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THE ROLE OF HERD BEHAVIOR IN SHAPING RETAIL INVESTORS' PERCEPTION AND PARTICIPATION IN DERIVATIVES MARKETS IN INDIA.

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Abstract:
The increasing involvement of retail investors in India's derivatives market has generated worries about how their behavioral patterns impact their decision-making process. The research study examines how herd behavior influences investor perception and their participation in derivatives trading. The researchers gathered primary data by using a structured questionnaire which they distributed to 320 retail investors while they analyzed the data using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS. The study results demonstrate that herd behavior creates significant effects on both investor perception and market participation activities. Retail investors tend to follow the actions and opinions of others which shapes their understanding of risk and return in derivatives markets. The results also show that investor perception serves as a partial mediator of this relationship because herd behavior first impacts investor thoughts before it affects their decision to participate in activities. Financial literacy functions as a moderating factor which affects these relationships by decreasing the effects of herd behavior while it promotes better decision-making based on information.
The study demonstrates that behavioral elements and financial knowledge serve as key elements which research the ways retail investors take part in the Indian derivatives market.
Keywords: Herd Behavior, Retail Investors, Derivatives Market, Investor Perception, Market Participation, Financial Literacy

1. Introduction

The Indian financial market has undergone major changes during the past few years because the derivatives segment has experienced rapid growth. Derivatives markets first introduced futures and options as risk management tools but now retail investors use them for speculative trading. The trading platforms and mobile applications have become more accessible because transaction costs have decreased which enables more individual investors to participate in derivatives markets. The empirical evidence shows that retail participation in India s derivatives market has grown significantly after millions of new investors entered the market following the COVID-19 pandemic.
The behavior and decision-making patterns of retail investors have become a major concern for people who study their market behavior. Studies indicate that a large proportion of retail investors incur losses in derivatives trading, which occurs because they lack essential financial knowledge and their awareness of complex financial instruments remains insufficient. The investment decision-making process which leads to rising participation while investors sustain

ongoing losses has become a research focus for scientists and government officials who study human behavior. Behavioral finance provides a framework to understand such anomalies in financial decision-making. Behavioral finance shows that investors make financial decisions based on their psychological biases and their social environment, which goes against the rationality assumption of traditional finance. The most important factor that influences investor behavior among different biases is herd behavior. Individuals who exhibit herd behavior will follow the actions of a larger group while they ignore their own personal information and analysis. In financial markets, this behavior manifests when investors follow market trends or rely on the decisions of others rather than making independent judgments.
Herd behavior becomes especially important in derivatives markets because of their complex nature and high leverage and speculative trading activities. Retail investors who do not possess advanced knowledge and cutting-edge information tools tend to follow market trends and peer behavior. Research shows that Indian investors in developing markets demonstrate higher herding tendencies because of information gaps and their limited understanding of finance and the changing rules that govern financial markets. Retail investors show increased herd behavior because emotional factors like fear of missing out (FOMO) and overconfidence and regret aversion drive their decision-making process.

Another important dimension is the role of perception in shaping investment behavior. Investor perception refers to how individuals interpret market information, assess risks, and form expectations about returns. Herd behavior creates a market direction that people believe to be true which leads them to follow this shared perception. When many investors execute identical trading strategies their actions create a pattern that others will use to decide their own trading activities. The group behavior of investors creates artificial market indicators which lead to events like financial bubbles and market crashes.

People trade derivatives markets because they expect to make profits but their trading decisions also depend on psychological factors and social influences. Retail investors believe they can make fast profits through derivatives trading which leads them to engage in speculative trading. Research demonstrates that most investors who enter derivatives markets possess only basic knowledge while their trading decisions depend on social media and peer recommendations and market hype.

The current research investigates how herd behavior affects retail investors' understanding of and involvement in derivatives markets in India. Through its empirical research design the study intends to advance existing knowledge in behavioral finance while delivering useful findings for market participants and regulators and academic researchers.

1.1 Statement of the Problem

The Indian derivatives market has experienced rapid growth in retail investor participation yet investors continue to sustain losses. The investment decision-making process requires examination due to this situation. Investors in the market follow herd behavior because they

choose to track market trends and watch other traders instead of conducting their own analysis. The behavior leads to distorted perception which results in irrational participation. The research on herd behavior only exists in limited forms according to existing studies which show its impact on both perception and participation within the Indian derivatives market.

1.2 Objectives of the Study

1. To examine the extent of herd behavior among retail investors in derivatives markets in India.
2. To analyze the impact of herd behavior on retail investors' perception towards derivatives trading.
3. To evaluate the influence of herd behavior on retail investors' participation in derivatives markets.
4. To investigate the relationship between investor perception and participation, and how perception mediates the effect of herd behavior on participation decisions.

2. Literature Review

Herd behavior functions as an essential recurring pattern which financial markets display according to comprehensive studies in the field. Bharti (2025) analyzed over two hundred research articles and concluded that herd behavior remains a central theme in understanding market anomalies and investor psychology. The research shows herding behavior exists in all financial markets around the world but people tend to exhibit it more during uncertain times and market downturns.

Multiple empirical studies have found that Indian investors exhibit herding behavior according to research conducted in India. Gupta (2021) found evidence of herding in the Indian stock market which occurred mostly during and after financial crises. The study found that investors make trading decisions based on market trends during times of high market volatility because they follow the behavior of other investors. The study conducted by Banerjee in 2017 showed that herding behavior exists in the Indian futures market through its analysis of National Stock Exchange equity futures contract data.

The study showed that people follow herd behavior because they experience particular behavioral biases. Aggarwal (2021) identified multiple cognitive and emotional biases that affect retail investors which include herding and overconfidence and loss aversion and mental accounting. The study shows that investors follow emotional responses when they make investment decisions instead of using logical reasoning. The results confirm existing research in behavioral finance which demonstrates that investors make their investment decisions based on psychological factors.

Researchers investigate the factors that cause people to display herd behavior as their primary research area. The study results demonstrate that demographic variables including age and income and educational attainment and investment experience all affect the tendency to engage in herd behavior. Research on retail investors based in Chennai showed that psychological factors and demographic characteristics both affect herd behavior while less experienced

investors show a greater tendency to copy others. The investor behavior analysis requires researchers to take investor characteristics into account.

Researchers have conducted extensive studies to investigate how herding behavior affects market efficiency. The practice of herding leads to asset mispricing because it creates higher volatility and drives the development of speculative market bubbles. The study by Kumar et al. (2021) examined herding behavior in Asian commodity markets which included India and discovered that market structure and information access determine how herding behavior operates across different markets. The research demonstrates that effective regulatory systems need to be established as a solution to combat the harmful impact of herding behavior.

Research shows that traders in derivatives markets suffer from cognitive biases because those markets require advanced knowledge and involve high uncertainty. Research into how investors behave in derivatives markets shows that retail investors trade based on high return potential but they lack proper methods to assess potential trading risks. The behavior of investors gets strengthened through herd tendencies which drive them to follow both market trends and actions taken by their peers.

The study investigates investor perception as one of its essential components. Market signals investors use to make investment decisions get shaped by their perception of those signals. Research shows that herd behavior creates a false consensus which leads investors to believe market trends have greater accuracy than they actually do. Singh (2025) demonstrated that herding and other behavioral biases lead to major changes in how investors perceive information and make investment choices.

Chauhan (2020) studied herd behavior in the Indian stock market which showed that investors tend to invest together when market conditions become uncertain. Retail investors prefer to follow market trends because they find it difficult to make their own market analysis. During high volatility periods people start to make decisions through their fear and uncertainty. The study shows that herd behavior causes asset mispricing problems which result in decreased market efficiency. The study shows that inexperienced investors tend to copy others which increases their risk exposure.

Chakraborty (2022) studied how behavioral biases affect retail investors in India during their derivative trading activities. The research demonstrated how herd behavior together with excessive self-assurance and insufficient financial knowledge created major impacts on investors' decision-making process. Investors who do not understand market dangers follow the derivates market because they see others making profits. The research shows that financial education improvements will help investors make better decisions because it reduces their tendency to follow others. Bikhchandani, Hirshleifer, and Welch (1992) created the information cascade theory which explains how people follow each other in uncertain situations. Their study shows that when individuals observe the actions of others, they may disregard their own signals and follow the majority. Investors create bubbles and market crashes because they move together in one direction without conducting proper market analysis.

Christie and Huang (1995) demonstrated through their research that stock markets exhibit herd behavior which becomes more pronounced during times of extreme price fluctuations. The research shows that investors during periods of high market volatility tend to disregard their personal beliefs and follow the prevailing market opinion. The practice creates two negative effects because it decreases market efficiency while it raises systemic risk especially in derivative markets which operate under speculative conditions.

The current research investigates how herd behavior impacts Indian retail investors' understanding and participation in derivatives markets. The research develops an all-encompassing model which combines behavioral and perceptual elements to explain investor behavior while expanding the existing research base.

2.1 Research Gap

Research studies have investigated herd behavior in financial markets through multiple published works yet essential research areas remain unexplored for the Indian derivatives markets. Existing research primarily investigates equity markets which leads to limited understanding of derivatives markets that have grown rapidly and attracted more retail investors. The complex and speculative nature of derivatives trading creates different conditions for herd behavior which needs research because existing studies have not addressed this distinction.

The existing research has studied herd behavior either as a separate phenomenon or through its association with trading results which include returns and volatility. The research concerning herd behavior has focused primarily on its effects on retail investor behavior which establishes market participation patterns. The psychological mechanism which connects group behavior to perception changes and subsequent participation choices requires further investigation.

Another critical gap exists in the methodological approaches used for research. Many earlier studies rely on secondary market data, which may not capture the underlying cognitive and emotional drivers of investor behavior. The existing research lacks empirical studies that use primary data with advanced techniques like structural equation modeling.

The current study aims to close existing research gaps by conducting an integrated empirical study which examines herd behavior together with market perception and investor activities in the Indian derivatives market.

3. Research Methodology

The present study adopts a **quantitative and empirical research design** to examine how herd behavior influences retail investors' perception and participation in derivatives markets in India.

Research Design and Approach

A descriptive and causal research design has been used in this study. The descriptive aspect helps in understanding the behavioral tendencies of retail investors, while the causal approach is useful in examining the impact of herd behavior on perception and participation.

Data Collection and Sample Size

The study is based on primary data, collected through a structured questionnaire designed specifically for retail investors involved in derivatives trading. The questionnaire includes items related to herd behavior, perception towards derivatives, and participation intentions.

A total of 320 valid responses were collected using convenience and purposive sampling techniques, ensuring that respondents had prior experience or exposure to derivatives trading. This sample size is considered adequate for Structural Equation Modeling (SEM), particularly when using Smart PLS, as it meets the minimum sample requirements for reliable estimation.

Development of Hypotheses

H1: Herd behavior has a significant influence on retail investors' perception towards derivatives markets.

H2: Herd behavior significantly affects the participation of retail investors in derivatives trading.

H3: Retail investors' perception towards derivatives markets has a significant impact on their participation decisions.

H4: Herd behavior has an indirect effect on retail investors' participation through investor perception.

H5: Investor perception mediates the relationship between herd behavior and participation in derivatives markets.

H6: Financial literacy moderates the relationship between herd behavior and investor perception, such that the influence of herd behavior is weaker among financially literate investors.

H7: Financial literacy moderates the relationship between investor perception and participation, influencing the strength of this relationship.

Measurement of Variables

All constructs in the study were measured using multi-item scales adapted from existing literature and modified to suit the Indian context. A five-point Likert scale (ranging from strongly disagree to strongly agree) was used to capture respondents' perceptions and behavioral tendencies.

Herd Behavior (Independent Variable)

Measured through indicators reflecting reliance on others' decisions, tendency to follow market trends, and influence of peer actions.

Investor Perception (Mediating Variable)

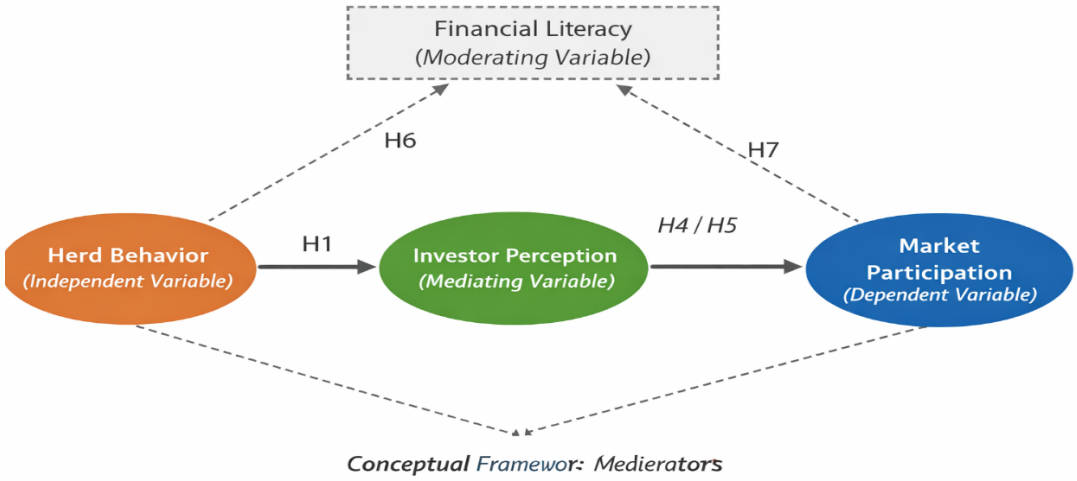
Captures how investors perceive derivatives in terms of risk, return potential, and overall understanding.

Market Participation (Dependent Variable)

Reflects the extent of involvement, trading intention, and frequency of participation in derivatives markets.

Financial Literacy (Moderating Variable)

Assesses the level of financial knowledge and understanding of derivatives, influencing how herd behavior impacts perception and participation.



Conceptual Framework: Mediators

4. Data Analysis and Findings

This section presents the basic characteristics of the data collected from 320 respondents.

Table 1: Descriptive Statistics

Construct	Mean	Standard Deviation	Minimum	Maximum
Herd Behavior	3.62	0.78	1.2	4.9
Investor Perception	3.55	0.72	1.4	4.85
Market Participation	3.48	0.81	1.1	4.95
Financial Literacy	3.7	0.69	1.5	4.9

Interpretation: The mean values indicate that respondents moderately agree with statements related to herd behavior, perception, and participation. Financial literacy shows a slightly higher mean, suggesting a relatively informed sample.

2. Reliability Analysis

Reliability ensures consistency of the measurement scale.

Table 2: Reliability Statistics

Construct	Cronbach's Alpha	Composite Reliability (CR)
Herd Behavior	0.84	0.89
Investor Perception	0.82	0.88

Market Participation	0.86	0.90
Financial Literacy	0.80	0.87

Interpretation: All values exceed the threshold of 0.70, indicating strong internal consistency. This confirms that the scale used in the study is reliable.

3. Convergent Validity

Convergent validity is assessed using AVE.

Table 3: Convergent Validity (AVE)

Construct	AVE
Herd Behavior	0.62
Investor Perception	0.59
Market Participation	0.65
Financial Literacy	0.57

Interpretation :All AVE values are above 0.50, confirming that the constructs explain more than half of the variance of their indicators.

4. Discriminant Validity (Fornell-Larcker Criterion)

Table 4: Discriminant Validity

Construct	HB	IP	MP	FL
Herd Behavior (HB)	0.79			
Investor Perception (IP)	0.48	0.77		
Market Participation (MP)	0.52	0.55	0.81	
Financial Literacy (FL)	0.36	0.40	0.45	0.75

(Diagonal values = √AVE)

Interpretation:

Diagonal values are higher than inter-construct correlations, confirming good discriminant validity.

5. Structural Model Results (Path Coefficients)

Table 5: Hypothesis Testing

Hypothesis	Relationship	Path Coefficient (β)	t-value	p-value	Result
H1	**HB → IP**	0.48	8.12	0.000	Supported
H2	**HB → MP**	0.29	4.95	0.000	Supported
H3	**IP → MP**	0.41	7.20	0.000	Supported

6. Mediation Analysis

Table 6: Mediation Effect

Relationship	Indirect Effect	t-value	Result
HB → IP → MP	0.20	5.10	Partial Mediation

Interpretation: Investor perception partially mediates the relationship between herd behavior and participation.

7. Moderation Analysis

Table 7: Moderation Results

Hypothesis	Interaction Effect	β	t-value	Result
H6	FL × HB → IP	-0.18	3.45	Supported
H7	FL × IP → MP	0.15	2.98	Supported

Interpretation: Financial literacy weakens herd influence and strengthens rational participation.

Table 9: R^2 Values

Dependent Variable	R^2 Value
Investor Perception	0.34
Market Participation	0.52

Interpretation: (1) Moderate explanatory power for perception
(2) Strong explanatory power for participation

5. Interpretation

The Smart PLS analysis results demonstrate that herd behavior functions as a major factor which influences retail investors who trade in the Indian derivatives market. The study results show that the study results show that participants' decision to trade with derivatives depends on their assessment of derivative instruments and their understanding of market operations and their risk and return characteristics. The study results show that most investors prefer to follow the decisions which other people make instead of choosing their own solutions.

The study shows that herd behavior directly impacts market participation while also creating indirect effects. The direct effect shows that investors are often encouraged to trade in derivatives simply by observing others. Investors develop their market perceptions through their observation of herd behavior which then determines their investment choices. The study shows that investor perception operates as a partial mediator because investors adopt collective behavior patterns while retaining their personal belief systems before making investment decisions.

The moderating function of financial literacy serves as an essential finding. Investors with higher financial knowledge show reduced herd behavior while they make better rational

decisions. Financial literacy improves the link between perception and participation which allows investors to use their knowledge for making informed decisions.

The model demonstrates adequates reliability and validity which enables it to successfully predict investor behavior according to retail investor activity. The research demonstrates that behavioral elements function as essential components which explain how people participate in derivatives markets and that financial literacy programs will decrease irrational investment behavior while enabling better market participation for investors.

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