Understanding the Behavioral Finance: Analysis of Investment Decisions of Investors

[*1]Nur Samsi,[2]**Fitrawati,**[3]**Avinash Pawar**

*[*1]Accounting Study Program, STIE Nahdlatul Ulama Trate,Gresik,Indonesia*
[2]Public Administration Study Program, Universitas Muhammadiyah Sinjai,Sinjai,Indonesia
[3]DY Patil Institute Management Studies, Pune, India

Author's email:
[1]nursamsisofi@gmail.com;[2] fitrawatiab67gmail.com; dr.avinashpawar@outlook.com

**Corresponding author: [1]nursamsisofi@gmail.com*

Abstract. *Behavioral financing is an evolving field that studies how psychological factors affect decision taking under uncertain conditions. Behavioral finance is one of the important topic for us to know about the mindsets of the people about how they think of various things when they invest in various investment avenues. Through this research we came to know about the mentality of the people while they invest in various investment avenues. I.e. what do they think while investing. This paper seeks to find out the major influence of certain behavioral finance concepts such as overconfidence, perception, Representative, anchoring cognitive Dissonance, Regret Aversion, narrow framing and mental accounting on the decision-making process of individual investors in stock market. We conducted primary research by framing a structured questionnaire and by collecting sample of 201 investors of Jakarta. The primary objective was to know effects of behavioral financing on investors and to study the impact and relevance of behavioral financing in investment decision of investors. Whereas secondary objective of our study was to know factors influencing the investors while investing and to study the concepts of behavioral financing and various theories related to it.*

Keywords: *Behavioral Finance; Mental Accounting; Investment; Psychological Factors*

1. INTRODUCTION

Field of finance is basically about decision making as to investment decision, working capital decision, dividend decision and fund allocation decision whereas field of economics is about decision making as to what to produce, how to produce and for whom to produce. In the same way, the emerging field of behavioral finance also deals with the complex activity of decision making. Though the fields of economics and finance have contributed many theories over the years, it could not explain why people sometimes take irrational financial decision. There are studies in the field of finance which gives us theories with explanation and proofs about how market operates and how the investors take their investment decisions. They explain the dynamics of investment and rules to apply for investment decision. The rules seem to be simple but investor's feels difficulty in applying those rules. Due to inefficiency in applying rules, investor's trade too much, buy or sell at wrong time, allow emotions to overrule logic and misjudge probabilities. The finance field was reluctant to accept the view of psychologists who proposed the behavioral finance model. Indeed, the early proponents of behavioral finance were regarded as heretics. As the evidence of the influence of psychology and emotions on decisions became more convincing, behavioral finance has received greater acceptance. Although there is disagreement about when, how, and why psychology influences investment decisions, the award of 2002 Nobel Prize in economics to psychology Daniel Kahneman and experimental economist Vernon Smith is seen as a vindication of the field of behavioral finance.

Traditional Finance vs Behavioral Finance

The key difference between the traditional finance and behavioral finance are as follows:

Traditional Finance

- Assumes that people process data approximately and correctly.
- Presupposes that people view all decisions through the transparent and objective lens of risk and return.
- Assumes that people are guided by reasons and logic and independent judgment.
- Argues that markets are efficient implying that the price of each security ia an unbiased estimate of its intrinsic value.

Behavioral Finance

- It recognizes that people employ imperfect rules of thumb to process.
- It recognizes that emotions and heard instincts play an important role in influencing decisions.
- It suggests that the perceptions of risk and return are influenced by how decisions problem is framed.
- Argues that there is lack between market price and fundamental value are often caused by behavioral biases and errors, frame dependence effects, emotions and social influences.
- It arrives that prices are pushed by investors to unsustainable levels in both directions.

Behavioral Finance

Behavioral finance, a sub-field of behavioral economics, proposes psychology-based theories to explain stock market anomalies, such as severe rises or falls in stock price. The purpose is to identify and understand why people make certain financial choices. Within behavioral finance, it is assumed the information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes.

Behavioral Finance Biases

Overconfidence

People tend to be overconfident and hence overestimate the accuracy of their forecasts. Overconfidence stems partly from the illusion of knowledge. The human mind is perhaps designed to extract as much information as possible from what is available, but may not be aware that the available information is not adequate to develop an accurate forecast in uncertain times.

Anchoring

After forming an opinion an opinion, people are often unwilling to change it, even though they receive new information that is relevant. Suppose that investors have formed an opinion that A company has above average long-term earnings prospect. Suddenly, A reports much lower earnings than expected.

Familiarity

People are comfortable with things that are familiar to them. The human brain often uses the familiarity shortcut in choosing investments. Indeed, familiarity breeds investment. That is why people tend to invest more in the stocks of their Employer Company, local company and domestic companies.

Conformation Bias

People tend to overlook information that is contrary to their views in favour of information that confirms their views. Investors often only hear what they want to hear. They spend more time searching for reasons supporting their views and less time searching for reasons opposing their views.

Innumeracy
People have difficulty with numbers. People confuse between nominal changes and real changes. Economists call this money illusion. People have difficulty in figuring out the true probabilities. Put differently the odds are that they don't know what the odds are. People tend to pay more attention to big numbers and less weight to small figures.

Frame Dependence
Prospect Theory
Proposed by Kahneman and Tversky, prospect theory, perhaps the most important concept of behavioral finance, provides an alternative description of how people frame and value a decision involving uncertainty. Under this description, utility does not depend on the level of the wealth as in standard traditional theory, but on changes in the wealth from the current level. The utility function is concave foe gains.

Mental Accounting
Traditional finance holds that wealth in general and money in particular must be regarded as fungible and every financial decision should be based on a rational calculation of its effects on overall wealth position. In reality, however, people do not have the computational skills and will power to evaluate decision in terms of their impact on overall wealth.

Narrow Framing
Ideally investors should pay attention to changes in their total wealth. Narrow framing in the cross sectional sense means that investors tend to look at each investment separately rather than the portfolio in its reality. Hence they are more focused on price changes in individual stocks and less concerned about the behavior of the overall portfolio.

Shadow of the Past
After experiencing a gain, people are willing to make more risk. After winning money in a gamble, amateur gamblers somehow don't fully consider the winning as their own and are hence are tempted to risk it in further. Gamblers refer to this as the house money effect. After incurring a loss, people are less inclined to take risk. This is sometimes referred to as the snake bite effect. A loss is akin to a snake bite that makes a person more cautions.

Emotional and Social Influences
Emotional Effect
Emotions have a bearing on risk tolerance and risk tolerance influences portfolio selection. Investors have a variety of emotions as they consider alternatives, decide how much risk to take, watch their decisions play out, assess whether the initially strategy needs modification, and finally learn how far they have succeeded in achieving their financial objectives.

Heard Instincts / Information Cascade
There is a natural desire on the part of human beings to be a part of a group. So people tend to herd together. Moving with the herd, however, magnifies the psychological biases. It induces one to decide on the feel of the herd rather than on rigorous independent analysis. This tendency is accentuated in the case of decision involving high uncertainty.

2. LITERATURE REVIEW

In this research paper Behavioral finance argues that some financial phenomena can plausibly be understood using models in which some agents are not fully rational. The field has two building blocks: limits to arbitrage, which argues that it can be difficult for rational traders to undo the dislocations caused by less rational traders; and psychology, which catalogues the kinds of deviations from full rationality we might expect to see (Barberis, 2002). This article presents a new approach in the analysis of capital markets, namely behavioral finance. Behavioral finance is the study of the influence of the psychological factors on financial markets evolution (Birău,no date). Investments in renewable energy (RE) technologies are regarded with increasing interest as an effective means to stimulate growth and accelerate the recovery from the recent financial crisis (Masini, 2012). This article provides econometric evidence on the importance of psychological considerations for aggregate stock price fluctuations. To this end, a novel measure of stock market sentiment, dubbed the Net Psychology Index (NPI), based on information contained in Bloomberg News's end-of-the-day stock market reports, is confronted with a battery of multivariate empirical analyses (Mangee, 2017). Most large stock price shocks are not accompanied by publicly available information. Then, what other information do investors use to set prices? The authors find that investors rely on reference points and their private information signals (Brady, 2018).

3. RESEARCH OBJECTIVES

Primary Objective

To study the impact and relevance of behavioral financing in investment decision of investors

Secondary Objectives

To study various factors influencing the investors while investment decisions and to know the preference of people towards investing.

Scope of Study

- Scope of study is limited to Jakarta city of Indonesia
- Scope includes the investors of all age groups.
- The study was limited to some theories only.

Research Design

The type of research design that we are using here is descriptive design because is used to describe characteristics of a population or phenomenon being studied.

Data Collection Sources

- *Primary Data*: Here in this research the following methods of data collection are used: schedules, questionnaire, interview, observation methods.
- *Secondary Data*: Internet, Books, Newspaper, Articles, magazines and blogs are some of the sources of secondary data collection that we have used for our research.

Sampling Plan

- Population : People of Jakarta city
- Sampling frame : People who invest
- Sampling method : Convenience sampling
- Sampling size : 201 people

Expected Contribution

- The relevance of behavioral financing and its importance in making investment decision can be known.
- The research will enrich the knowledge about traditional finance and different aspects of behavioral finance.

- The research can be beneficial to other researchers.

Data Analysis

Bi-Varient Analysis

1. Do You Think That You Have Sufficient Knowledge About It? *Education

Case Processing Summary								
Do you think that you have sufficient knowledge about it? *Education Crosstabulation								
		Education						Total
		Under Graduate	Graduate	Post Graduate	Professional	PhD	Others	
Do you think that you have sufficient knowledge about it?	Yes	7	46	47	10	3	3	116
	No	5	43	27	10	3	5	85
Total		12	83	74	20	6	8	201

Out of total respondents, 58% of under graduate, 66% of graduate, 63% of post graduate and 62% of professional think that they have the sufficient knowledge about investing. The level of education and the overconfidence bias was compared here to check whether there is any relationship between education level and overconfidence. It shows that the graduate people are the people with the highest level of overconfidence bias and it can be said that people who are educated has more overconfidence bias to predict the market compared to people who are less educated.

2. When It Comes to Decisions Related to Investments, You Rely More on Your Intutions and Gut Fellings *Gender

When it comes to decisions related to investments, you rely more on your institutions and gut fellings *Gender Crosstabulation				
		Gender		Total
		Female	Male	
When it comes to decisions related to investments, you rely more on your intutions and gut fellings/	Yes	50	59	109
	No	50	52	92
Total		100	101	201

Out of total respondents, 62% of female and 54% male rely on their intution and gut feeling while making investment decision. The comparison was made with gender and emotional bias. So it can be said that female rely more on their intution and gut feeling while making investment decision. Female gender is more prone to emotional bias as compared to males.

3. Suppose You Have Bought the Shares of ABC Ltd, Then Will You Give More Importance to the Positive News Related With ABC Ltd. *Age

Suppose you have bought the shares of ABC Ltd, then will you give more importance to the positive news related with ABC Ltd. *Age Crosstabulation							
	Age						Total
	18-25	25-35	35-45	45-55	55-65	>65	

Suppose you have bought the shares of ABC Ltd, then will you give more importance to the positive news related with ABC Ltd.	Yes	21	30	56	40	7	8	162
	No	6	5	8	9	7	4	39
	Total	27	35	64	49	14	12	201

Out of total respondents, 95% of people of the age 18-25, 85% of people of the age 25-35, 93% of people of the age 35-45, 85% of people of the age 45-55, 100% of people of the age 55-65 and 80% of people of the age more than 65 give more importance to the positive news related to their investments. Here relationship between conformation bias and age was studied and it was concluded that there is no relationship between conformation bias and age of the investors. Conformation bias can occur to any investors irrelevance of age.

4. If Your Investment is Showing Loss, Will You Hold it for Recovering the Loss? Occupation?

If your investment is showing loss, will you hold it for recovering the loss? *Occupation Crosstabulation

Count

		Occupation					Total
		Service	Business	Self Employed	Retired	Home Maker	
If your investment is showing loss, will you hold it for recovering the loss?	Yes	59	23	16	6	30	134
	No	27	7	12	10	11	67
Total		86	30	28	16	41	201

Out of total respondents, 67% of service, 76% of business , 70% of self-employed, 54% of retired and 64% of home makers will hold their loss showing investment to recover the losses. Here the relationship between the trying to break even effect and occupation is studied. It can be analysed that business and self-employed people are most affected by trying to break even effect and retired people are least affected by it. Business and self-employed people are the people who take higher risk than other occupations.

Hypothesis Testing

H0: There is no influence of behavioral finance on investment decisions

H1: There is influence of behavioral finance on investment decisions

Theory	Level of Percentage
1. Overconfidence	66%
2. Innumeracy bias	39%
3. Mental Accounting	54%
4. Narrow Framing	22%
5. Confidence Bias	91%
6. Prospect Theory	74%
7. Anchoring Theory	34%

8. Familiarity with investment	69%
9. Heard instinct/Information cascade	47%
10. The shadow of the past	41%
11. Trying to break even effect	79%
12. Emotional effect	47%

So from the above table it can be concluded that the theories of behavioral financing holds true.
H1: is accepted
There is influence of behavioral financing n investment decisions on investors

Mean and Standard Deviation Table

Theory	Question	Mean	Std. Deviation
Overconfidence	Do you think that you have sufficient knowledge about it?	1.3655	.46107
Innumeracy	From the following two options which one will you choose?	1.6598	.49563
Mental Accounting	Suppose you have invested Rs 1 lac in equity, Rs 1 lac in bond and if there is news in bond market then will it affect your buying and selling decision in equity?	1.4409	.50658
Narrow Framing	You tend to react strongly on short term changes in price of investments?	2.8017	1.14320
Conformation bias	Suppose you have bought the shares of ABC Ltd, then will you give more importance to the positive news related with ABC Ltd.	1.1350	.37737
Prospect Theory	You have given Rs. 1 lakh and is asked to choose between two options. Which will you choose?	1.2934	.49604
Prospect Theory	You have given Rs. 2 lakh and are asked to choose between two options. Which will you choose?	1.6643	.58564
Anchoring	Do you prefer to keep holding onto investments even if there past performance is not very encouraging?	1.6193	.55101
Familiarity Bias	From the following two options which would you prefer?	1.3560	.57004
Heard instincts/Conformation bias	Your friend has invested in some investment avenue for short term and have earned 60% return on investment will you invest in same investment alternative by his/her advice?	1.5614	.49166
Heard instincts/Conformation bias	Do other investor's decisions of buying and selling make impact on your investment decisions?	1.6414	50966
Heard instincts/Conformation bias	Do the expert opinion/ survey/analyst forecasted in news/media have any impact on your buying and selling decisions	1.3155	.51229
The shadow of the past	You have invested in stock of ABC ltd. for some period of time and you have earned good amount of return in past, will you agree to	3.5387	1.62231

	invest in same stock on the basis of your past experience?		
Trying to reach break even point	If your investment is showing loss, will you hold it for recovering the loss?	1.5149	.49577
Emotional Bias	When it comes to decisions related to investments, you rely more on your intuitions and gut feelings/	1.6254	.50578

- The mean of the overconfidence question is 1.3 which means more people have chosen yes to the answer and the people face overconfidence bias.
- In rating the attributes from 1 lowest to 5 highest the mean of financial advisor return past experience, familiarity, goals and research about investment is more than three which means people consider them or give importance to them before investing.
- The mean of the question of innumeracy is 1.6 which says that people have highly choosen bigger number than the calculative more return due to which the theory of innumeracy holds true.
- In the question of conformation bias the mean is 1.4 which states that the frequencies are equally distributed and people are more neutral about it.
- In the question of familiarity the mean is 1.3 which means that people choose familiarity of investment over more returns.
- In the question of conformation bias the mean is 1.5 which means that frequency is equally distributed and people are more neutral about it.
- The mean of the question of past experience is 3which means people are neutral about the importance to the past experience.
- In the question of trying to reach break-even point the mean is 1.3 which tells that people are highly affected by the bias of trying to reach breakeven point.
- In the question of emotional bias, the mean is 1.4 which tells that people are highly affected by the emotional bias while making an investment decision.

CONCLUSION

The objective of this study was to check the relevance of the behavioral finance theories and if the average individual investor participating in the investments market of the Jakarta city is always rational or not. The focus was is on the behavioral biases namely: overconfidence, anchoring, familiarity, conformation bias, innumeracy, prospect theory, mantel accounting, narrow framing, shadow of past, emotional bias and information or heard instinct. Effects of the above biases on the decision-making process of the investors of the Jakarta city was studied and analyzed. Data collection was done through questionnaire and 181 responses were obtained from individual investors. The study found out that investors are not rational and there is always the effects of above biases in more or less proportion on the decision making process of investors in the investments.

REFERENCES

Arora, D. K. (n.d.). Behavioral Finance: An Insight into Investor's Psyche. *IOSR Journal of Economics and Finance*.

Athur, A. D. (2013). Effect of Behavioural Biases on Investment Decisions of Individual Investors in Kenya.

Birău, F. R. (n.d.). Retrieved January 2019, from Google Scholar: https://ideas.repec.org/a/cbu/jrnlec/y2012v3p45-50.html

Bloomfield,R.J.(2006). Google Scholar. Retrieved Feb 2019 from Google Scholar: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=941491

Brase,Gary.S.D.(2018). Retrieved january 2019, from Google Scholar: https://www.tandfonline.com/doi/full/10.1080/15427560.2018.1492580

Bucciol, A. &. (2015). Does Investors' Personality Influence their Portfolios? *International Journal of Management Research and Business Strategy*.

Chandra, A. (2008). Decision Making in the Stock Market: Incorporating Psychology with Finance. *National Conference on Forecasting Financial Markets of India*.

Chaudhary, Amar,Kumar.P.(2017). A Study on Impact of Behavioral Finance.

Chiao-Ming Cheng, A. Y.-C. (20 , dec). Retrieved January 2019, from Bloomfield,R.J.(2006). Google Scholar. Retrieved Feb 2019 from Google Scholar: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=941491

Jurevičienė,Daiva.O.I.(2013). Behavioural Finance: Theory and Survey.

Masini,Andrea.E.M.(2012). Science Direct. Retrieved January 2019, from Google Scholar: https://www.sciencedirect.com/science/article/pii/S030142151000532X

Mitroi, Adrian. A. O.(2014).Retrieved January 2019, from http://store.ectap.ro/articole/978.pdf

Vankatramanan, M. M. (2018). Behavioural Finance - A Study on the Motivation of Investors. *International Journal of Scientific Research and Review*, 9. Google Scholar: