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REVIEW ARTICLE

Herding and retail investors' decisions: A review literature

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ABSTRACT

The main purpose of this paper is to review the existing literature of herding behavior and its relationship with retail investors' decisions as well as its impact too to understand trend in the literature and some aspects relate to herd behavior. Herding occurs when individuals surrender their decision to a group and neglect their own beliefs to replicate others' thoughts, feelings and actions. The study employed Prisma framework to review literature. It relied on intensive databases and sources such as Google scholar, Emerald, Elsevier, Springer, Research gate and Scopus. Literature studies have revealed tremendous empirical investigations about the impact of herding on retail investors' decisions in the developed and developing countries. However, those studies have been filled the gap in the literature which relate to the relationship between herding and retail investors' decision. This study aims to fill this gap by reviewing the literature on the relationship between herding and retail investors' decision to figure out the trend of herd behavior. Therefore, the highlighting and reviewing of herding and its impact on retail investors decision might enrich the literature and assist researchers to determine gap in the field as well as determine new area need to be investigated.

Keywords: herding; retail investors

1. Background

Herding occurs when individuals surrender their decision to a group and neglect their own beliefs to replicate others' thoughts, feelings and actions. Additionally, it is the behavior of ignoring stock price movements and following the majority decisions[1] as well as investors are prone to follow other investors[2]. Moreover, agreement among a group of portfolio managers to buy or sell specific stocks simultaneously[3]. Furthermore, it is the process of following other decisions whether rational or irrational. It originated in the economic field and is reflected in the stock market, particularly in declining or collapsing markets since fear of loss and loss guide investors to sell their assets quickly. It has become a trendy title in behavioral finance and asset pricing alike. This occurs as a result of its role as the initial reason for financial crises or market bubbles[4,5], one of the reasons for speculative bubbles[6] and one of the bubble stages[7]. Similarly, it might lead stock prices to deviate from its fundamental value[8]. When there is herding behavior in the stock market, the trading volume and volatility of the market goes up to the highest level[9]. As a result of that, investors speculate more as they imitate other acts without adequate information and analysis[6]. The impact of herding might not cause volatility and high trading volume only, but also it influences the whole stock market[10]. This might cause a crash in the stock market[11] and destroy the whole economy of a country[12].

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The herding can be divided into two types spurious and intentional herding[13]. In spurious herding, investors utilize the same information set which led them to make the same decision whereas investors imitate others' investment decision in intentional herding. Usually, investors look at others' options before making decisions in intentional herding while investors decide whether to observe others' investors' decision or not in the spurious herding. In other words, imitation drives investors in intentional herding while coincidence rather than imitation causes spurious herding as it relies on public basic information[14]. Moreover, the outcome from spurious herding is more efficient than intentional herding. Therefore, the reason behind intentional herding might be rational or irrational.

Herding behavior can be classified into two models regarding rationality of agent and can be like the double-edged sword. When there is intentional herding, it can be rational and irrational herding[14]. Some researchers believe that herding is the result of rational incentives[13,15–17]. This rational herding can occur in three different aspects: (1) payoff externalities; (2) protect reputation and (3) information cascade. First, the payoff externalities herding occurs when increasing in return or benefit rely on the number of followers or involve in the herding. In other words, the herding becomes rational if the investor stimulates others to follow him to gain more. In addition, following the stock market leader or portfolio manager might bring tremendous returns. Sometimes, the ideal rational decision-making is to follow others, particularly if guides are experts or professional in the field. Second, protecting reputation can be happened when managers follow each other to protect their reputation and guarantee against underperformance in absence of accurate information[18,19]. Likewise, analysts might predict earnings like those announced by previous analysts whether to imitate their higher ability, defend their reputation or hide their weaknesses[20]. Third, investors might imitate others' actions and ignore available information as result of information cascades impact[13,21,22]. Sometimes, the best choice for individual investors is neglecting their privileged information and imitating preceding actions of individuals, which are dependent on very essential information. This notion led to belief, which considers failure conventionally better than success unconventionally. In the same way, individual investors speculate the short horizons term might herd to explore what other informed investors know. Therefore, herding might be rational in some situations such as payoff externalities; protect reputation and information cascade[13,17,23], and for some financial agents.

On the other hand, other scholars think that cognitive bias might guide investors to herding[17,24]. Irrational behavior is the most famous belief about herding which influences investment decisions and might cause bubbles or crises in the market. Several researchers have investigated its impact on investment decisions. They found that it links with irrationality, instability of markets and excessive volatility[13,25]. Sometime, the agent has a motivation to follow and a desire to be followed if herd behavior has a profit. This might occur if an investor notices that other investors gain more from trading or speculating in specific stocks. Therefore, he/she will be the follower for other by trading in the same stock without considering consequences of this step. Imitating other investors' pattern for no professional and low sophisticated investors lead them to feel safer in trading[26]. On the other hand, an investor might encourage other investors to trade in a specific stock if that increases his profit or attracts more investors to speculate in the stock to raise its price. Generally, people feel more comfortable when their decision is consistent with other people around them. Prior literature asserts that investors would rather associate with people around them[27]. Usually, irrational herding occurs when investors imitate each other blindly and neglect the importance of rational analysis[28]. Consequently, the existence of many noise traders and availability of high herding restricts intelligent investors from entering the market[29]. In the stock market, retail investors represent noise traders when they rely on personal judgment or subjectivity to make decisions. When private information of retail investors encourages them to make specific decisions, there is a high probability of following the group[17]. Moreover, retail investors are prone to herding more than

institutional investors do[30].

Retail investors are those who invest in securities in small amounts and for their personal benefit through agents or by themselves. There has been an increase in retail products over the decades. Banks and financial agents have provided enormous tools, which serve individual investors. Those instruments have stimulated retail investors to become more sophisticated when they trade in the stock market. Several studies assert that retail investors behave irrationally through judging. Usually, they do not have appropriate skills for making decisions. They described them obviously as dump investors[31,32].

Various studies have investigated impact of herding on retail investors and stock market in different domain and market[4,33–41]. A study conducted on French individual investors, it concluded that individual investors in French tend to herd[42]. In line with prior result, information from public source such as google grab investors' attention about specific company and leading to herding among retail investors[34]. In consistent with aforementioned result, there is a significant impact of herding on retail investors decision[35]. Furthermore, the male retail investors tend more to overconfidence and herding bias than females when they make decision[4]. Moreover, several studies employed some models and most of them found the existing of herding in investors behavior[36]. In consistent with prior studies, Saudi's investors perform herding to each other when making decision and the herding become stronger during rise of market return and trading volume[41]. In line with previous result, the herding and overconfidence are mediated the relationship between retail investors' decision and financial literacy in the north of India region[33].

2. Literature review

2.1. Introduction

Extensive papers have investigated the behavior of herding and its impact or association with retail investors' decisions. This literature has revealed the herding from different aspects to give more insight into it. This study will shed light on literature that investigated some of these aspects such as the relationship between herding and financial bubbles and crises, drivers and causes of herding, relationship between herding and investors sentiment, methodologies and models of herding and the relationship between gender and herding.

2.2. Herding and bubbles and crises

Herding as originator of crises in financial market was investigated in the stock market. Various investors from several nations have been impacted by herding when making decision[43]. Quite number of studies links between herding behaviour and volatility, instability of the market and crises and crash[5,44–46]. It has contributed remarkably to financial bubbles, crises and crashes. There is a positive relationship between herding and market volatility and arbitrage opportunities[8]. In addition, in some sectors of the US market, herding is considered a crucial element to formulate bubbles[47]. Indeed, the herding played vital role to several crises and bubbles in the US market such as the black Monday of 1987, dot com/tech crash in 2000 and the last global financial crisis[47]. Whenever asset price deviates from its fundamental as result of herding, the probability of bubble and subsequent crash rise[5]. Herding is the main reason for the US market volatility, which caused the emergence of the global financial crisis[48]. In line with prior result, the herding in the US financial industry was investigated during financial crises of 2008. The study resulted that the financial crises contributed enormously on spurious herding particularly in the down market as well as conditional volatility of return[49]. Hence, the drivers of herding which consider one of behavioral factors that might lead to bubble and crises should be investigated in depth to protect market.

2.3. Herding drivers and causes

Considerable factors can drive herding in stock market named, high information flow, uncertainty and market conditions[50–54]. In addition, small stocks which investors rely more on during herding[52,55,56]. Also, high volatility risk guides investors to herd more[49,53,54]. Similarly, there is remarkable evidence of herding when stock prices move from medium to large[57]. Moreover, industry herding occurs during markets declining[38,58]. Furthermore, during crises, there is a high probability for herding[59–61]. Likewise, IPO period might cause a significant herding. During the Aramco IPO, there was a significantly positive relationship between herding and IPO investment decisions[44]. The transmission of information, particularly crucial information related to economics, plays a vital role in investors' behavior in the stock market. Macroeconomic information influences investors' behavior and uncertainty[62] as well as impact investors' beliefs and preferences[63]. The change in oil price is one of the most significant macroeconomic types of information that might affect investors' behaviors as the dramatic change reflects on several aspects of a country's economy. It becomes clear now; the information has contributed greatly to herding since it influences investors' sentiment.

2.4. Herding and investors' sentiment

The investor sentiment contributes to herding behaviour of investors[64,65]. The economic expectation and investors' sentiment constitute the transmission channels between central bank's monetary policy and herding in the equity markets[66]. Also, the tremendous information and emotion sharing as well as the financial liberalization among countries might increase herding behaviour among investors[65]. The behavioural finance theory asserts that the herding affects the investors by depending on sentiment and noise rather than market fundamentals[67]. The study of the Spanish stock market concluded that herding can be explained by investor sentiment[25]. Also, the financial crisis and the market crash could be predictable through the effect of investors' sentiment[68]. In case of investors' pessimism spreading during a crisis, investors might form a serious cognitive bias, and irrational buying and selling behaviour that might lead to reduction in the overall market returns[69]. During the turbulent times, almost all areas of the US stock market was influenced by herding[70]. Knowing some aspects of herding impact and its reasons and causes need to figure out which methodologies have been utilized to measure herding.

2.5. Herding methodologies and models

Various empirical methodologies have been employed to measure herding in the markets. First, cross-sectional standard deviations were utilized to investigate herd behavior in the US market. This methodology was applied when speculators rely on market consensus for their investment decision during tremendous market movements. Hence, Individual asset return will evenly match market return[71]. Second, cross-sectional absolute deviation (CSAD) strengthens than cross-sectional standard deviation (CSSD) as it cannot be impacted from outliers. A rational asset-pricing model assumes a positive and linear relationship between CSAD and market return. This methodology led to evidence of existence of herding in South Korea and Taiwan stock Markets yet absent of evidence of herding is in the U.S. or Hong Kong market[72]. Third, a new examining methodology that depends on cross-sectional variability of factor sensitivities proves an existence of herding in the South Korea[73]. Fourth, the LSV measure is hereafter employed to test the direction of investors decision (buying and selling) for stock in specific time. Indeed, it tests whether investors buy or sell specific stocks simultaneously[74]. Employing different methodologies, several studies have examined the existence of herding in different markets[39]. Finally, the IHM hereafter examines retail herding for specific (time) quarter by relying on the signed LSV. It assists in tracking dynamics of retail herding which might lead to determine source of retail heterogeneity[42].

The progress of herding measure model improvement passed through multistage. First, in 1992 and 1998,

a model was suggested based on the information cascades theory to clarify the bubbles and crashes by incorporating mimetic behavior, which is resulted from news, rumors, information or professionals' recommendations[75]. To confirm the previous experience, Bayesian statistical techniques were employed. Second, A statistical measure relays on trades of a homogenous subgroup of managers who buy or sell particular stock over a period[74]. This statistical test neglected the trade volume, so scholars were curious to overcome this limitation by developing new tests. Third, a portfolio-change measure became a substitute for the previous statistical test by considering the direction and the intensity of investors trading[18]. Fourth, investors and market return's dispersion were the pillars for new test. It was suggested that dispersion measure by cross-sectional standard dispersion[71,72]. Then, this model was modified to test herding widely and based on CAPM model that assumes the market return and individual assets dispersion have a linear relationship. Hence, herding in the market is generated from nonlinear relations between them.

2.6. Herding and gender

Several studies pointed out that female herding more than male[23,76,77]. Some characteristics such as high degree of conformity, less overconfident and lower trading experience might expose female to herd more than male[23]. Also, there is high probability of female to follow other investors decision. Particularly, when they get information from their relatives or trustful people, they follow and imitate this information and rely on it to make decisions[76]. Furthermore, as result of limited investment knowledge, low confidence and risk averse, Arab women herd more men investors[77]. Unlike prior studies, male investors prone more to overconfidence and herding biases when making decision[4]. In addition to the gender, age may result in different behavior in herding. Older investors perform fewer herds than young while women practice herds more than men[78]. The aspects of herding and others were caused by various reasons.

2.7. Other empirical literature and studies

The impact of herding on decision-making and its relationship with retail investors' decisions have been studied for developed and developing countries. Quite number of prior studies[54,56,58,61,79–82] have investigated the impact of herding on individual investors in the developing countries and emerging market. In the Turkish market, global risk factors influence stock market and generate herding behavior among investors[83]. In line with prior result, the Mongolian stock market were investigated during various periods full period, bull and bear market, high and low volatility. The test resulted the existence of herding behavior in all situations[79]. Also, the difference in gender and age may result in different behavior in herding. Women practice herds more than men. Furthermore, older investors perform fewer herds than young ones[78]. Other papers examining herding in the Chinese Stock Market conclude that some factors such as analyst recommendation, short-term investors horizon and risk may be the principal cause of herding[84]. Also, the domination of individual investors who lack professional knowledge and have restricted access to accurate information leads them to follow institutional investors' decisions. There are some factors which affect investors through herding by tending investors to herd in the stock market. One of these factors is overconfidence. Overconfidence and other behavioral pitfalls predominate significantly speculators' herding tendencies[85]. Ultimately, retail investors in emergent markets and developing countries tend more to herd as some restriction to access to information, their domination to stock market and weak regulations that protect market from this type of behavior. However, the situation might be different in the developed countries.

Several studies investigated herd behavior in developed countries, particularly in the US[86,47]. Christie and Huang[71] utilized cross sectional methodology to study herding in the US market and they end that there is no evidence of herding in the US market. In contrast to the prior studies, the determinants for investor decision have been examined for 50 countries. The study adopted the cross-sectional absolute deviation of

returns to test the existence of herding. The study concluded that there was an existence of significant herd behavior in 18 markets out of the whole sample particularly, low sophisticated markets and Confucian stock markets[86]. Ultimately, the popular result of testing herding in the US market is the presence of herding with different levels. In addition to the US market, European markets were targeted to examine the existence of herding for instance[87–90]. The existence of herding behavior was tested for several countries in Europe for the interval between 1998–2008. Among those countries, Italy and Greek markets have remarkable herding behavior[91]. Indeed, during the asymmetric market condition and the crises periods, the European Stock Market had herding[87]. In prior empirical studies, specific methodologies were utilized to measure herding in markets.

3. Significant of study

Review the literature for one of the most significant factors named herding, which is associated with market volatility, bubbles, crises and instability. Its existence among investors in the stock market is enough reason to review literature to highlight its impact for researchers, retail investors and authority.

3.1. Objectives

- To review the available literature about retail investors' herding.
- To determine trending as well as present some herding aspects that identified in the literature.

3.2. Gap of study

However, there is lack of studies that review literature of herding impact on retail investors in developed and development countries together. The majority of studies focus on one country. While there are enormous studies in the existing literature that concentrate on herding in particular stock or market in single country, future study might should conduct for aggregated stocks in numerous markets utilizing worldwide sample[92]. Therefore, this study attempts to fill this gap by reviewing the literature of several countries and various aspects for herding. The difference in efficiency and maturity between markets in the developed and developed countries will enrich the literature and provide more insight into herding in those markets.

4. Method and research strategy

Various activities were conducted to figure out relevant works that meet the paper objective. To write this article, several databases were employed such as Google scholar, Emerald, Elsevier, springer, ResearchGate and Scopus. The searching involved journal articles, review papers and conferences in English language for the period (1995–2021). However, it focused more on recent publications. This might shed light on the evolution in the literature for herding and its related factors. Moreover, the paper utilized the following keywords, herding, investors' sentiment and retail investors' decision. Similarly, the article employed the Prisma framework for a systematic literature review as it clarified in the below **Figure 1**.

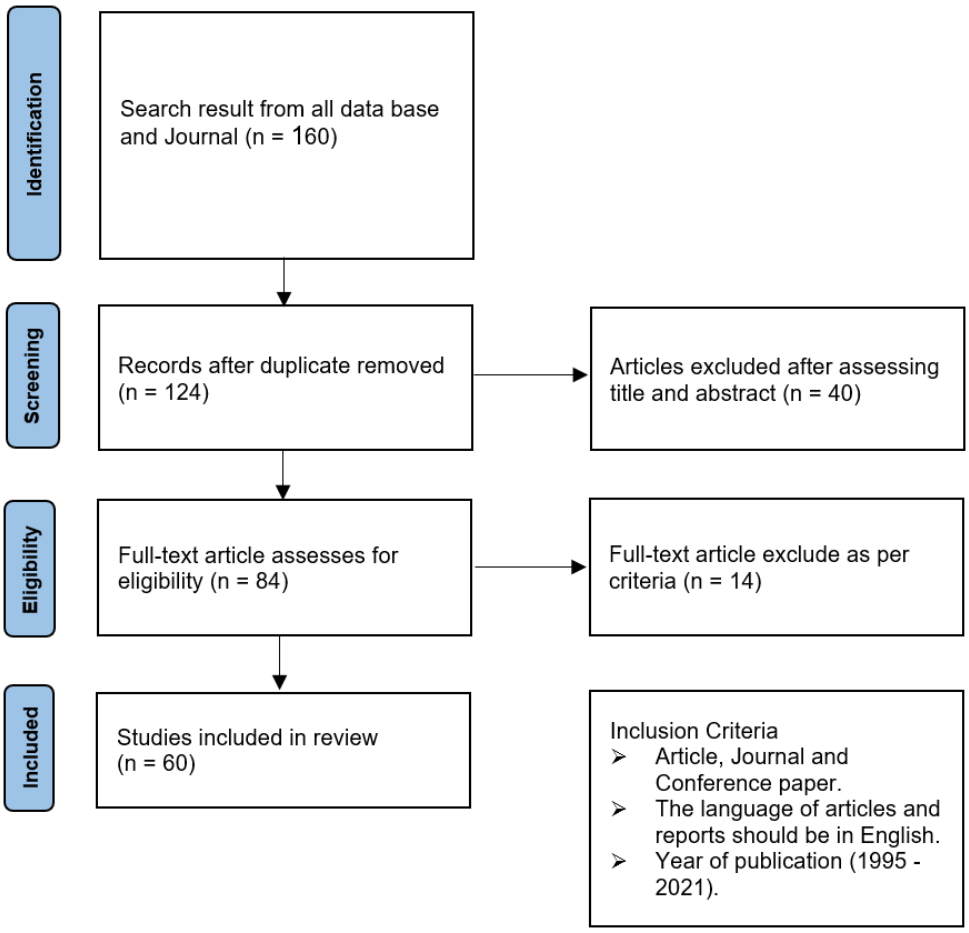

Figure 1. Prisma framework.

5. Findings and conclusion

The study aimed to review the current literature of retail investors herding for the period (1995–2021) as well as determine the trending and some aspects relate to herding. It relied on various resources and publications. The study found that the herding is one the crucial factors that impact retail investors decisions, so several papers and literature investigated its relationship and impact to gain more insight. Also, the author found that literature investigated and studied herding's relationship and impact from different aspects and in different domains. Furthermore, the most crucial aspects that papers focused more are remarkable contribution of herding on financial bubbles and crises, its role in increasing trading volume and volatility, its relationship with rationality as well as irrationality, drivers' factors to herding and its impact on retail investors decision. They found various reasons and drivers for herding such as information flow, uncertainty, market condition, Speculating small stock and market volatility. Particularly, transmission of information influence investors' sentiment which reflects on their decisions in stock market. Likewise, some literature revealed the difference between gender (male and female) toward herding. The paper observed that the majority of studies claimed that females are prone more than man to herding. The reasons behind that might be high confidence of male rather than female. Similarly, the paper mentioned some methodologies that are utilized in empirical studies as well as the evolution of implementation of these methodologies. Moreover, the author categorized empirical studies in the paper based on situation of country whether development or developed countries to shed light more on which class expose more to herding impact. The paper noticed that the majority of markets in developing countries are exposed to herding among retail investors. On the other hand, retail investors in developed countries tend less to herd as availability of information and their knowledge in stock price.

Ultimately, the current paper has highlighted that herding is a crucial factor that affects retail investors' decisions and causes financial bubbles and crises. Therefore, studying this factor and its related aspect needs to be conducted periodically to gain enough knowledge that assist authority to protect market from bubble and crises.

However, the study has some limitations that impact its result. First, the paper focused on retail investors' decision and neglect institutional investors which constitute the majority in developed countries. In the future, other studies might take into account both types of investors. Second, while the study focused more on stock markets, the future study may consider other markets such as real assets and crypto market to figure out impact of herding on these markets. Finally, whereas this study looked only on herding as behavioral factors, other study might be conducted on other behavioral variables such as investors sentiment and overconfidence.

This study will enrich the literature bout retail investors' herding and some of its aspects. Also, it might assist retail investors and stock market' regulator to be aware more about herding impact on retail investors' decision. Therefore, the CMA will take into account all these results when they prepare or modify regulations. Similarly, investors will keep their attention to herding as well as might utilize technical or fundamental analysis or rely on experts' recommendations when they make investment decision.

Conflict of interest

The authors declare no conflict of interest.

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