Investors Perception Towards Behavioral Finance in Investment Decision Making

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Abstract - Finance is the system that includes the granting of money and credit, making of investments and provision of banking facilities. Behavioral finance is a new academic discipline which seeks to apply the insights of the psychologists to understand the behavior of both investors and financial markets. This study analyse the Investors behavior through 600 respondents using Factor analysis test. The results of the study show that the 16 variables selected for the study had been reduced to 5 factor models using the principle component analysis such as Market Dynamics, Logical Analysis , Herding Bias, Regret Aversion and Heuristic Bias. Thus, Behavioral finance is becoming a primary part of the decision making process, since it influences investors' behavior greatly.

Key words: Efficient Markets Hypothesis, Anchoring, Overconfidence.

I. INTRODUCTION

Finance is the system that includes the granting of money and credit, making of investments and provision of banking facilities. It is a study of the management of funds and comprises the dynamics of assets and liabilities under different degrees of uncertainty and risk situation. The ground and study of finance has long been based about the design of "efficient markets." The Efficient Markets Hypothesis (EMH), which classical finance theory is built upon, states that at any given moment in time the price of any and all assets and securities being trade is correct and reflects all available information.[8]

Behavioral finance is a new academic discipline which seeks to apply the insights of the psychologists to understand the behavior of both investors and financial markets. It focuses upon how investor interprets and acts on information to take investment decisions. It explains that an individual does not always act rationally in their financial decisions and that their behaviors cause them to make different choices about their financial decisions.[3] This new field incorporated the theories of psychology, sociology and also neurology in the study of investor behaviour. Behavioral finance is becoming a primary part of the decision making process, since it influences investors' behavior greatly. Better understanding of behavioral finance will help the investors to select a better various investment option.

II. REVIEW OF LITERATURE

Atif Kafayat (2014) in his article examines the investors of Islamabad Stock Exchange are representing tendencies of irrational behavior when expose to certain psychological dilemma. This study deals with three dilemmas such as selfattribution bias, overconfidence bias and over optimism bias. The main function of the study is to empirically confirm the relationship among the biases and their outcome on the rational decision making of an investor. The findings of the studyproved that the investors were suffer fromthese Biases and make suboptimal decisions and their outcome is less than what they expect. It is examined that the biases are related and if an investor suffer from one bias there is a higher possibility that investor would eventually exposed to another bias. So it is found that investors will become overconfident and overoptimistic when they credit themselves of their success and blame other factors for failures.[1]

RanpreetKaur (2015) in his article stated that in the era of volatility and uncertainty, investors are exposed to greater risk in investment. The study analyzes the behavior influence of retail investors in equity investment and how their expectations are getting changed in the era of instability. The outcome of the study reveals that the investors past experience, attitude towards risk, available market information and decision of other investor affect the decision of equity investment. Influence of dividend on market price shows their expectations as their behaviors affects the investment approach. The findings of the study revealed that the attitudes, expectations, over confidence, heuristic, prospect and market information are the major behavioral factors that influence the investors.[7]

Vaibhav Jain (2012) in his article attempts to explain the anomalies of efficient market hypothesis. The study explains

how security prices incorporate all information immediately without giving the chance to the investors to make profit from them. Behavioral Finance models such as prospect theory, expected utility theory, overconfidence, over and under reaction, mental compartments, Disjunction effect and limits to arbitrage are also studied as none of the three conditions given above satisfies in reality and hence explained asanomalies of market efficiency.It also discusses the foundation of market efficiency to exist on satisfaction of any of the three conditions that are Rationality, Arbitrage and Independent deviation from Rationality. The three different trading strategies such as Momentum, Contrarianand Technical are also analyzed but only momentum and contrarian are much preferred by theacademics and investors.[10]

III. STATEMENT OF THE PROBLEM

Traditional financial theory says that, the decisions made by the investors are usually rational. During several past years, investments are usually based on forecasting, performance, market timing. Whereas the modern theories suggest the investors make irrational decisions during their investments and psychological impact was found during these mistakes. Thus, Behavioral Finance had got popularity in the globe of investment decisions and stock markets. Since many years, investors have been considering psychology an important factor while determining the market behavior, but formal studies have only been conducted in recent years in this field of behavioral finance.[2] The role of Behavioral finance in facilitating the investors' decision making while investing creates the following questions in the minds of researcher.

1. What are the drawbacks in traditional finance?
2. How did behavioral finance begin, and stand at the present time?
3. What are the Behavioral factors and its role on the investors in decision making?
4. How the investors shall overcome from these Behavioral biases?
5. What is the future for the field of behavioral finance? And, what specific areas are likely to produce the best and most exciting research within behavioral finance?

Hence the above said questions have inspired the researcher to undertake this study on Behavioral finance in the decision making.

IV. OBJECTIVES OF THE STUDY

1. To study the concept of behavioral finance and to understand difference between traditional finance and behavioral finance.
2. To determine the main behavioral factors that influences the investment decisions.
3. To offer suggestion based on the results of the study.

V. METHODOLOGY

The methodology used in the study is explained below.

5.1 Data and Sources of Data
The study is based on both primary and secondary data. Primary data have been collected through issue of questionnaire to the investors. Secondary data about the Behavioral finance have been collected from various Books, Magazines, Journal and Websites.

5.2 Area of study
The study area is limited to Erode City Municipal Corporation, Erode District, Tamilndu, India.

5.3 Number of sample investors
Formula for finite population

$$n = Z^2 * P * Q * N / (N-1) e^2 + Z^2 P*Q$$

Z = Z value e.g. 1.96 for 95% confidence level, P = 0.5 standard deviation, Q=1-P, N= population (498121), e=margin of error 0.04, n = sample size for finite population.

$$n = 1.96^2*0.5*(1-0.5)*498121 / (498121 - 1) (0.04)^2 + 1.96^2*0.5(1-0.5)$$

$$n = 478395/ 796.992+0.9604 =599.5$$

Sample size determination proportionate method = 600
Questionnaire has been collected from 600 investors of major share markets. The sample investors are selected on the basis of convenient sampling method.

5.4 Framework of Analysis
The statistical tool used to analyse the data was Factor analysis.

5.5 Software Used for the study
1. Microsoft Excel
2. SPSS 16.0 for Windows

VI. THEORITICAL CONCEPTS OF BEHAVIORAL FINANCE

6.1 EMERGENCE OF BEHAVIORAL FINANCE
Efficient Market Hypothesis is one of the most accepted financial market theories as its participants are, rational "wealth maximizers". It became one of the most influential concepts of modern economics and a cornerstone of financial economics. The Efficient Market Hypothesis is considered as the leading investing theory from the early 60s to the mid 90s for more than 30 years as it was the backbone of contemporary financial theory.[5] The various anomalies have been identified and the concept of traditional theory was criticized on many grounds. The emotion and psychology influence the decisions, causing to behave in unpredictable or irrational ways. Such criticisms have given birth to an alternative discipline called Behavioural Finance. This new field has challenged the assumptions of EMH, particularly by incorporating emotion and psychology in the investor

rationality concept of investment behaviour. Thus the concept of Behavioral Finance got popularity in the world of stock markets and investment decisions.

6.2 Evolution of Behavioral Finance

Behavioral Finance is a concept that has become widely popular in recent years. The principles of behavior used by Behavioral Finance in practice are based on psychology and sociology. Amos Tversky and Daniel Kahneman are identified as the fathers of Behavioral Finance.[6] They have focused much of their study on the cognitive biases and heuristics that cause people to engage in unanticipated irrational behavior.
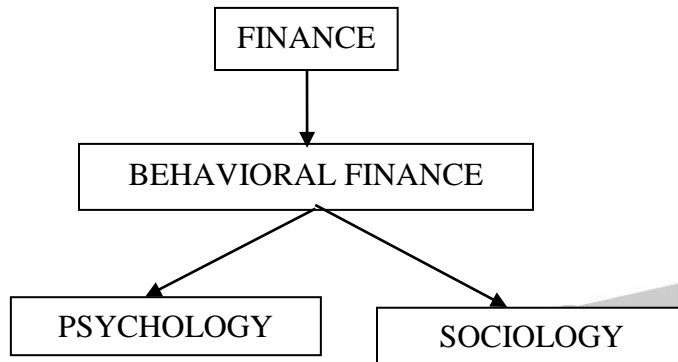

Figure 1: Evolution Of Behavioral Finance
Source: Schindler (2007)

6.3 Traditional Finance Vs Behavioral Finance

Traditional financial theory says that, the decisions made by the investors are usually rational. During several past years, investments are usually based on forecasting, performance, market timing. This means that they behave rationally so they earn returns for the money they invest in stock markets. Rational behavior patterns were necessary to become successful in the stock market for investors. Rational behavior is also required to overcome tendencies.

Whereas the modern theories suggest the investors make irrational decisions during their investments and psychological impact was found during these mistakes. Investors deal with several cognitive and psychological errors. Due to the difference between the assumptions made in traditional finance theory and actual behavior of investors, behavioral finance has been growing specifically over the last two decades. Since many years, investors have been considering psychology an important factor while determining the market behavior, but formal studies have only been conducted in recent years in this field of behavioral finance.[4]

Role of Emotions:

There is no place for emotions in decision making process as per EMH. Behavioral finance has incorporated emotion and psychology too in the investment behaviour study.

Informational Accuracy:

Strong form of EMH says that all the investors have equal access to all information and the stock price reflects that information and as such the prices happen to be accurate. Behavioural finance contradicts the principle of EMH and says that stock prices do not always reflect all information.

Market Crisis:

If this theory actually been exists, there would not have found any market crisis or market bubbles, as EMH believes that the investors always act rationally. The market crisis or bubbles are better described by Behavioural finance as it says that the investor rationality is not the only ground in decision making process and various other issues should also to be considered.[9]

VII. ANALYSIS AND INTERPRETATION

Behavioral finance is the study of the influence of psychology on the behavior of financial practitioners and the subsequent effect on markets. The descriptive techniques have employed to provide the demographic variables and behavioral aspects of the investors as sample respondents in the study. The following table reveals the demographic profile, behavioral factors and satisfaction level of the sample respondents.

Behavioral Factors Influencing The Decision of Investor in Stock Market

Factor Analysis technique has been applied to find the underlying dimensions (factors) that exists in the 16 variables relating to the behavioral factors influencing the decision of investor in stock market selected for the study.

7.1 KMO and Bartlett's Test of Sphercity

Further two tests namely Kaiser-Meyer-Olkin measures of sampling adequacy (KMO) & Bartlett's Test of Sphercity have been applied, to the resultant correlation matrix to test whether the relationship among the variables has been significant or not as shown in table 7.1

Table 7.1 KMO and Bartlett's Test of Sphercity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.728**
Bartlett's Test of Sphercity	Approx. Chi-Square	6.629E3
	Df	120
	Sig.	**0.000**

The result of the test shows that with the significant value of 0.000 there is significant relationship among the variable chosen. KMO test yields a result of 0.728, which states that factor analysis can be carried out appropriately for these 16 variables that are taken for the study.

7.2 Factor Extraction

Using the Principle Component Analysis five factors have been extracted based on the variance (Eigen value greater than 1). Table 7.2 shows the percentage of variance, cumulative percentage and the total variance of the variable identified for the study.

Table 7.2 Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	4.444	27.774	27.774	4.444	27.774	27.774	3.282	20.511	20.511
2	2.880	18.002	45.776	2.880	18.002	45.776	2.667	16.668	37.179
3	2.385	14.904	60.680	2.385	14.904	60.680	2.408	15.051	52.230
4	1.687	10.541	71.221	1.687	10.541	71.221	2.395	14.967	67.197
5	1.262	7.888	79.109	1.262	7.888	79.109	1.906	11.912	79.109
6	.726	4.539	83.649						
7	.576	3.597	87.246						
8	.409	2.556	89.802						
9	.357	2.234	92.035						
10	.323	2.017	94.053						
11	.235	1.470	95.522						
12	.196	1.227	96.749						
13	.173	1.084	97.833						
14	.158	.989	98.822						
15	.112	.698	99.520						
16	.077	.480	100.000						

Extraction Method: Principal Component Analysis.

From the above table 7.2, it is clear that the five factors extracted together account for 79.109% of the total variance (information contained in the original sixteen variables). This is pretty good, because we are able to economize on the number of variables (from 16 we have reduced them to 5 underlying factors), while we lost only about 20.891% of the information content (79.109% is retained by the 5 factors extracted out of the 16 original variables).

7.3 Communalities

Table 7.3 shows the proportion of the variance explained by the 5 factors in each variable. The proportion of variance is explained by the common factors called communalities of the variable.

Table 7.3 Communalities

Variables	Initial	Extraction
Q1. Skills and knowledge help to outperform	1.000	.823
Q2. Use trend analysis	1.000	.806
Q3. Prefer to buy local stocks	1.000	.708
Q4. Anticipate the end of good and poor	1.000	.650
Q5. Avoid selling property that have decreased in value and shows profit	1.000	.718
Q6.Treat each element seperately in investment portfolio	1.000	.897
Q7. Ignore the connection between different investment possibilities	1.000	.826
Q8. Able to forecast the market return	1.000	.817
Q9. Focus on past performance for investment	1.000	.714
Q10. Focus on recent performance for investment	1.000	.876
Q11. Current prices are correct and decisions are based on it	1.000	.928
Q12. Depend on other investors decisions of stock types &volume	1.000	.514
Q13. Act in same way as majority of investors around you	1.000	.845
Q14. React quickly to changes of other investors buying and selling	1.000	.846
Q15. After taking decision you think that is wrong	1.000	.863
Q16. Take suggestion from others before investment	1.000	.825

Extraction Method: Principal Component Analysis.

The above table 7.3 indicates the amount of variance in each variable. For principal components analysis, the initial communalities are always equal to 1.000. Extraction communalities are estimates of the variance in each variable accounted for by the factors (or components) in the factor solution.

7.4 ROTATION

Since the idea of factor analysis is to identify the factors that meaningfully summarize the sets of closely related variables, the rotation phase of the factor analysis attempts to transfer

initial matrix into one that is easier to interpret. Varimax rotation method is used to extract meaningful factors. This is

given in Table 7.4.

Table 7.4 Rotated Component Matrix

Variables	Component				
	1	2	3	4	5
Q11. Current prices are correct and decisions are based on it	.937				
Q10. Focus on recent performance for investment	.901				
Q6.Treat each element separately in investment portfolio	.888				
Q14. React quickly to changes of other investors buy&selling		.877			
Q7. Ignore the connection between different investment possibilities		.783			
Q13. Act in same way as majority of investors around			.879		
Q8. Able to forecast the market return			.827		
Q12. Depend on other investors decisions of stock types and volume			.514		
Q4. Anticipate the end of good and poor				.438	
Q15. After taking decision you think that is wrong				.400	
Q9. Focus on past performance for investment				.813	
Q16. Take suggestion from others before inv.				.680	
Q5. Avoid selling property that have decreased in value and shows profit				.450	
Q3. Prefer to buy local stocks				.537	
Q1. Skills and knowledge help to outperform					.864
Q2. Use trend analysis					.770

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

The above table 7.4 presents the factor loadings for each variable. The table shows that variables Q11, Q10 and Q6, have loadings of 0.937, 0.901 and 0.888 on factor 1; this suggests that factor 1 is a combination of these variables. At this point, factor 1 can be named as "Market Dynamics". Incase of the factor 2 columns, the variables Q14, and Q7 have high loadings of 0.877 and 0.783 respectively. This indicates that factor 2 is the combination of these two variables. Incase of factor 3 columns, the variable Q13, Q8 and Q12 has a high loading of 0.879, 0.827 and 0.514 and therefore it is groups under it. Incase of factor 4 columns, the variables Q4, Q15, Q9, Q16, Q5 and Q3 has high loadings with 0.438, 0.400, 0.813, 0.680, 0.450 and 0.537, so they are grouped under it. Incase of factor 5 columns, the variables Q1 and Q2 has high loadings with 0.864 and 0.770, so they are grouped under it respectively.

Further all the variables, which have high loadings, are combined with the concerned factor based on their scores as shown in table 7.5.

Table 7.5 Variables identified for Factor Name

S.No	Variables	Factor Name
1	Q11. Current prices are correct and decisions are based on it	Market Dynamics
2	Q10. Focus on recent performance for investment	
3	Q6.Treat each element seperately in investment portfolio	
4	Q14. React quickly to changes of other investors buying and selling	Logical Analysis
5	Q7. Ignore the connection between different investment possibilities	
6	Q13. Act in same way as majority of investors around you	Herding Bias
7	Q8. Able to forecast the market return	
8	Q12. Depend on other investors decisions of stock types and volume	
9	Q4. Anticipate the end of good and poor	Regret Aversion
10	Q15. After taking decision you think that is wrong	
11	Q9. Focus on past performance for investment	
12	Q16. Take suggestion from others before investment	
13	Q3. Prefer to buy local stocks	

| 14 | Q5. Avoid selling property that have decreased in value and shows profit | |
| 15 | Q1. Skills and knowledge help to outperform | **Heuristic Bias** |

| 16 | Q2. Use trend analysis | |

The above table 7.5 shows the 5 factors that are identified from 16 variables using principle component analysis and each factor each factor have been given a name which is associated with the corresponding variables based on the values obtained from the rotated component matrix table.

VIII. SUGGESTIONS OF THE STUDY

1. The investors should also be able to interpret the market and economic indicators since they influence the performance of the share on the market. They should evaluate all the variables in the environment instead of considering only one variable.

2. Check the source of information, before reacting to it. The announcements from the companies should be sufficiently adjusted in the portfolio as soon as possible.

3. Investors do also need to diversify their investment in different companies by developing a portfolio of investments to minimize risks and maximize returns and the investors should have to analyse all information and should avoid looking at other investor's pattern of investment.

IX. LIMITATIONS OF THE STUDY

1. The study is carried out only in Erode Municipal Corporation. Thus, its findings cannot be generalized to other cities due to the nature of the environment.

2. The study was limited to a few variables related to behavioral factors of investment decision making and the analysis tools and techniques have its own limitations to provide accurate results of the study.

X. AVENUES FOR FUTURE RESEARCH

Future research studies can concentrate on emerging stock markets and other markets such as the derivatives market. Research can be performed by combining different types of investors such as individuals, institutional (mutual funds, hedge funds, pension funds, investment advisors, etc.) to find out the difference in their behaviour and the effect of behavioural biases in their financial decision making.

XI. CONCLUSION

The research found that unlike the classical finance theory suggests, individual investors do not always act rationally while making investment decisions. Individual investors suffer from several psychological and emotional biases. These biases play an integral role in an investor's decision making. There are some common biases identify in these study and also develop the strategies to overcome these biases. The study shows that market dynamics, logical analysis, herding bias, regret aversion and heuristic bias were the behavioral factors which influence the investors in investment decision making. The impact of behavioral factors on investment decision making leads to irrational decision, loss and make investor not to invest in future. People need to identify the biases and develop the strategies to overcome these biases and people require proper allocations strategies and identify the risk and return in investment decision.

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