What Moves the Market? Exploring Factors That Shape Investor Behaviour in Equities

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Sections Info	ABSTRACT (9 pt)
Keywords: Personality traits Behavioral factors Biases Investment Decisions	*Objective:* *With rapid changes in the perspective of the stock market as well as investors' behavior, the financial market has become organized. Various stock markets in all over India are opened for trading. In the last few decades, the major focus is diverted towards the study of investors' behavior. The main intent of this study is to develop a broader understanding about investors' psychological behavior for the purpose of increasing the efficiency of individual investors as well as the market. Investments of investors contribute funds not only in the capital market but also in the growth of the economy. This study is an attempt to analyze the behavioral factors which include different types of biases as well as big five personality traits that influence their investment decisions.*

INTRODUCTION

Theories of traditional finance like efficient market hypothesis (EMH), expected utility theory, and portfolio theory are developed with an assumption that individuals or economic agents are rational. These theories assume that all the information related to stock market is easily available for each and every economic agent equally. They can process unlimited number of information for taking the complex decisions in the financial market. The efficient market hypothesis is based on the notions that people behave rationally and are able to process all available information (Shiller, R.J.1999). Herbert Simon in his theory "Bounded rationality" explains the limitations of individual economic agents in terms of processing of information and incorporating that information in their decision-making process.

However, in last few decades, these theories have failed to explain the individual investors' behavior as well as the financial market. The reason behind this is that people are not homo-economicus as assumed by the traditional economic theory, they are homo-sapiens. And human being are not rational so they are supposed to get confused with biases and make mistakes and making such mistakes would eventually affect the financial markets. The assumptions of conventional finance and investor rationality and market efficiency are firstly challenged by psychologists (Khaneman & Tversky, 1974, 1979) and many more such as (Thaler, 1985; Shefrin and Statman, 1985; Shiller, 2003; Statman, 1995, 2008, 2014).

People rely on some heuristics and biases to reduce the complexity of financial decision making that are Representativeness, Availability and Anchoring (Daniel Kahneman and Amos Tversky, 1974). Prospect theory is an improvised model of the expected utility theory given by (Khaneman & Tversky, 1979) Under risk and certainty effect, it is a descriptive model of decision making. Prospect theory is an improved approach addressed the issues related to expected utility theory. In reality, they observed that our

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choices are driven by different heuristics and biases, including our personal experiences, societal factors and of course, cognitive issues. Traditional finance theories assume that people are rational. They are not affected by cognitive errors and not confused by frames. They do not know the pain of regret, and they have no lapses of self-control. While behavioral finance theories assume that people may not always be rational, but they are always normal. Normal people are often confused by frames, affected by cognitive errors, and know the pain of regret and the difficulty of self-control (Statman, M. (1995)). The main focus of behavioral finance is on the application of psychological and economic principles for the improvement of financial decision making (Robert A. Olsen 1998).

Investors' attitude bias: It implies to the tendency of individual investors to perceive in a predetermined way leading to systematic deviations from a standard, rational thought process in decision making.

Risk propensity: It is a tendency of individuals to take or avoid loss of risk in the stock market.

Anchoring: Anchoring is a cognitive bias that refers individuals' tendency to rely on one piece of information or (anchor), too heavily offered when making investment decisions.

Regret aversion: Regret aversion is the tendency of people who generally feel regret by selling the winning stocks too early.

Over-optimism: The over-optimism is a cognitive bias that refers to an excessive or unrealistic degree of optimism about their skills.

Sensitivity to rumours: It is the tendency of individuals to react to an irrelevant piece of information spread around the society. It determines how an investment decision changes with fluctuations in outside factors.

Illusion of control: illusion of control refers to individuals' tendency to overestimate what they can control over the uncontrollable events and outcome.

Big five personality traits: There are five big different types of personalities such as Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.

Openness: persons are always open to new experiences or desire for knowledge.

Conscientiousness: persons are always sticking to the timelines of their plans. Usually they follow the schedule.

Extraversion: An energetic and cheerful persons like making friends and staying connected with them.

Agreeableness: Considerate, helpful and thoughtful persons appreciate others' opinions also.

Neuroticism: Persons having neuroticism personality often feel broken under a great deal of stress. They get discouraged when things go wrong.

Literature Review

The study examines that the people depends on some heuristics which reduce the tasks of assessment and prediction of values (Khaneman & Tversky, 1974). The study further explored that individual investors exert risk averse behavior at the time of sure shot gains and risk seeking behavior at the time of sure loss (Kahneman, D., & Tversky, A. 1979). Mostly, people show overreaction to dramatic and unexpected news events (De

Bondt, W. F. M., and Thaler, R. 1985). Normal people are generally affected by cognitive errors, frames, and also feel the pain of regret (Statman, M. 1995). Under this study the major focus is on psychological and economic principles of behavioral finance for better financial decision making (Robert A. Olsen 1998). Efficient markets hypothesis is based on the notions that people are rational and are able to process all available information in stock market (Shiller, R. J. 1999). Loss aversion bias refers to the tendency of individual investors to feel pain of a loss more intensely than the gain (Rabin, M., & Thaler, R. H. (2001), Hwang, S., and Satchell, S. E. 2010). Different psychological disposition affects the investors' buying and selling of shares other than technical and fundamental analysis (Levy et al. 2008). it is the common tendency of human to rely on (anchor) one piece of information too heavily when making financial decisions (Andersen, J. V. 2010). Perceptual errors and the investors' personality are significantly correlated (Sadi et al.2011). Individual investor behaviour is influenced by various psychological biases and heuristics such as overconfidence, representativeness and mental accounting (Chandra et al. 2012). Efficiency in financial market can be increased by better understanding of investors' perceptions. (Kalra Sahi et al. 2012). Investment performance is different for different investor grouped by gender and age (Talpsepp & Tõnn 2013). Risk taking behaviour depends on variety of demographic factors such as income level, age group, gender status, occupation level, education level and marital status of individual investors (Parkash et al. 2014 and Mak and Ip 2017). Retail investors are very sensitive to both endogenous and exogenous factors (Lillo et al. 2015). Investors' risk attitude may be predicted by perception of market information, and overconfidence of individuals (Abdallah, Salam and Hilu, Khalil (2015). Active investors exert more overconfidence bias while passive investors exert more herding bias (Hayat, A. 2016). The relationship between heuristics and performance of investment is mediated by two factors fundamental and technical analysis (Abdin, S. Z. ul, et al. 2017). Under behavioral finance the major focus is on the prospect theory, heuristics theory and herding theory (Mahina, J. N. et al. 2017). Herding behaviour is exerted among the investor when they suppress his information and follow the other perspective, again it is extended that herding is exerted more significantly in stocks of large-cap companies than in stocks of small-cap companies (Batchu Satish, B. and Padmasree K. (2018) and Chauhan, Y. et al 2019). Investors buying decision depends on easily available information, instead of doing a complete analysis of relevant information (Rasheed, M. H. et al. 2018). Investors having neuroticism personality trait, are emotionally weak, unstable and are likely to be depressed and having the higher risk tolerance (Baker, H. K., et al., and Lai, C.-P. 2019). Individual investors besides being rational, are affected with self attribution and overconfidence bias (Mushinada &Veluri 2019). The investor does not diversify his portfolio when he suffers with psychological biases and afraid of regret, disappointment and uncertainty (Yurttadur,M. & Ozcelik, H.(2019), Thambireddy, H., et al (2021). Investors suffering from overconfidence and representative bias, they generally overreact to any new piece information arriving in the market (Parveen, S., et al. 2020). There is a link between behavioural biases and financial literacy of individuals (Gerth,F.,et al.2021). Overconfidence and herding biases are directly affected by the demographic factors of investors. (Sonawane,M.,et al. 2021). Active Investors are generally accumulator and

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independent for investment decisions while Passive investors are generally preserver and follower of others decisions (Tupe, V.A.2021).

Objective of Study

The study has the following objectives:

1. To review the theoretical concept of the personality traits and the investors' attitude bias.
2. To determine the impact of the personality traits, the investors' attitude bias towards the investors behaviour.
3. To measure the direct and the indirect effects of the variables relating to personality traits, investors' attitude bias towards investors' behaviour.

RESEARCH METHOD

This study is descriptive in nature. It determines the influence of investors' attitude bias and the personality traits towards investors' behavior. Also measures the direct and the indirect impacts of the variables such as personality traits, investors' attitude bias towards investors' behaviour. Primary data is collected from the respondents belongs to Delhi NCR. Convenience sampling technique is used. Questionnaire was distributed to approximately 280 respondents, out of which 254 questionnaires was accurately filled. So the pilot study and reliability test is done on the sample size of 254. Statistical tools such as Descriptive Statistics, Pearson correlation analysis and Regression analysis is used for analysing the primary data.

RESULTS AND DISCUSSION

Based on the objectives of the study, the collected data from the respondents have been firstly tabulated then analyzed by using different tools such as descriptive statistics, Karl Pearson's correlation and multiple regressions. After analyzing the data by applying the various statistical tools the result has been interpreted.

Demographic variables of respondents include- sex, age, educational qualification, occupation, and monthly income. Factors related to Investment include- the amount invested the investing period, the investor type and the place of trade. Factors related to personality traits, big five personalities are considered. These are extraversion, openness to experience, agreeableness, conscientiousness and neuroticism. Factors related to Investors' attitude bias includes- anchoring, risk propensity, over-optimism, regret aversion, sensitivity to rumours and illusion of control. Factors related to trading such as long or short term trading of stocks.

Descriptive Statistics

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	99	38.9	38.9	38.9
	Male	155	61.1	61.1	100.0
	Total	254	100.0	100.0	

(Table N. 1)

Qualification

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		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	College level	108	42.6	42.6	42.6
	Professional level	136	53.7	53.7	96.3
	School level	10	3.7	3.7	100.0
	Total	254	100.0	100.0	

(Table N. 1.1)

Monthly Income(in Rs)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20,000 to 40,000	57	22.2	22.2	22.2
	40,000 to 60,000	47	18.5	18.5	40.7
	above 60,000	89	35.2	35.2	75.9
	Below 20,000	61	24.1	24.1	100.0
	Total	254	100.0	100.0	

(Table N. 1.2)

What is the total amount invested in the primary and secondary market?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 lakhs to 6lakhs	89	35.2	35.2	35.2
	6 lakhs and above	38	14.8	14.8	50.0
	Below 3 lakhs	127	50.0	50.0	100.0
	Total	254	100.0	100.0	

(Table N. 1.3)

How long have you been investing in the Primary and secondary market?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 to 6 years	52	20.4	20.4	20.4
	6 to 9 years	28	11.1	11.1	31.5
	9 years and above	33	13.0	13.0	44.4
	Below 3 years	141	55.6	55.6	100.0
	Total	254	100.0	100.0	

(Table N. 1.4)

What type of investor are you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Both long term and day trading	47	18.5	18.5	18.5
	Day trading	71	27.8	27.8	46.3
	Long term	136	53.7	53.7	100.0

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Total	254	100.0	100.0

(Table N. 1.5)

Where do you often trade?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Brokers office	136	53.7	53.7	53.7
	Work place	118	46.3	46.3	100.0
	Total	254	100.0	100.0	

(Table N. 1.6)

The results of the table 1.7 display that there is a positive correlation at the higher level between risk propensity over optimism, sensitivity to rumors and illusion of control while it is positively correlated at the lower level with anchoring and regret aversion. There is a positive correlation at the higher level between the anchoring, regret aversion and over optimism while it is positively correlated at moderate level with sensitivity to rumors and illusion of control. The regret aversion shows higher positive correlation with over-optimism, sensitivity to rumors and with illusion of control at medium level. It also shows that there is a positive correlation between sensitivity to rumors illusion of control. While over optimism positively correlated at higher level with illusion of control and also positively correlated at lower level with sensitivity to rumors. The correlation coefficient shows that there is a significant positive correlation between all the variables of the investor attitude bias.

Pearson's correlation coefficient test between factors of investor attitude bias

Investor attitude bias	Risk Propensity	Anchoring	Regret Aversion	Over-Optimism	Sensitivity to Rumors	Illusion of Control
Risk Propensity	1	0.351*	0.501 **	0.7913*	0.611*	0.6720*
Anchoring		1	0.701*	0.743*	0.492**	0.552**
Regret Aversion			1	0.485**	0.551**	0.582**
Over-Optimism				1	0.351**	0.785*
Sensitivity to Rumors					1	0.482**
Illusion of Control						1

(Table N. 1.7)

Pearson's correlation coefficient test between factors of personality traits

Investor attitude bias	Neuroticism	Extraversion	Openness to Experience	Agreeableness	Conscientiousness
Neuroticism	1	0.331*	0.418**	0.322**	0.627**

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Extraversion		1	0.688*	0.643*	0.496**
Openness to Experience			1	0.691*	0.602**
Agreeableness				1	0.651*
Conscientiousness					1

(Table N. 1.8)

Pearson's correlation coefficient test between personality traits and factors of Investors' attitude biases.

Investor attitude bias	Neuroticism	Extraversion	Openness to Experience	Agreeableness	Conscientiousness
Risk Propensity	- 0.254**	0.666*	0.611*	0.690*	0.519**
Anchoring	- 0.241**	0.373**	0.377**	0.221*	0.415**
Regret Aversion	0.781*	0.307*	0.409*	0.499**	0.418*
Over-Optimism	-0.301**	0.643*	0.620**	0.590**	0.501**
Sensitivity to Rumors	0.520**	0.601**	0.610*	0.506**	-0.306**
Illusion of Control	0.255*	0.566**	0.581**	0.558**	0.218*

(Table N. 1.9)

Multiple Regression Analysis of Investor Attitude Bias on Investor Behaviour

Variables	co-efficient	Std. Error	P value
Constant	06.001	0.726	<0.001**
Risk propensity	- 0.014	0.039	0.731
Anchoring	- 0.029	0.042	0.431
Regret Aversion	- 0.210	0.041	<0.001**
Over-optimism	- 0.131	0.032	<0.001**
Sensitivity to rumours	- 0.189	0.029	<0.001**
Illusion of control	- 0.180	0.029	<0.001**
Multiple R value = 0.764, R Square value = 0.584			

(Table N. 2)

Multiple Regression Analysis of Personality Traits on Investor Behaviour

Variables	co-efficient	Std. Error	P value
Constant	3.001	0.598	<0.001***
Neuroticism	0.229	0.030	<0.001***

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Extraversion	0.072	0.026	<0.001***
Openness to Experience	0.071	0.024	<0.016**
Agreeableness	0.188	0.035	<0.001***
Conscientiousness	0.330	0.034	<0.001***
Multiple R value = 0.796, R Square value = 0.634			

(Table N. 2.1)

Multiple Regression Analysis of Overall Personality Traits, Overall Investor Attitude Bias on Investor Behaviour

Variables	co-efficient	Std. Error	P value
Constant	3.571	0.603	<0.001***
Overall investor attitude bias	- 0.045	0.010	<0.001***
Overall personality traits	0.121	0.013	<0.001***
Multiple R value = 0.781, R Square value = 0.609			

(Table N. 2.2)

Conclusion:

There is a profound or noticeable psychological impact on the individual investors' behavior and the market. This study has combined investor attitude bias, Big five personality traits with investors' behavior and showed the impacts towards investment decision making. The multiple regression equations analyzed the impact of the personality traits and the investors' attitude biases on their investment behavior. The findings show that the individual investors take biased investment decisions depending on various demographic as well as psychological factors. Due to the irrational behavior of investors, their performance is inefficient in the financial market. They are not efficient in long term trading and unable to create diversified portfolio. They generally exert risk averse behavior at the time of financial decision making. This study is helpful for better understanding of irrational factors of individual investors' behavior for the purpose of increasing investment efficiency in financial market.

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