

Inter-relationship of Behavioral Biases: Effects on Investment Decisions

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Abstract

Behavioural finance studies the influence of the psychology on the behaviour of investors. It deals with how emotional factors influence the individual's investment decision making. It also includes the subsequent effects on the financial markets. It focuses on the fact that investors are not always take rational decisions and are influenced by their behavioural biases. In this research work researcher included behavioural biases such as confidence, availability bias, self-attribution bias, representativeness, anchoring, and cognitive dissonance, illusion of control, herding, loss aversion, and regret aversion. Here, the literature has documented the concept of the behavioural finance and various factors affecting upon the investment decision making of an individual investor. This paper focuses on role of Behavioural biases, their inter-relationship and how they impact on individual's investment decision making.

Keywords: Behavioral Biases, Behavioral Finance, Psychological Factors, Decision Making.

Introduction

What is Behavioral Finance?

Behavioral finance is the relatively new field of the economics and it is associated with the investors. It is the integration of classical economics and finance with psychology and the decision-making sciences. Behavioral finance is divided into the macro behavioral finance and micro behavioral finance. Behavioral finance is an attempt to explain anomalies which affects on the financial market that have been observed and reported in the finance literature. Behavioral finance is the study of how investors make judgment about the investment related decisions, or "mental mistakes."

Behavioral Biases

Overconfidence Bias

Overconfidence bias leads to the false assumption that someone is better than others, due to their own false sense of skill, talent, or self-belief.

Cognitive Dissonance Bias

“Cognitive dissonance is the mental conflict that people experience when they are presented with evidence that their beliefs or assumptions are wrong” (Montier, 2002).

Regret Aversion Bias

Regret Aversion is a psychological error that arises out of excessive focus on feelings of regret at having made a decision, which turned out to be poor, mainly because the outcomes of the alternative are visibly better for the investor to see.

Confirmation Bias

Confirmation bias is the tendency of people to pay closer attention to information that confirms their hypothesis or belief and ignore information that contradicts it. This is a type of bias in behavioral finance that limits our ability to make objective decisions.

Representativeness Bias

Representative bias occurs when the similarity of objects is confused with the probability of an outcome, meaning people incorrectly believe that two common-sounding events are believed to be more closely correlated than they are.

Mental Accounting Bias

Mental accounting was coined by Richard Thaler and defined by Thaler [1999] as the “Set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities.” This result in a tendency for people to separate their money in to separate accounts based on a variety of subjective reasons.

Anchoring Bias

Anchoring bias is the theory that people rely too much on pre-existing informational and the first data points they receive when making decisions.

Loss Aversion

Loss aversion is a tendency in behavioral finance where investors are fearful of losses and try to avoid them more so than they tend to focus on making gains.

Herd Mentality Bias

In behavioral finance, herd mentality bias refers to investors' tendency to follow and copy what most other investors are doing. They are largely influenced by emotion and instinct, rather than by their own independent analysis.

Literature Review

Richard H. Thaler is an American economist and the Charles R. Walgreen Distinguished Service Professor of Behavioral Science and Economics at the University of Chicago Booth School of Business. In 2015, Thaler was president of the American Economic Association.

Thaler has contributed in the behavioral economics about the human flaws regarding psychology in decision making. Thaler revealed that Economists aim to develop models of human behavior and interactions in markets and other economic settings.

Subramaniam V.A., and Velnampy provides that there is a shift from traditional mathematical approach based on the assumptions of fully rational investors and perfectly efficient markets. In other words traditional finance assumes that people are not affected by biases or emotions and developed its models based on this assumption. Researcher further explained that Behavioral finance theories explains the psychology-based theories to explain stock market anomalies such as severe rises or falls in stock price.

M. Kannadhasan explains that decision-making is a complex activity, an optimum investment decision plays an active role and is a significant consideration. In designing the investment portfolio, the investors should consider their financial goals, risk tolerance level, and other constraints. In addition to that, they have to predict the output mean- variance optimization.

Jaya Mamta Prosad in her doctoral thesis entitled "Impact of Investors' Behavioral Biases on the Indian Equity Market and Implications on Stock Selection Decisions: An Empirical

Analysis” investigates the presence and impact of four behavioral biases in the Indian equity market, namely; herd behavior, optimism (pessimism), overconfidence and the disposition effect. She also explained that herd behavior is not seen in the overall market, although, it persists in a bull phase.

Dr. Deepak Sahni provides a brief introduction to behavioral finance. According to the author, Behavioral finance encompasses research that drops the traditional assumptions of expected utility maximization with rational investors in efficient markets. The two building blocks of behavioral finance, mentioned in the article, are cognitive psychology. The study found that most investors are intelligent people, neither irrational nor insane.

Albert Phung, Investopedia says According to conventional financial theory, the world and its participants are, for the most part, rational "wealth maximizes". However, there are many instances where emotion and psychology influence our decisions, causing us to behave in unpredictable or irrational ways.

Meir Statman (1999) focuses on Market efficiency as it is at the center of the battle of standard finance, behavioral finance, and the value of investment professionals. But the author argues that the term “market efficiency” has two meanings. One meaning is that investors cannot systematically beat the market. The other is that security prices are rational. Rational prices reflect only practical characteristics, such as risk, not value-expressive characteristics, such as sentiment.

Research Methodology

Research Methodology of present research work is as follows;

Objectives of the Study

- To study the important behavioral biases related to investment decision making.
- To analyze the interrelationship between the behavioral factors.
- To evaluate the impact of behavioral factors on investor’s decision making.

Sample Size and Sampling

Perception of investors towards various investment avenues is utmost important to take a right decision regarding investment. In the present research work individual investors include more than one preferred investment avenues from Jalgaon city are our proposed population of study.

Out of uncounted unidentified investors amongst population of 350000 adults of Jalgaon city, we consider 100 individual investors as our sample size i.e. respondent for study. Schedules were

distributed to all 100 investors and out of which 84 questionnaires received and after screening a full fledged 77 questionnaires are considered as a final sample size for further research.

Sampling Method

In order to select sample size from the population i.e. 100 respondents, a simple random sampling technique has been used for study.

Data Analysis and Interpretation

Table No.1 Gender wise distribution

Factor	Response	Frequency	Percent [%]
Gender	Male	50	64
	Female	27	35
	Total	77	100

Interpretation: Making investment decision is an equally important for men and women. From the above table, it shows that there is less female investor i.e. 35% than that of male investors i.e. 64%.

Table No.2 Marital Status

Factor	Response	Frequency	Percent [%]
Marital Status	Married	49	64
	Unmarried	28	36
	Total	77	100

Interpretation: From the above table, it shows that amongst the 77 respondents 49 are married and 28 are unmarried.

Table No.3 Annual income

Factor	Response	Frequency	Percent [%]
Annual income	Up to 3 Lacks	28	36
	3Lacs-5Lacks	30	39
	5Lacks-10Lacks	18	25
	More than 10 lacks	01	2
	Total	77	100

Interpretation: From the above table it shows that, 39 % of investors earn in a range of 3L – 5L whereas 25 % of investors earns in a range of 5L- 10L.

Table No.4 Portion of salary as a monthly saving

Factor	Response	Frequency	Percent [%]
Portion of salary as a monthly saving	Up to 10%	33	26
	10%-20%	20	58
	20%-30%	14	12
	More than 30%	10	4
	Total	77	100

Interpretation: From the above table, it shows that 14 respondents save 20 to 30% of their salary whereas 20 out of 77 save 10-20% of their salary.

Table No.5 Portion of annual income as your annual investment

Factor	Response	Frequency	Percent [%]
Portion of annual income as your annual investment	Up to 10%	37	42
	10%-20%	19	29
	20%-30%	13	19
	More than 30%	08	10
	Total	77	100

Interpretation: From the above table, it shows that the only 8 % of total respondents invests more than 30% of their annual earnings, whereas 19 % respondents invest in a range of 10%-20%.

Table No.6 Saving Pattern

Factor	Response	Frequency	Percent [%]
Saving Pattern	As per planned schedule	20	26
	Monthly savings like SIP	45	58
	Saving after expenditure	09	12
	Occasional savings	03	4
	Total	77	100

Interpretation: From the above table, it shows that 58% respondents do monthly savings whereas only 26% save as per planned schedule.

Table No.7 Investment Avenues

Factor	Response	Frequency	Percent [%]
Investment Avenues	Insurance	42	55
	Mutual Funds	03	4
	Bank Deposits	15	19
	Gold and Bullion	05	6
	Post office deposit	12	16
	Total	77	100

Interpretation: From the above table, it shows that among all the given investment avenues, only 4% respondents invest in mutual funds, 19 % in bank deposits and 55% in Insurance.

Table no. 8 Primary objective for Investment

Factor	Response	Frequency	Percent [%]
Primary objective for Investment	Safety	10	13
	Income/ ROI	45	58
	Growth of Capital	10	13
	Tax Minimization	12	16
	Marketability	00	00
	Liquidity	00	00
	Total	77	100

Interpretation: From the above table, it shows that 58% respondents save for the reason of getting return on investment or Income, whereas 13% of respondents do save for growth of capital.

Table No.9 Average rate of return on Investment

Factor	Response	Frequency	Percent [%]
Average rate of return on Investment	Yes	21	27
	No	49	64
	Can't say	7	9
	Total	77	100

Interpretation: From the above table, it shows that 49 respondents don't know their average rate of return on their investment, whereas 9% i.e. 7 cannot predict the average rate of return.

Table No. 10 Satisfaction level with ROI

Factor	Response	Frequency	Percent [%]
Satisfaction level with ROI	Highly satisfied	15	19
	Satisfied	42	55
	Neutral	18	23
	Dissatisfied	02	3
	Total	77	100

Interpretation: From the above table, it shows that only 3% of respondents are dissatisfied about their return on the investment whereas 19 % of respondents are highly satisfied with their return on investment.

Table No.11 Surety about making the correct decision

Factor	Response	Frequency	Percent [%]
Surety about making the correct decision	Yes	39	51
	No	20	26
	Can't Say	18	23
	Total	77	100

Interpretation: From the above table, it shows that 51% respondents are sure about taking a right decision whereas 26% said that they are not sure.

Table No. 12 Preference to "hot" investment options depending on recent past

Factor	Response	Frequency	Percent [%]
Preference to "hot" investment options depending on recent past	Yes	28	37
	No	25	32
	Can't Say	24	31
	Total	77	100

Interpretation: From the above table, it shows that 28 of respondents invest in most famous investment options whereas, others i.e. 25 do not.

Table No.13 Reliability on previous market experiences

Factor	Response	Frequency	Percent [%]
Reliability on previous market experiences	Yes	52	68
	No	25	32
	Total	77	100

Interpretation: From the above table, it shows that 68% of respondents rely on their previous market experiences regarding investment whereas 32% do not rely.

Table No.14 Changing an opinion immediately after hearing views from others

Factor	Response	Frequency	Percent [%]
Changing an opinion immediately after hearing views from others	Yes	16	21
	No	45	58
	Can't say	16	21
	Total	77	100

Interpretation: From the above table, it shows that 16 respondents change their opinion, related to investment, immediately after hearing views from others whereas 45 never change their opinion.

Table No. 15 Preference given to local investment rather than international investment based on availability

Factor	Response	Frequency	Percent [%]
Preference given to local investment rather than international investment based on availability	Yes	16	21
	No	15	19
	Can't Say	46	60
	Total	77	100

Interpretation: From the above table, it shows that 15 respondents give preference to local investment rather than international investment based on availability whereas 45 respondents cannot predict about this.

Table No. 16 More investment after a positive outcome

Factor	Response	Frequency	Percent [%]
More investment after a positive outcome	Yes	64	83
	No	13	17
	Total	77	100

Interpretation: From the table, it shows that 56 respondents invest more when they got positive outcome from their investment whereas 21 respondents' response is negative.

Table No.17 Having a greater control on your investment

Factor	Response	Frequency	Percent [%]
Having a greater control on your investment	Yes	18	23
	No	42	55
	Can't Say	17	22
	Total	77	100

Interpretation: From the above table, it shows that, 23% of respondents have a proper control on their investment whereas 55% said that they do not have control on their investment.

Table No. 18 Other's decision's impact on your investment decision making process

Factor	Response	Frequency	Percent [%]
Other's decision's impact on your investment decision making process	Yes	49	64
	No	13	17
	Can't Say	15	19
	Total	77	100

Interpretation: From the above table, it shows that 49 respondents said that other's decisions impact on their investment whereas 13 respondents said that they never influence by other's decision.

Table No. 19 You become more risk averse after a prior loss

Factor	Response	Frequency	Percent [%]
you become more risk averse after a prior loss	Yes	42	55
	No	17	22
	Can't Say	18	23
	Total	77	100

Interpretation: From the above table, it shows that 55% of respondents become more risk averse after a loss whereas 23% of respondents cannot predict.

Table No. 20 You feel regret about holding losing stocks than selling winning stocks

Factor	Response	Frequency	Percent [%]
you feel regret about holding losing stocks than selling winning stocks	Yes	45	58
	No	20	26
	Can't Say	12	16
	Total	77	100

Interpretation: From the above table, it shows that 45 respondents said that they feel regret about holding losing stocks whereas 20 respondents said that they never feel regretted.

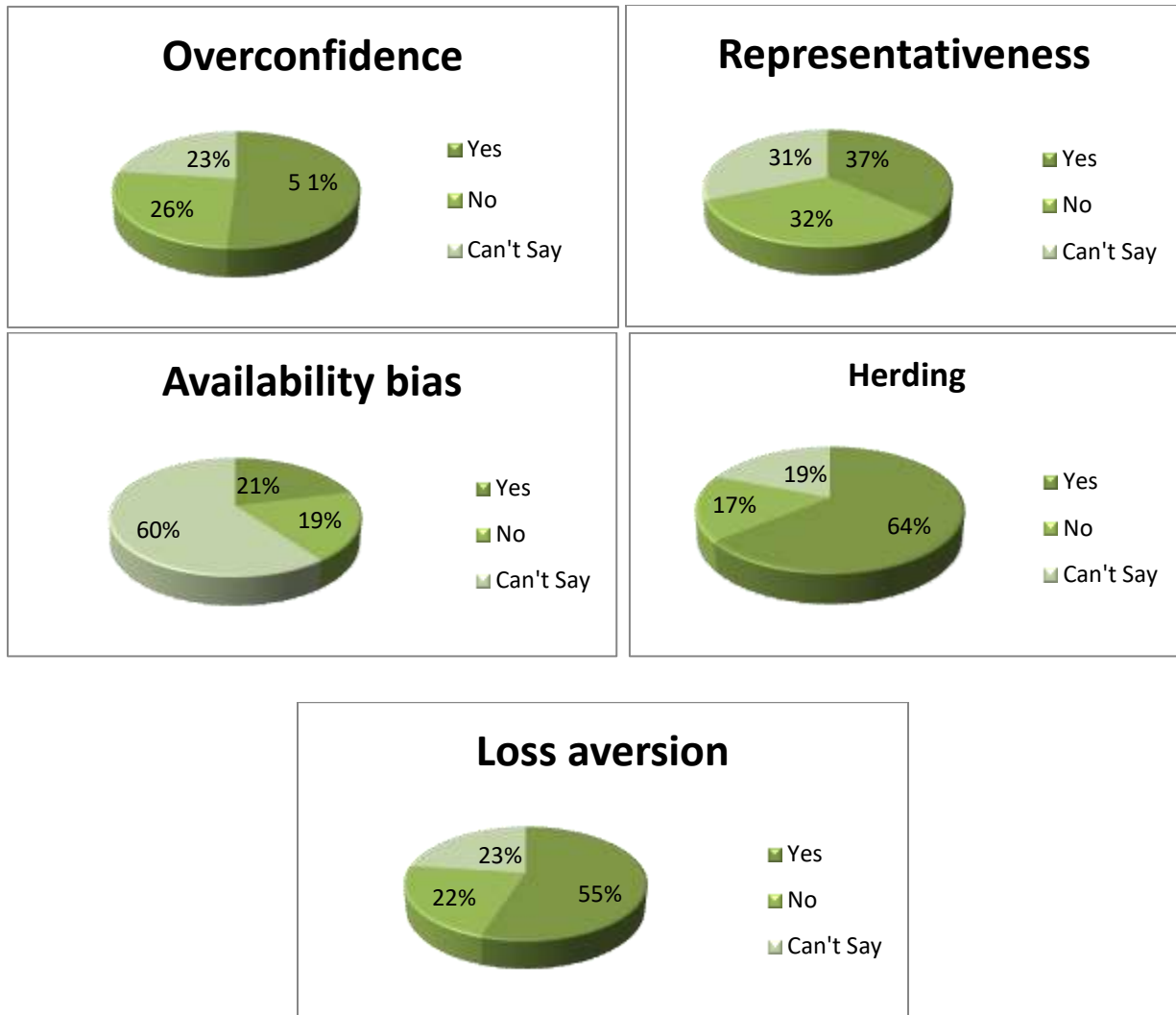
Testing of Hypothesis

H₀ – Behavioral biases are staunchly affecting decision making process of an investor.

H₁ – Behavioral biases are not affecting decision making process of an investor.

To test the effects of behavioral biases on decision making process of an investor, we have to consider the responses to following factors;

1. Overconfidence (Table No.11)
2. Representativeness (Table No.12)
3. Availability bias (Table No.15)
4. Herding (Table No.18)
5. Loss aversion (Table No.19)



From the above pie charts, it is seen that out of 77 respondents more than 50% of respondents agreed that they are confident about that they take a correct decision about their investment. Also, there are more than half of the respondents who agreed that other’s decision making about investment effects on their investment decision making and they got risk averse when they suffer from loss i.e. loss aversion. Out of 77 respondents, 37% respondents prefer most famous investment options and their decision is depends on past performances of those investment options. There are 60% respondents, who invest on the basis of availability of the investment options. Therefore, from this it is observed that the behavioral biases are not only affected but staunchly affect the decision making of an investor.

Hence, on the basis of above analysis we confer and accept null hypothesis that the behavioral factors effects on the decision making of the investors.

Findings

1. According to the research work conducted, it is found that male investors are more than female investors. Most of the respondents are married and were aware about the investment planning as it is highly needed further.
2. From the study it is also founded that, everyone does savings according to their earnings and there are very few people who invest more than 30% of their annual income.
3. More than 50% of respondents invest in Insurance options but very few invest in mutual fund.
4. Most of the respondent's primary objective behind investment is gaining return or income and growth capitalization but most of them cannot estimate their average rate of return.
5. After gaining return, 18 respondents were satisfied with the level of the rate of return on investment.
6. Furthermore, most of the respondents agreed that they can take a correct decision regarding their investment always.
7. Some of the respondents invest in most famous investment options and avoid that have performed poorly in the recent past.
8. More than half of the respondents rely on their previous market experience about investing in options.
9. More than 50% respondents said that they never change their decisions after hearing views from others.
10. Based on availability, most of the respondents cannot predict that which investment option they should prefer, local or international.
11. Almost all respondents invest more when they get a positive outcome form their investment and also other's decision making impact their decision making about the investment.
12. Some of respondents said that they cannot properly control their investment portfolio.
13. But when they suffer a loss from the investments they have made, they become more risk averse.
14. More than 50 % of respondents agreed that they feel regret when they hold losing stocks than selling winning stocks.

Conclusion

Behavioral finance has been impact on an individual's thinking and ability to take any kind of decision; the impact of individual behavior seems to be reflecting on individual's decisions related to expenditure and investment. From the findings, it is concluded that individual's investment decisions are influenced by behavioral biases like representative bias, availability bias, confidence and many more. Specifically, investors are risk averse because they invest in

traditional options rather than risk taking options. Herding and self-attribution biases are found to be most dominant factors which effects on the investment decision making of an individual.

The study also concludes that confidence of an individual investor can be attributed to strong belief in their knowledge and skills. Here the representative bias shows that, investors analyze the market conditions and then invest in options when they get more returns they invest more.

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