

# The Rationality Conundrum : Exploring Herd Mentality among Individual Investors in the Indian Stock Market

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## Abstract

**Purpose :** The present study aimed to explore the factors contributing to and interaction of rationality and irrationality in the herding behavior of investors in the Indian stock markets.

**Methodology :** A structured questionnaire was developed to explore the driving factors of rational and irrational herding based on the literature to explore the interplay between rational and irrational herding. The required data for the study was collected from 384 respondent investors selected through snowball sampling. Further, the study adopted a casual research design to examine the hypotheses framed through the literature.

**Findings :** The study found that many rational and irrational factors are causing Indian retail investors' herding behavior. Self-attribution, noise trading, and social influence are the causes of rational herding; whereas, spurious herding and the illusion of control are drivers of irrational herding behavior.

**Research Implications :** Policymakers and stock market regulators, among other stakeholders, should take note of the study's conclusions. Additionally, this research aids in the formulation of a plan to reduce investors' herding behavior.

**Originality :** The majority of the research on herding behavior in stock markets focused on the variables that lead to herding; there are not many studies on how rational and irrational elements interact to cause herding behavior. This study contributes to the body of knowledge on herding behavior in the stock market.

**Keywords :** herd mentality, rationality, irrationality, individual investors, stock market, stimulus

**JEL Classification Codes :** D83, G02, G11, G14, G41

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Herding conduct is the collective, non-directed action of an individual within a group. Both animals and people exhibit herding behavior in a variety of settings (Gupta & Kohli, 2021). When someone makes an economic decision by copying the actions or opinions of others, it is known as herding in the financial markets (Spyrou, 2013). Investor herding behavior demonstrated that investors do not always make logical decisions when making stock market investments, which further challenged the foundations of conventional finance theory (Ahmad & Wu, 2022). Numerous prior empirical investigations have concentrated on identifying

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investor herding behavior and how it affects their decision-making (Ah Mand et al., 2023; Chiang & Zheng, 2010; Javaira & Hassan, 2015; Vo & Phan, 2017; Wu et al., 2020).

While a large body of research has been done to identify herding behavior, relatively little has been done to explain the underlying causes of this behavior in emerging economies (Kumar & Goyal, 2016). The current study tries to fill this information gap by studying stock market herding behavior. Proponents of behavioral finance theory contend that economic decision-makers engage in herding behavior, which is motivated by irrational ideas and involves their following one another impulsively rather than considering reasonable reasoning. Still, it is important to remember that herd behavior in stock investments can have both rational and irrational causes (Devenow & Welch, 1996). When investors react to fresh information in the stock market, especially about their stock portfolios (Lin et al., 2013), they are engaging in rational herding. This happens when investors observe the market and learn from it, even when they need more information (Ali, 2022).

When investors follow the passive activities of other investors due to social norms and influences, this is known as irrational herding (Zhang & Liu, 2012). Notably, in bullish, bearish, and sideways market circumstances, rational and irrational herd behavior can all appear (Dangi & Kohli, 2018; Merli & Roger, 2013). Even while investors frequently believe they are making logical decisions about their investments, their selections may unintentionally be impacted by a variety of personal situations (Subramaniam & Velampy, 2017). Human psychology is largely shaped by the herd instinct, which causes people to unconsciously mimic the behaviors of a bigger group (Pochea et al., 2017). This emphasizes how complex herding is as a phenomenon that both irrational and rational considerations can drive.

The inherent variations from generalized models that are meant to support the stability of the economic system are frequently ignored by conventional financial procedures. However, academics are pushing more and more to acknowledge the herding effect within the conventional framework of stock markets and its participants in light of previous financial crises (Seth & Kumar, 2020). This acknowledgment is crucial as herding behavior reinvigorates trading patterns and occasionally validates the unpredictable nature of stock markets. Therefore, the study of herd mentality is paramount, as its explosive nature is correlated with rational and irrational stock market behavior. Hence, we were motivated to examine such a phenomenon in the Indian context.

The present study explores the factors contributing to and interaction of rationality and irrationality in the herding behavior of investors in the Indian stock markets. The study aims to provide an encompassing understanding of the reasons underlying retail investors' herding behavior by analyzing the drivers of rational and irrational herding driving factors. Furthermore, it seeks to assess the presence and viewpoints of both rational and irrational herding among retail investors in the Indian stock market. Policymakers, regulators, academics, and other stakeholders will be drawn to this study due to its significance in understanding the behavior of retail investors and the market.

## **Theoretical Development**

The phenomenon of herding in the stock market and among individual investors has been extensively studied in the field of behavioral finance. The outcomes of these investigations suggest creating a theoretical framework for the stimulation of investors' irrational and rational herding behavior. Herd mentality is seen in both rising and declining markets, which leads to significant returns and transaction volume volatility (Ouarda et al., 2013). Herding of investors raises the demand for stocks, which ultimately leads to the bubble's collapse (Shantha, 2018). Returns used to decrease during periods of significant market volatility and uncertainty, prompting investors to gather in large numbers and underscoring the need for increased prudence in order to make wise investment selections (Risal & Khatiwada, 2019). When they follow the crowd and think that the majority of their decisions will be profitable despite abrupt changes in the market, these investors feel more confident. The fundamental

reason for this herding is loss aversion bias, which causes people to put preventing loss ahead of possible gain. This is made worse by social pressure to follow the herd's investment decisions (Liu et al., 2014).

Due to their thirst for more money, investors were herded during the boom and again during the market fall out of fear of losing their capital (Vijaya, 2016). Investors follow the herd and purchase a rising stock without doing a fundamental examination because they are afraid of missing out (Pertwi et al., 2019). The bandwagon effect impacts stock market decisions since it is linked to information processing, social groups, and herd mentality (Bekiros et al., 2017). The reviews address both the advantages and disadvantages of using the herd mentality while making investing decisions. They employ both irrational and rational herding to explain why investors have a herd mentality, but they are unable to identify the reasons why investors have such a mentality. The literature does a decent job of summarizing the mechanisms that underlie herding behavior, but it falls short of statistically distinguishing the effects of rational and irrational herding from herding as a whole. It is necessary to comprehend investor behavior and market dynamics. Hence, the following hypothesis was framed:

❖ **H<sub>1</sub>** : Rational and irrational herding is positively and significantly associated with herd mentality.

### ***Rational Herding***

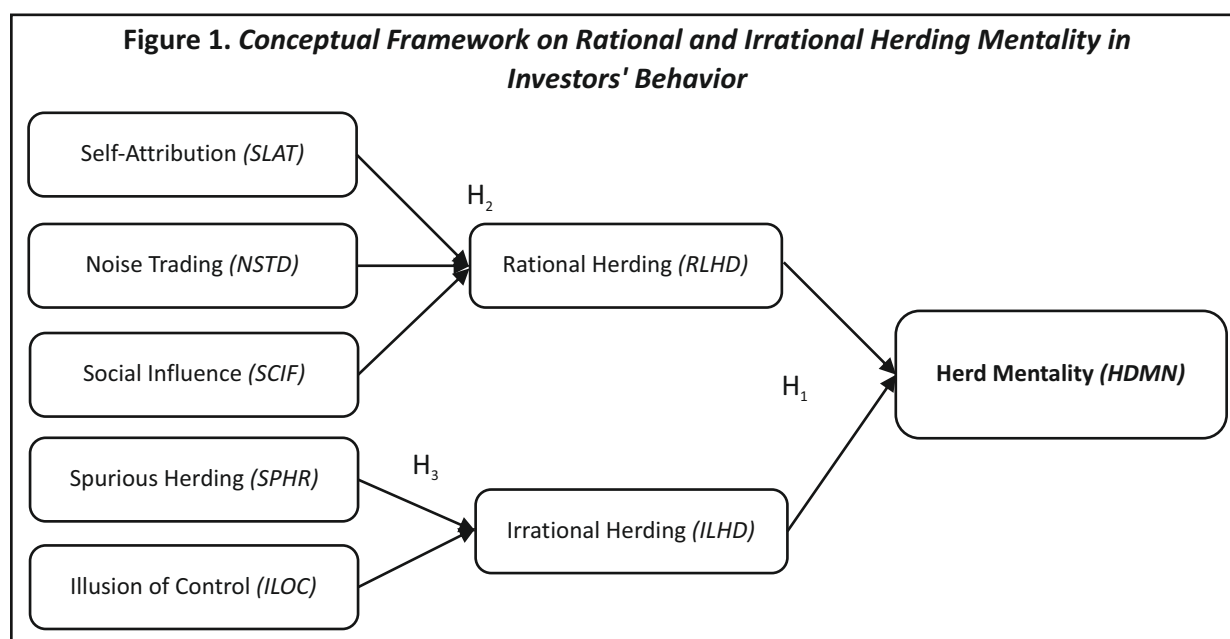
Behavioral economists argue that investors engage in herding behavior not solely due to irrationality but also due to their limitations in their ability and resources to evaluate investment options (Ackert, 2014). While investors may exhibit rational herding behavior by intentionally imitating others to achieve desired outcomes, externalities such as information challenges or incentive issues are at the core of this behavior (Abbi et al., 2014). Rational herding can be categorized into three subcategories: compensation-based, reputation-based, and information-based herding, which reflects the underlying causes of this behavior in financial markets (Kumar et al., 2016). For instance, investors may use rational herding to save time and money on information acquisition and processing.

Moreover, investors involved in intraday transactions need time to analyze available information. However, due to a lack of time and knowledge, they rely on the decisions of others (Vieira & Pereira, 2015). Herding behavior can also be driven by compensation structures, concerns for reputation, and imperfect information in stock markets (Demirer et al., 2010). Self-attribution bias affects investors' views of their talents, which influences rational herding. It is a tendency to ascribe achievements to personal traits and blame failures on outside reasons (Alquraan et al., 2016). Noise traders, who make investment decisions based on market noise, contribute to herding behavior, affecting stock market volatility (Huo & Al-Shamaa, 2017), leading to herding behavior as their social environment and societal norms influence investors (Clements et al., 2017). Based on the above discussion, the following hypothesis was developed:

❖ **H<sub>2</sub>** : Self-attribution, noise-trading, and social influence establish the rational herding.

### ***Irrational Herding***

In some cases, herding may be considered irrational when investors, constrained by limited time horizons, engage in herding based on comparable information, thereby benefiting from the knowledge of other informed investors (Nareswari et al., 2021). True herding behavior and false herding activity are two different forms of herding behavior. When investors purposefully mimic the actions of others, it is known as spurious herding. Investors respond to reports that well-known investors have come to different conclusions, demonstrating the predominance of social influence over reasoned behavior (Jeon & Moffett, 2010). Spurious herding is the practice of making investment decisions based on publicly accessible information; whereas, intentional herding is the behavior of those who purposefully imitate the actions of other investors (Vo & Phan, 2016).



Investors are more likely to herd when they feel they have control over the situation (Ajmal et al., 2011; Ibrahim et al., 2020). This is because investors tend to want to be part of large groups, which increases the size of the herd and makes each investor's behavior significantly dependent on the illusion of control. People frequently experience a heightened sense of the illusion of control when faced with judgments made by a big group of investors because they think they can never be incorrect while others might (Balcilar & Demirer, 2015). Everyone possesses distinct characteristics for perceiving uncertainty, including risk-taking, an illusion of control, ambiguity, perseverance, and confidence (Fernández et al., 2011) beliefs, which influence them to downplay the role of luck, overestimate their ability and believe in control and influence unfavorable events (Metilda, 2015). In the context of herding behavior, investors with an illusion of control are likelier to engage in herding behavior (Bashir et al., 2014). In summary, investor herding can be driven by spurious herding and the illusion of control, contributing to irrational behavior. Based on these considerations, the following hypothesis was formulated:

✎ **H<sub>3</sub>** : Spurious herding and the illusion of control are positively associated with irrational herding.

As discussed above, herding behavior can be classified as rational and irrational herding. Some stimuli of rational and irrational herding of investors lead to a herding mentality. Based on the literature, the following framework in Figure 1 is developed to examine the stimulus of rational and irrational herding.

## Methodology

### Sampling

Survey-based research was used in this study; from January to March 2023, individual investors from the southern Indian states of Kerala, Tamil Nadu, Karnataka, Telangana, and Andhra Pradesh provided the necessary quantitative data. Nonetheless, individuals who moved to South India in search of work were also included in the sample from other regions of India. When the population size is unknown, or more than one lakh, a sample size of 384 is enough, according to Krejcie and Morgan (1970). Additionally, Hair Jr. et al. (2017) stressed that a sample

size of 200–400 is suitable for research. Consequently, data from 384 valid and useful responses were gathered for this investigation.

To ensure the desired number of responses, 571 questionnaires were distributed with the assistance of a sharebroking firm. Out of the distributed questionnaires, 443 were received, resulting in a response rate of 77.6. However, upon careful examination, only 384 questionnaires were deemed suitable for final analysis. The remaining 59 responses were excluded due to factors such as inattentiveness or carelessness during the completion of the questionnaire. Hence, this study's final sample size for further analysis is 384 respondents.

### **Questionnaire Development**

The questionnaire is used to enhance the precision of data and decrease the level of bias in the survey. A 5-point Likert scale is used to quantify investors' responses, and it is prepared with a score value of 5, indicating high agreement, and 1, indicating low agreement. The investors are also assured that their questionnaire responses will be confidential and not shared with any third party. Before the survey was carried out, the questionnaires' content and face validity were tested by 30 retail investors. Using wordings, meanings, and measurement items was improved by active interaction with finance specialists, academicians, investment professionals, and policymakers in equity share investments. Eventually, the individual investors were successfully guided to complete the questionnaire through proper clarification and appropriate suggestions whenever questions were put up. Cronbach's alpha test for each construct was evaluated to assess the reliability and internal consistency of the data. For each construct, Cronbach's alpha value is more than 0.78, which is acceptable for social science research (Ritika & Kishor, 2022).

### **Statistical Tools**

Apart from the descriptive statistical analysis, this study employed structural equation modeling (SEM) to analyze the stimulus of rationality and irrationality forming herd mentality among individual investors along with confirmatory factor analysis (CFA). The SEM model allows for a real-time study of the complete model, examining a variety of theoretical connections and calculating the effect of external factors on herd mentality (Sarstedt et al., 2014).

## **Empirical Analysis and Results**

A structural and descriptive equation model was used to examine the gathered data. Approximately 74% of the respondents were men, according to the results of descriptive statistics (see Table 1). The majority of the

**Table 1. Analysis of Socio-Economic Profile (N = 384)**

S. No.	Socio-Economic Profile	Variables	Number	Frequency
1.	Gender	Male	295	76.82%
		Female	89	23.18%
2.	Age	Below 30 years	85	22.14%
		30 – 45 years	178	46.35%
		Above 45 years	121	31.51%
3.	Education	Under-graduation	227	59.11%
		Post-graduation	116	30.21%

		Others	41	10.68%
4.	Annual Income	Below ₹ 10 Lakhs	132	34.38%
		₹ 10 – 20 Lakhs	145	37.76%
		Above ₹ 20 Lakhs	107	27.86%
5.	Investment Experience	Below 3 years	66	17.19%
		3 – 10 years	138	35.94%
		Above 10 years	180	46.87%
6.	Size of Investment	Below ₹ 5 Lakhs	59	15.36%
		₹ 5 – 10 Lakhs	172	44.79%
		Above ₹ 10 Lakhs	153	39.85%
7.	Residential Status	Rural	67	17.45%
		Semi-urban	106	27.60%
		Urban	211	54.95%

responders were undergraduates with investments between 5 and 10 lakhs, fell into the middle age group (i.e., 30–45 years old), and had more than 10 years of cumulative investment experience. This graph indicates that the chosen participants had a great deal of experience and substantial stock market investment. In summary, this sample is more suited for researching both rational and irrational herding behavior since it consists of a mix of seasoned and novice investors who meet the necessary educational requirements.

Individual investor characteristics, both rational and irrational, are included in the phenomena of herd mentality in equities market investments. Noise trading techniques, social impact in financial decision-making, and self-attribution bias are examples of rational herding behavior. Conversely, irrational herding behavior is influenced by spurious herding and the illusion of control over investment decisions.

To characterize the connections between latent variables and the associated observed indicators, a measurement model has been developed. To investigate the connections between these constructs and their proposed links, the SEM model was created. Based on the research hypotheses, eight latent constructs were derived from 37 observable variables related to self-attribution, noise trading, social influence, spurious herding, the illusion of control, rational herding, irrational herding, and herd mentality.

CFA is performed to validate the measurement model, ensuring that the model adequately fits the data. The reliability of the data was assessed by examining the internal consistency of each variable used to measure the latent constructs. The findings of the CFA analysis, including data reliability and convergent validity of the research instrument, are presented in Table 2.

**Table 2. Results of Convergent Validity**

Latent Variables	Variables	FL	Delta	Cronbach's Alpha	AVE	Sum of FL	Sum of Delta	CR
Self-Attribution ( <i>SLAT</i> )	<i>SLAT1</i>	0.895	0.199	0.869	0.633	3.151	1.466	0.871
	<i>SLAT2</i>	0.895	0.199					
	<i>SLAT3</i>	0.628	0.606					
	<i>SLAT4</i>	0.733	0.463					
Noise Trading ( <i>NSTD</i> )	<i>NSTD1</i>	0.878	0.229	0.906	0.577	2.997	1.692	0.841
	<i>NSTD2</i>	0.867	0.248					
	<i>NSTD3</i>	0.596	0.645					



	<i>NSTD4</i>	0.656	0.570					
Social Influence ( <i>SCIF</i> )	<i>SCIF1</i>	0.897	0.195	0.922	0.553	2.828	1.789	0.817
	<i>SCIF2</i>	0.587	0.655					
	<i>SCIF3</i>	0.590	0.648					
	<i>SCIF4</i>	0.954	0.090					
Spurious Herding ( <i>SPHR</i> )	<i>SPHR1</i>	0.862	0.257	0.897	0.533	2.853	1.868	0.813
	<i>SPHR2</i>	0.876	0.233					
	<i>SPHR3</i>	0.547	0.701					
	<i>SPHR4</i>	0.568	0.677					
Illusionof Control ( <i>ILOC</i> )	<i>ILOC1</i>	0.862	0.257	0.886	0.541	2.885	1.836	0.819
	<i>ILOC2</i>	0.868	0.247					
	<i>ILOC3</i>	0.599	0.641					
	<i>ILOC4</i>	0.556	0.691					
Rational Herding ( <i>RLHD</i> )	<i>RLHD1</i>	0.680	0.538	0.904	0.507	3.420	2.464	0.826
	<i>RLHD2</i>	0.896	0.197					
	<i>RLHD3</i>	0.521	0.729					
	<i>RLHD4</i>	0.512	0.738					
	<i>RLHD5</i>	0.911	0.170					
Irrational Herding ( <i>ILHD</i> )	<i>ILHD1</i>	0.820	0.328	0.878	0.631	3.858	1.847	0.890
	<i>ILHD2</i>	0.980	0.040					
	<i>ILHD3</i>	0.563	0.683					
	<i>ILHD4</i>	0.541	0.707					
	<i>ILHD5</i>	0.954	0.090					
Herd Mentality ( <i>HDMN</i> )	<i>HDMN1</i>	0.778	0.395	0.931	0.586	4.909	2.897	0.893
	<i>HDMN2</i>	0.834	0.304					
	<i>HDMN3</i>	0.871	0.241					
	<i>HDMN4</i>	0.543	0.705					
	<i>HDMN5</i>	0.587	0.655					
	<i>HDMN6</i>	0.790	0.241					
	<i>HDMN7</i>	0.606	0.705					

Table 2 demonstrates that the latent construct captures factor loadings ranging from 0.512 to 0.980, indicating adequate validity. In this way, all latent variables partake in AVE values that are more excellent than the standard 0.50. Reliability values are more than 0.70, indicating high data reliability (Nunnally & Bernstein, 1994). Each latent variable has a composite reliability coefficient larger than 0.70, indicating that the model has strong internal reliability.

Then, discriminant validity is computed to confirm the reality of the hypothesized structural path. Table 3 describes how to use the squared values of correlation and average variance to assess the discriminant validity of data.

The square root values of the extracted average variance are provided in Table 3; the values are bolded across the diagonal. It validates discriminant validity by confirming that the retrieved average variance values are greater than the square of correlation values. Table 4 presents the results of the CFA model fit.

**Table 3. Discriminant Validity**

	<i>SLAT</i>	<i>NSTD</i>	<i>SCIF</i>	<i>SPHR</i>	<i>ILOC</i>	<i>RLHD</i>	<i>ILHD</i>	<i>HDMN</i>
<i>SLAT</i>	<b>0.633</b>							
<i>NSTD</i>	0.452	<b>0.577</b>						
<i>SCIF</i>	0.350	0.456	<b>0.553</b>					
<i>SPHR</i>	0.440	0.469	0.373	<b>0.533</b>				
<i>ILOC</i>	0.454	0.421	0.326	0.365	<b>0.541</b>			
<i>RLHD</i>	0.375	0.271	0.278	0.253	0.270	<b>0.507</b>		
<i>ILHD</i>	0.398	0.355	0.336	0.333	0.333	0.243	<b>0.631</b>	
<i>HDMN</i>	0.407	0.314	0.310	0.425	0.295	0.332	0.332	<b>0.586</b>

**Table 4. Measurement Model – Fit Indices**

S. No.	Model Fit Indices	Statistics	Threshold Limit
1.	CMIN/ <i>df</i>	2.960	<3
2.	Normed Fit Index (NFI)	0.914	>0.9
3.	Goodness of Fit Index (GFI)	0.911	>0.9
4.	Relative Fit Index (RFI)	0.901	>0.9
5.	Comparative Fit Index (CFI)	0.918	>0.9
6.	Tucker-Lewis Index (TLI)	0.902	>0.9
7.	Incremental Fit Index (IFI)	0.920	>0.9
8.	Parsimony Comparative Fit Index (PCFI)	0.913	>0.9
9.	Parsimonious Normed Fit Index (PNFI)	0.917	>0.9
10.	Root Mean Square Error of Approximation (RMSEA)	0.055	<0.06

Table 4 discloses that the computed CMIN/*df* value is 2.960, less than the threshold limit of 3. Furthermore, the fit indices such as NFI, GFI, RFI, CFI, TLI, IFI, PCFI, and PNFI exceed the threshold limit of 0.90. The RMSEA value is safely less than the minimum limit of 0.06. Therefore, the measurement model assures that it fits well with the data (Hair Jr. et al., 2010).

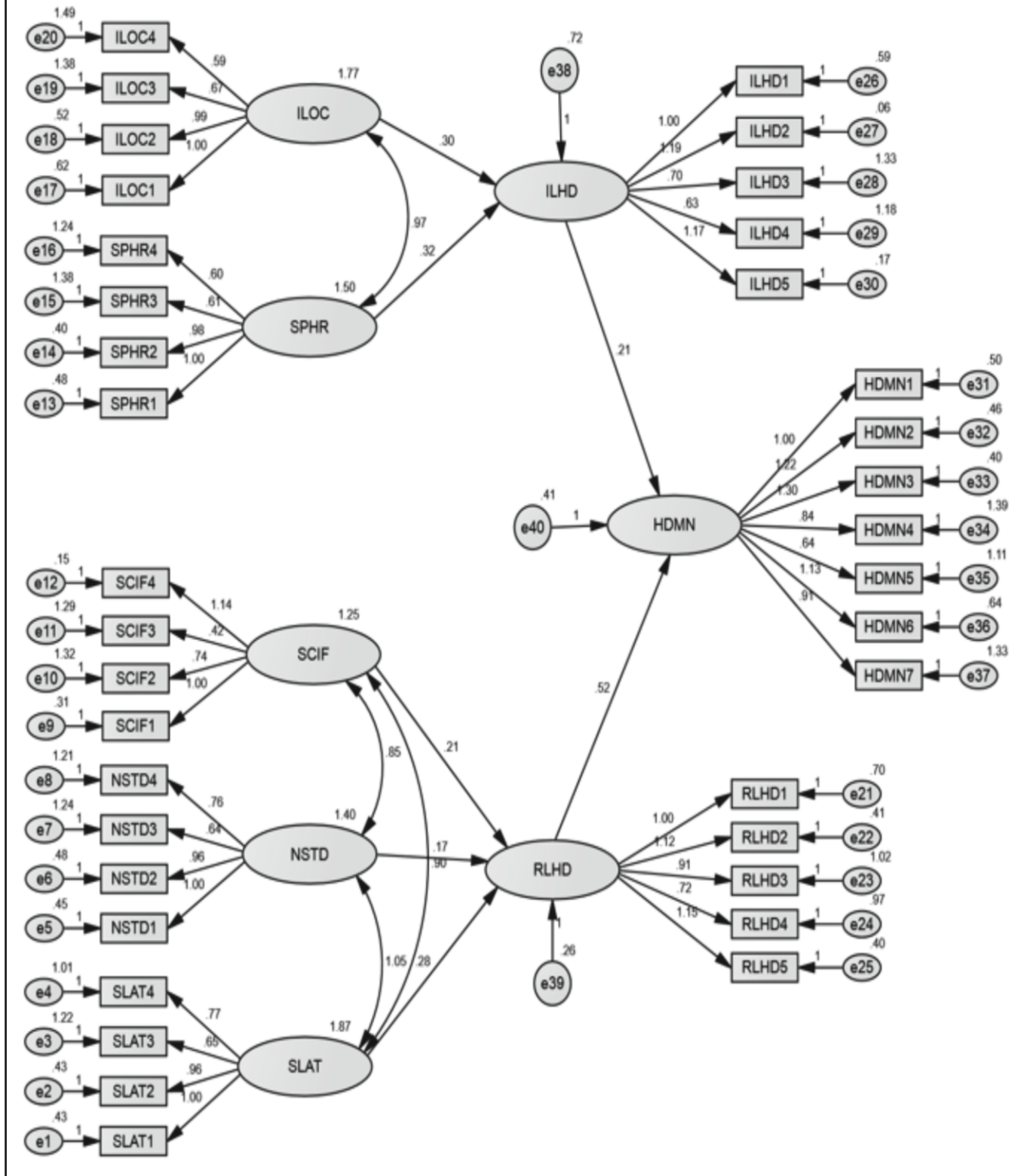
The data coherence of the suggested measuring model is used to test the study hypotheses. The predicted correlation between the tested construct and the path is significant at 0.05. As a result, the research goal is to show that all of the hypotheses are related positively and straightforwardly (Hair Jr. et al., 2017). Figure 2 shows the potential connections between the various constructions.

Figure 2 displays the different hypothetical pathways, with significant results at  $p < 0.05$ . The study examines the models in the graph and creates flowcharts to illustrate the herd mentality that affects stock investments. Because it is sample size-sensitive, the model fit in SEM determined by the  $\chi^2$  value is more intricate. These limitations have led to the development of several fit indices, each of which represents a different sample size. Thus, Table 5 presents the quality of fit.

Table 5 discloses that the goodness of fit indices of the structural model assured a good fit with the data of all indices. The computed CMIN/*df* value is 2.927, less than the threshold limit of 3. The estimates of the goodness of fit indices such as NFI, GFI, RFI, CFI, TLI, IFI, PCFI, and PNFI are more than the threshold limit of 0.90. The RMSEA value (0.053) is safely less than the minimum limit of 0.06. SEM has made significant progress regarding the goodness of fit metrics, with all suggested values being consistent. The outcome backs up the reliability of the



Figure 2. Structural Model – Unstandardized Coefficients



**Table 5. Goodness of Fit Indices**

S. No.	Goodness of Fit Indices	Statistics	Threshold Limit
1.	CMIN/df	2.927	<3
2.	Normed Fit Index	0.908	>0.9
3.	Goodness of Fit Index	0.923	>0.9
4.	Relative Fit Index	0.916	>0.9
5.	Comparative Fit Index	0.924	>0.9
6.	Tucker-Lewis Index	0.910	>0.9
7.	Incremental Fit Index	0.912	>0.9
8.	Parsimony Comparative Fit Index	0.905	>0.9
9.	Parsimonious Normed Fit Index	0.908	>0.9
10.	Root Mean Square Error of Approximation	0.053	<0.06

statistical test data (Hooper et al., 2008). The specific hypothetical link between the antecedents and research variables is presented in Table 6.

**Table 6. Testing of Path Relationship**

Hypothesized Path Relationship			Unstandardized Coefficients		Standardized Coefficients	t	p	Result
			Beta	Standard Error				
SLAT1	<---	Self-Attribution	1.000		0.902			
SLAT2	<---		0.959	0.039	0.895	24.491	***	
SLAT3	<---		0.646	0.047	0.625	13.796	***	
SLAT4	<---		0.767	0.045	0.722	17.049	***	
NSTD1	<---	Noise Trading	1.000		0.870			
NSTD2	<---		0.965	0.049	0.854	19.591	***	
NSTD3	<---		0.643	0.056	0.563	11.476	***	
NSTD4	<---		0.756	0.057	0.631	13.216	***	
SCIF1	<---	Social Influence	1.000		0.896			
SCIF2	<---		0.741	0.058	0.585	12.835	***	
SCIF3	<---		0.421	0.055	0.384	7.715	***	
SCIF4	<---		1.145	0.043	0.957	26.728	***	
SPHR1	<---	Spurious Herding	1.000		0.869			
SPHR2	<---		0.977	0.050	0.884	19.603	***	
SPHR3	<---		0.605	0.056	0.533	10.733	***	
SPHR4	<---		0.595	0.054	0.547	11.072	***	
ILOC1	<---	Illusion of Control	1.000		0.860			
ILOC2	<---		0.995	0.052	0.877	19.191	***	
ILOC3	<---		0.665	0.054	0.601	12.307	***	
ILOC4	<---		0.587	0.054	0.539	10.792	***	

<i>RLHD1</i>	<---	Rational Herding	1.000		0.724			
<i>RLHD2</i>	<---		1.119	0.071	0.839	15.714	***	
<i>RLHD3</i>	<---		0.914	0.079	0.621	11.631	***	
<i>RLHD4</i>	<---		0.719	0.071	0.540	10.094	***	
<i>RLHD5</i>	<---		1.152	0.073	0.849	15.886	***	
<i>ILHD1</i>	<---	Irrational Herding	1.000		0.820			
<i>ILHD2</i>	<---		1.192	0.046	0.982	26.166	***	
<i>ILHD3</i>	<---		0.705	0.060	0.559	11.784	***	
<i>ILHD4</i>	<---		0.627	0.056	0.536	11.223	***	
<i>ILHD5</i>	<---		1.174	0.047	0.953	25.095	***	
<i>HDMN1</i>	<---	Herd Mentality	1.000		0.758			
<i>HDMN2</i>	<---		1.216	0.074	0.826	16.464	***	
<i>HDMN3</i>	<---		1.299	0.076	0.861	17.188	***	
<i>HDMN4</i>	<---		0.842	0.087	0.505	9.651	***	
<i>HDMN5</i>	<---		0.635	0.075	0.444	8.425	***	
<i>HDMN6</i>	<---		1.127	0.075	0.757	14.944	***	
<i>HDMN7</i>	<---		0.913	0.087	0.544	10.432	***	
H2 <i>Rational</i>	<---	<i>SCIF</i>	0.207	0.044	0.264	4.700	***	Accepted
<i>Herding</i>	<---	<i>NSTD</i>	0.171	0.047	0.230	3.652	***	
	<---	<i>SLAT</i>	0.282	0.039	0.439	7.241	***	
H3 <i>Irrational</i>	<---	<i>ILOC</i>	0.300	0.050	0.361	5.951	***	Accepted
<i>Herding</i>	<---	<i>SPHR</i>	0.321	0.054	0.357	5.898	***	
H1 <i>Herd</i>	<---	<i>ILHD</i>	0.207	0.036	0.279	5.827	***	Accepted
<i>Mentality</i>	<---	<i>RLHD</i>	0.518	0.056	0.554	9.292	***	

**Note.** \*\*\* Significant at the 1% level.

Table 6 demonstrates a self-attribution bias coefficient value of 0.902 for SLAT1, 0.895 for SLAT2, 0.625 for SLAT3, and 0.722 for SLAT4. These results are significant at a 1% level. It is confirmed that these factors establish self-attribution bias in equity investments. Similarly, the noise trading antecedents fetch a coefficient value of 0.870 for NSTD1, 0.854 for NSTD2, 0.563 for NSTD3, and 0.631 for NSTD4. This result is also significant at the 1% level. It confirms that these factors are accountable for governing noise trading among individual investors in the stock market. These antecedents have a positive and significant association with noise trading.

Social influence is significant at the 1% level and yields coefficient values of 0.896 for “I follow fellow investors' advice,” 0.585 for “others provide useful information,” 0.384 for “emotionally attached with others information,” and 0.957 for “bandwagon effect in the selection of shares.” It is acknowledged that these factors favor social influence in the equity market. The antecedents of social influence have a positive and significant association with social influence. Spurious herding fetches a coefficient value of 0.869 for “reactions to analyst revisions or sentiment” (SPHR1), 0.884 for “may add or withdraw funds as per crowd decision” (SPHR2), 0.533 for “buy recent winners and sell recent losers” (SPHR3), and 0.547 for “react to information known to the public” (SPHR4) and its results are significant at the 1% level. It is confirmed that these factors are intensely contributing to spurious herding among individual investors in the stock market. Hence, it concludes that the antecedents of spurious herding have positive and significant associations.

The illusion of control brings a coefficient value of 0.860 for “rests on individual predispositions” (ILOC1),

0.877 for “understate the role of luck” (ILOC2), 0.601 for “exaggeration of skills to control random events” (ILOC3), and 0.539 for “control the outcome of unpleasant events” (ILOC4). At the 1% level, its findings are noteworthy. These elements are recognized as responsible for controlling the false sense of control that individual stock market participants possess. Rational herding fetches the coefficient value of 0.724 for “effect of information cascade” (RLHD1), 0.839 for “influence of reputation-based herding” (RLHD2), 0.621 for “compensation induces herd motive” (RLHD3), 0.540 for “imitate of allocation strategies of others” (RLHD4), and 0.849 for “follow publicly available information” (RLHD5). The findings have significance at the 1% level. It is recognized that these elements encourage logical herding in the stock market. The antecedents have a favorable and significant relationship with rational herding. The results align with the findings of Saeedi and Chahar deh (2013).

Irrational herding fetches the coefficient value for ILHD1 is 0.820, 0.982 for ILHD2, 0.559 for ILHD3, 0.536 for ILHD4, and 0.953 for ILHD5. Moreover, its results are significant at a 1% level. It has been verified that these elements have a significant role in causing irrational herding in equity markets among individual investors. The results align with the findings of Kanojia et al. (2022). A one percent significance level is likewise reached by the coefficient value of each of the herd mentality antecedents. The herd mentality that individual stock market participants exhibit is allowed to be influenced by these variables. Positive and substantial correlations exist between the antecedents and herd mentality. Results from Bzdok et al. (2012) and Ramli et al. (2016) are corroborated by it.

Rational herding takes the coefficient value of 0.264 for “social influence,” 0.230 for “noise trading,” and 0.439 for “self-attribution,” and its results are significant at a 1% level. Rational herding is vastly ruled by self-attribution bias, noise trading, and social influence among the investors in the stock market. Therefore, it supports the hypothesis ( $H_2$ ). Thus, rational herding has a positive and significant relationship with self-attribution, noisy trading, and social effects. This is consistent with findings from Agrawal et al. (2016) and Setyowati et al. (2018). The coefficient values for “illusion of control” and “spurious herding,” respectively, are 0.361 and 0.357 for irrational herding and are significant at the 1% level. Therefore, irrational herding is shaped by the dynamic presence of the illusion of control and spurious herding in the stock market. The findings are consistent with hypothesis ( $H_3$ ), which holds that irrational herding is positively and significantly correlated with false herding and the illusion of control. It validates the findings of Sabir et al. (2018) and Sharma and Bhowal (2017). Herd mentality brings a coefficient value of 0.554 for “rational herding” and 0.279 for “irrational herding,” which is significant at a 1% level. Rational and irrational factors form a herd mentality among investors in equity stock investments (Rahayu et al., 2021). Consequently, the outcome supports the hypothesis ( $H_4$ ), which states that herd mentality is positively and significantly correlated with both illogical and rational herding. The results are in line with those of Pavlovic (2018). Table 7 provides the results of the analysis conducted on the test of estimations of independent components.

**Table 7. Estimates of Independent Factors**

Independent Relationship			Unstandardized Coefficients		Standardized Coefficients	t	p
			Beta	Standard Error			
SLAT	<-->	NSTD	1.048	0.113	0.647	9.308	***
SLAT	<-->	SCIF	0.901	0.101	0.589	8.911	***
SPHR	<-->	ILOC	0.968	0.114	0.595	8.520	***
NSTD	<-->	SCIF	0.854	0.092	0.645	9.269	***

Table 7 depicts the independent relationship between research variables. Self-attribution and social influence factors maintain a significant relationship with noise trading, with coefficient values of 0.647 and 0.589. Spurious herding maintains a significant relationship to 0.595 with the illusion of control. Finally, noise trading maintains a significant relationship of 0.645 with social influence. These results align with the literature (Dzung et al., 2021; Suresh, 2024).

## **Theoretical and Managerial Implications**

Successful investment decisions depend on investors' adaptability to the changing market conditions. To make individual investors successful market participants, stock market officials, regulators, and even institutional market participants should improve the quality of awareness and training programs. This will lead to an improvement in individual investors' literacy in investing decision-making. Investors will treat the illogical herding tendency favorably.

Consequently, investors will be competent to effectively learn from prior experience, reducing their vulnerability to behavioral biases in decision-making. As a result, the main focus of such awareness and training programs will be to increase self-reliance rather than following herding in the stock market. Brokerage firms, investment advisors, and specialists should explain the pitfalls of following a herd mentality when making investment decisions. Furthermore, individual investors should equip themselves with essential information on the firm, industry, economy, and market sentiment to excel and achieve greater profitability. This study is bent toward novelty and generalization of findings and works as an eye-opener for individual investors in the stock market.

## **Conclusion**

This study investigates the interplay of rationality and irrationality in individual investors' herd behavior in Indian stock markets. The objectives are to identify the factors driving rational and irrational herding and to examine their influence on herd mentality. This study points out the association between driving factors and the herding behavior of retail investors. Rational herding driving factors, namely self-attribution bias, noise trading, and social influence, are the main reasons for retail investors to replicate the behavior of other investors to achieve the desired results. Similarly, irrational herding driving factors are spurious herding and the illusion of control. Individual investors' tendency toward learning and adopting the changing market conditions is considered a crucial factor.

## **Limitations of the Study and Scope for Future Research**

This study has limitations similar to previous research that can be taken into account for other studies. While self-reported data introduces response biases, snowball sampling suffers from selection bias and has low generalizability. Future research might, therefore, use random sampling techniques and take into account different methods for gathering data. Additionally, longitudinal studies, experimental designs, and econometric modeling can provide deeper insights into herding behavior dynamics and causal mechanisms.

## **Authors' Contribution**

Dr. Suresh G. conceived the idea and designed the study. Ooi Kok Loang extracted the literature papers from the database using keywords. Dr. Suresh G. and Ooi Kok Loang designed the research methodology. The collection of

data and formal analysis were executed by Dr. Suresh G., and formal writing and reviewing of the original draft was taken care of by Suresh G. and Ooi Kok Loang.

## Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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## Data Availability

Data will be made available from the corresponding author upon reasonable request.

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## Appendix

### Self-Attribution (*SLAT*)

<i>SLAT1</i>	I consider advice from a reliable reference group.
<i>SLAT2</i>	I rely upon my predictive skills to outperform the market.
<i>SLAT3</i>	Loss-making is a result of following others' advice.
<i>SLAT4</i>	I react quickly to price changes in the market.

### Noise Trading (*NSTD*)

<i>NSTD1</i>	Belief in hype on prices of stocks.
<i>NSTD2</i>	Inaccurate own ideas in stock trading.
<i>NSTD3</i>	Inaccurate and against the use of concrete data.
<i>NSTD4</i>	Disproportionate amount of trading.

### Social Influence (*SCIF*)

<i>SCIF1</i>	I follow fellow investors' advice.
<i>SCIF2</i>	Others provide useful information.
<i>SCIF3</i>	Emotionally attached to others' information.
<i>SCIF4</i>	Bandwagon effect in the selection of shares.

### Spurious Herding (*SPHR*)

<i>SPHR1</i>	Reactions to analyst revisions or sentiments.
<i>SPHR2</i>	May add or withdraw funds as per crowd decision.
<i>SPHR3</i>	Buy recent winners and sell recent losers.
<i>SPHR4</i>	React to information known to the public.

### Illusion of Control (*ILOC*)

<i>ILOC1</i>	Rests on individual predispositions.
<i>ILOC2</i>	Understate the role of luck.
<i>ILOC3</i>	Exaggeration of skills to control random events.
<i>ILOC4</i>	Control the outcome of unpleasant events.

### Rational Herding (*RLHD*)

<i>RLHD1</i>	Effect of information cascade.
<i>RLHD2</i>	Influence of reputation-based herding.
<i>RLHD3</i>	Compensation induces herd motive.
<i>RLHD4</i>	Imitate allocation strategies of others.
<i>RLHD5</i>	Follow publicly available information.

### Irrational Herding (*ILHD*)

<i>ILHD1</i>	Always follow the majority of others' decisions.
<i>ILHD2</i>	Make decisions on stock movements.
<i>ILHD3</i>	Fast market movements influence the decision.
<i>ILHD4</i>	Blindly believe reference group decisions.
<i>ILHD5</i>	Overconfident in my investment decisions.

### Herd Mentality (*HDMN*)

<i>HDMN1</i>	Rumors affect my decision-making.
<i>HDMN2</i>	Follow group behavior in risky decisions.

<i>HDMN3</i>	Lack of information accessibility about investments.
<i>HDMN4</i>	Seek other's help in uncertain situations.
<i>HDMN5</i>	Market turbulence forces to follow the herd.
<i>HDMN6</i>	A conservative attitude guides one to follow others.
<i>HDMN7</i>	Implementation of profit earners' strategy.

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### About the Authors

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