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A STUDY ON THE HERDING BEHAVIOR OF THE INDIAN STOCK MARKET

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ABSTRACT:

Until recently, the Indian stock market was dominated by brokers and individual investors. As a result, brokers and major market participants are generally responsible for determining the market's attitude. Despite efforts by market regulators to safeguard individual investors, information asymmetry continues to put them at risk. A sudden shift in the market might be seen as a sign of anomalous information. Panic ensues because of this. Panic drives the market to excessive rallies, which in turn drove the market to extreme values as a result. Herding, which we refer to as extreme activities, has expanded throughout the market. Market herding occurs when investors are expecting a large shift in the value of assets. The present paper aims to study the Herding behavior ofthe Indian stock market.

Keywords: Herding behavior, Indian stock market, Size, Industries

INTRODUCTION:

The development of a country's economy is impossible without a strong financial system. It acts as a go-between for people who save a portion of their income and those who put it to work by investing the rest. It mobilizes and productively distributes the finite resources of a nation. Complex, well-integrated subsystems of financial institutions, markets, instruments, and services ensure an efficient and effective flow of cash.

Savings and investments play an important role in maintaining a good and happy life because they preserve the "worth of money" from being eroded by inflation over time. They

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are essential. To put it simply, "investment is a present commitment of money or resources with the prospect of a future return." BODIE, KANE; MARCUS; and MOHANTY For economists, "proper use of resources to raise future income and production output" is the economic definition of investment. Investment choices are critical to achieving financial objectives and success since risk and financial returns from investments are constantly linked. Investing even a tiny amount of money daily may provide substantial returns, according to one study.

Every investor's goal is to maximize profits while minimizing risk. Investors do comparative analyses of the different instruments on the market to reach this goal. Investors must have a variety of investments in their portfolios, including both real and financial assets, to maximize their returns. Companies employ investors' money to acquire real property that generates greater profit or revenue for the firm, which in turn gives investors with higher returns. Investing in stocks and bonds of firms or other financial assets allows investors to maximize their returns. There are three forms of financial assets: cash, stocks, and bonds:

1. Fixed income bearing securities
2. Equity and
3. Derivatives

A predetermined proportion of current interest rates is paid to investors who invest in fixed income securities or debt instruments. As a result, the investors receive a steady income with no risk.

The stock market, as a vital financial middleman, contributes to economic development. Stock exchanges are now home to a slew of publicly traded corporations. Investors are drawn to equities that are more liquid and appealing when they are traded on stock exchanges. Investing in the stock market might result in higher returns for investors. They purchase and sell stocks based on how well they've done in the market in the past. Investors used to be wary of putting their hard-earned money into the stock market, preferring instead to place it in low-riskfixed-income investments. However, as the economy expands, more money is required. Secondary market investments, however hazardous, are preferred by

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investors who desire greater income and liquidity from their money.

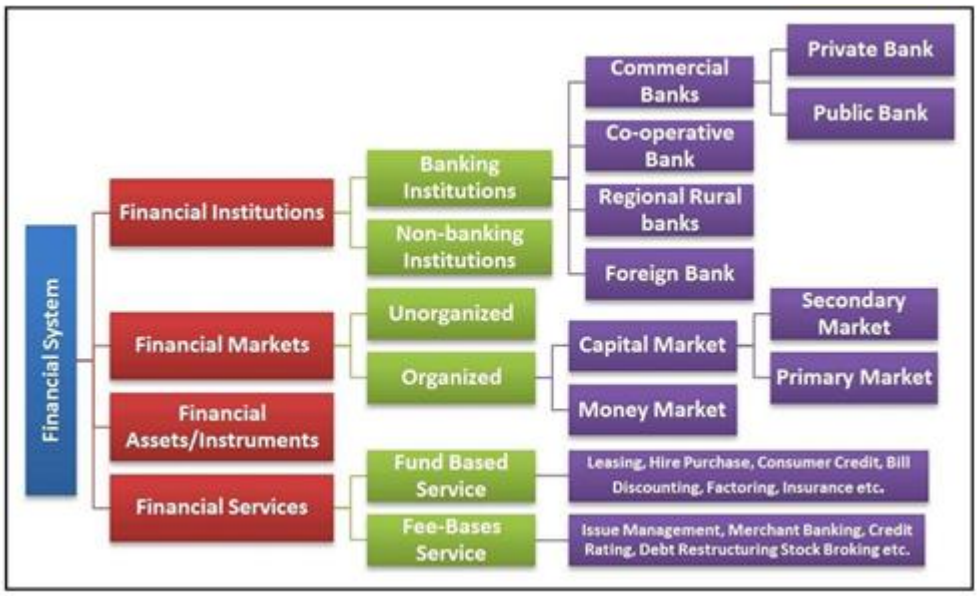

Figure1:The Indian financial system's structure

Since private people are more able to acquire and own wealth via economic growth, stock exchanges are better able to stimulate private savings and channel those savings into productive investments. ". Modern industrialized society thus requires the use of the stock market." Investors from all over the world are taking advantage of the Indian stock market. Many scholars have come up with many models, methods, and approaches to help investors make the most of their resources, such as the "Capital Asset Pricing Model (CAPM), Markowitz managing Portfolio Theory, Arbitrage Pricing Theory, Fundamental Analysis, and Technical analysis." The financial strength of the economy, industry, and firm may be gleaned through "Fundamental Analysis," while "Technical Analysis" assists in predicting stock prices based on historical and current trends. Portfolio theory "recommended the risk-return connection of the portfolio rather than relying exclusively on accounting information". To limit risk and maximize profits, this theory aids investors in putting up an appropriate investment portfolio. A fundamental flaw in the idea is that all the assets in the portfolio have identical risk and return characteristics; they are interconnected and the math

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behind them is complicated. As a result, Sharpe's "Single Index Model" has been presented. In this model, stock returns are assumed to be linearly connected to market returns.

CAPM aids in the evaluation of a stock's predicted return on investment. Return on a risk-free asset plus an investor's risk premium is equal to the anticipated return. There was just one thing that these models focused on, and that was how to maximize profits. Investors may look at all the available data to see which investments would provide the best profits.

The opposite school of thinking asserts that the price of an asset reflects the information available to investors. The "Efficient Market Hypothesis" hypothesis was established by researchers to better understand how the price of a stock is influenced by information about that stock.

HYPOTHESIS OF AN EFFECTIVE MARKET

Rationality and efficiency are hallmarks of the Efficient Market Hypothesis (EMH). When it comes to making money, rational investors are constantly looking for more. "Efficient markets are those in which a large number of rational profit-maximizing participants are actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants," stated Eugene Fama, the pioneer of EMH, in 1965. At that time, Fama said that an "efficient market" was one in which prices completely represent the whole amount of data available to all market participants, and hence prices would be unaffected by the disclosure of that data to them all. A market where companies may make production-investment choices and investors can pick among the securities that represent ownership of firms' activities on the premise that security prices at any moment "completely reflect" all the available information. Investors can choose. All price changes indicate random and uncorrelated departures from the prior price, according to the efficient market theory. According to one study, "stock prices roughly resemble random walks through time; the price changes are unexpected because they only occur in reaction to truly new information, which is unpredictable by the mere fact that it is new." It signifies that the current price of the shares

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is not affected by any future developments in the market.

Experts say, "the market and equities might be as random as tossing a coin," according to the researcher. In the words of a researcher, "stock price movements are independent of each other and have the same probability distribution" It is widely accepted that stock prices are seen as erratic and uncontrollable. In an active market with many well-informed and clever investors, assets will be priced accurately and represent all available information," says the researcher.

The efficient market theory may be divided into three categories.

- Assuming that all market information is reflected and that previous returns have no influence on future prices, the weak version of the theory argues that markets are efficient. Consequently, it was presumed that the market's return rate would be uncorrelated.
- Semi-strong form argues that markets are efficient, reflecting all public knowledge. A strong manifestation of the EMH was also seen in the stock market's reaction to fresh information. Thus, this theory argued that stock prices only respond to publicly accessible information for a short period of time. Prices have little influence on the general population beyond that time.
- Even if an investor has complete knowledge of the market, he or she will not make extraordinary gains since markets reflect all private and public information equally efficiently. It is hypothesized that investors do not have a competitive edge.

Assuming an efficient market, new information on fundamental values is likely to be reflected in real prices "immediately" in an efficient market, according to the researcher. Even if an investor is very active in the stock market, he or she will not be able to get an edge over the rest of the market participants because of the EMH. "All investors have the same knowledge accessible in the market," is a common assumption. Assuming that everyone in the EMH state is aware of the same knowledge, basic and technical analyses are of little benefit. In contrast to the EMH, the Researcher claims that "in markets, in which all investors have 'rational expectations', prices completely represent all available information

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and marginal-utility weighted prices follow martingales." The researcher rejects this claim. Investors who want to outperform the market may choose to overlook public and private information in favor of blindly following the lead of others, as he explains. To earn fast and easy money, they made irrational actions that disrupted market equilibrium and caused securities to be overvalued or underpriced. Due to a lack of communication between the investors, this imbalance may occur.

EFFICIENT MARKET HYPOTHESIS CRITIQUE

The EMH has been challenged by several scholars because of the many market irregularities that exist. Prices are deviating from fundamentals because of these abnormalities.

1. **Information asymmetry:** The EMH asserts that investors have access to all essential market data. Each investor must be informed of the latest market developments at all times. As a result, fresh knowledge should spread swiftly in the market. In addition, when more investors become aware of the knowledge, its value diminishes. As a result, investors withheld or distributed inaccurate information to gain an advantage. Even though "significant differences in investor access to information persist," Researchers claimed in 1984 that "news is absorbed into pricing within 10 minutes." Investors benefit from asymmetric knowledge and rapid price changes as a result.
2. **Existenceofirrationality:**Investors did not always act logically. "Markets may stay irrational longer than you can be solvent," wrote Keynes. Investors act unreasonably in the market to achieve above-average returns. There are instances when they overreact or underreact to new information, causing market instability.
3. **Stock Market Crash**: For example, a stock market collapse is a social phenomenon where external economic events meet herd behavior and psychology in a positive feedback loop where selling by some market participants promotes further selling by others. Crash factors include a protracted period of increasing stock prices and excessive economic confidence, a market where P/E ratios (Price-Earnings ratios) surpass long-term norms, and substantial margin debt and leverage by market players. Another factor that might cause a major drop in the value of a broad variety

of equities is wars or large-corporation hacking, changes in federal rules and regulations, and natural catastrophes in highly productive regions. There may be an increase in the stock prices of companies that compete with those harmed by stock decreases.".

Financial innovation has been made possible thanks to the rise of 'Fama development. Several academics, however, claimed in the 1980s to have found evidence that contradicted the efficient market theory. Some academics questioned the efficacy of the stock market by claiming that high PE ratios are overpriced, whereas low PE ratios are undervalued. Calendar effects may be seen in the fact that daily abnormal return distributions in January have significant mean values compared to the other eleven months of the year. Ball (1978) reported the high gains in post-announcement profits. If the knowledge is available to the whole public, then it contradicts the theory of efficient markets (1).

EVOLUTION OF BEHAVIORAL ECONOMICS

Rationality has been an assumption in traditional financial theories. Investors are presumed to act rationally in the presence of a well-functioning stock market. According to research conducted by psychologists, investors did not make logical judgments but rather acted irrationally due to cognitive biases and behavioral characteristics. Traditional financial theories have been called into question considering this new perspective. It is possible for investors to make irrational financial choices due to cognitive errors and severe emotional biases.

A fundamental premise of behavioral finance is that information structure and characteristics of market participants impact the individual's investment choices and market results in a systematic manner. ". Shortcuts and emotional filters are common in the way investors digest information. It is possible to make irrational judgments because of a lack of knowledge or because you are following others without thinking.

One of the most important aspects of behavioral finance is that it emphasizes the role of investors' behavior in making investment choices. To make well-informed financial choices, behavioral finance is the study of how people understand and respond to information, according to researchers. When it comes to making economic judgments, "science

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knowledge on human cognitive and emotional biases is used." Behavioral finance does not strive to define 'rational' conduct or label decision making as biased and incorrect; it tries to comprehend and forecast systematic financial market consequences of psychological decision processes," the researcher said. It's this discipline of finance that uses ideas from other behavioral sciences like psychology and sociology to uncover and explain events contrary to the paradigm of the anticipated utility of wealth and narrowly defined rational conduct, according to one researcher. Research approaches that are seldom used in conventional financial literature are used in behavioral economics. An academic topic is known as "behavioral finance" aims to shed light on the role of investors' emotions and cognitive errors in making investment decisions. Psychological, sociological, and other behavioral sciences are brought together to describe the behavior of individuals and groups. According to behavioral finance, it is hard for investors to construct a lucrative or diversified portfolio, and they are more likely to follow the herd. " In the stock market, they buy and sell "looser" shares.

According to a researcher, "Behavioral finance is no longer a contentious topic." People will look back at articles written 15 years ago and wonder what all the hoopla was about as financial economists become used to thinking about the significance of human behavior in determining stock prices. "Behavioral finance" was projected to be considered redundant soon, as it is now. Is there any other kind of finance? They will frequently include as much "behavior" into their models as they see in the actual world in their understanding of economics. It would be absurd to do anything otherwise."

Traditional financial ideas have been challenged by behavioral finance. Biases" are the behavioral proclivities of investors in finance, and these biases are known as "Biases." Researchers classify behavioral biases into three categories:

1. JudgmentBias,
2. Preferenceerrorsand
3. Biases related to living with the consequences of decisions.

"Overconfidence, Optimism, Hindsight, and Overreaction to Chance Events" are examples

of judicial bias. "Nonlinear weighting of probabilities; people's tendency to value changes, rather than states; the value of gains and losses as a function; the shape and attractiveness of gambles; the use of purchase price as a reference point; narrow framing; tendencies related to repeated gambles and risk policies; and the adoption of short versus long views" are some examples of preference errors. Because of this, "regret of omission and commission but also implications for the link between regret and risk-taking" is a common outcome of making decisions. There are two primary sorts of biases that people tend to fall into: cognitive and emotional biases.

1. **Cognitive Bias:** These preconceived notions have to do with the way a person thinks. Cognitive bias is a term used to describe the errors in thinking that arise when a person's belief is held regardless of additional evidence. Anchoring and adjustment; cognitive dissonance; availability; self-attribution; the illusion of control; conservatism; ambiguity aversion; mental accounting; confirmation; hindsight; recency; and framing biases are all included in this category. Overconfidence.
2. **Emotional Bias:** As humans, we are susceptible to making emotional errors and biases. These are the results of the investor's instincts, rather than a deliberate decision-making process. Among the many emotional biases are the endowment, self-control; optimism; loss-aversion; regret-aversion; the status quo; and the herd.

These are the many sorts of irrationalities that affect stock market participants' investing methods. Most experts have discovered that investors tend to follow the lead of others, which is known as "herding."

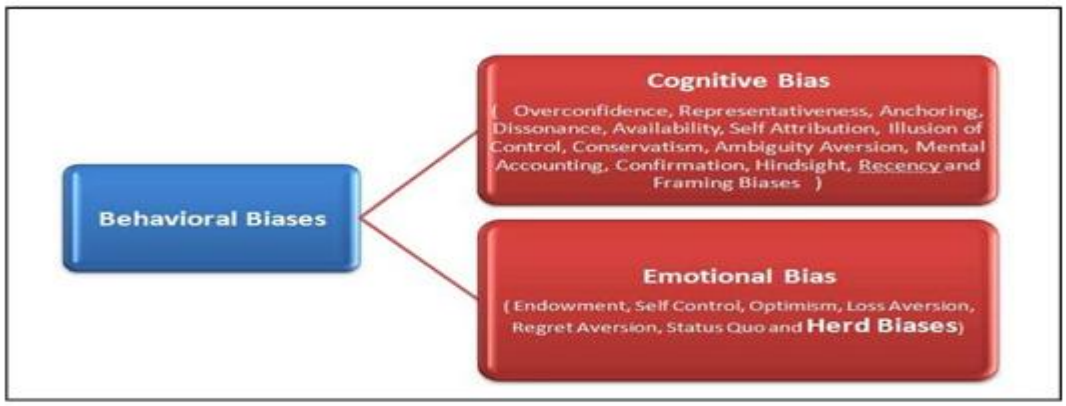

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Figure2:Biases of several kinds exist.

HERDING THEORIES

Herding is a behavior in which people follow the lead of others without regard for their own distinctive characteristics or thoughts. For this effect of social influence on individual choices, there are numerous possible explanations, including rational learning theories based on Bayesian updating assumptions and individual differences-based theories, notably in sociology and psychology. In a world of uncertainty, it is difficult to quantitatively identify a correct course of action, and so, as Simon (1979) (3) observes, people will be procedurally rational decision-makers, and so, in the end, their decisions will be the product of a subjective judgment. This unified approach can be seen as a way of bringing together the approaches. When individuals use herding as a decision-making heuristic, social learning continues. Instead of a compensatory updating process observed in Bayesian models leading to a choice to adhere to the group, preferences that are lexicographic rather than compensatory would lead to a decision to disregard private information entirely. A person's proclivity to employ heuristics and rules of thumb is likely to be influenced by their unique set of personal characteristics and personality traits.

Rational Learning: In the most widely accepted microeconomic models of herding, it is described as a rational learning process in which the choices of various individuals are interconnected and reinforcing. To make rational decisions in a world of uncertainty, Bayes' rule may be used: Bayesian updating of a priori probabilities will draw from a broad set - including social knowledge about the observed behaviors of other people (4, 5). Bayesian herding is plagued by the fact that valuable private information is overlooked in favor of knowledge about the herd's activities. To demonstrate the concepts, below are a few examples: When it comes to reproductive decisions, voting, and financial decision-making, individuals tend to follow the herd, according to a new model developed by a researcher. A well-intentioned but perhaps mistaken information collecting technique will result in herding. Informational cascades are used to explain localized conformity when it is best for

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individuals to follow their predecessor's actions and discard their own private knowledge. This model of sequential decision-making has been developed by researchers. As can be observed in Banerjee's model, no future members of the herd get any new evidence with each successive choice. A boundedly rational herding response to imperfect information is depicted in both models as leading to convergence toward an outcome determined by social knowledge about herd behaviors rather than private information. If kept private, knowledge is rendered useless, which may occasionally lead to stable outcomes, but often, results in idiosyncratic and unstable ones.The researcher was the first to perform economic experiments to verify Bayesian ideas of rational herding. Experiments such as this often confirm Bayesian assumptions. Experimentation has shown that herding is a wide category of copying behaviors, whereas informational cascades are a specialized sort of learning that occurs in uncertain conditions. A variety of ideas regarding rationality may explain the regular patterns in herding seen in the experimental literature. A herding experiment that allows for many states and numerous signals allows for rational herding and rational contrarianism (behavior opposite to herd preferences). Although they witness both rational and irrational contrarianism, they find that around 70% of their respondents' conduct falls under their definition of rationality. Non-traders' illogical conduct becomes predictable when they adjust for individuals who do trade. A reduction in herding might be achieved by better information and signals, but policymakers should be wary of categorizing all herding as illogical. Using a Bayesian framework, researchers may add flexible pricing into a model where cascades are impossible. In their study, they found that some respondents do not trade or engage in contrarian trading based on their private knowledge. Furthermore, researchers look at experimental individuals' Bayesian ways of thinking and discover that they may not be utilizing belief-based reasoning, but rather boundedly logical, insight-based rules of thumb.

Informational Cascades:The significance of individual variation According to Bayesian theories, individual decision-making is generated by the application of a mechanical algorithm that uses knowledge about collective choices to update the probabilistic

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assessments of people, resulting in informational cascading in the process. Researchers differentiate between the exact phenomena of informational cascades, which is sequential herding caused by Bayesian reasoning, and the more general phenomenon of herding, which is just following a group. Evidence suggests that decision-making is not the exclusive product of statistical reasoning and that humans are not necessarily proficient in applying statistical concepts to practice.

Social Learning: Evolutionary pressure may have led to the development of herding impulses that permit social learning in animals as varied as bees, ants, elephants, zebras, ostriches, sheep, and cows, all of which exhibit widespread herding inclinations. Animals who are better at keeping tabs on the behavior of their peers will get social information about resource availability and mate potential, increasing their chances of reproducing. It is possible that socially driven herding instincts may have developed to help us obtain essential social information about the worth of our assets. There is safety in numbers, which may be a driving reason for our tendency to flock together as a species. To some extent, herding may be explained by sociological theories of crowd influence and group pressure, such as those proposed (6) in his study of mob psychology. Normative effects stem from a desire to fit in vs informational impacts gained through seeing how others behave, according to sociological research. Then in economic models of social learning, sociology emphasizes the effect of information. Researchers presented evidence from controlled experiments showing that when asked to make simple judgments about the lengths of lines, a substantial minority of experimental subjects were susceptible to intragroup pressure and were persuaded to change their minds in the face of deliberately misleading decisions by experimental confederates, with effects increasing as group size and consensus increased. Shiller (1995) argues that Asch's findings are not inconsistent with a rational learning process since the subjects tend to attribute their mistakes to their own physical limitations, such as poor eyesight (7). Evidence suggests that following the crowd isn't only about peer pressure; social impact even without human face-to-face encounters is consistent with social learning from a group's judgments, even when the mob is made up of computers rather than

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humans. It is possible to reconcile these distinct ideas from economics, psychology, sociology, and evolutionary biology as different methods of describing social learning in a limited rationality environment.

MEANING AND DEFINITIONS OF HERDING

Individuals in a herd may move in unison even if there is no strategy in place. It is referred to as "herding" when people just copy the acts of others without giving any thought to their own thoughts, ideas, or knowledge. If investors tend to herd around the market consensus, asset prices may diverge from economic fundamentals because of their trading activity. Therefore, assets are overvalued. Investors' differing levels of expertise in financial markets may lead to a propensity for some investors to follow in the footsteps of others, particularly during moments of market instability." Herding" refers to the propensity of investors to follow the lead of their peers. "(when) people adjust their own ideas to fit more closely with publicly declared opinions of others" and "(when) a group of investors trades in the same direction over a period of time."

Herding or herd mentality is a prevalent phenomenon in the financial market generally-stock market specifically, regardless of established or developing economies (13). "Herd mentality" Due to herding's tendency to overreact to changes in a market's stability, herding may reduce the efficiency of financial markets. When we're afraid of being incorrect, we tend to follow the crowd, since we believe that a group mistake is less detrimental to an individual's reputation than an individual mistake. “Herding behavior" occurs in the stock market when investors trade identical stocks. In addition, stock market fund investors, such as mutual funds, have a greater tendency than individual investors to exhibit herding behavior. It is because fund investors have access to better information than individual investors do. Sheep tend to herd together, therefore they tend to follow one another (12). To better understand investors' thinking and how it affects their financial choices, we may investigate herding. Money managers, for example, are said to herd because they are afraid of being adversely evaluated or criticized by others if they make a mistake. It is common to hear that investor "acted like a herd that stampeded without reason" when the market crashes without any meaningful changes in economic fundamentals. According to the current global

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financial crisis, market prices may diverge significantly from basic values over extended periods of time. After conducting a thorough investigation of the 1987 stock market meltdown, a researcher found that investors' emotional reactions were to blame. This issue is usually blamed on liquidity restrictions, asymmetric knowledge, limits on arbitrage, and other frictions. Market players and financial institutions are exposed to uncontrollable systemic risk because of these traits, which represent a persistent danger to financial stability. Herding, defined as the reciprocal copying of activity that results in convergence, is a well-documented phenomenon found in these severe market situations (11). More than just individual stocks may be subject to herding. An industry rather than an individual stock may make it simpler for managers to monitor and replicate the techniques of others, therefore imitating the opinions of other managers about a certain sector's future development. Sector-level herding would seem to be a more accurate indicator of genuine herding in smaller, less liquid equities. In the case of a significant stock purchase by one management in a tiny company, later managers may not be able to replicate the strategy identically, but by acquiring another small company, subsequent managers may be exposed to variables that affected the original manager."

Types of Herding

Both logical and irrational herding are examples of 'intentional herding' and 'spurious herding' given(8).

Spurious herding: Unintentional or spurious herding occurs when investors with similar challenges and knowledge sets make the same conclusions. It's a result of need rather than a conscious decision to make. Investors are frequently compelled to follow the herd because of the current economic situation. There is unintentional herding since the public reacts in the same way to any unsubstantiated information or signs (9).

Intentional herding: By purposefully following the crowd, investors are ignoring their own private knowledge in favor of relying on the opinions of others. Rational or illogical behavior may be used to herd animals. Logical herding occurs when investors believe that

others have more information about the market than they do. Investors' herding behavior might be illogical if they follow in the footsteps of their predecessors for psychological reasons. If it's something you're doing on purpose, it's a result of several circumstances (10).

- Intentional herding occurs when investors feel they lack knowledge while others have more.
- When investors want to know in advance what their investment returns will be.
- Portfolio managers emulate their peers to build a solid reputation in the market.

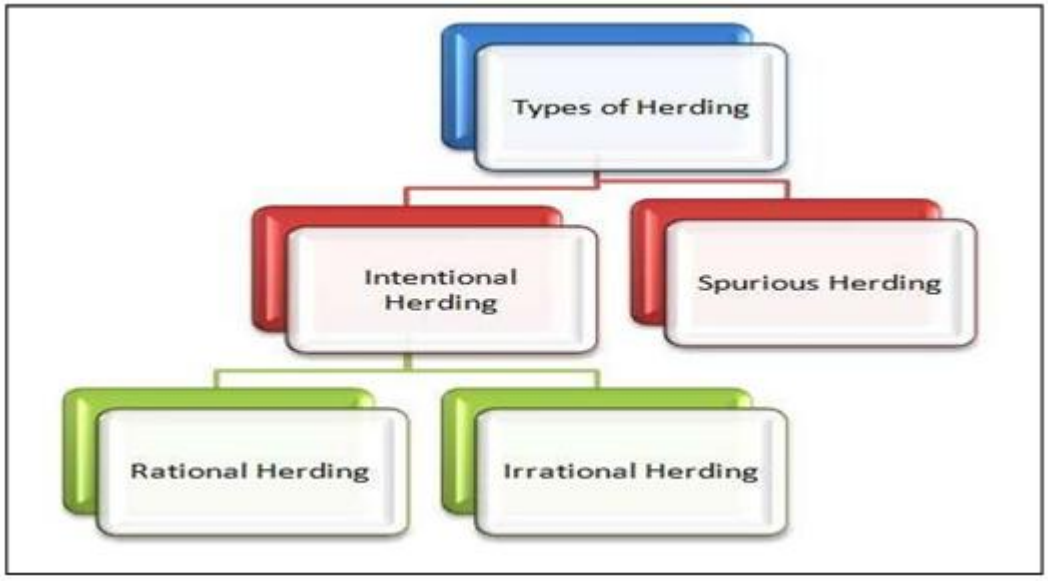

Figure3:Types of Herding

CONCLUSION:

A more difficult investment environment resulted from the heightened levels of complexity, unpredictability, and asymmetrical information, particularly in emerging countries. The tightening of the investment climate and the increasing complexity of investment choices were both aided by the liberalization process and the convolution in the investment setting. As a result, developing economies such as India is being seen as a hub for investment since they provide more liquidity and a better rate of return than established markets. As a result, the market players have acted in the Market in a variety of ways.

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