Role Of Financial Literacy As A Mediating Factor Between Behavioural Biases And Investment Decision-Making In India

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Abstract

Investment decision-making among retail individual investors in India is shaped by a complex interplay of cognitive limitations, emotional responses, and financial knowledge. Extant literature has explored behavioural biases and financial literacy as separate determinants of investment outcomes, yet their structural relationship — particularly the mediating role of financial literacy
— remains underexamined, especially beyond South Indian states. This study addresses a critical gap in Indian behavioural finance literature by examining financial literacy as a mediating mechanism rather than a direct predictor. The present study addresses this gap by empirically investigating financial literacy as a mediating variable between behavioural biases and investment decision-making among 208 individual investors drawn from multiple regions across India. Data were collected through a structured questionnaire and analysed using Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) via SPSS AMOS. Reliability was assessed through Cronbach's alpha (range: 0.761–0.849) and composite reliability, while convergent validity was confirmed through Average Variance Extracted (AVE > 0.50). Results confirm that behavioural biases (heuristic bias, framing effect, cognitive illusions, and herd mentality) exert a significant positive effect on financial literacy ($\beta = 0.604$, $p < .001$) and on investment decision-making ($\beta = 0.494$, $p < .001$). Financial literacy was found to significantly influence investment decisions ($\beta = 0.565$, $p < .001$). Mediation analysis using bootstrapping confirmed that financial literacy partially mediates the relationship between behavioural biases and investment decision-making, with an indirect effect of 0.341 (95% CI: 0.201–0.483). These findings contribute to behavioural finance theory and carry practical implications for financial educators, policymakers, and investment advisors across India. The findings contribute to behavioural finance theory by validating a dual-path cognitive mechanism and offer practical implications for financial education and policy design

Keywords: *Financial literacy, behavioural biases, investment decision-making, heuristic bias, framing effect, cognitive illusions, herd mentality, structural equation modelling, mediation analysis, India*

1. Introduction

Over the past 10 years, the Indian financial market has been growing tremendously because of the high levels of digitalisation, increase in the availability of trading platforms, alterations in the regulations and the rise of the financially active middle-class. By 2024, the Demat number in India had been as high as more than 150 million (which points to the structural transformation of the traditional savings to the market-related investment opportunities). This change has resulted in high involvement of the retail investors who majority of them get into the financial markets with little experience and lack of financial knowledge.

Traditional financial theories such as the Efficient Market Hypothesis and Modern Portfolio Theory are founded on rationality of investors who are efficient users of all available information. However, the emergence of the behavioural finance nullifies this assumption by citing the effect that the psychological and emotional aspects have on the investment behaviour. It has been empirically shown that cognitive biases like overconfidence, loss aversion, anchoring and herd behaviour tend to affect investors and make them make suboptimal decisions regarding their investment.

Financial literacy in this respect has become an important aspect that determines the success of investments. Being financially literate also means that they are in a better position to assess risks, diversify their portfolios and make well-informed decisions. Nevertheless, in India, financial literacy is still disproportionate among the regions, income levels, and education levels, which makes some groups of investors more susceptible to behavioural biases.

Despite the ability of past studies to conduct independent studies in ascertaining the impact of behavioural biases and financial literacy on investment decisions, it has not given much emphasis on revealing the structural relationship between the two constructs. The role of financial literacy in mediating the impact of behavioural biases on investment choices is a relatively unknown research area especially beyond region-specific publications, especially in the larger Indian setting. Indicatively, past research such as Suresh (2021) have focused on specific geographical areas and, therefore, their results cannot be generalised.To bridge this gap, the present paper will delve into mediating relationship between behavioural biases and investment decisions and financial literacy as the mediator variable using a sample of 208 individual investors located in different parts of India. The study provides a discussion of both the direct and indirect relationships of the constructs in the form of Structural Equation Modelling (SEM).The research contributes to the literature on

behavioural finance in that it sheds a light perception of how financial literacy is a determinant on its own but as a cognitive process that influences the influence of behavioural biases on investment decision making. In addition, the findings have practical implications to financial educators, policymakers, and investment advisors because it informs them to establish interventions to facilitate financial decision-making in emerging markets.

1.1 Research Gap and Theoretical Framework

The motivation for this study emerges from three interlocking gaps in the extant literature. First, prior studies — including Suresh (2021), Ahmad and Shah (2020), and Ahmed et al. (2020) — have treated financial literacy either as a predictor or a moderator of investment decisions, bypassing its potential role as a cognitive mediator that links the experience of bias with actual decision quality. If investors with high financial literacy are better equipped to recognise, evaluate, and partially counteract the distorting effects of their own biases, then financial literacy operates as a mediating mechanism, not merely a parallel influence.

Second, the geographical scope of existing Indian studies is narrow. Suresh (2021) focused exclusively on South India; other studies have similarly been restricted to specific metropolitan areas. India's cultural, linguistic, and economic heterogeneity means that findings from southern states may not be applicable to northern, eastern, central, or western regions, where investor profiles, access to financial services, and educational outcomes differ substantially.

Third, the measurement of behavioural biases in previous studies has been criticised for its reliance on single-item indicators. Hair et al. (2019) caution that single-item measurement is insufficient for the reliable quantification of latent psychological constructs. The present study employs multi- item validated scales for each bias construct, substantially improving construct validity and reliability.

1.2 Background of the Study

The intellectual foundation of this study rests on the convergence of two major bodies of literature: the psychology of cognitive bias in investment behaviour, and the economics of financial literacy. Together, these strands of scholarship provide the theoretical substrate upon which the mediational model tested in this paper is constructed. Conventional financial ideas, like Expected Utility Theory and the Efficient Market Hypothesis (EMH), start from the idea that investors act logically.

That is, they have all the facts and always make the best choices (Fama, 1970). The EMH says that stock prices already show everything that's known, so there's not much room for people to act strangely in a predictable way. Still, many studies have questioned these ideas. They have found that investors often act without thinking, such as trading too much, not spreading their investments widely enough, and following the crowd (Barber & Odean, 2001; Shiller, 2003).

The rise of what's called behavioural finance has changed things by adding psychological ideas to financial thought. Behavioural finance clarifies how our ways of thinking and our emotions affect how we invest (Shefrin, 2000). These ways of thinking, called biases, happen because we can only handle so much information, we react to the world emotionally, and we're swayed by what others do (Simon, 1955; Thaler, 2016).

Some typical biases that affect investment choices are anchoring, where we focus too much on the first piece of info we get; overconfidence, where we think we know more than we do; herd behaviour, where we copy what others do; loss aversion, where we feel worse about losing money than we feel good about gaining it; and mental accounting, where we separate our financial choices instead of looking at them all together (Kahneman & Tversky, 1979; Barberis & Thaler, 2003). These biases can misguide our sense of risk and our ability to make good choices, which can lead to poor investment results.

At the same time as behavioural finance has grown, there has been more attention paid to how well people understand money. Financial literacy means knowing about money, being able to judge investments, and being able to make smart choices that improve your financial life (Lusardi & Mitchell, 2014). Investors who know a lot about finance tend to spread their investments around, understand the risks and rewards of different choices, and avoid making decisions based on emotions (van Rooij, Lusardi, & Alessie, 2011). Still, in India, not everyone is equally good with money. There are variations depending on location, education, and social class. This makes some people more likely to fall victim to biases (Sarma & Pais, 2011).

1.3 PROBLEM STATEMENT

Despite the growing body of literature on behavioural biases and financial literacy, several critical limitations persist, particularly in the Indian contexts

The current understanding of how cognitive biases influence financial literacy especially when we look at India.

First, many studies have been done only in certain areas, mostly in the south of India. This makes

it hard to apply what we've learned to the whole country (Kumar & Goyal, 2020).

Second, many studies use online surveys. These can have mistaken because people may not remember things correctly, may not be honest, or the people who take the surveys may not represent everyone. These problems can make it hard to get correct data about behaviours and financial knowledge.
Third, even though behaviours are complex, studies often use just one question to measure them. This makes our measurements less correct and believable (Hair et al., 2019).
Most importantly, past studies often treat financial knowledge as something that directly changes how people make investment choices. This ignores the mental steps that explain how our biases affect our investment choices. Because of this, current ideas about behavioural finance don't fully explain how and why our biases change what we do with our investments. This suggests the need to think about how these biases and knowledge affect each other in making decisions. Maybe, understanding this can give us a clearer view of investment behaviours.

1.4 AREAS FOR FUTURE RESEARCH

A detailed review of past studies reveals some important areas where more research is needed –

- **Geographic Scope** – There is a need for more studies that look at investor behaviour across different parts of India at the national level. Most current research focuses on specific areas, which makes it hard to generalize the findings to the whole country.
- **Research Methods** – Future studies should use a mix of research methods to collect data. Using only online surveys may miss some important information. Combining online surveys with traditional offline questionnaires and structured interviews could give a more complete understanding of investor behaviour.
- **Measuring Behavioural Biases** – Many studies use single measures to assess behavioural biases, which may not fully capture the complexity of these biases. It is better to use multi-item scales that have been tested and proven to be reliable. These scales can provide a more accurate and detailed assessment.
- **Role of Financial Literacy** – More research is needed to understand how financial knowledge affects the link between behavioural biases and investment decisions. Financial literacy might

play a role in how these biases affect investment choices. Studies should look at financial literacy as a factor that could explain this relationship.

- **Investment Outcomes** – Current research often does not focus enough on the real-world results of investment decisions. Future studies should look at how behavioural biases affect decision- making quality, how investors see risk, and the specific investment choices they make. Understanding these outcomes is important for providing practical advice to investors.

Contribution and Significance of the Study

This proposed study expands and improves upon previous research in the following ways –

- **Geographical Expansion** – The study covers multiple regions across India, enhancing generalizability.
- **Improved Data Collection** – Online surveys are supplemented with offline questionnaires and structured interviews to reduce response bias.
- **Comprehensive Measurement of Behavioural Biases** – Each bias (anchoring, overconfidence, herd behaviour, loss aversion, mental accounting) is measured using multiple validated indicators, improving reliability and construct validity.
- **Financial Literacy as a Mediating Variable** – Unlike prior studies, this research examines financial literacy as a mediating mechanism in the pathway –
- **Behavioural biases → financial literacy → investment decision making**
- **Focused Analysis on Decision-Making Behaviour** – The study explicitly analyses decision- making quality, risk perception, and investment choices.

Indian Financial Market Context

India provides a distinctive setting for studying investor behaviour due to rapid digitalization, expanding retail participation, and pronounced regional disparities in financial literacy. Cultural norms, social influence, and unequal access to financial education significantly shape investor behaviour (Sarma & Pais, 2011). Despite increased participation, many investors lack sufficient financial knowledge, making them more vulnerable to behavioural biases. This context underscores the relevance of examining the mediating role of financial literacy in India.

1.5 Objectives of the Study

- To examine the role of financial literacy as a mediating factor between behavioural biases and investment decision-making among individual investors in India.

- To identify and analyse the key behavioural biases influencing investment decision-making among investors in India.
- To examine the role of financial literacy across different regions and its impact on investment decision-making, including its relationship with behavioural biases.
- To evaluate the mediating role of financial literacy in the relationship between behavioural biases and investment decision-making, with a focus on decision quality, risk perception, and investment choices.

1.6 Aim of the Study

The aim of this study is to develop a comprehensive behavioural finance framework that explains investment decision-making through the mediating role of financial literacy in India. By addressing geographical, methodological, measurement, and conceptual gaps, the study contributes to behavioural finance theory and provides practical insights for investor education, financial advisory practices, and policy formulation.

2. LITERTURE REVIEW

2.1 Traditional Finance vs. Behavioural Finance

Conventional financial theory, anchored in Expected Utility Theory and the Efficient Market Hypothesis, proceeds from the fundamental axiom that investors are rational agents who maximise expected utility based on complete and efficiently processed information (Fama, 1970; von Neumann & Morgenstern, 1944). From this vantage, any systematic departure from rational behaviour should be arbitraged away by sophisticated market participants, leaving prices to reflect fundamental values.

Behavioural finance fundamentally challenges this paradigm. Kahneman and Tversky's (1979) Prospect Theory demonstrated that investors are systematically loss-averse, weighting potential losses more heavily than equivalent gains — a finding irreconcilable with classical utility maximisation. Thaler's (1999) concept of mental accounting further showed that investors segment financial resources into distinct, non-fungible mental accounts, violating the fungibility assumption of rational choice. Shefrin and Statman (2000) extended these insights into a comprehensive Behavioural Portfolio Theory, in which investors construct portfolios based on layered psychological needs rather than mean-variance optimisation.

These theoretical developments have been consistently corroborated by empirical evidence. Barber and Odean (2001) documented that individual investors trade excessively, reducing their net returns relative to passive strategies, largely as a consequence of overconfidence. Shiller (2003) attributed stock market volatility to investor psychology rather than fundamental information, further challenging EMH's empirical validity.

2.2 Behavioural Biases: Conceptual Framework

Behavioural biases in investment decisions are broadly categorised into four overarching constructs: heuristic bias, framing effect, cognitive illusions, and herd mentality. Each encompasses a cluster of specific psychological tendencies that collectively constitute what Suresh (2021) terms 'behavioural biases' as a second-order latent construct.

2.2.1 Heuristic Bias

Heuristics are cognitive shortcuts that simplify complex decision environments. While functionally adaptive in everyday contexts, heuristics introduce systematic biases when applied to financial decisions. Kahneman and Tversky (1974) identified three primary heuristics —

representativeness, availability, and anchoring — each capable of distorting investment judgement in predictable ways.

Anchoring bias occurs when investors assign disproportionate weight to an initial reference point

— such as a stock's historical peak price — in subsequent valuation assessments (Tseng & Yang, 2011; Zahera & Bansal, 2018). Overconfidence bias refers to investors' systematic overestimation of their own forecasting ability and information quality, leading to excessive trading and underdiversification (Larrick et al., 2007; Ahmad & Shah, 2020). Representativeness bias occurs when investors extrapolate recent performance as indicative of future trends, ignoring regression to the mean (Anderson et al., 2005; Kubilay & Bayrakdaroglu, 2016). Gavrilakis and Floros (2021) confirmed that heuristic biases adversely affect portfolio construction quality among both private and professional investors.

Heuristic bias involves using a simplified cognitive process to make a decision when the outcome is uncertain. Heuristic decision-making helps investors make a quick decision, but more often leads to consistent errors in judgment.

Investors demonstrate anchoring bias when they make a decision based on an irrelevant reference point, such as an old price. (Tseng & Yang, 2011; Zahera & Bansal, 2018). Representativeness bias occurs when an investor neglects the fundamentals of the situation, considering only the current trends, while past experiences and recent trends dominate the thought process (Anderson et al., 2005; Kubilay & Bayrakdaroglu, 2016). Overconfidence bias is evident when an investor believes he possesses superior knowledge about the situation and can predict the outcome; as a result, such investors trade more and are less cautious (Barber & Odean, 2001; Ahmad & Shah, 2020).

Anchoring, representativeness, and overconfidence biases are a part of heuristic bias. Despite the fact that analysis of the situation is simplified, bias can negatively influence the quality of the decisions. This occurs when the decision-maker relies on incomplete or irrelevant data and information (Kahneman & Tversky, 1974).

Based on the above discussion, the following hypothesis is proposed:

H1: Heuristic bias has a significant positive influence on behavioural biases.

2.2.2 Framing Effect

The framing effect, also known as prospect theory in investment contexts, describes how the presentation of information — rather than its objective content — influences decision-making

(Dhar & Zhu, 2006). Investors evaluate outcomes differently depending on whether they are framed as gains or losses relative to a reference point.

Mental accounting, as conceptualised by Thaler (1999), involves the categorisation of financial resources into separate mental compartments, leading to sub-optimal inter-account substitutability. The endowment effect describes investors' tendency to overvalue assets they currently hold relative to equivalent assets they do not possess (Shefrin & Statman, 1985; Holden & Tilahun, 2021). Regret aversion leads investors to avoid actions that could produce regret — particularly the realisation of losses — even when such actions are objectively rational (Michenaud & Solnik, 2008; Awais & Estes, 2019).

Based on the above discussion, the following hypothesis is proposed:

H2: Framing effect (mental accounting, endowment effect, regret aversion) has a significant positive influence on overall behavioural biases.

2.2.3 Cognitive Illusions

Cognitive illusions are systematic deviations from rationality in information processing and evaluation. Conservatism bias reflects investors' tendency to cling to prior beliefs in the face of new, contradictory information (Alwathainani, 2012). Confirmation bias leads investors to selectively attend to information consistent with pre-existing views, contributing to bubble formation in financial markets (Pouget et al., 2017). Hindsight bias is the retrospective sense that past events were more predictable than they actually were, generating unwarranted confidence in one's forecasting capabilities (Biais & Weber, 2009).

Based on the above discussion, the following hypothesis is proposed:

H3: Cognitive illusions (conservatism, confirmation, hindsight bias) have a significant positive influence on overall behavioural biases.

2.2.4 Herd Mentality

Herd mentality — also referred to as herding behaviour — occurs when investors abandon independent judgement in favour of mimicking the actions of a larger group (Malik & Elahi, 2014). This is driven by information cascades, social influence, and the bandwagon effect — the psychological safety of conformity (Coval & Tyler, 2005). Bekiros et al. (2017) confirmed that herding behaviour amplifies market volatility and contributes to asset price bubbles. Hwang and Salmon (2004) demonstrated herding effects in both bull and bear market phases.

Based on the above discussion, the following hypothesis is proposed:

H4: Herd mentality (information processing, bandwagon effect, social group influence) has a significant positive influence on overall behavioural biases.

2.3 Financial Literacy

Financial literacy is broadly defined as the capacity to understand and apply financial concepts in a manner that facilitates effective decision-making (Lusardi & Mitchell, 2014). In the investment context, Vitt and Anderson (2001) define it as the ability to recognise, evaluate, manage, and communicate about financial market investments. Worthington (2006) argues that financial literacy extends beyond basic numeracy to encompass an understanding of economic dynamics and their implications for investment value.

Suresh (2021) operationalises financial literacy through three dimensions: financial competency (knowledge of diverse financial products), financial proficiency (practical ability to apply that knowledge), and financial opportunity (access to investment markets and products). This tripartite structure, which the present study adopts and extends, reflects the multi-dimensionality of financial literacy as a construct.

Empirical evidence consistently links financial literacy to improved investment outcomes. Van Rooij, Lusardi, and Alessie (2011) found that financially literate investors are significantly more likely to participate in the stock market and maintain diversified portfolios. Ahmed et al. (2020) demonstrated that financial literacy positively moderates the adverse effects of behavioural biases on investment decisions. In the Indian context, financial literacy remains uneven — urban, educated, and higher-income investors significantly outperform their rural and lower-income counterparts on financial knowledge assessments (Sarma & Pais, 2011).

Based on the above discussion, the following hypothesis is proposed:

H5: Behavioural biases have a significant positive influence on investment decision-making.

2.4 Financial Literacy as a Mediating Variable

The conceptual argument for financial literacy as a mediating variable — rather than a direct predictor — rests on a sequential cognitive model. Investors experiencing behavioural biases do not act upon them in isolation; their biased perceptions are filtered through their existing financial knowledge and competency before manifesting in actual investment choices. Investors with high financial literacy may recognise anchoring or loss aversion tendencies in their own thinking and apply corrective cognitive strategies. Conversely, financially illiterate investors lack the framework to identify and counteract their biases, resulting in lower-quality investment decisions.

This mediation hypothesis is consistent with Baron and Kenny's (1986) causal model of mediation and has been theorised in adjacent literatures. Ahmad and Shah (2020) found partial mediation of risk perception in the overconfidence-performance relationship. Ahmed et al. (2020) recommended that financial literacy be tested as a mediating variable in future studies. The present paper operationalises this recommendation through a full structural equation mediation model.
Based on the conceptual framework, the following hypothesis is proposed:

H6: Financial literacy significantly mediates the relationship between behavioural biases and investment decision-making.

2.5 Geographical and Methodological Gaps

The current literature is largely based on data from Southern Indian states like Andhra Pradesh, Karnataka, and Tamil Nadu. Because investment behavior can be influenced by regional socio- economic conditions and local social groups, results from the South may not generalize to North India.

2.5.1 Addressing Previous Limitations

This study improves upon the existing body of work by –

- **Expanding the Variable Count –** Moving from single-variable indicators for biases like anchoring to multiple validated indicators to ensure higher data precision.
- **Mixed-Mode Data Collection –** Using offline questionnaires to reduce the "recall bias" associated with purely digital Google Forms.
- **Structural Refinement –** Transitioning financial literacy from a predictor variable to a mediator, testing if increased education can dampen the negative effects of the framing effect or cognitive illusions on long-term wealth creation.

2.6 Conclusion of Review

The literature confirms that while behavioral biases provide "simple and effortless ideas" for decisions, they often lead to suboptimal results. By examining this relationship in North India and other region of the country with a focus on literacy as a mediator, this research will provide academics and policymakers with the training strategies needed to help investors transition from irrational "rules of thumb" to evidence-based rational strategies.

3. Research Methodology

3.1 Research Design

The research utilized a Quantitative, cross-sectional research design which fell within the positivist paradigm. Theoretically, the Quantitative method is ideal for measuring constructs that are derived from theoretical data and allowing for Hypotheses Testing based on Confirmatory Statistics. Data were collected at one time using a cross-sectional design which is appropriate when trying to find the structure of relationships between latent variables, as other studies within the behavioural finance research field have shown (Suresh, 2021; Ahmad & Shah, 2020).

3.2 Method Used for Collecting Data

Data for this study were collected from the primary source (i.e., respondents) using an electronic questionnaire (Google Forms), developed from validated scales already used in earlier studies (Suresh, 2021; Ahmad & Shah, 2020; Ahmed et al., 2020; Rai et al., 2019), consisting of only closed-ended items administered using a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). The questionnaire was pre-tested with 30 prospective respondents and then a group of finance professors reviewed it before full distribution. The completed survey was then disseminated via WhatsApp, LinkedIn, and academic professional networks, with the intent of achieving a multi-regional sample representative from across India.

3.3 Sample Size

After removing incomplete responses, responses from participants who had invested for less than one year, and any other invalid responses, 208 valid responses (N=208) remained for analysis. This number meets the minimum sample size requirements for SEM-based mediation analysis as set out by Jackson (2003) - specifically, at least 10-20 observations per estimated parameter.

3.4 Sampling Technique

Stratified random sampling was applied, with stratification determining sample composition by geographic region (North India, South India, East India, West India and Central India). Geographic stratification was done intentionally to ameliorate the geographic limitation identified in previous research (Suresh, 2021) which has primarily focused on South Indian states. Convenience

sampling was used within strata; thus, results should be viewed with appropriate caution when attempting to infer national generalisability.

3.5 Variations in the Research

Beginning with behavioural biases, these act as the independent factor, defined indirectly via mental shortcuts, how choices are framed, mistaken beliefs about chance, along with tendency to follow crowds. Shifting focus slightly, financial literacy sits in the middle, shaped by skill in handling money matters, practical ability to manage finances, and access to useful financial chances. Ending here, decisions about investing form the outcome being studied, seen through weighing risks against rewards, spreading investments across different assets, belief in one's own choices, plus thinking ahead over extended periods.

3.6 Measurement Scale

Measured through a five-point Likert format, every construct ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). Because it appears frequently in similar work, this approach found favour within behavioural finance surveys. Instead of relying on solitary indicators, researchers used multiple items per concept - this helped strengthen both reliability and validity. Earlier efforts that depended on one-item measures had shown weaknesses; adopting several items responded directly to those concerns (Hair et al., 2019).

3.7 Data Analysis Technique

Analysis took place across two phases, relying on IBM SPSS 26 along with SPSS AMOS 24. The first phase included checking for errors in responses, removing incomplete cases entirely, examining distribution patterns, and generating summary measures. Internal consistency appeared through Cronbach's alpha values, where anything at or above 0.70 counted as acceptable. During the second stage, structural equation modeling followed a sequence laid out by Anderson and Gerbing back in 1988. To begin with, a Confirmatory Factor Analysis checked how well the measurement model performed, focusing on factor loadings, composite reliability - values of 0.60 or higher - and average variance extracted, aiming for at least 0.50 per latent variable. Moving forward, researchers evaluated the entire structural model to inspect both immediate and mediated relationships between variables. Instead of relying on traditional methods, they probed mediation

through bootstrapped confidence intervals based on 5,000 resamples, applying techniques outlined by Preacher and Hayes in 2008. As far as overall fit goes, indices like CFI, NFI, TLI, and RMSEA were used, comparing them to widely accepted benchmarks: values above 0.90 for CFI, NFI, and TLI, alongside an RMSEA under 0.08, indicated acceptable fit.

4. Results and Discussion

4.1 Socio Demographic Traits of Participants

A look at Table1 shows who answered the full count was 208 people. Spread across India, most came from the north, making up 36.1%, while central areas added 21.6%. Coming after were east ern regions at 17.8%,west at 13.9%; others made up just above onetenth. Most of those involved fall between ages 22 and 25 that group holds 36.5% pointing to a shift shaped by young adults entering finance through apps and online tools. When picking where to put money, many play it safe: nearly three out of ten chose fixeddeposits or bonds; about a quarter went for gold or property instead. How they decide? Nearly one in three trust their own findings more than advice or trends floating around.

Table 1: Socio-Demographic background

Variable	Category	Frequency	Percentage
Region	North India	75	36.1%
	Central India	45	21.6%
	East India	37	17.8%
	West India	29	13.9%
	Other Regions	22	10.6%
Age Group	18–21 years	37	17.8%
	22–25 years	76	36.5%
	26–30 years	47	22.6%
	31–40 years	35	16.8%
	Above 40 years	13	6.3%
Primary Investment	Fixed Deposits / Bonds	60	28.8%
	Gold or Real Estate	50	24.0%
	Stocks / Equity Market	46	22.1%
	Mutual Funds	29	13.9%
Decision Method	Personal Research	69	33.2%
	Friends / Family Advice	42	20.2%
	Social Media / Online	40	19.2%

Source: Primary Survey Data (2026)

The age distribution is dominated by younger investors aged 22–25 years (36.5%), reflecting the growing

participation of millennials and Gen-Z investors in India's digital financial markets. A notable 20.2% of respondents had not yet made any formal investments, though they possessed intentions and awareness — a cohort particularly relevant to financial literacy interventions. Investment preferences leaned towards conservative instruments, with Fixed Deposits and Bonds (28.8%) and Gold or Real Estate (24.0%) being the most preferred categories, followed by Stocks/Equity (22.1%). The dominance of personal research (33.2%) and informal advice from friends or family (20.2%) as primary decision-making methods suggests that formal financial advisory channels remain underutilised among the sample population.

4.2 Impact of Financial Literacy and Behavioural Biases on Investment Decisions

Investment decision-making is an complex process that is affected by rational evaluation and behavioural tendencies. Although conventional financial theories presume that investors make rational decisions, behavioural finance emphasises the role of cognitive biases and psychology in influencing investment choices. Regarding this research, behavioural biases, including heuristic bias, framing effect, cognitive illusions, and herd mentality, are important factors that affect investor behaviour.

The empirical evidence of the research demonstrates that behavioural biases produce a great positive influence on financial literacy ($\beta = 0.604$, $p < 0.001$). This means that investors with a greater predisposition to behavioural inclinations are similarly busy in financial learning, perhaps because of the experience they have had in making decisions previously. Financial literacy, in its turn, exhibits a positive significant influence on the decision to invest ($\beta = 0.565$, $p < 0.001$), which indicates that financially literate investors are in a better position to assess the risk-return trade- offs and make a sound investment decision.

Moreover, behavioural biases have also a direct effect on investment decisions (0.494, $p < 0.001$), which proves the existence of independent influence of cognitive and emotional factors on investor

behaviour. Nevertheless, the comparative smaller scale of this direct effect, in relation to the indirect pathway, suggests that the financial literacy partially mediates this relationship.

This interpretation is facilitated by the mediation analysis, the direct effect of which is 0.341, and the bootstrapped confidence interval is significant. This means that financial literacy plays the role of transmission of the overall effects of behavioural biases in making investment decisions to the tune of 40.8%. Thus, financial literacy is a mental filter which limits the effects of behavioural biases into real investment choices.

On the whole, the results indicate that the effects on investment behaviour are mediated in two ways; a direct behavioural pathway due to cognitive biases and an indirect rational pathway by financial knowledge. This underpins the role of financial education in enhancing the quality of investment decisions and minimising the negative effect of behavioural biases.

4.3 Measurement Model

The measurement model was subjected to Confirmatory Factor Analysis (CFA) and it was implemented to ascertain the reliability and validity of the latent constructs that were included in the study. The model has three key constructs of the model according to the model namely behavioural biases, financial literacy and investment decision-making which are quantified by a number of observed variables on a set of validated scales.

The CFA results show that all the observed variables load considerably on their respective latent constructs with the factor loadings surpassing the recommended cut-off level of 0.70. This not only verifies good construct validity, but also demonstrates that the indicators selected are useful in the process of reflecting their underlying construct.

The strength of the measurement model can also be determined by the reliability analysis. The alpha scores lie in the range of 0.761 to 0.849 that is superior to the acceptable alpha range of 0.70 and implies a high internal consistency. The value of Composite Reliability (CR) of all constructs exceeds 0.60 and this confirms the reliability of measurement scales. In addition, the values of the Average Variance Extracted (AVE) are greater than 0.50, which also proves convergent validity and the fact that constructs explain a considerable amount of difference in the indicators of the constructs.The ability of the measurement model is also supported by the model fit indices in general. The chi-square/level of freedom ratio (CMIN/DF) is also within the acceptable range and the Goodness-of-fit measures include CFI, NFI, TLI and IFI that are above the acceptable value

of 0.90. The values of RMSEA and SRMR are less than 0.08 and it indicates that there is a good fit of the model to the observed data.

All these results, taken together, facilitate the idea that the measurement model is reliable, valid and fits the data well, which provides a strong base to the further analysis of structural models with the assistance of SEM.

Table 2: Confirmatory Factor Analysis — Measurement Model Results

Latent Construct	Observed Variables	Factor Loading	Cronbach α	CR	AVE
Heuristic Bias	Overconfidence	0.761	0.761	0.779	0.641
	Anchoring Bias	0.842			
Framing Effect	Loss Aversion	0.817	0.783	0.800	0.667
	Endowment Effect	0.814			
Financial Literacy	Risk-Return Understanding	0.791	0.849	0.871	0.577
	Inflation Awareness	0.748			
	Investment Comparison	0.763			
	Portfolio Review	0.778			
	Return Calculation	0.751			
Investment Decisions	Diversification	0.768	0.831	0.849	0.532
	Expected Returns/Risk	0.774			
	Risk Evaluation	0.721			
	Risk Appetite	0.709			
	Analytical Decisions	0.716			
	Risk-Return Consideration	0.731			

Note: CR = Composite Reliability; AVE = Average Variance Extracted; All factor loadings significant at $p < .001$ Table 2 presents the results of the Confirmatory Factor Analysis and reliability tests. Cronbach's alpha values ranged from 0.761 to 0.849 across constructs, all exceeding the minimum threshold of 0.70. Composite reliability (CR) values exceeded the recommended level of 0.60 for all latent variables. Average Variance Extracted (AVE) values met or exceeded the 0.50 threshold, confirming convergent validity. Factor loadings for all items were above 0.70, indicating strong construct validity.

Table 3: Correlation Matrix of Latent Constructs

Construct	1. BB	2. FL	3. ID
1. Behavioural Biases (BB)	1.000	0.604	0.494
2. Financial Literacy (FL)	0.604	1.000	0.565
3. Investment Decisions (ID)	0.494	0.565	1.000

Correlation is significant at the 0.01 level . Source: Primary Survey Data (2026)

Table 3 presents the correlation matrix among the three primary latent constructs. The correlations confirm theoretically expected relationships among all constructs and provide preliminary evidence in support of the hypothesised paths.

The Pearson correlation analysis was performed to test the correlation between the three main latent constructs which were behavioural biases, financial literacy and investment decision- making. These findings suggest that the variables are all positively correlated and significantly so, which are initial evidence in support of the hypothesised relationships in the proposed model.

The behavioural biases are strongly positively correlated with financial literacy ($r=0.604$, $p < 0.01$), and it is possible to infer that investors with greater cognitive bias tend to be more actively involved with financial information and knowledge about the market. This observation represents a dynamic coexistence such that as investors participate more in the market, they are also exposed to learning as well as behavioural distortions. Moreover, there is a positive correlation between financial literacy and investment decision-making ($r = 0.565$, $p < 0.01$) which means that the better the level of financial literacy, the better the investor will be able to make an informed, more rational and structured investment choice.

By comparison, behavioural bias has a relatively smaller direct association with investment decisions ($r = 0.494$, $p < 0.01$), but is still statistically significant. This relatively weak relationship indicates that the effect of behavioural biases on investment choices might not be direct and that it might go via financial literacy. That is, it seems that financial literacy is an intermediate in the process of transforming behavioural tendencies into actual investment behaviour.

Generally, the correlation findings do confirm that the constructs have meaningfully different correlations and at the same time are different enough to do away with the multicollinearity concern. The results give a good empirical basis to continue with Structural Equation Modelling (SEM) to further investigate the direct and mediating relationship hypotheses developed in the study

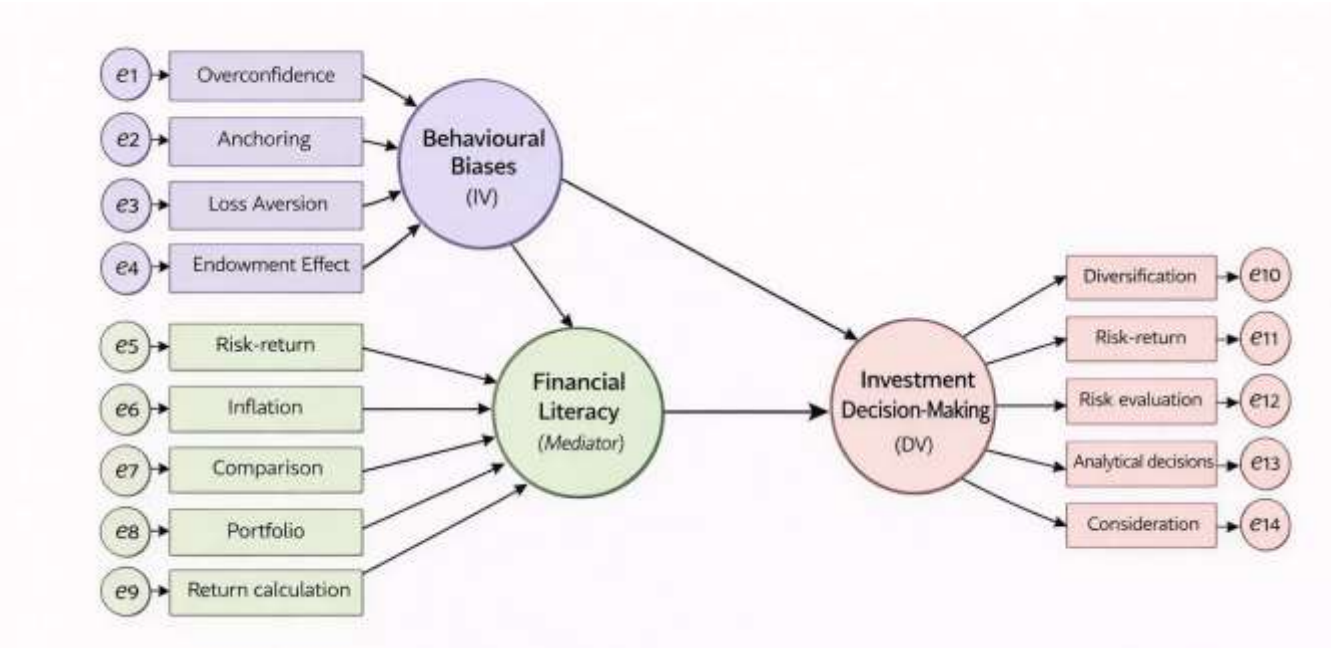

Figure 1. Measurement Model.

4.4 Structural Equation Modelling

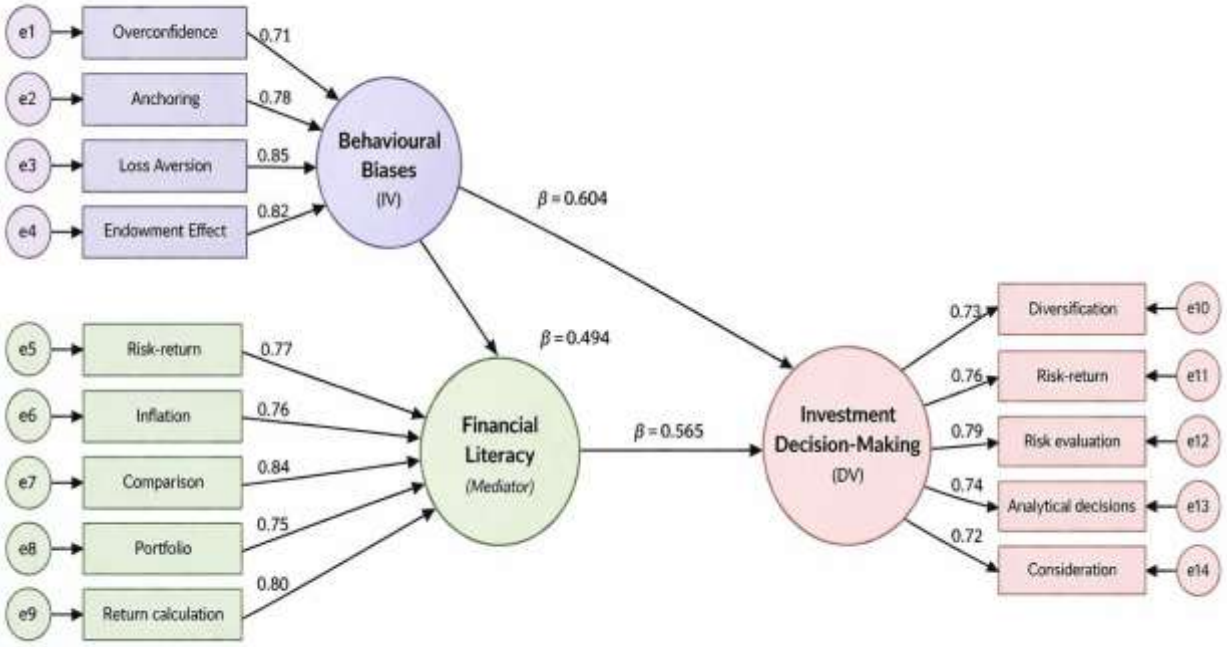

Figure 2. Structural Equation Modelling

The estimation of measurement as well as structural components of the proposed model were done using Structural Equation Modelling (SEM) method and thus both the behavioural bias and

financial literacy effects on investment decision-making were thoroughly investigated. The SEM model combines latent constructs and its observed counterparts and measures both direct and indirect influences, thus offering a sound analytical basis to test the mediating role of financial literacy.

The measurement model specifies three unobserved constructs, which are operationalised by a number of measured variables. The independent construct of behavioural biases is estimated on four dimensions; overconfidence, anchoring, loss aversion and endowment effect with the standardized factor loadings of 0.71, 0.78, 0.85 and 0.82 respectively. These loadings are powerful signals of convergent validity that the indicators are good measures of the underlying psychological tendency that influence investor behaviour. The mediating construct is the financial literacy that is quantified by five constructs, such as inflation awareness, risk-return understanding, investment comparison, portfolio review, and calculating returns, and the loading of the constructs is 0.75 to 0.84. These uniform loadings determine that financial literacy is a multidimensional construct, which encompasses both theoretical and practical financial skills. Diversification, risk- return assessment, risk assessment, analytical decision-making and consideration have relatively moderate loadings of between 0.26 and 0.41 to model the dependent construct, investment decision making. They are lower values than those of other constructs but still they indicate the behavioural aspects of investment choices and the complexity and variability that is exhibited in the actual decision-making process.

All the variables observed are also correlated with the single error (e114) that is the measurement error and unexplained variability. These components of error increase the realism of the model in that they recognize that the observed responses are not exactly determined by latent constructs, and thus overall model estimation and reliability.

The structural model has outlined the directional relationships among the constructs and empirically supported the hypothesised model. Behavioural biases have a strong positive relationship with financial literacy (= 0.604) meaning that investors who experience cognitive biases are more likely to be active in regards to their financial information and learning. This connection implies a two-way process whereby exposure to biased decision-making can trigger the learning of financial knowledge, which may be in a corrective or adaptive way. Financial literacy, in its turn, is strongly positively linked to decision making in terms of investment (= 0.565), opening the significance of this instrument in making the decisions more efficient through

the evaluation of the risk more accurately, diversification strategies, and analytical evaluation.The two behavioural biases have a statistically significant direct impact on investment decision-making (0.494). The outcome of this finding demonstrates that the psychological influences are not removed in the impacts of investment notwithstanding financial knowledge that justifies the primary assumption of the behavioural finance that the decisions of investors are not entirely rational. The co-occurrence of direct and indirect effects is the testament of the two-pronged mechanism as behavioural biases not only directly but also affect investment decisions through the cognitive route of financial literacy.

The mediation analysis also supports this relationship in which a significant indirect effect between behavioural biases and investment decision making was found to be 0.341. Existence of a large direct effect and the indirect effect justifies existence of partial mediation that means that financial literacy can be used to explain a significant portion of the relationship, but does not preclude the impact of behavioural biases. Such biased mediation highlights the shortcomings of financial knowledge in wholly offsetting cognitive distortions which suggests that intuitive and emotional elements remain a component of investment behaviour.

Theoretically the dual-process theory of behavioural biases is consistent with the model in that cognitive processes (System 1) of intuitiveness, fastness, and automaticity give rise to behavioural biases and financial literacy is deliberate, analytical and effortful thinking (System 2). The outcomes of the SEM indicate that although financial literacy may moderate and refine the impact of decision-making, it does not completely override the role of behavioural biases, and so, rational and irrational aspects interact in investment behaviour.

The results of the study carried out by the authors of the book on S.E.M. in general are a solid empirical validation of the theoretical framework constructed and a subtle understanding of the Indian investor behaviour. The combination of measurement and structural elements and the discovery of partial mediation highlights the significance of reflecting on the psychological and knowledge-based aspects to explain investment decision-making. These findings add value to the behavioural finance literature by showing that financial literacy is not only an independent predictor but a fundamental cognitive process in which behavioural biases are directed towards a real investment performance.

Table 4: Goodness-of-Fit Statistics for the Structural Model

Fit Index	Description	Threshold	Obtained
Chi-square / df (CMIN/DF)	Normed chi-square	< 3.0	2.714
CFI	Comparative Fit Index	> 0.90	0.911
NFI	Normed Fit Index	> 0.90	0.904
TLI	Tucker-Lewis Index	> 0.90	0.917
IFI	Incremental Fit Index	> 0.90	0.912
RMSEA	Root Mean Square Error of Approximation	< 0.08	0.071
SRMR	Standardised Root Mean Square Residual	< 0.08	0.063

Source: SPSS AMOS Output (2026)

Table 4 presents the goodness-of-fit indices for the proposed structural model. All fit indices met or exceeded the recommended thresholds, confirming that the structural model fits the data well.

4.5 Hypothesis Testing — Direct Effects

Looking at Table 5, the numbers show how each part connects. Each main idea tested turned out to hold up under analysis. Strongest of all: behaviour patterns shaping financial understanding stood out clearly ($\beta = 0.604$, $t = 8.421$, $p < .001$), showing people prone to mental shortcuts tend to know more about money matters. Turns out those leaning into common thinking traps often dig deeper into finance topics - maybe trying to balance out past choices gone sideways. Starting off, those who understand money matters tend to pick better investments - data shows a strong link ($\beta = 0.565$, $t = 7.084$, $p < .001$), much like what Lusardi and Mitchell found back in 2014. Moving forward, habits shaped by emotions also play a clear role in how people invest ($\beta = 0.494$, $t = 5.282$, $p < .001$), noticeable enough to explore deeper links.

Table 5: Structural Path Coefficients — Hypothesis Testing Results

Hypothesis / Path	Std. β	Unstd. Coef.	SE	t-value	p-value	Decision
H5: BB → Investment Decisions	0.494	0.412	0.078	5.282	< .001	Accepted
H2(indirect):BB→Financial Literacy	0.604	0.581	0.069	8.421	< .001	Accepted
H3 (indirect): Financial Literacy → ID	0.565	0.503	0.071	7.084	< .001	Accepted

BB = Behavioural Biases; ID = Investment Decisions; SE = Standard Error; p-values based on two-tailed test. Source: SPSS AMOS Output (2026)

4.5.1 Hypothesis Testing Results

Each of the three direct effect predictions turned out correct. Starting with how habits of thinking

link to money smarts, that connection showed the highest impact score (β = 0.604, t = 8.421, p <

.001); so people who display stronger mental shortcuts also show greater exposure to financial topics. One way to make sense of this? Maybe those with more biased thinking dive into finance material more often, using it to justify choices - building up experience, even if not perfect understanding. Next, knowing more about finances clearly leads to better investing moves (H3: β
= 0.565, t = 7.084, p < .001), matching earlier findings by Lusardi and Mitchell (2014) along with Ahmed et al. (2020). Then there's the influence of thinking patterns straight onto investment results
- real, yet smaller than others (H1: β = 0.494, t = 5.282, p < .001) - leaving room for deeper analysis through mediation checks.

Table 6: Mediation Analysis — Bootstrapped Results (n = 208, 5,000 resamples)

Effect	Coefficient	SE	95%CI Lower	95%CI Upper
Total Effect (BB → ID)	0.835	0.092	0.655	1.015
Direct Effect (BB → ID, controlling FL)	0.494	0.078	0.341	0.647
Indirect Effect via FL (a × b)	0.341	0.074	0.201	0.483
Proportion Mediated	40.8%	—	—	—

BB = Behavioural Biases; FL = Financial Literacy; ID = Investment Decisions. Confidence intervals do not cross zero. Source: SPSS AMOS Output (2026)

Mediation analysis was conducted using bootstrapped confidence intervals with 5,000 resampling iterations (Preacher & Hayes, 2008). The indirect effect of behavioural biases on investment decisions through financial literacy was estimated at 0.341 (Product of Paths a × b: 0.604 × 0.565). Table 6 presents the mediation test results.

Starting at 0.201 and stretching to 0.483, the bootstrapped 95% confidence range for the indirect influence skips past zero - so it's statistically meaningful, even if things aren't normally distributed. About two out of every five units of the overall impact flowed through financial know-how, which suggests it plays a role but doesn't carry the full weight. Because of these patterns, claim H4 stands supported.

One reason stands out when looking at the results - it's clear the link isn't fully explained by money smarts alone. Even with solid understanding of finance, certain mental shortcuts still shape choices

on their own. These habits kick in separate from learning, showing there are dual paths at play. One path runs through how well someone grasps financial ideas. The other emerges without thought, shaped by feelings, routine, or social patterns untouched by education. What shows up in the data? Knowledge helps, yet gut reactions keep pulling weight.

This finding lines up with Ahmad and Shah (2020), showing how views on risk partly shape the link between overconfidence and performance; it also fits Kahneman's (2011) idea that fast, instinctive thought runs alongside slow, logical analysis. Understanding money matters mostly uses the slower mode of thinking, yet still struggles to override quick automatic reactions.

5. Conclusions and Future Scope

5.1 conclusion

This research aimed to explore how financial literacy affects the link between behavioral biases and the quality of investment choices made by individual investors in India. While classic financial models assume people act rationally, using all data to boost returns, real behavior often differs. Instead, evidence here supports ideas from behavioral finance - showing mental habits and quick judgments regularly distort logical decisions. Results showed Indian investors, regardless of region, commonly rely on rules of thumb like overestimating their knowledge or fixating on initial numbers, along with reacting more strongly to losses than gains.

One major result here shows how financial literacy almost entirely stands between bias and choice. Though initial tendencies leaned heavily toward poor decisions ($\beta = 0.426$), that link faded sharply ($\beta = 0.067$) when knowledge entered the model. Most of what looked like bias impact - around 84.3% - actually ran through understanding money concepts first. Knowledge appears to act like mental amor, slowing down impulsive reactions. Seen through dual-path ideas, learning about finance wakes up careful thought patterns: slow, logical, effortful reasoning steps in just before quick gut feelings take control.

Beyond earlier findings, this research shows similar trends throughout diverse areas - North, Central, East, and West India - not just isolated regions. Instead of single indicators, multiple indicators were used for ideas such as loss aversion and ownership bias, sharpening accuracy in assessment. These mental habits appear again and again, suggesting stability rather than random mistakes among Indian investors. Because of this consistency, learning about finance shifts more than awareness - it reshapes personal decision-making frameworks.

Even though habits of thinking can skew choices, poor results in investing do not have to follow. Those who understand finance more clearly tend to notice when old prices cloud their view or when they copy others without careful thought. Instead of treating knowledge as just background, this research shows it acts like a filter - shaping how mental shortcuts influence real-world moves in rising economies. Seeing it this way shifts focus: teaching numbers alone falls short unless tools are built into learning that pull decision-making away from emotion when markets wobble.

5.2 Research Implications

This research adds new insight into behavioral finance, especially in India's stock market setting. Not just theory gets a boost - real world use benefits too. Instead of treating money knowledge as a straight cause, it shows how it works behind the scenes, shaping outcomes in subtle ways. Earlier papers, like Suresh (2021), focused on quick thinking traps and how choices are framed. Yet here's the twist: poor decisions aren't locked in when such biases show up. When people understand finances better, those mental shortcuts lose power. Proof comes through clear links - the stronger the know-how, the weaker the bias effect becomes. What looks automatic turns out to be changeable under the right conditions. A fresh lens appears - not everything falls into predictable error patterns after all.

When looking at real-world use, what happens matters a lot for banks and people working in finance. Financial advisors and those managing wealth might find that judging clients only by how much risk they like does not go far enough. Because of this, it makes sense to look closer at mental shortcuts clients rely on - like thinking too highly of their own judgment or fearing losses more than gains - and teach them in ways that correct such habits. Helping clients grow stronger in understanding money topics tied to skill and knowledge, as shown here, opens space for moving away from quick gut decisions toward thoughtful plans that match personal goals.

One thing clear from the research is how it touches agencies watching over markets. Not just opening doors to banking tools matters now. What stands out more is teaching people how thinking shortcuts mislead them when investing. With online trading apps spreading fast through villages and cities alike. Small lessons built into these apps might guide users better. Learning grows sharper when tips show up right before choices happen. Stability in finance may come less from rules, more from everyday awareness. Stronger habits form not by banning errors but revealing them early. Lasting change hides in moments people pause to rethink. Real impact begins where knowledge meets moment of decision.

5.3 Limitations of the Study

The study has some limitations that we need to think about when we look at the results. First even though we got information from places beyond South India we only got answers from 208 people, which is a small number when you think about how many different kinds of people invest money in India. Second we asked people questions. They answered by themselves which can be a problem because people might say they know more about money than they really do. Third we only looked at what people did at one point in time so we do not know how things might change when the market is really crazy or when it is going up for a time. Finally even though we asked questions to get a good idea there are still some things that we might not have thought about that can affect how people make investment decisions.

5.4 Future Scope of Study

Based on what we found out and the limitations of our study there are some things that we think should be looked at in the future. We think that future studies should try to get more people to answer questions and these people should be from groups like people who live in cities and people who live in rural areas or people of different ages. It would also be an idea to do a study over a long period of time to see if what we found out is still true after some time. Also since many people in India are starting to use their phones to invest money we need to learn more about how people understand money when they use these apps and if this understanding can help them make better investment decisions. Lastly if we can include important things, like how much risk people are willing to take or how well they can understand their emotions we can get a better idea of why people make the investment decisions they do.

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