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The Influence of Behavioural Factors in Equity Investment Decisions: An Exploratory Analysis

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Abstract - Traditional Finance theories were developed based on the premise of rationality. These theories believed that investors are rational and their investment decisions are appropriate. Later, behavioral finance theories disproved the concept of rationality, and found that a study on investor behavior is very significant as it affects the investment decision and impacts the stock market. In this context an attempt is made in the present study to explore the behavioral factors which impacts the investment decision. Using the responses from 100 equity investors, an exploratory factor analysis is conducted to identify those factors which influence the investment decision. Six factors extracted includes overconfidence, regret aversion, mental accounting, anchoring, herding and availability bias.

Key words: Behavioral factors, equity investment decisions, exploratory factor analysis (EFA)

I. INTRODUCTION

Finance is a field where the financial resources are optimally allocated to maximize the returns and minimize the risk. Contributing to the field of finance many economists developed finance theories like Efficient Market Hypothesis, Capital Asset Pricing theory, APT, Options model etc. which created an evolution in the finance world. These theories are framed based on the underlying assumption that investors are rational, therefore their investment decision will also be rational leading markets to efficient. Traditional finance played a very partial role in answering few questions like why investors behave differently. Why markets outperform or underperform? (Subrahmanyam, 2007). To address the critics of traditional finance, a new emerging filed Behavioural finance evolved, which deals with the human behaviour to explain more accurately the investment decisions (R. H. Thaler, 1999). Behavioural finance integrates psychology, sociology with finance theories to give an insight about the investment decisions. A comprehensive model was build integrating different disciplines with Behavioural Finance as shown in the Fig 1.

The theory of behavioural finance has evolved during late 1970s. In 1979, two psychologist Daniel Kahneman and Amos Tversky came out with the brilliant work "Prospect Theory", which challenged the most significant theory of Finance, Efficient Market Hypothesis (EMH). Later in 1980s, (R. Thaler, 1985, p. 19) researched and identified the mistakes of an investor during investment decisions like ignoring the opportunity cost and sunk cost, regret aversion etc, which created the necessity of a new discipline Behavioural finance which can help the investors to consider all the aspects during their investment decisions. (De BONDT & Thaler, 1985) continued with their research to check whether stock markets react differently. Their experiment found that investors over react to unpredicted news which impacts their returns. It was evident in their study that investors overreact to the bad news than the good news and let the decisions affect their investments.

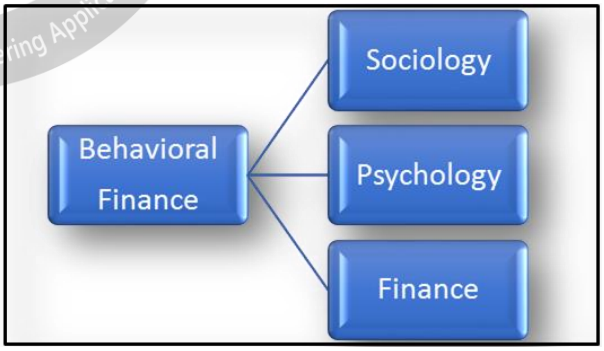

Fig 1 integration of Different disciplines with Behavioural Finance

In 1990s, the research on Behavioural Finance started appearing in journals, newspaper and magazines. Thaler and Shiller organised a series of conference on Behavioural Finance to create awareness and importance of Behavioural Finance in investment decisions (Shiller, 2003). Later in early 1999s, internet bubble had raised lot of questions on the collapse of the Internet Stock Bubble Blast. (R. H. Thaler, 1999) applied the theories of Behavioural Finance to explain the market anomalies and

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highlighted Herding Bias as the major cause for the Internet Stock Bubble. (Shiller, 2003) studied the transition from EMH to Behavioural Finance and highlighted the advantage of Behavioural theories, which helps in identifying the root cause of market crash, stock market bubble. The identified root cause of these anomalies is Human Behaviour and the assumption that investors are rational. (Statman, 2014) elucidated that behavioural finance theories assume that investor is "Normal" not "Rational". It does not mean that normal investor is completely irrational; it just mean that they are not completely rational, as they are influenced by cognitive biases (Statman, 2014). However, in the recent years, the research on Behavioural finance has created awareness about different behavioural biases among the individual investors and financial institutions.

(Shefrin & Statman, 2000) developed Behavioural Portfolio Theory and identified the broad category of the behavioural biases which helps in developing behavioural theories. The broad category of biases are "Heuristics", "Framing", and "Emotions".

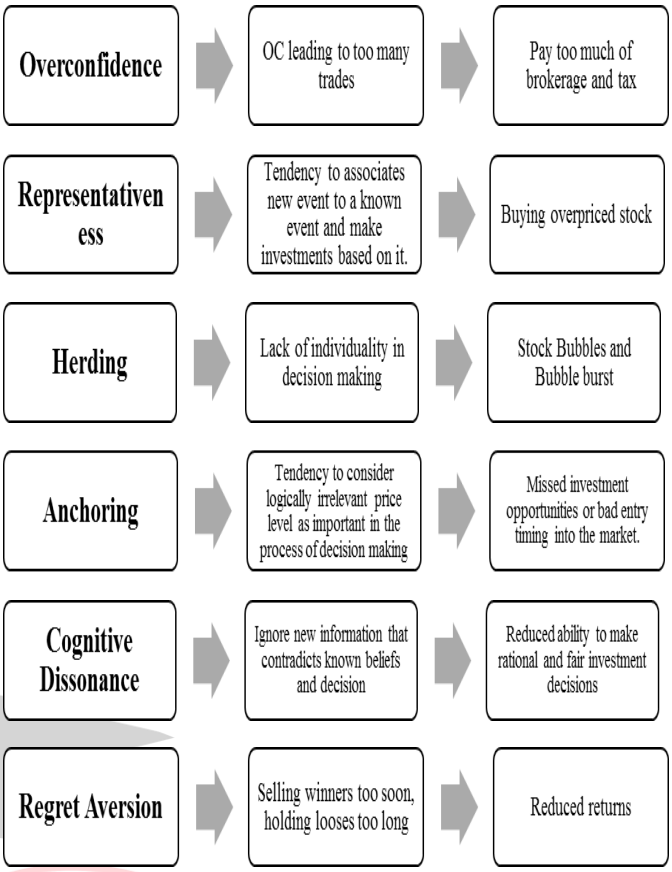
Heuristics refer to the rule of thumb. When an investors wants to make any kind of investment decisions, he tend to apply the rule of thumb in order to avoid the loss in his decision making. (Brabazon, 2000) defined the heuristic bias, as "the process by which investors find out solution for complex problems in uncertain environments by trial and error method which in turn leads to the rule of thumb". The different types of heuristics include loss aversion, information anchoring, regret aversion, availability bias to name a few.

Framing states that people behave differently when the same situation is framed differently in terms of risk or return, which means that the perception of the investors is influenced by the frame of references. It is also known as "Frame Dependence". The biases included in framing are disposition effect and mental accounting

Emotions is another important aspect in behavioural finance, as the investment decisions are mainly based on the emotions of the investors like greed, fear and aspirations.

(Baker & Nofsinger, 2010) have identified factors that affect the investors' decision making. The factors are grouped into four categories namely, psychological, socio economical and demographical (Ahmad, Ibrahim, & Tuyon, 2017).

(Subash, 2012) has identified the different biases and described how these biases affect the investment decision of the investor. He also mentions about the outcome of these biases and the consequence on the stock market



Source: ***Subash, R. (2012). Role of behavioural finance in portfolio investment decisions: evidence from India***.

II. LITERATURE REVIEW

The extensive research conducted on Behavioural Finance is reviewed below.

(Kahneman, 1979) father of Behavioural Finance, conducted an experiment on the preferences of the investors when same situation is framed in a different way. In the experiment it was evident that, investors selected an alternative which was framed with positive alternative than that of with loss/ negative alternative. However, the outcome of both the situations are same. This experiment led to Prospect Theory, which was one of the breakthrough in the field of Behavioural Finance.

(Schiereck, De Bondt, & Weber, 1999) opined that the novel discipline Behavioural Finance integrates the theories of psychology and finance and tries to build the interface between the investor behaviour and market anomalies. However, Behavioural finance attempts to identify the behavioural biases which influences the investment decisions and suggests few strategies to overcome the biases.

(Coval & Shumway, 2005) analysed the behaviour of investors in "Chicago Board of Trade" and found the effect of behavioural factors influencing the share prices. It was found that the investors who trade in the later part of the day are more risk takers, in order to cover up their

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losses made in the earlier part of the day. As of result of this, the stock prices were overpriced.

(Grinblatt & Keloharju, 2000) studied the investor behaviour of different types of investors. It was found that the loss aversion bias explains the momentum of investors. It was evident in their study that investors prefer to buy past winning stocks and sell past loosing stocks. This behaviour had a positive impact on their portfolio.

(Barber & Odean, 2000) analysed the behaviour of the households who trade very frequently. They found that households who trade occasionally make more profit than who trade frequently. They concluded that overconfidence bias leads to poor performance of the investors. (Barber & Odean, 2001) opined that men are more likely to have overconfidence bias in their investment decisions.

(De BONDT & Thaler, 1985) analysed the representativeness behaviour in investors. They found that "winner's portfolio" consisting of top performing stocks did not perform well in the market. But, "loser's portfolio" comprising of worst performing stocks performed well and consistently beat the market index.

(Chandra & Sharma, 2010) examined the behaviour of Indian investors and tried to point out the psychological biases which affect the stock market. They identified the 5 common biases namely, overconfidence, over/under opportunism, representativeness, conservatism and sensitivity to the rumours as the biases which have a high degree of influence the Indian investors.

(Prosad, Kapoor, & Sengupta, 2015) studied the herding effect in Indian Stock market (NSE) using linear regression model. They found that Indian markets are efficient and reported that there is no severe herding. If at all herding prevails it is only in the bull phase.

Research Gap.

From the extensive research it is evident that investors make poor investment decisions due to the influence of different behavioural biases. Contrary to this, it is obvious that not all investors are getting affected due to the different behavioural biases. However, it becomes more imperative that necessary steps should be implemented during the investment decisions to overcome these biases. The gap found is that there is paucity in the research of some biases. Most of the researchers have generalised the biases in their work. Therefore, there is scope for extensive research in individual behavioural biases like gamblers fallacy, mental accounting, and regret aversion to name a few.

III. RESEARCH METHODOLOGY

Statement of the problem

"Stock market is considered as a barometer of an economy". The stock market behaviour is majorly contributed by the investors' behaviour. Therefore, the investors behavioural bias during investment decisions plays a vital role in the determining the market trend aligning with the economical growth. It is imperative to explore the factors influencing the investment decisions of the equity investors and frame suitable strategies top overcome the biases during investment decisions. However, it will be convenient for the stock broking firms to understand their clients (equity investors) behaviour and suggest appropriate investment decisions.

Objective of the study: To explore the behavioural factors influencing the equity investment decisions

Type of Research: Explorative research is used to explore the behavioural factors influencing the equity investment decisions.

Research Instrument: A structured questionnaire

Sampling Technique: Non-Probability Sampling – Convenient Sampling

Sample Size: 100 respondents (equity investors)

Scope of the Study: Bengaluru City

Exploring the factors influencing the investors' equity investment decision

The present study focuses on equity investors in Bengaluru city. A structured questionnaire was administered to 100 equity investors. Questionnaire included 36 items, out of which 24 items was designed to explore the behavioural factors of investors.

Exploratory Factor Analysis

To validation of measurement scale in social sciences, exploratory factor analysis (EFA) is commonly used especially when research instrument is adopted for first time. (Hair, Black, Babin, & Anderson, 2013) (Izquierdo, Olea, & Abad, 2014). Exploratory factor analysis is used to identify the main behavioural factors. Initial EFA was done with 24 items using Principal Component Analysis Method with Varimax rotation. To measure the sampling adequacy KMO test is used. The KMO measure is 0.789 which represent that the sample is adequate to conduct the exploratory factor analysis. Bartlett's test of sphericity is also highly significant [$\chi^2 = 1043.759$, $p<0.05$] indicating that the correlations are sufficiently large. It also suggests that the factor analysis is appropriate for this data. The items with factor loading less than 0.5 was dropped. Six factors were retained. The decision to retain factors was based on eigenvalues more than 1 (Kaiser Criteria). The iteration of EFA has been conducted to confirm the factors with Eigen value more than 1. There were 6 factors extracted, which explained 62.927% of variance is explained as mentioned in **Table No 2**. All the 6 factors extracted are mentioned in **Table no 3**

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Table no 1 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.789
Bartlett's Test of Sphericity	Approx. Chi-Square	1043.759
	df	276
	Sig.	.000

Table 2 Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.639	31.827	31.827	7.639	31.827	31.827	3.897	16.239	16.239
2	2.507	10.444	42.272	2.507	10.444	42.272	3.522	14.676	30.915
3	1.437	5.989	48.260	1.437	5.989	48.260	2.149	8.954	39.869
4	1.261	5.256	53.516	1.261	5.256	53.516	2.021	8.421	48.290
5	1.151	4.797	58.313	1.151	4.797	58.313	1.969	8.205	56.495
6	1.107	4.611	62.924	1.107	4.611	62.924	1.543	6.429	62.924
7	.975	4.064	66.987						
8	.929	3.872	70.860						
9	.816	3.402	74.261						
10	.803	3.344	77.605						
11	.745	3.103	80.708						
12	.579	2.411	83.119						
13	.547	2.278	85.397						
14	.528	2.199	87.596						
15	.466	1.941	89.537						
16	.424	1.766	91.302						
17	.400	1.668	92.970						
18	.347	1.444	94.415						
19	.334	1.393	95.808						
20	.265	1.102	96.910						
21	.245	1.021	97.931						
22	.211	.879	98.811						
23	.157	.655	99.466						
24	.128	.534	100.000						

Extraction Method: Principal Component Analysis.

Table 3 EFA Loading

Rotated Component Matrix[a]						
	Component					
	Anchoring	**Overconfidence**	**Herding**	**Regret Aversion**	**Mental Accounting**	**Availability Bias**
A1	**.536**					
A2	**.654**					
A3	**.751**					
A4	**.774**					
OC1		**.540**				
OC2		**.642**				
OC3		**.621**				
H1			**.805**			
H2			**.606**			
H3			**.602**			
H4			**.560**			
RA1				**.691**		
RA2				**.559**		
RA3				**.681**		
RA4				**.656**		
MA1					**.534**	
MA2					**.665**	
MA3					**.773**	
AB1						**.696**
AB2						**.667**
AB3						**.526**

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Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

IV. CONCLUSION

The study aimed in identifying the behavioural factors that influence the equity investment decisions. EFA is carried out to explore the factors influencing equity investment decisions. After an extensive literature review different types of behavioural factors were found which influence the investors' behaviour. Six factors including overconfidence, regret aversion, mental accounting, herding, anchoring and availability biases were extracted. It was evident that these factors have high impact on the investment decisions of the equity investors in Bengaluru city. Investors should be aware about the behavioural biases which affect their investment decisions. At the same time stock brokers also should have awareness about different types of behavioural biases, in order to educate their clients and direct them towards making good investment decisions. The major limitation of the study is only few behavioural biases have been studied, other biases like loss aversion, gamblers fallacy, cognitive dissonance are not considered for the study.

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