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## **Factors Affecting Behavioral Finance Towards Value Investing in Financial Market**

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### **Abstract**

Behavioral Finance is a unique combination of various schools of thought. It adopts an inter – disciplinary approach by combining financial theories and psychology. This theory has become a contradiction to the traditional Capital Asset Pricing Model and Efficient Market Hypothesis. The main objective of the study is to know the factors affecting behavioural finance towards Value Investing. For the purpose of the study, primary data has been collected from the individual equity investors based in Bangalore City. A study was conducted with a sample size of 750 chosen from the population of individual equity investors based in Bangalore City using Stratified Sampling in order to find out if the respondents had a clear conceptual understanding of the topic and explanations were given wherever required. It is observed that herd behavior has an impact of 0.08 on the key variables in value investing, over confidence has an impact of 0.25, optimism has an impact of 0.27, conservatism has an impact of 0.13 and contrarian investing has an impact of 0.15 on the key variables in value investing. While optimism and over confidence have the highest impact, herd behavior has the least impact on value investing. It may also be observed that the overall impact of the select behavioral factors on the key variables in value investing is 48%.

**Key Words:** Behavioural Factors, Value Investing.

### **1. Introduction**

Since the mid-1950s, Traditional Financial Model developed by the economists at the University of Chicago dominated the field of finance. The main assumption of traditional financial model is that investor are rational. However, psychologists have challenged this assumption. They argue that people often suffer from intellectual and emotional prejudices and act in an obviously irrational way. The traditional finance school of thought was reluctant to agree with the psychologists who proposed the financial model of behavior. Behavioral finance is widely accepted because evidence of psychological and emotional influences on decision-

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making is highly compelling. Despite the controversy over when, how and why psychology influences investment decisions, the 2002 Nobel Prize in Economics was awarded to Daniel Kahneman and Vernon Smith, an experimental economist. Many consider this to be a justification to the field of behavioural finance.

The theory of limited arbitrage highlights that the behavior of irrational investors causes aberrations from the fundamental value while the rational investors behave helplessly. Based on this irrationality, behavior models have been framed as a result of the experiments conducted by financial economists along with cognitive psychologists. These models suggest that an investor forms some beliefs / expectations which in turn affect the investment decisions. The various behavioral factors which affect the investment decisions of investors have been depicted in the diagram below:



### **Behavioral Finance Factors affecting Investment Decisions**

Behavioral Finance is a unique combination of various schools of thought. It adopts an inter – disciplinary approach by combining financial theories and psychology. This theory has become a contradiction to the traditional Capital Asset Pricing Model and Efficient Market Hypothesis. Behavioral Finance can be studied both at micro and macro level. Micro behavioral finance focusses on the behavior of individual investors whereas macro behavioral finance focusses on the behavior of the markets. It also helps in studying the behavioral profile of equity investors and the patterns of their investment decisions.

Intelligence and brilliance help in the short run but it is the wisdom that works in the long run. A wise and prudent investor applies various methods to evaluate a business and works very



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hard to foresee future. Unfortunately, due to lack of time, investors take hasty decisions. Despite the hard work, the formulas used to calculate risk and return on investment does not help in making an investment decision. To overcome these anomalies, investors adopt various investment strategies, one of which is “Value Investing.”

## **2. Value Investing Philosophy**

The market reflects humanity as well as the underlying fundamental values. Some investors work upon their knowledge of stocks throughout the weekend and would have made up their mind to invest in a particular stock on Monday morning. However, some of the investors may not be sure whether their stocks would outperform the market on a Monday morning. The market reflects the human psyche, as the combination of these human minds decide at what price a particular stock should transact on a particular day.

Behind every transaction, there are many human minds who bring in their optimism, pessimism or over confidence while they trade in the market. Also, psychologists believe that individuals behave in an aggressive manner when they are in a group than when they are alone. This behavior leads to highs and lows in the market and the prices of stocks are traded either above or below their true net worth. Under such circumstances, value investors follow a strict emotional discipline by studying the historic fundamentals of stocks and how they have traded in the market so that they can gauge their performance in the future.

This stock analysis process will determine the true or intrinsic value of such stocks. Stocks that trade significantly above their long-term intrinsic value will eventually decline to that value, and if the stock is below that value, they may eventually return to their long-term intrinsic value.

## **3. Review of Literature**

The Traditional Economic Theory emphasizes on the fact that investors are rational. Research shows that investors act against the predictions of this theory. These deviations have given rise to numerous literatures in the field of Behavioral Finance. The present study focuses on the select behavioral factors which influence the key variables in Value Investing. For this purpose, a detailed review of relevant literatures has been carried out and organized as follows:



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- **Vanita Tripathi, Priti Agarwal (2018)<sup>1</sup>** tested the value effect in Indian Stock Market and identified the important sources that cause these effects. Measures like Book to Market Equity , Earnings to Price, Cash flows to Price and Dividends to Price related to 482 stocks which formed part of BSE 500 Equity Index were studied . The findings of the study suggested that value effect was significant on unadjusted as well as risk – adjusted return basis. It was also found three sources were important to value effect namely, operating profitability , size and financial leverage.
  - **Anuradha Samal, Das Mohapatra A.K (2017)<sup>2</sup>** conducted a study in the Odisha Province of India to find out the various factors that influence the investors while taking investment decisions. The findings of the study suggest that organisation efficacy, mediator’s influence, return on investment, fear of loss, risk factors and level of income of the investors are the factors which influenced the investment decisions. However, there were other factors related to the company which also played a very important role in decision – making such as past performance of the company, recommendations of financial analysts, loyalty to the company product, insider information etc.,
  - **AmlanJyoti Sharma (2016)<sup>3</sup>** studied the limitations of conventional finance and the emergence of behavioral finance. The researcher strongly believes that the anomalies in the market behavior can be overcome by adopting behavioral finance principles. The study also suggests that investment decisions can become efficient and helps vulnerable investors to come out of their shell and take risks while investing.
  - **Caroline Ndinda Kimeu W.A (2016)<sup>4</sup>**. It has been observed that heuristic factors, forecast factors, grazing factors and rationality factors are combined to influence investment decisions. He also found that these factors had a positive effect on the decision. However, researchers felt the need to conduct seminars on accounting and finance to improve investors' valuation skills.
  - **Deepak Sahni (2016)<sup>5</sup>** studied the loss aversion of Indian Investors. The findings of the study suggest that majority of the investors prefer stable returns and wish to hold on to the losing stocks with a hope that prices will increase in future. The study also shows that anchoring theory is relevant in case of Indian investors.
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- **Jhansi Rani Bodla, Sunitha. G, et al. (2016)<sup>6</sup>** studied various behaviors and investment decisions of individual investors in Telangana. It was observed that out of all assumed variables, only heuristics and prospect had a significant impact on the behavioural pattern of investors.

#### **4. Research Design**

Empirical evidence shows that human factor is more important in decision – making. Behavioral Finance is gaining more importance in today’s uncertain economy. Understanding Behavioral Finance helps investors to take better investment decisions. It provides an opportunity to the investors to understand their own biases and errors of judgment. A disciplined trading strategy would help investors take rational decisions. Hence, this study has been undertaken to study the select behavioural factors that influence the key variables in Value Investing.

#### **5. Statement of the Problem**

Value Investing calls for more discipline in financial modelling. It provides guidelines for making investment choices and helps individuals to reap increased investment returns. The value investment process is considered a conservative long-term strategy and value investors make measurements and investment choices such as financial statements and profit margins, returns and book values. It was found that in view of the growing interest in the Indian stock market, investors are not doing fundamental analysis when making investment decisions. Hence, it was considered necessary to conduct an in – depth study to understand the behavioral factors affecting such investment decisions. This study aims at finding out the key variables in value investing and the select behavioral factors that influence the key variables in Value Investing of the individual equity investors based in Bangalore city.

#### **6. Need for the Study**

An average amateur investor does not simply invest but he speculates. This differentiates such an investor from an investor who has an in-depth knowledge of the concept of “Value Investing” and applies it while making investment decisions. Hence, it was deemed appropriate to undertake this research to understand the key variables in Value Investing considered by



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individual investors while investing in equities. The outcome of the study would help the ordinary investors to understand the behavioral factors affecting their investment decisions.

### **7. Significance of the Study**

The main aim of an equity investor is to create wealth. In other words, wealth creation is not a number game but a mind game. The value of investment not only allows individual investors to grow micro-wealth by helping them acquire good stocks but also promotes business growth and drives the economy in the right direction. In this connection, one can assert that Value Investing has social significance and is worth a study.

### **8. Scope of the Study**

This study aims at finding out the impact of select behavioral factors on the key variables in Value Investing of Equity Investors based in Bangalore city.

### **9. Objectives of the Study**

To study the impact of select behavioral factors on the key variables in Value Investing

### **10. Hypothesis of the Study:**

**H<sub>0</sub>** :There is no significant impact of behavioral factors on the key variables in Value Investing

**H<sub>1</sub>** :There is a significant impact of behavioral factors on the key variables in Value Investing

### **11. Research Methodology**

Research is empirical and quantitative research is used to collect and analyze data. The survey was conducted using a questionnaire method. To conduct the survey, a structured questionnaire method was followed to gain insight into the issues explored in this survey.

The Questionnaire is divided into three parts. The first part of the survey consists of the demographic profiles of individual stock investors, including various demographic variables such as gender, age, and income. The second part of the study contains select behavioral factors that impact the investment decisions of individual stock investors. Five factors namely Herd



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Behavior, Over Confidence, Optimism, Conservatism and Contrarian Investing have been considered for the study. The third part of the Questionnaire consists of the Investment Profile of equity investors.

### **12. Sources of Data**

For the purpose of the study, primary data has been collected from the individual equity investors based in Bangalore City.

### **13. Sampling Design**

A study was conducted with a sample size of 750 chosen from the population of individual equity investors based in Bangalore City using Stratified Sampling in order to find out if the respondents had a clear conceptual understanding of the topic and explanations were given wherever required. The data so collected was tested for reliability and necessary corrections were made in the Questionnaire after discussions with academic experts, stock brokers and financial consultants. Using simple random sampling, the structured questionnaire was distributed to seven hundred and fifty individual investors in equities of various companies listed in recognized Stock Exchanges to collect primary data. The response format was based on a five – point Likert scale ranging from “1 – strongly disagree” to “5 – strongly agree.” The data thus collected has been analyzed after validating the same.

### **14. Development of Scale**

The questionnaire was created based on a literature review and detailed discussions with experts. Ten value investing variables, five behavioral factors, seven demographic variables, six investment decision variables and overall thirty statements on value investing were included in the questionnaire.

### **15. Scale validation**

The scale so developed has been validated through Exploratory Factor Analysis. The Factor Loadings and Cross Loadings have been shown in the form of a table which depicts the PLS-SEM Outer Model. Variables whose threshold value is less than 0.50 have been eliminated. Boot Strap Validation between the dependent and independent variables depicting the Inner Model has been shown in the form of a table.



A Confirmatory Factor Analysis to prove that the instrument is valid and reliable has also been used. Correlation matrix and Square Root of AVE have also been depicted in the form of a table. Construct Validity which includes Convergent Validity, Discriminant Validity and Face Validity have also been carried out.

### 16. Sample Specifics of the Research Study

The sample size of the research study is 588. The sample criteria indicate the individual investors in equities of companies listed in recognized stock exchanges and based in Bangalore city. Stratified Sampling and Simple Random Sampling have been used to collect data for the purpose of the study. Primary Data has been used for the study. However, secondary data has also been used to give suggestions.

### 17. Statistical Tools used for Analysis

Statistical Tools like Regression Analysis and PLS -SEM have been used for analysis of data.

### 18. Findings of the Study:

#### A. REGRESSION ANALYSIS:

	Dependent Variable: Value Investing				
	(Intercept)	Coefficient	R <sup>2</sup>	Adj. R <sup>2</sup>	RMSE
<b>Herd Behavior</b>	2.21 *** (0.48)	0.13 (0.14)	<b>0.02</b>	0.00	0.81
<b>Over Confidence</b>	1.40 *** (0.30)	0.51*** (0.08)	<b>0.44</b>	0.43	0.50
<b>Optimism</b>	1.47** (0.43)	0.60 *** (0.12)	<b>0.34</b>	0.33	0.73
<b>Conservatism</b>	1.99 *** (0.43)	0.42 ** (0.12)	<b>0.20</b>	0.19	0.73
<b>Contrarian Investing</b>	1.71 *** (0.41)	0.45 *** (0.11)	<b>0.25</b>	0.23	0.69

Source: Primary Data

\*Significant at 5% level of probability

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

Standard Error is given inside parentheses



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**Regression Analysis is attempted to establish the sign of causality between the select behavioral factors and the key variables in value investing. Since each behavioral factor is unique, it demands a separate regression model. Y is the dependent variable which represents the key variables in value investing and X is the independent variable which denotes the select behavioral factors such as Herd Behavior, Over Confidence, Optimism, Conservatism and Contrarian Investing. Across the 5 models, value investing is the only dependent variable.**

**Equations of model 1 through model 5 are given below:**

**Equation 1: Herd behavior (Y<sub>1</sub>)**

$$Y_1 = a + B_1 * X_1$$

$$Y = 2.21 + 0.13 * X_1$$

In the above equation, when herd behavior changes by 1 unit, it leads to a change in value investing by 0.13. R square is .02 or 2% which means that though model is statistically significant, the relationship between herd behavior and value investing is weak.

**Equation 2: Over confidence (Y<sub>2</sub>)**

$$Y_2 = a + B_2 * X_2$$

$$Y = 1.40 + 0.51 * X_2$$

In the above equation, when over confidence changes by 1 unit, it leads to a change in value investing by 0.51. R square is .44 or 44%, and hence the model is statistically significant. The relationship between over confidence and value investing is moderately good.

**Equation 3: Optimism (Y<sub>3</sub>)**

$$Y_3 = a + B_3 * X_3$$

$$Y = 1.47 + 0.60 * X_3$$

In the above equation, when optimism changes by 1 unit, it leads to a change in value investing by 0.60. R square is .34 or 34% and hence the model is statistically significant. The relationship between optimism and value investing is moderately good.

**Equation 4: Conservatism (Y<sub>4</sub>)**

$$Y_4 = a + B_4 * X_4$$

$$Y = 1.99 + .042 * X_4$$

In the above equation, when conservatism changes by 1 unit, it leads to a change in value investing by 0.42. R square is .20 or 20% and hence the model is statistically significant. The relationship between conservatism and value investing is moderately good.

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### **Equation 5: Contrarian Investing( $Y_5$ )**

$$Y_5 = a + B_5 * X_5$$

$$Y = 1.71 + 0.45 * X_5$$

In the above equation, when contrarian investing changes by 1 unit, it leads to a change in value investing by 0.45. R square is .25 or 25% and hence the model is statistically significant. The relationship between contrarian investing and value investing is moderately good. Regression Coefficient represents the impact of the select behavioral factors on the key variables of value investing. It is observed that the regression coefficient of herd behavior with value investing is 0.13, over confidence to value investing is 0.51, optimism to value investing is 0.60, conservatism to value investing is 0.42 and contrarian investing to value investing is 0.45. This shows that the impact of optimism on the key variables of value investing is the highest at 0.60, followed by over confidence at 0.51. Herd Behavior has the least impact of 0.13 on the key variables of value investing. In other words, it means that optimism and over confidence are the two behavioral factors which have a great impact on value investing than other behavioral factors.  $R^2$  represents the pattern in which the data is scattered around the regression line. The above analysis shows that  $R^2$  for herd behavior is 0.02, for over confidence is 0.44, for optimism is 0.34, for conservatism is 0.20 and for contrarian investing is 0.25. It is observed that  $R^2$  for over confidence is the highest at 0.44 followed by optimism at 0.34 while herd behavior has achieved the least  $R^2$  of 0.02. This shows that herd behavior has the least impact on the key variables on value investing while over confidence followed by optimism have the highest impact. While  $R^2$  is a relative measure of fit, RMSE is an absolute measure of fit. RMSE of herd behavior is 0.81, over confidence is 0.50, optimism is 0.73, conservatism is 0.73 and contrarian investing is 0.69. Lower RMSE indicates better fit and it is observed that the RMSE is least for over confidence and is the highest for herd behavior. This shows that among all behavioral factors, over confidence has a better fit than others.

### **B. STRUCTURAL EQUATION MODEL USING R**

Partial Least Squares is an evolving approach to Structural Equation Modeling. It is a statistical tool used to solve complex mathematical structures and handle data inadequacies. PLS-SEM models take care of both measurement and structural models. Unlike the conventional CB-SEM, PLS-SEM is more flexible and does not adhere to normal distribution. It

is predominantly used to explore and predict the constructs especially when the domain is in nascent stage. In this study, variance analysis and bootstrap confidence intervals have been computed using “R” software to give better outcomes. This model is attempted to prove the relation between the select behavioral factors and the key variables in value investing.

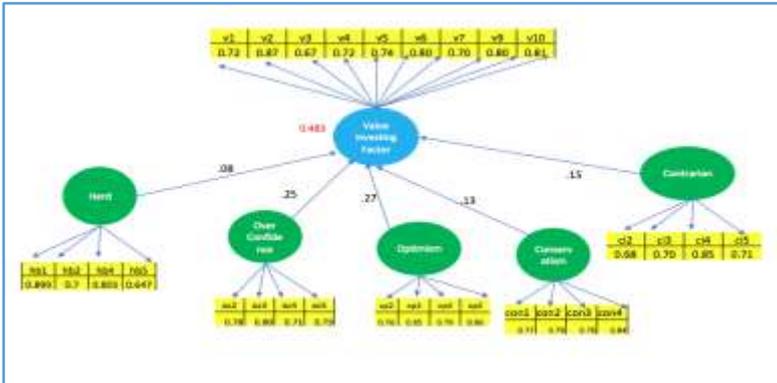
**STRUCTURAL MODEL ASSESSMENT - INNER MODEL**

	<b>Estimate</b>	<b>Std. Error</b>	<b>t value</b>	<b>P value</b>
<b>Intercept</b>	0.00	0.14	0.00	<b>1.00</b>
<b>Herd Behavior → Value Investing</b>	0.22	0.14	1.54	<b>0.13</b>
	<b>Estimate</b>	<b>Std. Error</b>	<b>t value</b>	<b>P value</b>
<b>Intercept</b>	0.00	0.12	0.00	<b>1.00</b>
<b>Over Confidence → Value Investing</b>	0.60	0.12	5.13	<b>0.00</b>
	<b>Estimate</b>	<b>Std. Error</b>	<b>t value</b>	<b>P value</b>
<b>Intercept</b>	0.00	0.11	0.00	<b>1.00</b>
<b>Optimism → Value Investing</b>	0.63	0.11	5.54	<b>0.00</b>
	<b>Estimate</b>	<b>Std. Error</b>	<b>t value</b>	<b>P value</b>
<b>Intercept</b>	0.00	0.12	0.00	<b>1.00</b>
<b>Conservatism → Value Investing</b>	0.57	0.12	4.73	<b>0.00</b>
	<b>Estimate</b>	<b>Std. Error</b>	<b>t value</b>	<b>P value</b>
<b>Intercept</b>	0.00	0.12	0.00	<b>1.00</b>
<b>Contrarian Investing → Value Investing</b>	0.58	0.12	4.82	<b>0.00</b>

Source: Primary data      \*Significant at 5% level of probability **n=588**

From the above table, it is observed that the ‘t’ value between optimism and value investing is 5.54, between over confidence and value investing is 5.13, between contrarian investing and value investing is 4.82, between conservatism and value investing is 4.73 and between herd behavior and value investing is 1.54. This indicates that the statistical relationship between over confidence and value investing is the highest while the statistical relationship between herd behavior and value investing is the least. Also, the ‘P’ value between herd behavior and value investing is 0.13 while the ‘P’ value between other behavioral factors and value investing is zero. This shows that except Herd Behavior, value investing factors are statistically related to all other behavioral factors like over confidence, optimism, conservatism and contrarian investing.

**OUTER MODEL**



**DIAGRAM MODEL OUTPUT - BOOT STRAPPED R SQUARE**

	<b>Original</b>	<b>Mean. Boot</b>	<b>Std. Error</b>	<b>perc.025</b>	<b>perc.975</b>
<b>Value Investing</b>	0.483	0.563	0.105	0.356	0.768

**19. Conclusion**

From the above model output, it is observed that herd behavior has an impact of 0.08 on the key variables in value investing, over confidence has an impact of 0.25, optimism has an impact of 0.27, conservatism has an impact of 0.13 and contrarian investing has an impact of 0.15 on the key variables in value investing. While optimism and over confidence have the highest impact, herd behavior has the least impact on value investing. It may also be observed that the overall impact of the select behavioral factors on the key variables in value investing is 48%.



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