision Under Risk. In: Handbook of the Fundamentals of Financial Decision Making. World Scientific. 2012; 99–127. Doi:10.1142/9789814417358_0006.
6. Jain J, Walia N, Singla H, Singh S, Sood K, Grima S. Heuristic Biases as Mental Shortcuts to Investment Decision-Making: A Mediation Analysis of Risk Perception. Risks. 2023;11(4):1–22.
7. Baker HK, Kumar S, Goyal N. Personality traits and investor sentiment. Rev Behav Financ. 2021;13(4):354–69.
8. Adil M, Singh Y, Ansari MS. How financial literacy moderate the association between behaviour biases and investment decision? Asian J Account Res. 2022;7(1):17–30.
9. Raue M, Scholl SG. The use of heuristics in decision making under risk and uncertainty. Psychological

Perspectives on Risk and Risk Analysis: Theory, Model Appl. 2018:153–79.

10. Jain J, Walia N, Gupta S. Evaluation of behavioral biases affecting investment decision making of individual equity investors by fuzzy analytic hierarchy process. Rev Behav Financ. 2020;12(3):297–314.

11. Pompian MM. Risk tolerance and behavioral finance. Investments and Wealth monitor, Boston. 2017 May;20(31):34-45.

12. Grable JE. Financial Risk Tolerance and Additional Factors that Affect Risk Taking in Everyday Money Matters. J Bus Psychol. 2000;14(4):625–30.

13. Lathief JTA, Kumaravel SC, Velnadar R, Vijayan RV, Parayitam S. Quantifying Risk in Investment Decision-Making. J Risk Financ Manag. 2024 Feb 18;17(2):82.

14. Gangwani S, Al Mazyad HA. Investment behaviour of working women in India. Acad Account Financ Stud J. 2020;24(3):18–23.

15. Panja S. Effect of Behavioural Biases on the Financial Decisions of Rural Women Micro-entrepreneurs: A Scale Development Approach. Vision. 2023. Doi:10.1177/09722629231182835

16. Lin H. Elucidating rational investment decisions and behavioral biases : Evidence from the Taiwanese stock market. African J Bus Manag. 2011;5(5):1630–41.

17. Dickason Z, Ferreira SJ. The effect of age and gender on financial risk tolerance of south african investors. Invest Manag Financ Innov. 2018;15(2):96–103.

18. Mittal R, Narwal KP, Sheera VP. Risk-return relationship in asian, american and european stock markets. Singapore Econ Rev. 2021;66(5):1397–420.

19. Gautam C, Wadhwa R, Raman T V. Examining Behavioural Aspects of Financial Decision Making: The Working Women Perspective. Financ Theory Pract. 2022;26(6):288–301.

20. Baker HK, Kumar S, Goyal N, Gaur V. How financial literacy and demographic variables relate to behavioral biases. Manag Financ. 2019;45(1):124–46.

21. Kumar S, Goyal N. Evidence on rationality and behavioural biases in investment decision making. Qual Res Financ Mark. 2016;8(4):270–87.

22. Chen G, Kim KA, Nofsinger JR, Rui OM. Trading performance, disposition effect, overconfidence, representativeness bias, and experience of emerging market investors. J Behav Decis Mak. 2007;20(4):425–51.

23. Cascão A, Quelhas AP, Cunha AM. Heuristics and cognitive biases in the housing investment market. Int J Hous Mark Anal. 2023 Jan;16(5):991–1006.

24. Waweru NM, Munyoki E, Uliana E. The effects of behavioural factors in investment decision-making: a survey of institutional investors operating at the Nairobi Stock Exchange. Int J Bus Emerg Mark. 2008;1(1):24.

25. Iram T, Bilal AR, Ahmad Z. Investigating The Mediating Role of Financial Literacy on The Relationship Between Women Entrepreneurs' Behavioral Biases and Investment Decision Making. Gadjah Mada Int J Bus. 2023;25(1):93–118.

26. Dickason Z, Ferreira S. Establishing a link between risk tolerance, investor personality and behavioural finance in South Africa. Cogent Econ Financ. 2018;6(1):1–13.

27. Kasoga PS. Heuristic biases and investment decisions: multiple mediation mechanisms of risk tolerance and financial literacy—a survey at the Tanzania stock market. J Money Bus. 2021;1(2):102–16.

28. Shah SZA, Ahmad M, Mahmood F. Heuristic biases in investment decision-making and perceived market efficiency: A survey at the Pakistan stock exchange. Qual Res Financ Mark. 2018;10(1):85–110.

29. Salman M, Khan B, Khan SZ, Khan RU. The impact of heuristic availability bias on investment decision-making: Moderated mediation model. Bus Strateg Dev. 2021;4(3):246–57.

30. Kanagasabai B, Aggarwal V. The Mediating Role of Risk Tolerance in the Relationship between Financial Literacy and Investment Performance. Colombo Bus J. 2020;11(1):83–104.

31. Hanna SD, Yao R, Hanna, SD, Lindamood S. Changes in financial risk tolerance, 1983-2001. 2004;13:1983–2001.

32. Hallahan T, Faff R, McKenzie M. An exploratory investigation of the relation between risk tolerance scores and demographic characteristics. J Multinatl Financ Manag. 2003;13(4–5):483–502.

33. Raheja S, Dhiman B. Relationship between behavioral biases and investment decisions: The mediating role of risk tolerance. DLSU Bus Econ Rev. 2019;29(1):31–9.

34. Pak O, Mahmood M. Impact of personality on risk tolerance and investment decisions: A study on potential investors of Kazakhstan. Int J Commer Manag. 2015 Nov;25(4):370–84.

35. Jain N, Kesari B. Psychological bias and financial risk tolerance of mutual fund investors-a systematic literature review. Elem Educ Online. 2020;19(3):1886–97.

36. Singh Y, Adil M, Haque SMI. Personality traits and behaviour biases: the moderating role of risk-tolerance. Qual Quant. 2023;57(4):3549–73.

37. Hair JF, Hult GTM, Ringle CM, Sarstedt M, Danks NP, Ray S. Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Practical Assessment, Research and Evaluation. 2021;21:1–197.

38. Gupta S, Mitra S, Mondal B. Women's Workforce Participation in India: State wise Trends. 2023;1–12. https://www.ibef.org/download/Uttar-Pradesh-March-2021.

39. Kannadhasan M, Aramvalarthan S, Mitra SK, Goyal V. Relationship between Biopsychosocial Factors and Financial Risk Tolerance: An Empirical Study. Vikalpa. 2016 Jun;41(2):117–31.

40. Jain J, Walia N, Singla H, Singh S, Sood K, Grima S. Heuristic Biases as Mental Shortcuts to Investment Decision-Making: A Mediation Analysis of Risk Perception. Risks. 2023;11(4). Doi:10.3390/risks11040072.

41. Rahman M, Albaity M, Baigh TA, Masud MAK. Determinants of Financial Risk Tolerance: An Analysis of Psychological Factors. J Risk Financ Manag. 2023 Jan 26;16(2):74.

42. Owusu GMY, Korankye G, Yankah NYM, Agyekum Donkor JB. Financial risk tolerance and its determinants: The perspective of personnel from security services in Ghana. Borsa Istanbul Rev.

2023;23(4):852–64.

43. Hair JF, Howard MC, Nitzl C. Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. J Bus Res. 2020;109(August 2019):101–10.

44. Fornell C, Larcker D. Structural equation models with unobservable variables and measurement error: Algebra and statistics. Journal of marketing research. Adv Methods Mark Res. 1994;18(3):382-388.

45. Raut RK, Das N, Mishra R. Behaviour of Individual Investors in Stock Market Trading: Evidence from India. Glob Bus Rev. 2020 Jun;21(3):818–33.

46. James A, Seranmadevi R. Unpacking the Psychology of Investment Intention: The Role of Emotional Intelligence, Personality Traits, and Risk Behaviour. Int Res J Multidiscip Scope. 2024;5(1):198–206.

47. Barber BM, Odean T. Barber, Brad M. / Odean, Terrance (2001): Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment, Quarterly Journal of Economics 116, 261–292. Q J Econ. 2001;116(1):261–92.

48. Singh Y, Adil M, Haque SMI. Personality traits and behaviour biases: the moderating role of risk-tolerance. Qual Quant. 2023;57(4):3549–73.

49. Salem R. Examining the investment behavior of Arab women in the stock market. J Behav Exp Financ. 2019;22:151–60.