

How Does the Behavioural Finance Theories Impact the Investor Decision Making: An Empirical Study

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Abstract

Considerable number of economic and financial postulations conclude that individuals act rationally in the process of decision-making by considering all available information. But there is corroboration to show recurrent patterns of irrationality in the way humans make decisions and choices when faced with uncertainty. The traditional finance paradigm seeks to understand the financial market using models in which agents are rational. Unfortunately, after years of effort, it has become clear that basic facts about the aggregate stock market, a cross-section of average returns and individual trading behaviour are not easily understood in this framework. Behavioural finance proposes psychology-based theories to explain stock market anomalies, such as severe rise and fall in stock price. The purpose is to identify and understand why people make certain financial choices. Within behavioural finance, it is assumed the information structure and the characteristics of the market participant systematically influence an individual's investment decision as well as market outcomes. The fact that even the most prominent and well-educated investors were affected by the collapse of the speculative bubble in the 2008 subprime crisis proved that something was fundamentally missing in the traditional models of rational market behaviour. In this paper, behavioural finance theories such as Herding theory, Prospect theory, Regret theory, and Anchoring theory are related to different investment strategies like Buy and hold, Fundamental analysis and technical analysis. In order to achieve this aim, the research on the subject was divided into two stages. The first stage examined the main issues of individual investors and studied their

relation to behavioural finance theories. The aim of the final stage was to form a pattern between the most common investment strategies and the four behavioural finance theories. The most significant finding was the correlation between Buy and hold strategy and regret theory.

Keywords: Herding Theory, Prospect Theory, Regret Theory, Anchoring Theory, Buy and Hold, Fundamental Analysis, Investor Decision, Behavioural Finance Theory

Introduction

A lot of theoretical discussions, according to Shiller (2003), changed their focus away from econometric analyses of time series on prices, dividends, and earnings towards building theories regarding human psychology and its relationship with financial markets starting in the year 1990. As a result, the study of behavioural finance developed. Numerous research has argued against rationality; these arguments stem from the seminal work of behavioural finance theorists like Kahneman and Tversky (Kahneman & Tversky, 1971; 1979). They continue to question empirical studies and conventional financial theories. The quantitative models that support the rational expectations-based theories include the Modern Portfolio Theory (MPT), Capital Asset Pricing Model (CAPM), and Arbitrage Pricing Theory (APT). Unfortunately, a lot of research has not been able to support this notion in the investment data that are now available. For instance, Fama and French (1993, 1996) and others

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have demonstrated that it is difficult to comprehend basic information about the overall stock market, cross-section average returns, and individual trading behaviour in this framework. The challenges the traditional paradigm have led to the emergence of the behavioural finance paradigm. Essentially, it contends that agents do not always update their views correctly and that there is systematic deviance from the normative process. It seeks to comprehend the phenomena of the investment market by loosening these two doctrines of the standard paradigm, that is, (i) agents fail to update their beliefs correctly and (ii) there is a systematic deviation from the normative process in making investment choices (Kishore, 2004). In addition, many behavioural researchers continue to publish their in-depth theoretical analyses and empirical refutations of the efficient market hypothesis (EMH) and the utility concept in the main field of finance. From this point on, behavioural finance started to emerge as an alternative to the theories of standard finance. In order to better comprehend market players, including corporate boards, managers, individual investors, institutional investors, portfolio managers, analysts, advisers, and even policymakers, behavioural finance scholars are examining the financial markets through a new lens utilising a psychological perspective on human emotions and cognition. In this study, we explore how behavioural characteristics affect the investment choices of individual investors.

Literature Review

According to Barber and Odean (1999), the major contribution of behavioural finance is that it provides an understanding of investor behaviour when such behaviour is not understood under the traditional theory. They examined two behavioural finance theories and got the predicted results that investors tend to sell their winners and hold their losers – the disposition effect. Also, due to the overconfidence effect, investors trade to their detriment. This behaviour reduces the investor's well-being. According to Sewell (2007), the study of psychology's impact on financial professionals' behaviour and how it affects markets is known as behavioural finance. Theoretical and experimental work in behavioural finance examines what happens when investors make choices based on intuition or emotion. Shiller (2003) claimed that according to the efficient market theory, when optimistic

irrational investors purchase a stock, smart money sells it, and when pessimistic irrational investors sell it, smart money buys it, negating the impact of irrational traders on the market price. However, finance theory may not always entail that the impact of smart money is completely countered by that of regular investors. A recent study on behavioural finance has provided critical insights into the implications of the existence of these two classes of investors for theory as well as specific traits of the members of the two classes. According to Kahneman and Tversky (1974), people frequently make decisions using the representativeness heuristic, which involves looking for the historical pattern that matches them the closest while ignoring the actual likelihood that the pattern will repeat. According to Badheka and Pandya (2022), Risk aversion, overconfidence, optimism, emotional and cognitive biases, and other psychological characteristics of managers have a substantial impact on business decisions and firm success. The decision of capital structure cannot be studied solely by classical theories or behavioural theories. Instead, it can be looked at holistically using the ideas from both schools of thought. Kumar and Kumar (2020) ascertained that women investors prefer low-risk investments. They are unable to take on significant danger. Women favour risk-free investments because they don't want to lose their money. Determining women's risk tolerance levels depends critically on their unique demographic characteristics. In this regard, it has been discovered that a woman's risk appetite is significantly influenced by her age, marital status, education, income, experience, and occupation. According to Luo (2019), Herding only occurred among Chinese ADRs that were issued during the Internet bubble, implying that market timing has substantial influences on herding behaviour and that issuer origin is irrelevant. The author concluded that the information-driven theory is corroborated by the Chinese ADRs' herding behaviour.

Research Objectives

The prime objectives of the study are:

- To empirically examine how behavioural finance theories influence an investment decision.
- To analyse the correlation between several investment strategies and behavioural finance theories.

Research Methodology

For the primary data, a questionnaire was distributed among the clients of a brokerage firm in Kolkata and their investment decisions and the effects of behavioural factors on them were studied. The focus is on individual investors, as they are more likely to have limited knowledge about the application of traditional theories in decision-making and hence are prone to making psychological mistakes. Secondary data is based on the study of the book, journals, articles, and research papers that deal with investment trends, investment strategies and behavioural finance theories.

Data Collection

The Primary data was collected from September 2021 to June 2022. The primary data consist of a self-completion questionnaire. The sample size was 212, but due to incompleteness of some questionnaire, only 180 data sets were considered for the survey and the rest 32 were rejected.

Analysis of Data and Research Findings

The result of the survey was processed using Microsoft Excel software. Firstly, the questionnaire was analysed and was characterised into three main categories based on the investment strategies that the respondent has chosen. Then the data of each investment strategy were compared to each other and were analysed to check whether certain

investment strategies correlate to certain behavioural finance models.

The statistics used are descriptive. There were ten questions in the questionnaire with several sub-questions. Three questions are related to the demographic condition of the respondents, and the rest are concerned with the investment behaviour of the investors.

Investment Strategies

In this section, researchers tried to assess various investment strategies for their individual investment decision.

Table 1 presents the majority (40%) of the investors who adopt 'Buy & Hold' investment strategies, followed by 30% of investors who are in favour of the 'Fundamental Analysis' strategy.

Table 1: Investment Strategies Adopted by Investors

<i>Investment Strategies</i>	<i>Percentage of Investor</i>	<i>Number of People</i>
Buy & Hold	40	72
Technical Analysis	25	45
Fundamental Analysis	30	54
Differentiation	5	9

Table 2 shows questions which were most helpful about individual investors and irrational behaviour. The nine-point chart tested participants, critical thinking while making investment decisions are tabulated below.

Table 2: Evaluation of Investors' Critical Thinking during Investment Decision

<i>Question Number</i>	<i>Description</i>	<i>Strongly Agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
i.	I often use information gained from news and magazine when making investment decision	45	81	36	18
ii.	I feel public opinion about profit making investment objectives are often correct	36	87	51	6
iii.	I mostly rely on company's historical financial data when making investment decision	18	90	60	0
iv.	I mostly rely on company's recent financial data when making financial decision	9	72	78	18
v.	I value company's recent information over historical one	9	81	72	18
vi.	I never make any investment decision without consulting my investment advisor	0	18	90	72

Question Number	Description	Strongly Agree	Agree	Disagree	Strongly Disagree
vii.	I feel my friends and family have more knowledge about investing than I do	24	54	54	90
viii.	I prefer not to invest in stocks with high volatility	54	72	45	9
ix.	I tend to hold on to securities losing value waiting for better terms	27	45	63	45

Source: William Coffie, Researching Business and Management Issues university of Wolverhampton, 2013.

Herding Theory: It was tested in statements i, ii, vii and vi. Respondents strongly agree with statements i, ii, vii and strongly disagree with statement vi and are probable to have herding tendencies. Investors stating strongly agree on any of the questions are seen as a strong positive correlation on Herding Theory.

Anchoring Theory: It was tested in statements iii, iv, and v. Respondents strongly disagreeing with statements iii and agreeing with statements iv and v are probable to have anchoring tendencies. Investors stating strongly disagree on question iii or strongly agree on question iv or v are seen to have a strong positive correlation with Anchoring Theory.

Prospect Theory: It was tested in statement viii. Respondents strongly agreeing with the statement are

likely to have tendencies on evaluating investment opportunities differently depending on whether they are explained in terms of gains or losses. Investor stating strongly agreeing on statement viii is seen as a strong positive correlation on Prospect Theory.

Regret Theory: It was tested in statement ix. Respondents strongly agreeing with the statement are likely to have regret tendencies. Investors stating strongly agree on question ix are seen to have a strong positive correlation with Regret Theory.

Table 3 presents correlation between investors critical thinking and behavioural finance theories.

Percentage distribution of investors following Behavioural Finance Theory Wise Investment Strategy.

Table 3: Correlation between Investors' Critical Thinking (Strategies Used) & Behavioural Finance Theories

Behavioural Finance Theories	Question Number	Strongly Agree	Strongly Disagree	Correlation	+/-
Herding Theory	i, ii, vii	✓		Strong	+
Herding Theory	vi		✓		
Anchoring Theory	iv, v	✓		Strong	+
Anchoring Theory	iii		✓	Strong	+
Prospect Theory	viii	✓		Strong	+
Regret Theory	ix	✓		Strong	+

Table 4: Shows a Significant Percentage of Investor Following a Strategy and the Theory to Which they Are More Inclined To

Financial Theory	Statement Number	Investment Strategies			
		% Of Investor of Buy & Hold Strategy Following the Financial Theory	% Of Investor of Buy & Hold Strategy Following the Financial Theory	% Of Investor of Technical Analysis Following the Financial Theory	% Of Investor of Fundamental Analysis Following the Financial Theory
Herding	i, ii, vii	108	16	5	26
Herding	vi	0			
Anchoring	iv, v	18	10	6	0
Anchoring	iii	18			
Prospect	viii	54			31
Regret	ix	27	71		36

Now to get a much clearer picture we will analyse Investors Portfolio Risk, Investor Reaction on Unprofitable Stocks, Investor Reaction on Profitable Stocks, Major Objective of an Investor.

Table 5 presents that 61% of investors are having medium portfolio risk level.

Table 5: Investor Portfolio Risk Level

<i>Investor Portfolio Risk Level</i>		
<i>High</i>	<i>Medium</i>	<i>Low</i>
33(18.33%)	111(61.67%)	36(20%)

Table 6 presents various reactions to value losing the security of regret theory. It exhibits that one major phenomenon of Regret Aversion is investors' lack of motivation and tendency to avoiding certain industries after poor decision-making. The results did not reveal the major statistical significance of one investor group losing their motivation over the others.

Table 6: Investor Reaction on Unprofitable Stocks

<i>Option</i>	<i>Number of Investors</i>
I Will Never Invest in the Same Stocks.	21(11.67%)
I Will Change the Course of My Investment.	69(38.33%)
I Perceived This May Happen, So No Need to Change.	39(21.67%)
I Know Stock Market Investment are Subjected to Risk, So I feel Relaxed.	51(28.33%)

Table 7

<i>Reaction on Unprofitable Stocks</i>	<i>Investment Strategy</i>	<i>Percentage of Investor</i>
Will Never Purchase	Buy & Hold	19%
Will Never Purchase	Fundamental Analysis	14%
Will Not Change	Technical Analysis	67%

Table 8 examines whether respondents place a different value on losses than on gains. Responses to questions viii and ix were compared to each other to investigate what creates stronger emotions among investors. Prospect Theory was used for interpreting the outcomes. None of

the members would consider purchasing more similar stocks. Notably, 50 per cent of the fundamental analysis investors would change the course of their investments or even decide not to invest in similar stocks again after a loss-making selling decision. This phenomenon refers to placing a higher value on losses than gains.

Table 8: Investor Reaction on Profitable Stocks

<i>Option</i>	<i>Number of Investors</i>
I Will Purchase More This Kind of Stocks.	15
I Am Proud of My Decision-Making Skills.	90
Profit & Loss are Part of Stock Market Trading. So, No Need to be So Happy.	63
What if the Stock Does Not Give the Same Return Again? So, I will Just Take My Profit & Will Not Reinvest in the Same Stock.	12

According to Table 9, there is no significant statistical difference in investors' reactions to gaining and losing money. However, evaluating respondents according to their investment strategies reveals fundamental analysis investor emotions are stronger when selling unprofitable stocks than when selling profitable ones. 35% per cent of the fundamental analysis group feel satisfaction after profitable sales.

Table 9

<i>Reaction on Profitable Stocks</i>	<i>Investment Strategy</i>	<i>Percentage of Investor</i>
Feel Satisfied	Fundamental Analysis	35

Now combining the result statement vi, vii and viii that we get from the nine-point chart and the level of risk that fundamental analysis investor is most risk-averse.

Table 10: Investment Strategy Wise Percentage Distribution of Investors' Level of Risk

<i>Level of Risk</i>	<i>Investment Strategy</i>	<i>Percentage of Respondent</i>
Medium	Buy & Hold	70
High	Technical Analysis	81
Low	Fundamental Analysis	87

Table 11 shows that investor has a realistic view regarding investment objective. Only 6% of the total investors have answered that they invest in stocks as they want to be rich. The majority, 46% of the investors, want to create long-term wealth by investing in the stock market.

Table 11: Major Objective of an Investor

Option	Number of Investors
Saving Money	36(20%)
Securing Future	48(28%)
Creating Wealth for Long Term	84(46%)
I Want to be Rich	12(6%)

Table 12

Behavioural Finance Theories	Number of People Inclined Towards Theory	Percentage of People Following Buy & Hold	Percentage of People Following Technical Analysis	Percentage of People Following Fundamental Analysis
Herding Theory	108	16	5	26
Anchoring Theory	36	6	10	0
Prospect Theory	54			31
Regret Theory	27	71		36

Analysis of Result

Table 13 reveals that buy-and-hold investors have tendencies to regret behaviour. Fundamental analysis investors are probable to herd and are risk-averse at the

moment of decision-making. The survey did not reveal a statistically significant correlation between technical analysis investors and a specific behavioural finance theory.

Table 13: Analysis Shows Correlations with Behavioural Finance Theories and Financial Strategies Adopted in the Table

Investment Strategy	Positive Correlation with Behavioural Finance Theory	Interpretation of Result
Fundamental Analysis	Herding Theory	26% investor Following Fundamental Analysis Strongly Agreeing to Statements i, ii, vi, vii & 87% of Them Chooses Low-Risk Portfolio Indicates Herding Tendencies.
Fundamental Analysis	Prospect Theory	31% investor Following Fundamental Analysis Strongly Agreeing to Statement viii & 50% of the People Chooses Not to Invest in Unprofitable Stocks Again & 35% investor are Satisfied with Their Decision of Purchasing Profitable Stocks. This Shows Stronger Emotions While Losing Than Gaining Money. They Show Strong Risk Aversion.
Buy & Hold	Regret Theory	71% Investor Following Buy & Hold Strongly Agreeing with Statement ix & 70% Choosing Medium Risk Portfolio Shows Strong Tendencies of Regret.
Technical Analysis	No Significant Correlation	-

Limitations

The study has the following limitations:

- The study did not analyse the inference of stock market investors and how they are affected by the behavioural finance model.
- The effect of illogical investor behaviour on the money market.

- How immature decision-making affects investor at an individual level and what impact it has on future investment decision-making.

Future Scope of the Study

The theories of behavioural finance can be used to analyse the investment strategies of mutual fund investors, and hence correct guidelines may be provided by the fund manager, which will be beneficial for the investor.

Conclusion

The most significant finding was the correlation between buy and hold strategy and regret theory. Secondly, Other significant discoveries were fundamental analysis of investors' positive correlations with Herding and Prospect theories. 26% of the investor responses to Herding Theory-related questions demonstrated strong herding tendencies. 31% Fundamental analysis investors also had stronger emotions towards losing than towards gaining money. This phenomenon is linked to Prospect Theory. The survey did not reveal any statistically significant correlations between technical analysis investors and a specific behavioural finance theory.

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Appendix:

Questionnaire

- Gender: Male ☐ Female ☐
- Age: 20-28 ☐ 29-36 ☐ 37-44 ☐ 45-52 ☐ 53-60 ☐
- Educational Qualification: Under-Graduate ☐ Graduate ☐ Post Graduate ☐
- Investors Experience (Years) in Stock Investment: 0-1 ☐ 2-3 ☐ 4-5 ☐ 6-7 ☐ Above 7 ☐
- Your Choice of Investment Strategy:
 - Buy And Hold ☐
 - Fundamental Analysis ☐
 - Technical Analysis ☐
 - E Differentiation ☐

6.

<i>Question</i>	<i>Strongly Agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
i. I often use information gained from news and magazine when making investment decision				
ii. I feel public opinion about profit making investment objectives are often correct				
iii. I mostly rely on company's historical financial data when making investment decision				
iv. I mostly rely on company's recent financial data when making financial decision				
v. I value company's recent information over historical one				
vi. I never make any investment decision without consulting my investment advisor				
vii. I feel my friends and family have more knowledge about investing than I do				
viii. I prefer not to invest in stocks with high volatility				
ix. I tend to hold on to securities losing value waiting for better terms				

7. Level of Risk of Your Portfolio?

High ☐ Medium ☐ Low ☐

8. How Do You React on Losing Money on Stocks?

<i>Option</i>	<i>Please Tick (✓) the Appropriate Option</i>
I will never invest in same stocks	
I will change the course of my investment	
I perceived this may happen so no need to change	
I know stock market investment are subjected to risk so I feel relaxed	

9. Your Reaction on Gaining Money

<i>Option</i>	<i>Please Tick (✓) the Appropriate Option</i>
I will purchase more this kind of stocks	
I am proud of my decision-making skills	
Profit and loss are the part of stock market trading so no need to be so happy	
What if the stock does not give the same return again so I will just take my profit and will not reinvest in the same stock	

10. What is the Objective of Your Investment?

<i>Option</i>	<i>Please Tick (ü) the Appropriate Option</i>
Saving money	
Securing future	
Creating wealth for long term	
I want to be rich	