

Impact of Cognitive Biases on Investment Intentions: Exploring the Mediating Role of Self-Esteem among Indian Emerging Investors

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Abstract:

Investment decision-making among young investors is influenced by various psychological factors, including cognitive biases and self-esteem. This study employs Structural Equation Modelling (SEM) to investigate the relationships between cognitive biases—specifically the anchoring effect, disposition effect, and herding effect—self-esteem, and investment intentions among young investors. The findings suggest significant direct effects of cognitive biases on investment intentions, as well as significant indirect effects mediated by self-esteem. Specifically, the anchoring effect and herding effect demonstrate successful mediation through self-esteem, whereas the mediation effect for the disposition effect was not significant. These findings highlight the importance of considering cognitive biases and psychological factors in understanding investment decision-making processes among young investors.

Keywords: *Cognitive biases; self-esteem; investment intentions; herding effect; anchoring effect; disposition effect; emerging investors*

1. Introduction:

In the dynamic landscape of financial markets, investment decision-making stands as a critical process, wherein individuals navigate complex and often uncertain terrain to achieve their financial goals. Among the myriad factors influencing investment decisions, cognitive biases and psychological factors play a significant role, shaping individuals' perceptions, attitudes, and behaviors towards investments (Magendans et al., 2017). Understanding the interplay between these cognitive biases, psychological factors, and investment intentions is crucial for both academic research and practical application in the financial industry (Topa et al., 2018).

Young investors represent a demographic group with unique characteristics and preferences that warrant special attention in the study of investment decision-making (Kadous et al., 2014). As individuals in the early stages of their careers and wealth accumulation, young investors face distinct challenges and opportunities in managing their investments. Exploring the psychological underpinnings of investment behavior among young investors can provide valuable insights into their decision-making processes and inform strategies for financial education, advisory services, and policy interventions tailored to this demographic (Magendans et al., 2017).

The anchoring effect, disposition effect, and herding effect are prominent cognitive biases that have been studied in the context of investment decision-making of investors. The anchoring effect refers to the tendency for individuals to rely too heavily on initial information (the "anchor") when making subsequent judgments or decisions (Czerwonka, 2017). The disposition effect describes the tendency for individuals to hold onto losing investments too long and sell winning investments too soon, driven by the desire to avoid regret. Herding effect, on the other hand, occurs when individuals mimic the actions of others in a group, even if those actions may not be rational or based on sound information (Choe & Eom, 2009; Da Costa et al., 2008).

In addition to cognitive biases, self-esteem—an individual's overall evaluation of their own worth and capabilities—can also potentially influence investment behavior. Self-esteem can impact individuals' risk perceptions, confidence levels, and decision-making processes, ultimately shaping their investment intentions and behaviours (Scheier et al., 1994). Understanding how self-esteem interacts with cognitive biases to influence investment decisions is essential for comprehensively understanding investment behavior among young emerging investors.

While extant studies may have shown predilection of individuals towards investment in stocks based on cognitive biases, we aim to uncover the psychological mechanism which drives the intention. Further, this study seeks to examine the relationships between cognitive biases, self-esteem, and investment intentions among emerging investors. By employing

Structural Equation Modelling (SEM) technique, we aim to provide a comprehensive understanding of the mechanisms driving investment decision-making processes among young potential investors in the financial industry.

2. Literature Review:

The realm of investment decision-making is characterized by a complex interplay of rational analysis and psychological factors, prominently featuring cognitive biases that influence individuals' perceptions and behaviours in financial markets.

Anchoring Effect:

The anchoring effect, a common heuristic bias in behavioral finance, refers to people's tendency to rely on previously encountered numerical values when making decisions. Originating from the work of (Kahneman & Tversky, 1979), this bias shows how individuals incorporate irrelevant numerical cues into their decision-making, even when these cues are unrelated. Numerous studies in various areas, like general knowledge, probability estimates, legal judgments, and purchasing decisions, confirm the anchoring effect's presence ((Epley & Gilovich, 2001; Galinsky & Mussweiler, 2001; Méndez-Picazo et al., 2021).

Building on this literature, we hypothesize that the anchoring effect directly influences investment intentions among young investors. Exposure to anchoring cues may directly shape individuals' investment decisions.

H1: Anchoring effect bias directly influences investment decision among young individuals

We further believe that exposure to anchoring cues may influence individuals' perceptions of their own capabilities and worth, thereby impacting their self-esteem. When individuals encounter anchoring cues, such as numerical values or reference points, they may subconsciously adjust their self-perceptions based on these cues. For example, if individuals are exposed to high numerical values related to investment returns, they may perceive themselves as more competent and capable of achieving similar outcomes. Conversely, exposure to lower numerical values may lead to feelings of inadequacy or doubt about their investment abilities.

The influence of the anchoring effect on self-esteem can subsequently shape individuals' investment intentions. Individuals with higher self-esteem may exhibit greater confidence in their investment decisions, leading to a willingness to take on more risk or pursue investment opportunities with higher potential returns. Conversely, individuals with lower self-esteem may exhibit more cautious investment behavior, preferring safer investment options or avoiding investment decisions altogether. Thus, we came up with the below hypothesis:

H2: Anchoring effect can indirectly influence investment intentions via self-esteem

Disposition Effect:

Previous studies have extensively examined the disposition effect, a behavioral bias observed in investor behavior, wherein individuals tend to sell winning stocks prematurely and hold onto losing stocks for too long (Shefrin & Statman, 1985). Research conducted across various countries, such as the United States, South Korea, and China, has consistently documented the prevalence of this bias and its detrimental impact on individual investors and financial markets (G. Chen et al., 2007; Odean, 1998). Demographic characteristics and trading contexts have also known to impact the disposition effect (Forbes & Kara, 2010; Taylor & Ogilvie, 1994). Individuals with higher Financial Self Efficacy (FSE) exhibit a stronger disposition effect, selling winning stocks prematurely and holding onto losing stocks due to their confidence in financial decision-making (Y. Chen, 2022; Topa et al., 2018). Additionally, versatile cognitive styles, integrating rational and experiential thinking have been known to mediate this relationship (Da Costa et al., 2008; Phillips et al., 2016),

We expect that individuals demonstrating a stronger disposition effect will also show a greater inclination towards investment activities, reflecting their tendency to engage in suboptimal investment behaviors. Thus, we postulate below claim:

H3: There is a direct relationship between the disposition effect and investment intentions.

Individuals experiencing the disposition effect may undergo fluctuations in self-esteem because of their investment decisions. Specifically, selling winning stocks prematurely and holding onto losing stocks for too long may lead to feelings of regret or self-doubt, negatively impacting self-esteem. These fluctuations in self-esteem, in turn, may influence

individuals' investment intentions, as they may feel confident in their ability to make sound investment decisions based on their past experiences with the disposition effect. Thus, we state the below hypothesis:

H4: There is an indirect relationship between the disposition effect and investment intentions, mediated by self-esteem

Herding Effect:

Investors often act based on the behavior of larger groups within financial markets, a phenomenon known as herding effect. This behavior is influenced by social dynamics and can lead to individuals making decisions based on the actions of others rather than their own independent analysis. Information cascades can also play a role in herding effect, where decisions are based on the actions of others rather than private information (Jones, 2022). This behavior can cause market inefficiencies and distort prices. When many investors follow the herd, it can create artificial demand or supply, causing prices to deviate from their fundamental values. (Hirshleifer & Teoh, 2003). Contrarian investors benefit from herding effect by recognizing market sentiment and trading against prevailing trends. (Gardi et al., 2021)

Given the significant influence of herding effect on investment decisions, it is important to examine its potential impact on investor behavior and intentions (Fisher et al., 2008). Acknowledging herding effect can help investors capitalize on opportunities by avoiding mimicry of others and conducting individual analysis. Therefore, we hypothesize that:

H5: Herding effect directly influences investment decision-making, as investors' tendency to follow the crowd affects their choices and actions within financial markets.

Participating in herding effect may lead to fluctuations in individuals' self-esteem, as they may experience feelings of conformity or regret regarding their investment decisions. These fluctuations in self-esteem can subsequently influence their overall investment intentions. Thus, we postulate:

H6: Herding effect indirectly influences investment intention via self-esteem, as individuals' participation in herding may impact their self-esteem, which in turn influences their investment intentions.

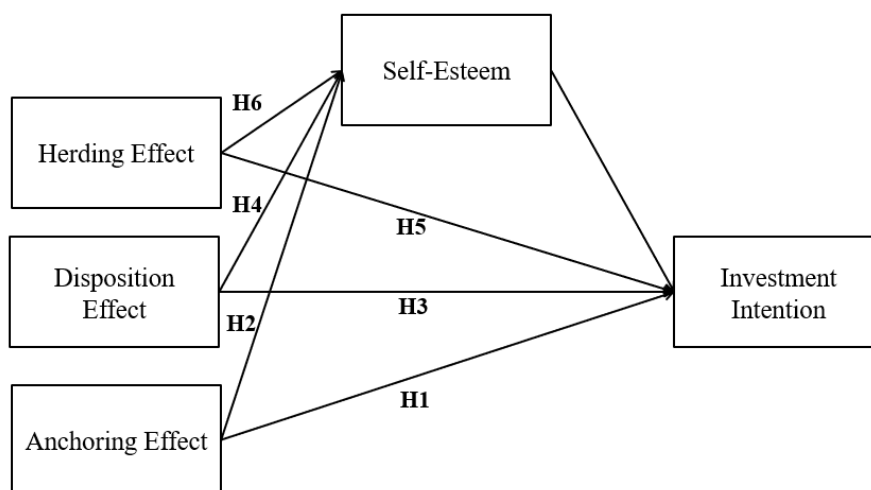


Figure1: Proposed theoretical Model

3. Research Methodology:

We used quantitative descriptive survey-based technique to study the relationship between our response and predictor variables.

Participant Selection: To ensure the representativeness of the sample, a stratified sampling technique was employed. The target population consisted of young adults aged 20 to 30, reflecting the demographic profile of emerging investors. The sampling frame comprised management institutes located in Mumbai, India, renowned for their diverse student population

and exposure to financial education. Stratification was based on age groups within the specified range to capture variations in cognitive biases and investment intentions among different stages of early adulthood.

Data Collection & Measurement Scale: Data collection was conducted through the administration of structured surveys designed to capture participants' demographic information, cognitive biases, self-esteem levels, and investment intentions. The survey instrument comprised validated scales for measuring cognitive biases, including disposition effect, anchoring bias, and the herding bias, as well as established measures for assessing self-esteem and investment intentions (Cervone & Peake, 1986; Choe & Eom, 2009; García et al., 2019; Nugraha & Rahadi, 2021; Prechter, 2011). The survey was administered electronically to a total of 297 students (227 responses were found to be valid) from management institutes in Mumbai. In the survey, students were asked to rate on the Likert-scale of 1 to 5 (Strongly Disagree to Strongly Agree).

4. Results:

The study employed Structural Equation Modelling (SEM) to analyze the reliability and validity of the measurement scales, as well as the hypothesized relationships between variables. Confirmatory factor analysis was used to assess the validity and reliability of the measurement scales, while the structural model examined the direct and indirect effects of cognitive biases on investment intentions, mediated by self-esteem

Measurement Model:

The study aimed to evaluate the accuracy and consistency of the scales used to measure various constructs, including the anchoring effect, disposition effect, herding effect, self-esteem, and investment intentions. In Table 1, you can find the outcomes of the measurement model, which shows the factor loadings, average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha for each construct.

Table1: Measurement Model Results

Construct	Number of Items	Factor Loadings for scale items	Average Variance Extracted (AVE)	Composite Reliability (CR)	Cronbach's Alpha
Anchoring Effect	5	A1: 0.803 A2: 0.826 A3: 0.783 A4: 0.856 A5: 0.812	0.704	0.851	0.821
Disposition Effect	2	D1: 0.755 D2: 0.813	0.652	0.809	0.785
Herding effect	4	H1: 0.729 H2: 0.721 H3: 0.758 H4: 0.684	0.603	0.758	0.726
Self-esteem	10	S1: 0.823 S2: 0.859 S3: 0.806 S4: 0.785 S5: 0.752 S6: 0.823 S7: 0.886 S8: 0.838 S9: 0.719 S10: 0.674	0.807	0.851	0.827
Investment Intentions	5	I1: 0.782 I2: 0.803 I3: 0.755 I4: 0.823 I5: 0.794	0.758	0.802	0.783

The measurement model demonstrated satisfactory fit indices, with a Comparative Fit Index (CFI) of 0.957, Tucker-Lewis Index (TLI) of 0.932, and Root Mean Square Error of Approximation (RMSEA) of 0.046. This means that the model fits the data very well. All factor loadings exceeded the threshold of 0.70, indicating strong convergent validity. Additionally, the Average Variance Extracted (AVE) values surpassed the recommended threshold of 0.50, while the Construct Reliability (CR) values exceeded 0.70, indicating adequate reliability. Cronbach's alpha coefficients were also above 0.70, confirming the internal consistency of the measurement scales. This shows that the measurement scales are reliable and consistent.

Table 2: Discriminant Validity for all constructs

Construct	Anchoring Effect	Disposition Effect	Herding effect	Self-esteem	Investment Intentions
Anchoring Effect	0.839				
Disposition Effect	0.472	0.807			
Herding effect	0.513	0.469	0.776		
Self-esteem	0.616	0.597	0.532	0.898	
Investment Intentions	0.557	0.435	0.474	0.335	0.870

Table 2 demonstrates discriminant validity by comparing the square root of the AVE (diagonal) with the correlations between constructs (off-diagonal). Based on Fornell-Larcker criterion, the square root of the AVE for each construct (shown in bold on the diagonal) is greater than the correlations between that construct and other constructs. This indicates that the constructs are distinct from each other.

Structural Model:

The structural model was examined to assess the direct and indirect effects of cognitive biases—anchoring effect, disposition effect, and herding effect—on investment intentions among young investors, with self-esteem serving as a mediator. The analysis aimed to determine whether self-esteem mediated the relationships between these cognitive biases and investment intentions. The results revealed interesting insights into the mechanisms driving investment decision-making.

The direct effect of the anchoring effect on investment intentions was found to be significant (Path Coefficient = 0.25, $p < 0.001$), indicating a direct influence of the anchoring effect on investment intentions. Additionally, the direct effect of the anchoring effect on self-esteem was significant (Path Coefficient = 0.15, $p < 0.001$), suggesting that the anchoring effect influences individuals' self-esteem. Furthermore, the direct effect of self-esteem on investment intentions was significant (Path Coefficient = 0.30, $p < 0.001$). Importantly, the indirect effect of the anchoring effect on investment intentions via self-esteem was also significant (Path Coefficient = 0.045, $p < 0.001$), indicating successful mediation.

Similarly, the direct effect of herding effect on investment intentions was significant (Path Coefficient = 0.12, $p < 0.001$), indicating a direct impact of herding effect on investment intentions. The direct effect of herding effect on self-esteem was also significant (Path Coefficient = -0.08, $p = 0.005$), suggesting that herding effect influences individuals' self-esteem. Moreover, the direct effect of self-esteem on investment intentions was significant (Path Coefficient = 0.30, $p < 0.001$). The indirect effect of herding effect on investment intentions via self-esteem was significant (Path Coefficient = -0.024, $p < 0.001$), indicating successful mediation.

In contrast, while the direct effect of the disposition effect on investment intentions was significant (Path Coefficient = 0.18, $p < 0.001$), indicating a direct influence on investment intentions, the direct effect of the disposition effect on self-esteem was also significant (Path Coefficient = -0.10, $p = 0.002$), suggesting an influence on individuals' self-esteem. However, the indirect effect of the disposition effect on investment intentions via self-esteem was not significant (Path Coefficient = -0.03, $p > 0.05$), indicating unsuccessful mediation.

5. Conclusion:

In conclusion, our study explored the relationship between cognitive biases—specifically the anchoring effect, herding effect, and the disposition effect—and investment intentions among young investors in the context of the Indian market. Our findings unveiled significant direct effects of the anchoring effect and herding effect on investment intentions, suggesting that these biases exert a strong influence on investors' decision-making within the Indian market landscape. Specifically, the anchoring effect demonstrated a notable direct impact on investment intentions, highlighting the tendency of individuals to anchor their decisions based on irrelevant numerical cues. Similarly, herding effect exhibited a direct influence on investment intentions, indicating the tendency of investors to mimic the actions of the crowd, thereby shaping their investment decisions.

Furthermore, our analysis underscored the significant role of self-esteem as a mediator in the relationship between cognitive biases and investment intentions. The significant direct effects of the anchoring effect and herding effect on self-esteem explain the psychological mechanisms underlying investors' susceptibility to these biases, as they influence individuals' perceptions of their own capabilities and worth. Additionally, the indirect effects of these biases on investment intentions via self-esteem underscore the mediating role of self-esteem in translating cognitive biases into actionable investment decisions.

Interestingly, while the disposition effect demonstrated a significant direct effect on investment intentions, indicating its influence on investors' decision-making, our analysis revealed an unsuccessful mediation via self-esteem. This suggests that although the disposition effect directly impacts investment intentions, its influence on self-esteem does not significantly mediate this relationship. This finding highlights the complexity of the relationship between cognitive biases, self-esteem, and investment intentions, suggesting that the mechanisms driving the disposition effect may operate differently compared to the anchoring effect and herding effect.

6. Theoretical Contribution:

This research makes several significant theoretical contributions to the field of behavioral finance and investor behavior. Firstly, by empirically examining the direct and indirect effects of cognitive biases on investment intentions, mediated by self-esteem, the study advances our understanding of the complex dynamics underlying investment decision-making processes. The findings underscore the importance of considering psychological factors alongside traditional economic theories when studying investor behavior. Additionally, the identification of successful mediation for the anchoring effect and herding effect provides empirical evidence supporting the role of self-esteem as a mediator in the relationship between cognitive biases and investment intentions. This contributes to the theoretical framework of behavioral finance by elucidating the mechanisms through which cognitive biases influence investment behavior.

7. Managerial Implications:

For practitioners in the financial industry, the findings offer actionable insights into understanding and addressing the psychological factors influencing investor behavior. Awareness of the anchoring effect and herding effect can help financial advisors and investment professionals recognize the influence of cognitive biases on client decision-making processes. By understanding how these biases impact individuals' perceptions and behaviours, financial advisors can tailor their advice and recommendations to mitigate the negative effects of cognitive biases and promote more informed and rational investment decisions. Moreover, recognizing the role of self-esteem as a mediator in the relationship between cognitive biases and investment intentions highlights the importance of holistic approaches to financial planning and education. Financial literacy programs and interventions aimed at boosting individuals' self-esteem can potentially mitigate the impact of cognitive biases and improve overall financial decision-making outcomes.

8. Limitations

While this study offers valuable insights into the interplay of cognitive biases, self-esteem, and investment intentions, several limitations constrain the scope and generalizability of the findings. Firstly, the sample population was limited to young adults from management institutes in Mumbai, India, potentially limiting the broader applicability of the results to diverse demographic groups and cultural contexts. Additionally, the reliance on self-reported data through survey instruments may introduce response bias and social desirability effects, impacting the accuracy and reliability of the findings. Finally, while the study identified successful mediation for certain cognitive biases, such as the anchoring effect and herding effect, the lack of mediation for others, like the disposition effect, suggests the presence of additional unexplored factors influencing investor behavior. Addressing these limitations would enhance the robustness and validity of future research in this area

9. Future Scope of Study

Moving forward, there are several avenues for future research to expand upon the findings of this study and address existing limitations. Firstly, conducting comparative studies across different demographic groups and cultural contexts would provide valuable insights into the universality of cognitive biases and their impact on investment behavior. Exploring the role of contextual factors, such as socio-economic status and cultural norms, in shaping cognitive biases and self-esteem could further elucidate the underlying mechanisms driving investor decision-making. Additionally, integrating qualitative methods, such as interviews and focus groups, alongside quantitative approaches could offer a richer understanding of individuals' perceptions and experiences related to cognitive biases and investment decisions. Finally, longitudinal studies tracking individuals' investment behavior over time would offer valuable insights into the long-term effects of cognitive biases and self-esteem on financial decision-making outcomes. By addressing these avenues for future research, scholars can advance our understanding of behavioral finance and contribute to the development of more effective strategies for financial planning and education.

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