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**“Biases And Its Factors Effecting Stock Market Investment Decisions: A Study Of Gujarat Investors”**

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| **ARTICLEINFO** | **ABSTRACT** |
|  | The theory in behavioural finance suggests that individual investors are not rational and are influenced by various behavioural biases while investing in stock market. The study conducted is an attempt to assess the factors of behavioral biases effecting individual investor of Gujarat while taking investment decision. Therefore, a descriptive research is being followed. The source of data was both primary as well as secondary. A well-structured questionnaire was used to collect data from 204 respondents, descriptive statistics and confirmatory factor analysis was used to analyse the data. Five biases namely Herd mentality, Overconfidence, Loss aversion, Representative and Anchoring bias were studied through observed variables and the CFA model resulted valid signifying that the observed variable were able to represent the latent variable correctly in the model. Moreover, the all these biases effected the investors ranging from 71% which was Loss Aversion to 85% which was Anchoring.**Keywords:** Behavioural biases, Rationality, Stock market, investment decisions |

## **Introduction**

Moral bias refers to beliefs that are based on thoughtless thinking and that can influence one's decision-making ability. It is divided into two subgroups namely emotional and psychological discrimination. Emotional bias refers to a decision that is based on emotion rather than material facts. Psychological discrimination refers to errors that arise from the misinterpretation of information available to us. Behavioral bias can lead to unfair judgment when investing which results in huge losses for investors. We see that there is a lot of instability in the stock market and it is very difficult to get accurate predictions about the stock market as this is driven by this bias. Some investors tend to invest their money based on information they have received from their family, friends and acquaintances. This is due to a lack of knowledge about the basics of the company and thus investors have the potential to think like a herd

**Objectives**

1. To understand factors leading to biases
2. To study behavioural biases of individual investors.

##

## **Review of the existing literature**

**Stock Market and Behavioural biases**

Overconfidence, resentment of loss, fencing, the current situation in favor of not finding myopic losses exist in the security market but this is not as strong as the negative relationship found between bias and the performance of the Nigerian security market. (Babajide et. al, 2012). While a study conducted on the Nairobi stock exchange concludes that bias as a tendency to be found, a bias of representation, a willingness to be firm, the performance of the situation has an impact on the individual investor. On the other hand, it was found that there was no significant relationship between gender and this discrimination, Onsomu (2014).

Mahina et. al. (2017) found a strong correlation between the tendency to not want to lose and to invest in the Rwanda stock exchange as one increases and the other increases. But on the other hand, due to the failure of the stock market by the investor, they catch a stock loss and sell the winning stock early. Huber et. al. (2020) found a 9% decrease in investment as a result of a reduction in resistance to losses and no change in investors' confidence in the expected return and inflation expectations. On the other hand ‘risk-taking’ behavior has not been reversed with a small investment.

Volatility in stock market played a significant role for investors who are supposed to sway from positive to negative thinking. The loss arising due to adverse movement in prices is more painful than gain arising from other investment which is key determinant for behavioral biases like loss aversion, overconfidence, gambler’s fallacy, over and under reaction etc. In India herd mentality is major bias that drive investment decision. People rely on recommendation of family and friends and what other investors are doing, and they invest accordingly due to which they show irrational behaviour and sometimes end up making huge losses. The biases impact investor’s decision in India, Agarwal et. al. (2018)

**Biases and its relations with Theories**

Efficient Market Hypothesis (EMH) and nature of behavioural theories have been provided by many authors such as Ahmad B. & Durri K. (2015), Fakhry B. (2016). Firm’s performance, risk perception level and corporate entrepreneurship are impacted by behavioural biases at both developed and developing countries. Bhutta et. al. (2015) concludes that behavioural biases is individualistic approach and is different in different countries and different cultures. Those who have low level of financial literacy possessed high level of behavioural biases as compared to those are more financial literate. Ateşaet. al. (2016) concludes that investors emphasis on representative bias and trust big companies as good and rely on the same for good returns.

There are several aspects such as psychology of risk, ethics, neuroeconomics, fiduciary that have been deliberately considered for behavioural finance. Risk is identified as feeling as recognition of risk alone cannot lead to loss aversion bias without the emotions are attached to it and the risk perception level depends on psychology, Byrne et. al. (2018). The risk-taking capacity is also influenced by past experience of investor. So, the change in behavioural biases will impact risk perception level of investors in stock market Raheja, et. al. (2019).

Lakshmi et. al. (2013) found that behavioural traits like overconfidence, herd mentality, social contagion and heuristic behaviour found in short term investors while high degree of risk aversion, disposition effect and cognitive dissonance among long term investors. Andrew W Lo (2005) identified that are many behavioural factors that are inconsistent with market efficiency and rather these are consistent with how an individual accept the changes in environment and apply it investment purpose. It also identified the degree of relativeness of market efficiency is based on various environmental factors like number of competitors, level of profitability of company, market situation.

Behavioural biases are evolutionary during market volatility and they try to learn from them behavioural mistake. It has revealed that learning cannot be introduced on basis of past trading behavior based on study of trial and error behavior on agent based financial market, Shantha (2019)

## **Research Methodolgy**

Descriptive research is defined as appropriate method for this study. Primary and secondary and have been used. The data has been collected through questionnaire which is primate data as it is filled directly by the individual for conducting the survey.

Non -Probability sampling method has been used in the research project. The sample size calculated for this research work is 204. It considers the margin of error as 5% and level of confidence as 95%.

**Statistical tool:** KMO and Bartlett's Test and Confirmatory Factor Analysis is used.

## **Data analysis & Interpretation**

* Descriptive statistical analyses show that males are keener to invest in stock market as compared to women. It can be possible that there is lack of awareness among women about investment in stock market.
* Newly employed individuals who generally falls between age group of 20-30 years give more importance to financial planning.
* Private employees’ investment in stock market is higher than then as per data collected.
* Day trading is least preferred by investor as it is very risky event.
* Generally, investors are regularly investing their money every one and three months.
* Very less respondents are dealing in stock market for long term period.
* There in increase in dealing in stock market in last two -three years which indicates that people are now adopting new investment pattern.
* 41% of respondent rely on fundamentals before investment in stock market, 36% respondents sometimes rely on fundamentals while 23% don’t rely on fundamentals

# **Finding based on factor analysis**

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| --- |
| **Table 1 : KMO and Bartlett's Testa** |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .352 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 5.319 |
| df | 3 |
| Sig. | .003 |
| a. Only cases for which Country of family origin = Africa are used in the analysis phase. |

Since there are already studies which talked about these biases through observed variable, its desirable to use Confirmatory Factory Analysis. AMOS is used to assess the multivariate normality shown in the table below. To demonstrate normality, the skewness and kurtosis should be within +/- 1.96.

**Normality Test (Table 2)**

| Variable | min |  | max | Skew | c.r. | kurtosis | c.r. |
| --- | --- | --- | --- | --- | --- | --- | --- |
| H4 | 1.000 |  | 5.000 | 0.732 | 4.921 | -1.386 | -8.442 |
| H1 | 1.000 |  | 5.000 | 0.336 | 0.491 | -1.36 | -8.031 |
| H2 | 1.000 |  | 5.000 | 0.217 | 5.236 | -1.138 | -7.715 |
| H3 | 1.000 |  | 5.000 | 0.391 | 0.581 | -1.26 | -7.17 |
| O1 | 1.000 |  | 5.000 | 0.57 | 0.042 | -1.184 | -7.595 |
| O2 | 1.000 |  | 5.000 | 0.759 | 4.306 | -1.153 | -8.049 |
| O3 | 1.000 |  | 5.000 | 0.665 | 3.599 | -1.34 | -9.472 |
| L1 | 1.000 |  | 5.000 | 0.265 | 7.769 | -1.312 | -7.912 |
| L2 | 1.000 |  | 5.000 | 0.769 | 5.116 | -1.177 | -7.632 |
| L3 | 1.000 |  | 5.000 | 0.61 | 9.268 | -1.221 | -8.134 |
| R1 | 1.000 |  | 5.000 | 0.549 | 0.343 | -1.058 | -8.809 |
| R2 | 1.000 |  | 5.000 | 0.768 | 8.694 | -1.297 | -7.3 |
| R3 | 1.000 |  | 5.000 | -0.042 | -0.134 | -1.054 | -8.641 |
| An1 | 1.000 |  | 5.000 | 0.302 | 0.479 | -1.388 | -7.924 |
| An2 | 1.000 |  | 5.000 | 0.406 | 9.488 | -1.311 | -7.939 |
| An3 | 1.000 |  | 5.000 | -0.012 | -0.724 | -1.383 | -9.018 |
| Multivariate  |  |  |  |  |  | -0.823 | -6.450 |

From the above table, both individual and multivariate data are between the desired value of +/- 1.96, so data is appropriate to process for CFA in AMOS.



**Confirmatory factor analysis (Table 3)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Item code** | **Constructs** | **Β** | **CR** | **AVE** | **MSV** | **ALPHA** |
| L1O1 | Herding | 0.764 | 0.768 | 0.551 | 0.368 | 0.790 |
| L1O2 | Herding | 0.687 |  |  |  |  |
| L1O3 | Herding | 0.782 |  |  |  |  |
| L1O4 | Herding | 0.81 |  |  |  |  |
| L2O1 | Overconfidence | 0.909 | 0.802 | 0.766 | 0.381 | 0.883 |
| L2O2 | Overconfidence | 0.697 |  |  |  |  |
| L2O3 | Overconfidence | 0.8 |  |  |  |  |
| L3O1 | Loss Aversion | 0.698 | 0.925 | 0.634 | 0.305 | 0.960 |
| L3O2 | Loss Aversion | 0.698 |  |  |  |  |
| L3O3 | Loss Aversion | 0.88 |  |  |  |  |
| L4O1 | Representative | 0.846 | 0.880 | 0.601 | 0.329 | 0.871 |
| L4O2 | Representative | 0.815 |  |  |  |  |
| L4O3 | Representative | 0.718 |  |  |  |  |
| L5O1 | Anchoring | 0.753 | 0.861 | 0.526 | 0.378 | 0.841 |
| L5O2 | Anchoring | 0.801 |  |  |  |  |
| L5O3 | Anchoring | 0.897 |  |  |  |  |

**Convergent validity of scale and nomological validity test (Table 4)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Herd** | **Overconfidence** | **Loss aversion** | **Representative** | **Anchoring** |
| **Herd** | **0.850** |   |   |   |   |
| **Overconfidence** | -0.031 | **0.882** |   |  **Read Caveats and Assumptions below**, and then click me. |   |
| **Loss aversion** | 0.015 | -0.017 | **0.864** |   |   |
| **Representative** | -0.063 | 0.026 | 0.005 | **0.762** |   |
| **Anchoring** | -0.040 | -0.004 | -0.015 | -0.009 | **0.822** |

Validity and reliability must be checked during Confirmatory Factor Analysis. The dependability is assessed using the Composite dependability Value (CR) which desirably should be more than 0.7 of each construct (Hair, Black, Babin, and Anderson ,2010). It was found (Table 3) that the composite dependability of each construct was above 0.7 which means the data is reliable.

Convergent validity explores the relationship between observable and latent variables. If the variables lack convergent validity, it means that the observable variables cannot explain the latent variable. To ensure convergent validity, the Average Variance Extracted (AVE) indicators should be larger than 0.5 (Hair, Black, Babin, and Anderson ,2010). Table 3 indicates the AVE greater than 0.5.

Discriminant validity checks if your observed variables measure distinct concepts. Ideally, they shouldn't be strongly related to other factors. To assess this, the Average Variance Extracted (AVE) should be higher than the Maximum Shared Variance (MSV). Alternatively, a correlation matrix can be used where the diagonal elements are high (ideally above 0.6) and the off-diagonal elements are lower. Table 4 signifies that the criteria of discriminant validity is also meeting the requirement. So the CFA is valid.

# **Measuring the biases**

**The following finding shows impact of biases on individual investors while investing:**

**Figure - 3**

**Figure - 2**

**Figure - 4**

**Figure - 5**

**Figure - 6**

**Findings:**

* 80% of respondent possess herd mentality bias while investing
* 78% investors are over-confident
* 71% investors are affected by loss aversion bias
* 80% of investors possess representative bias.
* 85% investors have anchoring bias.

# **CONCLUSION**

The study was conducted to determine factors representing biases. Five biases namely Herd mentality, Overconfidence, Loss aversion, Representative and Anchoring bias were studied through observed variables and the CFA model resulted valid signifying that the observed variable were able to represent the latent variable correctly in the model. Moreover the all these biases effected the investors ranging from 71% which was Loss Aversion to 85% which was Anchoring.

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