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A REVIEW

A study on behavioural influence and factors determining investment pattern of investors with special reference to stock market investments

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ABSTRACT

In contrast to the conventional academic finance theories, the emerging field of behavioural finance investigates the cognitive factors and emotional issues that impact the decision-making process of individuals, groups, and organizations. This study is envisaged to find investors behavioural patterns and factors that investors consider including the psychology of their investments. Further more the implication of technical and fundamental analysis, market psychology and risk appetite of market participants and to identify and confirm the psychological biases prevailing among Indian investors. This study found that the adhere to the news, tips and research reports about the performance of the companies and broker firm's recommendations rather than market psychology.

KEY WORDS : Behavioural finance, Prospect theory, Market psychology, Risk appetite

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During the past years the equity markets have been characterized by increasing volatility and fluctuations. The integrated financial markets are increasingly exposed to macro-economic shocks which affect markets on a global scale. From an investor's point of view, the vulnerability of markets has led to increased uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools. Market participants have for a long time relied on the notion of efficient markets and rational investor behaviour when making financial decisions.

While conventional academic finance emphasizes theories such as Modern Portfolio Theory (MPT) and the Efficient Market Hypothesis (EMH), the emerging field of behavioural finance investigates the cognitive factors and emotional issues that impact the decision-making process of individuals, groups and organizations. By understanding the human behaviour and psychological mechanisms involved in financial decision making, standard finance models may be improved to better reflect and explain the reality in today's evolving markets.

Behavioural finance- psychology of trading:

A field known as "Behavioural Finance" has evolved that attempts to better understand and explain how emotions and cognitive errors influence investors and the decision-making process.

Psychological work suggests that people are not able to behave in such a way in many situations. People are limited in their abilities and capabilities to solve especially complex

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problems[1] . People are limited in their capacity for processing information, since we possess a limited working memory and limited computational capabilities. Moreover, people are limited in their attention capacity and hence ability to perform multiple tasks simultaneously (Kahneman, 1973). To overcome these problems and manage the problem of interest, people generally rely on a limited number of simplifying rules-of-thumb, or heuristics, which often fail to accommodate the full logic of decisions .

In the words of William Sharpe in Investment Gurus by Peter J. Tanou:

The human mind craves clairvoyance, but anyone's ability to see the future is extremely limited.

Prospect theory:

Losses loom larger than Corresponding gains.Tversky and Kanheman (1979) developed the theory showing how people manage risk, explaining the apparent regularity in human behaviours when assessing risk under uncertainty. The theory describes the decision processes in two stages: editing and evaluation. During editing, outcomes of a decision are ordered according to certain heuristic. In particular, people decide which outcomes they consider equivalent, set a reference point and then consider lesser outcomes as losses and greater ones as gains.

The editing phase aims to alleviate any Framing effects. It also aims to resolve isolation effects stemming from individuals' propensity to often isolate consecutive probabilities instead of treating them together. In the subsequent evaluation phase, people behave as if they would compute a value (utility), based on the potential outcomes and their respective probabilities, and then choose the alternative having a higher utility.

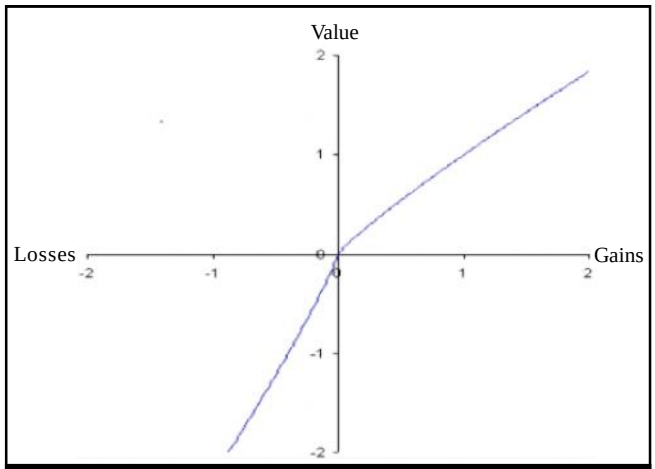

Fig.1 : Model of prospect theory

An important implication of prospect theory is that the way economic agents subjectively frame an outcome or transaction in their mind affects the utility they expect or receive. This aspect has been widely used in behavioural economics and mental accounting. Framing and prospect theory has been applied to a diverse range of situations which appear inconsistent with standard economic rationality.

Problem statement:

The vulnerability of financial markets has led to increased uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools. This study was intended by the researcher in order to find the impact of psychology of investors in predicting the future price movements and their pattern of analysis and their investment behaviour in stock markets of Coimbatore city.

Barber and Odean (2001) this paper tested this prediction by partitioning the investors on the basis of overconfidence and gender. Since men are more overconfident than women, men will trade more and perform worse than women. Rational investors trade only if the expected gains exceed transactions costs. Johnsson, Lindblom and Platan (2002), their purpose is to establish what factors lie behind the speculative bubble. The results obtained suggest that the behaviour of market participants during the speculative bubble was to some extent irrational and that the composition of investments has changed as a consequence of the speculative bubble. Zoghlami and Matoussi (2009), Tunisian stock market investors was not over-confident. 74 per cent of the population was found to be under-confident, very hesitant, defiant and very sensitive to other's reaction and opinion. 70 per cent of the investors decide not to persevere but to revise quickly their decisions and anticipations after any mistake and tend so to limit their potential losses. Verma (2008). The study employed primary data collection from 40 respondents through structured questionnaire. He analyzed of how an investment choice gets affected by the demographic variables. The investment preferences seem to be dynamic due to the changes in social, economic and political atmosphere, as well as introduction of new investment avenues. Nagpal and Bodla (2009), observed that the individuals may be equal in all aspects, but their financial planning needs are very different. Psychographics play an important role in determining investment behavior and preferences of individual investors. The study concludes that investors' lifestyle predominantly decides the risk taking capacity of investors. Hassan and Tamimi (2005), the paper identified the factors influencing the UAE investor behaviour. The five categories self-image/ Firm's image co-incidence, accounting information, neutral information, advocate recommendations and personal financial needs include thirty-four items. Sevil, Sen and Yalama (2007), the paper explained about the decision making process of the investors in istanbul stock exchange. 38 per

cent of the investors made decisions based on their own analysis and interpretation, while the rest based their decisions on different response points. The investors are not totally rational figures as assumed by the traditional theory. Merikas, Merikas, Vozikis and Prasad, this paper explained the factor category that displays the highest significance as per the investors in Greek Stock Exchange is Accounting Information. The last two categories are Advocate Recommendation and Personal Financial Needs" received weights of 0.89 and 0.71, respectively. Jarita Duasa Kassim (2007), this study examined the existence of herd behaviour among foreign investors in the Malaysian capital market. Results from the analyses of both FPI inflows and FPI outflow to/from Malaysia from/to the four main trading partners clearly show the existence of herd behaviour among foreign investors in the Malaysian market Rainer Baule (2008) used only the classic optimum portfolio theories can be problematic for small investors because of the transaction costs involved in it. This leads to optimization problems for these cost against the risk cost associated with the underlying assets. In case of small investments, only small underlying assets are possible due to the dominance of the transaction costs. Based on these risk costs associated, they are compared with the alternate vehicles of investments available.

Objectives of the study:

This study will help in gaining a better understanding of what an investors look for in an investment option. The study could also be used by the financial sector in designing better financial instrument customized to suit the need of the investors.

–To study the investors behavioural patterns including the psychology of their investments.
–To find out the factors that investors consider before investment.
–To find the implication of technical and fundamental analysis, market psychology and risk appetite of market participants.
–To identify and confirm the psychological biases prevailing among Indian investors:

METHODOLOGY

Research design:

The sampling technique followed here is simple random sampling. A private investor is a person who invests his/her money on the stock market and manages this portfolio of shares. Characteristics and decision-making processes affected private investors. The study is conducted in Coimbatore city, the second biggest city of Tamil Nadu, next to Chennai. It is the south Indian textile Manchester having large number of textile industries, engineering industries and the like. It is a hub of educational and information technology centre. Coimbatore has vast and heterogeneous population which provides ample scope to conduct the study. Hence, Coimbatore is selected. There are some difficulties in arriving at a sample of the viewers. They are:

–The viewer's/ readers population is not available. There is no authentic record about the population.
–This population is heterogeneous and hence arriving at population with homogenous features is yet another difficulty.

In spite of these difficulties a sample of respondents is drawn. Those who are individual investors alone are selected. Hence, purposive sampling method is adopted.

The statistical tools are employed by the researcher are percentage analysis for analysing the socio-demographic factors of respondents, ANOVA used for identifying the use of technical. Fundamental analysis, market psychology and risk appetite of respondents and Rank analysis used analysing the factors determining the investment behaviour of the respondents.

Using a statistical test always involves some degree of uncertainty since a sample is taken out of a small population. Using a 5 per cent significance level implies that we can with a certainty of 95 per cent be sure of our result. We have tried to minimize the probability, or risk, of making type I and type II errors. A type I error is to reject a correct Null hypothesis; a type II error is to accept an incorrect Null hypothesis (Körner, 1996).

The probability to make an incorrect decision is denoted by:

H_0= Association with technical and fundamental analysis, market psychology and risk appetite of the respondents.
H_1= No association with technical and fundamental analysis, market psychology and risk appetite of the respondents.
α = Is also called the significance level of the test.

ANALYSIS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under following heads :

Profile of the respondents:

The socio-demographic characteristics of the market participants are taken in to consideration for the change in behaviour pattern of the repondents. In this study the researcher has given prioritity for the gender, age, education, maritial status, occupation and gross annual annual income of the respondents.

The perception between respondents towards the behavioural aspects in stock market investments is different. From the Table 1, it is found that out of the 50 respondents, 70

per cent of them were male and 30 per cent of them were female. It is found that out of the 50 respondents, 46 per cent of the respondents are in the age group between 20-30 who shows interest in stock market investments, 40 per cent of the respondents are in the age group between 30-40, 8 per cent of the respondents are in the age group below 20 and 6 per cent of the respondents are in the age group below 40 who are the meagre investors.

The results of the marital status distribution show that out of the 50 respondents, 88 per cent of the respondents are married and participate in the stock market movements. Remaining 12 per cent of the respondents are single and shows less interest in the stock market investments. Interestingly it is found that out of the 50 respondents, 48 per cent are PG graduates who are well informed about the market conditions, 38 per cent are professional educationalist and the remaining 14 per cent of the less active respondents are UG graduates.

Investors purpose to invest in stock market invesments:

From Table 2, it is found that the most influencing factors of investors' investment decisions in the coimbatorian stock market participants in order of importance are: wealth creation, tax saving and to earn returns.On the other hand, the least influencing factors are

Table 1: Profile of the respondents

Variable	Investor grouping	Frequency	Per cent
Gender	male	35	70.0
	female	15	30.0
Age	below 20	4	8.0
	between 20-30	23	46.0
	between 30-40	20	40.0
	above 40	3	6.0
Marital status	single	6	12.0
	married	44	88.0
Education	UG graduate	7	14.0
	PG graduate	24	48.0
	professional education	19	38.0
Occupation	Private sector employee	25	50.0
	Government employee	4	8.0
	professional	21	42.0
Gross annual income	less than2L	12	24.0
	2L-4L	20	40.0
	4L-6L	18	36.0

Table 2: investors purpose to invest in stock market investments

Variables		Wealth creation	Tax saving	Earn returns	Future expenditure	Total	Per cent
Gender	male	15	9	9	2	35	70
	female	8	3	4	0	15	30
Age	below 20	4	0	0	0	4	8
	between 20-30	16	3	4	0	23	46
	between 30-40	0	9	9	2	20	40
	above 40	3	0	0	0	3	6
Marital status	single	4	0	2	0	6	12
	married	19	12	11	2	44	88
Occupation	pvt sector employee	11	5	9	0	25	50
	govt employee	4	0	0	0	4	8
	professional	8	7	4	2	21	42
Education	ug graduate	3	4	0	0	7	14
	pg graduate	8	5	11	0	24	48
	professional education	12	3	2	2	19	38
Gross annual income	less than2L	8	0	2	2	12	24
	2L-4L	9	3	8	0	20	40
	4L-6L	6	9	3	0	18	36

future expenditure.

Influence of technical analysis among educated investors in investment decision:

It is seen from the Table 3, where the significant values of.000 and .005 are lesser than .05 (5%) level of significance, it can be concluded that the alternate hypothesis is accepted. The daily price fluctuations, use of charts, patterns and trends and active trading volume/turnover has an association with the education level of the respondents.

The significant values of .052 and .058 are greater than .05 (5%) level of significance, it can be concluded that the investors may increase their investment when the market performance is poor has no association with the educational

Table 3 (ANOVA): Influence of technical analysis among educated investors in investment decision

		Sumof squares	df	Mean square	F	Sig.
use of past price movements to	Between groups	12.739	2	6.369	3.023	.058
predict future price, trust that	Within groups	99.041	47	2.107		
history repeats	Total	111.780	49			
daily price fluctuations	Between groups	20.616	2	10.308	13.723	.000
	Within groups	35.304	47	.751		
	Total	55.920	49			
use of charts, patterns and trends	Between groups	16.081	2	8.041	5.980	.005
	Within groups	63.199	47	1.345		
	Total	79.280	49			
active trading volume/turnover	Between groups	5.406	2	2.703	13.270	.000
	Within groups	9.574	47	.204		
	Total	14.980	49			
Increase my investment when the	Between groups	9.548	2	4.774	3.148	.052
market performance is poor	Within groups	71.272	47	1.516		
	Total	80.820	49			

Table 4 (ANOVA) : Role of education in fundamental analysis before investing

		Sum of squares	df	Mean square	F	Sig.
use of company's annual	Between groups	4.335	2	2.167	1.240	.299
reports	Within groups	82.165	47	1.748		
	Total	86.500	49			
P/E ratio	Between groups	9.224	2	4.612	4.442	.017
	Within groups	48.796	47	1.038		
	Total	58.020	49			
Dividend ratio	Between groups	.347	2	.174	.415	.663
	Within groups	19.653	47	.418		
	Total	20.000	49			
debt equity ratio	Between groups	1.737	2	.869	.774	.467
	Within groups	52.763	47	1.123		
	Total	54.500	49			
return on equity/ return	Between groups	13.114	2	6.557	7.308	.002
on investment	Within groups	42.166	47	.897		
	Total	55.280	49			
government	Between groups	1.150	2	.575	.763	.472
regulations/intervention	Within groups	35.430	47	.754		
	Total	36.580	49			
quality of top mgt	Between groups	3.401	2	1.700	3.278	.046
	Within groups	24.379	47	.519		
	Total	27.780	49			

background of the respondents. The use of past price movements to predict future price, trust that history repeats also do not have any association with the education of the respondents.

Role of education in fundamental analysis before investing:

From Table 4, the significant values of .299, .663, .467 and .472 which are greater than .05 (5%) level of significance, the alternate hypothesis is rejected. The fundamental analysis which includes the use of company's annual reports, Dividend ratio, debt equity ratio and government regulations/ intervention have no association with the educational background of the respondents.

It is seen from the table, where the significant values of .017, .002 and .046 are lesser than .05 (5%) level of significance, it can be concluded that the alternate hypothesis is accepted. It can be concluded that the educational background of the respondents have association with the P/ E ratio, return on equity/ return on investment and quality of top management.

Occupations with market psychology:

From Table 5, the significant values of .923, .532 and .592 which are greater than .05 (5%) level of significance, the alternate hypothesis is rejected. The educational background of the respondents does not have any significant association with the recommendations/advice of professional investors/brokers, friend, family and peer and the rumours in the market which forms part of the market psychology of respondents.

Gross annual income and risk appetite:

From Table 6, the significant values of .052 and .194 which are greater than .05 (5%) level of significance, the alternate hypothesis is rejected. It can be concluded that the respondents try to invest in risky stock for better return and invest mostly in companies with stable expected returns have

Table 5 (ANOVA) : Occupations with market psychology

		Sum of squares	df	Mean square	F	Sig.
rumour driven market	Between groups	.370	2	.185	.125	.883
	Within groups	69.650	47	1.482		
	Total	70.020	49			
new stories in the media	Between groups	24.773	2	12.387	7.454	.002
	Within groups	78.107	47	1.662		
	Total	102.880	49			
recommendations/advice of professional	Between groups	3.368	2	1.684	1.071	.351
investors/brokers	Within groups	73.912	47	1.573		
	Total	77.280	49			
recommendations/advice of some friend,	Between groups	4.782	2	2.391	1.867	.166
family and peer	Within groups	60.198	47	1.281		
	Total	64.980	49			

Table 6 (ANOVA): Gross annual income and risk appetite

		Sum of squares	df	Mean square	F	Sig.
Try to invest in risky stock for better return	Between groups	13.902	2	6.951	3.157	.052
	Within groups	103.478	47	2.202		
	Total	117.380	49			
Usually invest in companies with suitable expected returns	Between groups	22.430	2	11.215	7.873	.001
	Within groups	66.950	47	1.424		
	Total	89.380	49			
Am not concerned about the large loss in my stock than missing the substantial gain	Between groups	12.369	2	6.184	3.423	.041
	Within groups	84.911	47	1.807		
	Total	97.280	49			
Invest mostly in companies with stable expected returns	Between groups	4.050	2	2.025	1.701	.194
	Within groups	55.950	47	1.190		
	Total	60.000	49			

no association with the gross annual income of the respondents.

It is seen from the Table 6, where the significant values of .001 and .041 are lesser than .05 (5%) level of significance, it can be concluded that the alternate hypothesis is accepted. It can be concluded that the gross annual income of the respondents have association with their usual investment in companies with suitable expected returns and they are not concerned about the large loss in stock than missing the substantial gain from their investments.

Identifying and confirmation of psychological biases prevailing among Indian investors:

From Table 7, the mean score of 2.20 confines that the majority of the respondents are investing for long term profit seeking. The second mean score goes to the investors who invest for the purpose of steady income either in the form of dividend and interest. The third mean score tells us the investors invest for capital gains and finally short term profit seeking.

Rankg of inducement to invest in a particular stock:

From the Table 8, the mean score from 2.17 to 3.21 indicates that the respondents adhere to the news, tips and research reports about the performance of the companies and 3.21 indicates the broker firms recommendations in investment pattern. The mean score of 3.90 shows that the respondents are reluctant to do the personal homework.

The main Findings of the study are highlighted as follows:

The most influencing factors of investors' investment decisions in the coimbatorian stock market participants in order of importance are: wealth creation, tax saving and to earn returns. On the other hand, the least influencing factors is future expenditure.

The purposes behind the investments are related to age and education and gross annual income of the respondents.

The use of past price movements to predict future price, trust that history repeats also do not have any association with the education of the respondents.

The educational background of the respondents does not have any significant association with the recommendations/advice of professional investors/brokers, friend, family and peer and the rumours in the market which forms part of the market psychological factors.

It can be concluded that the occupations of the respondents have a significant association with the fundamental and technical analysis about the corporate performance and they do not consider the market psychological factors.

It can be concluded that the gross annual income of the respondents have association with their usual investment in companies with suitable expected returns and they are not concerned about the large loss in stock than missing the substantial gain from their investments. Their risk appetite is more.

The respondents adhere to the news, tips and research reports about the performance of the companies and broker firm's recommendations.

The purpose of market participants order for the day to invest in stock market investments are in the order of: long term profit seeking, steady income either in the form of dividend and interest, capital gains and finally short term profit seeking.

Suggesstion and conclusion:

The detailed analysis of the responses from the respondents who are the active market participants and their investment behaviour and their pattern in selection of financial instrument reveals that investors do not listen to

Table 7 (Ranks) : Inentifiying and confirmation of psychological biases prevailing among indian investors

	Mean rank	Test statistics	
Short term profit seeking	2.99	N	50
Steady income divd/int	2.24	Chi-square	12.200
Long term profit seeking	2.20	df	3
Capital gains	2.57	Asymp. sig.	.007

Table 8 (Ranks): Rankg of inducement to invest in a particular stock

	Mean rank	Test statistics	
Tips	2.77	N	50
News	2.17	Chi-square	32.389
Research report	2.95	df	4
Personal homework	3.90	Asymp. sig.	.000
Broker firms recommendations	3.21	Friedman test	

the recommendations/advice of professional investors/ brokers, friend, family and peer and the rumours in the market which forms part of the market psychological factors.

For recurrent selling and purchasing of investment in more profitable manner the assessment of the quality of the management of the companies in which investment has been made or proposed to be made has to be done. It is suggested that the broking firms, news channels and magazines regularly gives the expert advice based on the fundamental and technical analysis on the performance of the financial instruments like stock and securities. And so the investors update the stock market operations and stock price movements apart from their instinct decision making.

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