

Behavioral Biases and Investment Decisions: An Empirical Review.

Authors: ¹ Karimi Collins Wamae, ²Tabitha Nasieku, (PhD)

 Crossref DOI: [10.61108/ijsshr.v2i3.144](https://doi.org/10.61108/ijsshr.v2i3.144)

¹Scholar, Jomo Kenyatta University of Agriculture and Technology, Kenya

²Senior Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

ABSTRACT

Behavioral finance challenges the traditional assumption of rationality in investment decision-making, revealing how cognitive and emotional biases shape financial behavior. This study explores the influence of behavioral biases on investor decisions, particularly in volatile markets like the Nairobi Securities Exchange (NSE). Drawing on theoretical frameworks such as Decision Theory, Herd Behavior Theory, Prospect Theory, and Overconfidence Theory, the review examines how psychological biases diverge from classical finance principles. For instance, Prospect Theory highlights loss aversion, where investors disproportionately fear losses, leading to suboptimal decisions like premature selling of profitable assets or holding onto underperforming ones. Similarly, herd behavior amplifies market volatility as investors emulate majority actions, while overconfidence leads to excessive trading and risk-taking, undermining rational market engagement.

Empirical evidence corroborates these theoretical perspectives. Studies in developed and emerging markets, including the U.S., Lithuania, and Taiwan, demonstrate the prevalence of biases like overconfidence and loss aversion. Notably, Barber and Odean (2001) reveal that overconfident investors incur lower returns due to higher trade costs. In the context of the NSE, fluctuations in trading volumes and indices underscore the impact of biases, with the NSE 20 share index showing an 11% rise in 2019 and an 8% decline in 2018. This instability discourages consistent investor participation, emphasizing the need for bias mitigation strategies.

Critically, while behavioral finance offers robust insights into irrational investment behavior, its applicability to emerging markets like Kenya requires further exploration. Existing research predominantly focuses on developed markets, with limited contextualization for regions with unique economic dynamics. This study underscores the importance of addressing behavioral biases to enhance rational investment decision-making and foster stable financial market participation, particularly in developing economies.

Keywords: *Behavioral Biases, Overconfidence Bias, Herding Behavior, Loss Aversion Bias, Anchoring Bias, Investment Decisions*

APA CITATION;

Karimi, C. W., & Nasieku, T. (2024). Behavioral Biases and Investment Decisions: An Empirical Review. *International Journal of Social Science and Humanities Research (IJSSHR)* ISSN 2959-7056 (o); 2959-7048 (p), 2(3), 324–331. <https://doi.org/10.61108/ijsshr.v2i3.144>

1.0 INTRODUCTION

1.1 Background of the Study

According to Baker and Ricciardi (2014), behavioral bias is a systematic deviation from rational judgment in which investors act contrary to classical finance theories due to cognitive, emotional, or social influences. This bias manifest itself in investment decision-making as a tendency to make decisions based not only on logic or data-driven analysis, but also on heuristics, past experiences, or emotional reactions. Yes, it's how investor's finances make progress. In traditional finance theory, it is often presented as a rational exercise, based on the assumption that market players interpret information rationally to maximize profits (Daniel, Hirshleifer, & Teoh, 2018). Behavioral finance research suggests that investors' choices are often influenced by innate biases that hinder effective market performance and decision-making (Barberis, 2013; Thaler, 2016). Because these biases significantly impact an individual's or organization's risk profile and

Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 2, Issue 3, pp: (324-331), Month: September – December 2024, Available at: <https://researchbridgepublisher.com/>

financial outcomes, it is important to recognize and understand them (Statman, 2019).

The kind of finance known as traditional finance works under the assumption that those involved in investment are rational beings; it influences behavioral finance. However, Shefrin in a paper dated 2011 defined behavioral finance as the science of dealing with the impact of behaviors in the markets for financial assets. Unlike traditional theory, behavioral finance considers how psychological changes influence investor behavior, which often causes the market to deviate from predictable logic (Nofsinger, 2017). For example, loss aversion may cause investors to react undignifiedly to short-term market fluctuations and to alter their allocation policies in response to emotion rather than rationality (Barberis & Thaler, 2003). Traditional estimates of the rationality and predictability of economic behavior are subject to biases including confirmation bias, herd theory, and overconfidence, as documented by researchers such as Kahneman and Tversky (1979). As a result, in today's global financial markets, investment decision-making procedures based on estimates and market participants' vast knowledge are becoming increasingly unrealistic. Barber and Odean (1999), Huberman (2001), Pompian (2008), and Shefrin (2011) found that a person's psychological condition has an impact on their investment decisions. Various environmental variables (such as price volatility and economic shifts) have a substantial impact on investors' thoughts. People are constantly terrified of losing money, so they respond rashly to market swings, changing their long-term investing goals on the spur of the moment, and developing concerns about their investments. In situations where inefficient investments or escalating losses are the result, irrational decisions are widespread, lowering the number of people willing to invest. As a result, financial behavior is a science that investigates the complexities of market participants' behavior while also revealing their illogical decision-making motives, which may help to mitigate the impact of financial behavior on investment decisions and thus attract more people willing to participate.

The NSE 20 share index has risen and fallen in recent years. For example, in 2019, the average annual index was Ksh 345.6 billion, up 11% from the average annual index in 2011. The NSE share index dropped by 8% to Kshs 159.7 billion in 2018. The volume traded climbed by 17% to Kshs 186.7 billion in 2014, a significant rise over the previous year (Nairobi Securities Exchange, 2016). The data shows that the NSE's trading volumes have fluctuated over time.

In the financial literature, there are numerous traditional models (e.g., Efficient Market Hypothesis (Fama 1970), Modern Portfolio Theory (Markowitz 1952), and Capital Asset Pricing Theory (Jenson, Scholes, and Black 1972) concerning market drifts and people's behavior in their investment choices, and a large number of studies support them. In this regard, standard financial models assume that investors are rational people who, after collecting a vast quantity of data, submit it to numerical analysis to maximize the benefit they anticipate to receive.

Based on current studies in the field of finance, individual shareholders desire to rationally maximize their options in their investment selections, change their holdings, and decrease risks, but they fail to do so in their investments. As a result, human conduct does not always rely on the logical foundation provided by traditional financial models, and it may digress from reasonable behavior over time (Kahneman and Tversky 1979). Many significant variables are recognized to limit and steer individuals who participate in trading floors, hindering them from acting sensibly (Camerer 1995; Loewenstein 1999).

Psychological biases are one of the most important factors influencing investors' financial decisions (Camerer 1997; Bailey 2012; Breuer, Riesener, and Salzmann 2014). Due to psychological biases, people tend to make illogical conclusions based on feelings and intuition while making financial decisions. When compared to traditional finance, behavioral finance is predicated on the idea that investors are not rational. Behavioral finance, in contrast to traditional finance, is based on the notion that investors are irrational. Behavioral finance, which examines the

Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 2, Issue 3, pp: (324-331), Month: September – December 2024, Available at: <https://researchbridgepublisher.com/> psychological biases that impact investor financial investing decisions, backs up this assertion (Jureviciene and Jermakova 2012). This assumption is consistent with both classical and neoclassical finance theories, which are widely used in financial analysis. By integrating mentality and finance, many challenges to traditional theory are addressed from this perspective (Parker 2014; Siddiqui and Singh 2009). Over the last few years, business models have appeared in the literature that take these factors into account in an attempt to help investors make better judgments by creating control over psychological biases (Bruni and Sugden 2007).

The problem of behavioral biases hindering rational investment decision-making is addressed in this study, especially in volatile market environments such as the Nairobi Securities Exchange (NSE). Traditional finance theories encourage rationalization, but biases such as herd mentality, loss aversion, and overconfidence tend to deflect investor behavior from this, leading to inefficient financial outcomes (Kahneman & Tversky, 1979; Barberis, 2013). To show investor sentiment and quick reactions to market fluctuations, NSE's average index rose 11% in 2019 and fell 8% in 2018 (Nairobi Securities Exchange, 2016). These actions undermine public confidence in the market and inhibit their continued participation. To promote stable and visible market participation, there is a need to understand the extent to which bias affects investment behavior (Statman, 2019; Daniel & Titman, 2020)

1.2 Research Hypothesis

- H₀₁: Overconfidence does not have a significant effect on the investment decisions.
- H₀₂: Herding behavior does not have a significant effect on investment decisions.
- H₀₃: Anchoring does not have a significant effect on investment decisions.
- H₀₄: Loss aversion does not have a significant effect on investment decisions.

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

The study focused mainly on four theories to examine whether behavioral bias affects the investment decision. These are Decision Theory, Herd Behavior Theory, Prospect Theory, and Overconfidence Theory. Decision theory provides a basis for studying decisions in the face of uncertainty. It was first formulated by Wald (1945) and extended to economics by Savage (1954). It reflects how people assign subjective probability to events based on preferences and perceived risks (Savage, 1954). According to this theory, investor decisions are more influenced by regret and loss aversion rather than mere rationality, leading to the prioritization of loss avoidance over potential gains (Kahneman & Tversky, 1979).

Banerjee (1992) proposed herd behavior theory which suggests that people largely imitate majority behavior in economic situations because they believe others are smarter than themselves in markets. Collective decision-making brought about by this propensity to "follow the crowd" has the potential to worsen market downturns or produce bubbles (Banerjee, 1992). Herding behavior illustrates how widespread investor optimism or fear can magnify price movements in markets like the NSE as investors give up their judgment in favor of group agreement.

The prospect theory that Kahneman and Tversky put forward in 1979 tries to address the way that individuals make decisions regarding the risks they face and shows that these people are apt to be overly sensitive to gains and losses. Prospect theory also predicts that the pain of loss outweighs the pain of relative gain, which is contrary to conventional finance theories. This loss aversion causes investors to sell successful investments too early to make a profit for fear of losing money or hanging on too long for failed investments.

Roll (1986) introduced the theory of overconfidence in economic analysis, and Barber and Odeon (2001) developed it further. According to the prevailing view, overtrading and risk-taking are the result of investors consistently overestimating their knowledge and ability to forecast market movements (Barber & Odean, 2001). Investors often overlook data-driven strategies in favor of convenience due to this overconfidence, creating a gap between their perceived ability and actual ability.

In addition to the theories discussed above, empirical literature also provides contradicting evidence as to how behavioral bias affects investment decisions. Shefrin and Statman (2000) studied investors in mutual funds in the United States and examined the effect of behavioral biases on investment decisions. The exception includes assessing psychological accountability, overconfidence, and loss aversion in a mutual fund investor accounting sample. They found that these biases often lead investors to make maladaptive decisions, such as holding underperforming stocks due to loss aversion.

Barber and Odean (2001) looked at how overconfidence affects American entrepreneurial behavior. This research paper has explored a large universe of investors across the range of seven years with a sample of more than sixty thousand retail investments. Because of lower returns from higher trade costs and worse investment choices, they found that overconfident investors were more likely to trade than underconfident ones.

The second body of work relating to behavioral finance is Baker & Wurgler's (2007) study of over-optimism. Their 30-year study looked at the relationship between investor sentiment and market cycles in the US. The study concluded that emotional biases, such as herd mentality and overconfidence, often lead to mispricing of assets, jumps, and crashes based on historical details from stock market indices.

Tseng (2006) examined the role of overconfidence among Taiwanese investors with an emphasis on emerging markets. 300 retail investors participated in the survey, which showed that overconfidence is higher in optimistic markets. This allowed investors to overtrade, increased risk exposure, and eliminated many losses. Tseng's results validate the notion that overconfidence biases are prevalent across different market structures and economic environments, making them central when analyzing investor behavior in markets that now are developing like the NSE, where market volatility erodes the effect of overconfidence.

Jurevisien and Jermakova (2012) observed how psychological biases affect the choices of Lithuanian investors. As part of the study, 50 investors were selected for in-depth interviews, which examined loss aversion, psychological estimation, and overconfidence biases. Their study revealed that Lithuanian investors were profit-averse and tended to hold on to failing assets because they were loss-averse, which is consistent with findings in other sectors.

Joireman et al. (2010) study looked at the short-term and long-term perspectives of investors in East Africa, including Kenya. Using a sample of 200 investors from Nairobi, Kampala, and Dar es Salaam, the study found that East African investors tend to make rash investment decisions due to psychological biases such as short-termism and loss aversion.

Statman (2019) extends the scope of behavioral finance by examining the use of behavior-based portfolio selection by global investors. 1,500 investors from a variety of countries participated in this study, which examined how biases such as risk aversion and optimism affect stock choices. Investors often give up on the best variety because of bias, according to Statman, who also suggested that psychological traits greatly influence a portfolio formation and diversification decisions. Jegadeesh and Titman (2001) used historical stock data to examine herd behavior and

Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 2, Issue 3, pp: (324-331), Month: September – December 2024, Available at: <https://researchbridgepublisher.com/>
momentum techniques in U.S. stock markets over 20 years. The study discovered that momentum investing, in which investors follow rising stocks based on collective behavior rather than independent analysis, is influenced by herd mentality.

Schiller (2003) used historical data from significant economic bubbles to investigate irrational growth in asset markets. Even though the study focused on American markets, Shiller's findings on speculative jumps from overconfidence and herd thinking are universally applicable. According to the study, asset prices' inability to keep up and their subsequent collapse is due to irrational progress, fueled largely by psychological biases.

3.0 CRITICS OF THE LITERATURE

A fundamental explanation of how biases like loss aversion, groupthink, and overconfidence affect investment decisions is provided by behavioral finance theories like Prospect Theory, Herd Behavior Theory, Overconfidence Theory, and Decision Theory. These theories are generally supported by empirical research, especially in developed markets where irrational investing patterns are caused by biases including overconfidence and loss aversion (Shefrin & Statman, 2000; Barber & Odean, 2001). Critiques, however, surface as empirical data from developing markets, including Taiwan (Tseng, 2006) and Kenya (Nairobi Securities Exchange, 2016), demonstrates that these biases appear differently in various economic and cultural contexts and are frequently impacted by variables such as investor experience and market volatility. This implies that even if these theories are broadly relevant, they would need to be modified to account for the subtleties of investor behavior in various markets.

Although these theories explain why biases arise, they frequently do not offer helpful advice for reducing these biases in actual investing, according to other criticisms. For instance, Prospect Theory and Overconfidence Theory draw attention to the negative effects of excessive trading and loss aversion, but they offer no practical ways for investors to combat these tendencies. The universal applicability of herding and familiarity biases is further complicated by the fact that, despite their well-established nature, research like Huberman (2001) shows that individual preferences can occasionally take precedence over group behavior. Therefore, whereas behavioral finance theories provide useful frameworks, their applicability in a variety of financial circumstances may be enhanced by a more adaptable approach that includes useful techniques for managing bias.

4.0 CONCLUSION

In conclusion, there is empirical evidence that behavioral biases like herding, loss aversion, and overconfidence have a big impact on investor decision-making. These biases frequently result in irrational investment behaviors, which lead to suboptimal portfolio performance and market volatility, according to studies done in both established and emerging markets (Barber & Odean, 2001; Shefrin & Statman, 2000). Findings from a variety of settings, such as the NSE and other emerging markets, show that these biases do not all function in the same way. Although behavioral finance theories are generally applicable, they must be modified to take into account particular economic situations since cultural and market-specific factors influence how biases appear.

Furthermore, even though these theories offer useful frameworks for comprehending investor conduct, they frequently lack workable solutions to assist investors in reducing these biases. The results point to a chance to create more flexible models and instruments that provide practical advice on how to handle biases in particular market situations. Market stability and investment results may be improved by including useful tactics like investor education and customized bias-

Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 2, Issue 3, pp: (324-331), Month: September – December 2024, Available at: <https://researchbridgepublisher.com/>
reduction technologies. In the end, recognizing and resolving these biases is crucial to encouraging more logical decision-making, especially in unstable or developing markets.

The following conceptual framework, drawn from the above literature review, explains the relationship between behavioral biases and investment decisions.

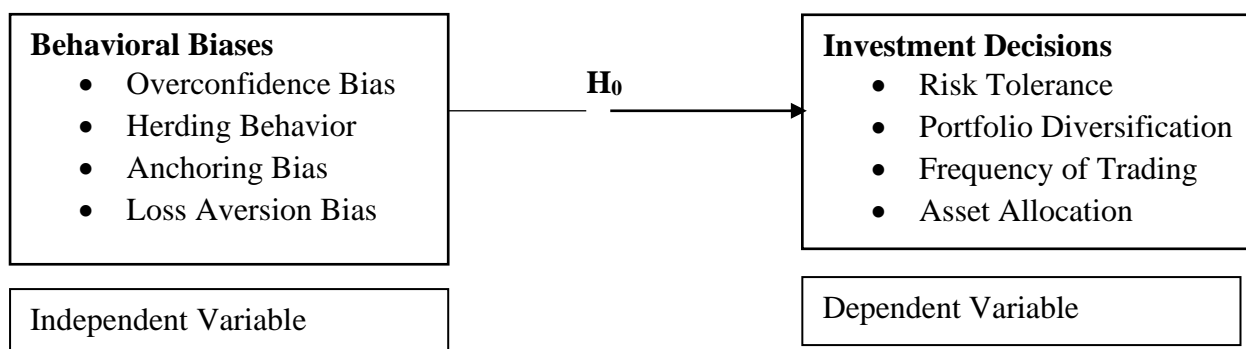


Figure 1: Conceptual Framework

In the above conceptualization, the independent variable is behavioral biases. Behavioral biases will be measured using overconfidence, herding behavior, and anchoring. Overconfidence is a psychological tendency that leads an investor to overestimate a parameter and suppose that an individual's assessments are flawed. One would never discover the proper distribution with those conclusions (Dubra, 2004). Overconfidence has been found to cause typical mutual fund managers to underperform the market (Gruber, 1996). A regular occurrence in the financial market is herding. Human nature frequently refers to, observes, and mimics the actions of others when financial markets are volatile (Yu, Dan, Ma, & Jin, 2018). When herding is present, investors make irrational investing decisions. When making financial decisions, they would rather adopt the views and beliefs of other investors. Investors therefore tend to follow others and exercise restraint while making judgments. The herding effect is more pronounced when there are market-distressing events such as price bubbles, rumors, or market abnormalities (Mertzanis & Allam, 2018). According to Philippas, Economou, Babalos, and Kostakis (2013), herding is viewed as a collective imitation that results in a convergence of motions. One of the best studied psychological biases is anchoring (Shin & Park, 2018).

Anchoring bias influences how investors make decisions (Wright & Anderson, 1989). According to Shin and Park (2018), Maqsood Ahmad and Syed Zulfiqar Ali Shah (2018), and Singh (2016), anchoring is a cognitive bias that explains why the average person tends to rely heavily on the initial piece of information while making judgments. It's possible that investors will base their stock purchases on the stock's most recent peak price. According to Krause, Shiller, Shleifer, Wilcox, and Shiller (1970), investors' inefficient decision-making processes are linked to anchoring bias, as demonstrated by such behavioral reactions. According to Pelster and Hofmann (2018), loss aversion, also known as the disposition effect is the tendency of investors to forego recognized losses in the hope of realized profits. The difference between the proportion of realized profits and the fraction of realized losses is the disposition effect, according to Odean (1999); Odean, Strahilevitz, and Barber (2010). The disposition effect is the term used to describe investors' propensity to cling onto losses to prolong and sell gains in investments too soon. According to Aspara and Hoffmann (2015), the disposition effect has a negative impact on an individual's investment since successful investments often continue to outperform while failing investments typically continue to underperform. The disposition effect is unaffected by

Research Bridge Publisher, International Journal of Social Science and Humanities Research, Vol. 2, Issue 3, pp: (324-331), Month: September – December 2024, Available at: <https://researchbridgepublisher.com/>
experimental manipulations of anticipated future profits or losses, according to researchers (H.-J. Lee, Park, Lee, & Wyer, 2008).

The above conceptualization also shows the dependent variable which is investment decisions reflecting choices made by investors that impact their financial outcomes. The efficacy of these choices will be evaluated by investment performance, which measures returns, risk-adjusted returns, and portfolio growth (Statman, 2019). According to Daniel and Titman (2020), investment performance is a measurable metric that provides information about how well decisions match investors' financial objectives and market possibilities. This strategy is in line with current research that shows behavioral biases cause differences in performance results (Bailey, Kumar, & Ng, 2019).

REFERENCES

- [1]. Aspara, J., & Hoffmann, A. O. I. (2015). Selling losers and keeping winners: How (savings) goal dynamics predict a reversal of the disposition effect. *Marketing Letters*, 26(2), 201-211. <https://doi.org/10.1007/s11002-013-9275-9>
- [2]. Bailey, W., Kumar, A., & Ng, D. (2019). Behavioral biases of mutual fund investors. *Review of Finance*, 23(2), 385-420.
- [3]. Baker, H. K., & Ricciardi, V. (2014). *Investor behavior: The psychology of financial planning and investing*. John Wiley & Sons.
- [4]. Baker, M., & Wurgler, J. (2007). Investor sentiment in the stock market. *Journal of Economic Perspectives*, 21(2), 129-151.
- [5]. Banerjee, A. V. (1992). A simple model of herd behavior. *The Quarterly Journal of Economics*, 107(3), 797-817.
- [6]. Barber, B. M., & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *The Quarterly Journal of Economics*, 116(1), 261-292.
- [7]. Barberis, N. (2013). Thirty years of prospect theory in economics: A review and assessment. *Journal of Economic Perspectives*, 27(1), 173-196.
- [8]. Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128.
- [9]. Daniel, K., & Titman, S. (2020). Market reactions to tangible and intangible information. *Journal of Financial Economics*, 137(2), 371-387.
- [10]. Daniel, K., Hirshleifer, D., & Teoh, S. H. (2018). Investor psychology in capital markets: Evidence and policy implications. *Journal of Monetary Economics*, 86, 56-76.
- [11]. Dubra, J. (2004). Optimism and overconfidence in search. *Review of Economic Dynamics*, 7(1), 198-218. [https://doi.org/10.1016/S1094-2025\(03\)00036-X](https://doi.org/10.1016/S1094-2025(03)00036-X)
- [12]. Gruber, M. J. (1996). Another Puzzle: The Growth in Actively Managed Mutual Funds. *The Journal of Finance*, 51(3), 783-810. <https://doi.org/10.2307/2329222>
- [13]. Jegadeesh, N., & Titman, S. (2001). Profitability of momentum strategies: An evaluation of alternative explanations. *Journal of Finance*, 56(2), 699-720.
- [14]. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292.
- [15]. Krause, M., Shiller, V., Shleifer, A., Wilcox, D., & Shiller, R. J. (1970). Human Behavior and the Efficiency of the Financial System. *Handbook of Macroeconomics*, 1-34.
- [16]. Lee, H.-J., Park, J., Lee, J.-Y., & Wyer, R. S. (2008). Disposition Effects and Underlying Mechanisms in E-Trading of Stocks. *Journal of Marketing Research*, 45(3), 362-378. <https://doi.org/10.1509/jmkr.45.3.362>
- [17]. Lo, A. W. (2019). *Adaptive markets: Financial evolution at the speed of thought*. Princeton

- [18]. Mertzanis, C., & Allam, N. (2018). Political Instability and Herding Behaviour: Evidence from Egypt's StockMarket. *Journal of Emerging Market Finance*, 17(1), 29-59. <https://doi.org/10.1177/0972652717748087>
- [19]. Nairobi Securities Exchange. (2016). Annual report. Nairobi: NSE.
- [20]. Nofsinger, J. R. (2017). *The psychology of investing*. Routledge.
- [21]. Odean, T. (1999). Do investor trade too much. *American Economic Review*.
- [22]. Odean, T., Strahilevitz, M. A., & Barber, B. M. (2010). Once Burned, Twice Shy: How Naïve Learning, Counterfactuals, and Regret Affect the Repurchase of Stocks Previously Sold. SSRN.
- [23]. Pelster, M., & Hofmann, A. (2018). About the fear of reputational loss: Social trading and the disposition effect. *Journal of Banking and Finance*, 94, 75-88.
- [24]. Philippas, N., Economou, F., Babalos, V., & Kostakis, A. (2013). Herding behavior in REITs: Novel tests and the role of financial crisis. *International Review of Financial Analysis*, 29, 166-174. <https://doi.org/10.1016/j.irfa.2013.01.004>
- [25]. Pompian, M. M. (2012). *Behavioral finance and investor types: Managing behavior to make better investment decisions*. John Wiley & Sons.
- [26]. Shefrin, H. (2011). *Behavioral finance: Investors, corporations, and markets*. Oxford University Press.
- [27]. Shefrin, H., & Statman, M. (2000). Behavioral portfolio theory. *Journal of Financial and Quantitative Analysis*, 35(2), 127-151.
- [28]. Shin, H., & Park, S. (2018, April). Do foreign investors mitigate anchoring bias in stock market? Evidence based on post-earnings announcement drift. *Pacific Basin Finance Journal*, 48, 224-240. <https://doi.org/10.1016/j.pacfin.2018.02.008>
- [29]. Singh, S. (2016). The Role of Behavioral Finance in Modern Age Investment. *Pacific Business Review International*, 1(1), 234-240.
- [30]. Statman, M. (2019). *Behavioral finance: The second generation*. CFA Institute Research Foundation.
- [31]. Thaler, R. H. (2016). *Misbehaving: The making of behavioral economics*. W. W. Norton & Company.
- [32]. Tseng, C. Y. (2006). Behavioral finance, bounded rationality, neuro-finance, and traditional finance. *Investment Management and Financial Innovations*, 3(4), 7-18.
- [33]. Wright, W. F., & Anderson, U. (1989, December). Effects of situation familiarity and financial incentives on use of the anchoring and adjustment heuristic for probability assessment. *Organizational Behavior and Human Decision Processes*, 44(1), 68-82. [https://doi.org/10.1016/0749-5978\(89\)90035-6](https://doi.org/10.1016/0749-5978(89)90035-6)
- [34]. Yu, H., Dan, M. H., Ma, Q., & Jin, J. (2018, May). They all do it, will you? Event-related potential evidence of herding behavior in online peer-to-peer . *Neuroscience Letters*, 681, 1-5. <https://doi.org/10.1016/j.neulet.2018.05.021>