A STUDY ON THE RELATIONSHIP BETWEEN SELF-ATTRIBUTION BIAS AND OVERCONFIDENCE AND ITS IMPACT AMONGST MUTUAL FUND INVESTOR DECISION MAKING

Dr. K. C. Mishra*
Mary Metilda J **

Abstract : *Proponents of Behavioural Finance believe that numerous factors both rational and irrational drive investor behavior. Overconfidence and self attribution are investor biases which have implications to investor decision making. Overconfident investors overestimate both their own predictive abilities and the precision of information they've been given.* ***Self - Attribution*** *is a cognitive phenomenon by which people tend to attribute success to innate aspects like talent and foresight and attribute failures to situational factors .It is a trend that individuals will take credit for successes and blame external factors for failures (Weary & Bradley). This study focuses on the influence of gender on overconfidence and self attribution. The main objective of the study is to find out if self attribution leads to overconfidence amongst mutual fund investors. The study used data collected from over 300 investors and the findings of the study shows significant relationship between overconfidence and self attribution, suggesting self attribution leads to overconfidence.*

Key Words : *Overconfidence, self attribution, investor decision, gender*

BACKGROUND OF THE STUDY

OVERCONFIDENCE BIAS

Overconfidence can be summarized as unwarranted faith in one's intuitive reasoning, judgments and cognitive abilities (Michael Pompian, 2006). People tend to be overconfident about their level of knowledge and their general abilities. Overconfidence is derived from cognitive psychological experiments in which subjects overestimate both their own predictive abilities and the precision of information they've been given. As such overconfidence bias has several forms like , a feeling of better than average, optimism and too narrow confidence limits. De Bondt and Thaler (1995) note that psychologists find overconfidence to be a pervasive human character.

Studies have shown that investor's are overconfident in their investing abilities. The confidence intervals they specifically assign to their investment predictions are too narrow. This is called *prediction overconfidence*. For example, while predicting the future value of stocks, predictive overconfidence may result in underestimating the downside risk to their portfolios. Oslen(1997) found that professional investment managers tend to overestimate probabilities of outcomes that are positive and underestimate undesired outcomes. People seem to be poorly calibrated , when estimating probabilities. Events which they think are certain to occur actually occur only 80 percent of the time, and events they think are impossible occur approximately 20 percent of the time.(Fischhoff, Slovic and Lichtenstein, 1977). Also Torngren and Montgomery(2004) found that professionals overestimate their probability to choose the better performing stock from two alternatives by over 20 percent.

Dr. K. C. Mishra * - Director, Sambaram Institute of Managemnt Studies, Bangalore*
*Mary Metilda J** - Sr. Assistant Professor, R V Institute of Management, Bangalore, Email:ma19ty@gmail.com*

Shefrin (2000) describes overconfidence with an example of driving. A research group was asked regarding their driving ability and between 65 and 80 percent of the respondents rated themselves above average. However in reality only half of us can be i.e if the trait is symmetrically distributed. In a study conducted by James Montier (2006), on 300 professional fund managers, 74 percent of them believed that they had delivered above-average performance and the remaining 26 percent believed that their performance was average. Almost 100 percent of the respondents believed that their performance was average or better. Studies show that as people gather more information about a situation, their confidence increases and not their judgment abilities. They equate quantity of information with quality. This is referred to certainty overconfidence. An example of certainty overconfidence is how investors simply loaded up technology stocks in late 1990s only to see that these gains vanish during the meltdown. People who are overconfident, overestimate their knowledge, underestimate risks and exaggerate their ability to control events. Colin Camerer and Dan Lovallo (1999) , found that overconfidence and optimism leads to excessive business entry. Nofsinger (2001) is of the view that people exhibit overconfidence in highly difficult task as specific security selection. Overconfidence causes excessive trading which can be risky according to Barber and Odean (2000).

Behavioral Implications of Overconfidence Investors

- They overestimate their ability to evaluate a company as a potential investment. They may be blind to any negative information that can indicate that stocks should not be bought or sold.(Shefrin 2000)
- Overconfident investors trade excessively leading to poor returns (Barber and Odean , 2001)
- They underestimate the downside risk because they do not heed to historical investment statistical performance , which results in poor portfolio performance.
- They hold undiversified portfolios.

Overconfidence and Gender

Prof. Brad Barber and Terrance Odean (2001) studied investment transactions of 35000 households, between 1991-1997 and published their results in 2001 paper, " Boys will be Boys: Gender, Overconfidence and Common Stock Investment." They noted that overconfident investors overestimate the precision of their information and thereby the expected gains of trading. They also found that men are overconfident than women and trade more and perform worse than women.

Michael. M. Pompian and John M. Longo (2004) in their study to create investment programs based on personality type and gender to produce better investment outcomes, have found that many personality types and both genders are differently disposed to numerous behavioural finance biases. They administered to 100 investors a detailed Myers- Briggs Type Indicator personality test and a questionnaire designed to uncover investor biases. A male who is an extrovert, sensible, thinking and perceiving can be considered a more risk tolerant investor and while an introvert, intuitive, feelers and judgers type female personality are considered least risk tolerant.

Lawellen,Lease and Schlarbaum(1977) found that men have stronger tendency to overconfident behavior than women

Self Attribution Bias

Self - Attribution is a cognitive

phenomenon by which people tend to attribute success to innate aspects like talent and foresight and attribute failures to situational factors. It is a trend that individuals will take credit for successes and blame external factors for failures(Weary & Bradley) An example could be students attributing their own intelligence and hard work when they get higher grades, and citing unfair grading when it comes to lower grades. The concept was given by Heider(1958) who explained that in ambiguous situations, attributions are influenced by a person's 'needs and wishes' Technically self attribution bias can be broken into

1. *Self Enhancing Bias* - this refers to the tendency of people to claim an irrational degree of credit for their success.

2. *Self protecting bias* - this refers to the irrational denial of responsibility for failure

There are two reasons attributed to Self Attribution Bias. One is cognitive and the other motivational. Miller and Ross (1975) argues that it is the limited information processing capacity of individuals that drives Self Attribution Bias, which explains the cognitive reason. The motivational approach argues that people make internal attributions for success and external attribution for failure to maintain their self esteem and feel good about themselves (Zuckerman 1979) . The two motives are self enhancement and self presentation. The self enhancing motivations help individuals to protect their self esteem by creating causal explanations that serve to make themselves feel better. The self presentation motivation refers to the drive to convey a desired image to others(Schlenker 1980)

Dr. Dana Dunn , a professor in psychology has proved the existence of self serving bias among students. Studies have shown that investors are also influenced by this bias. A self attributional investor , when he purchases an investment and its value goes up, he attributes this to he/she being investment or business savvy. In contrast when an investor who is susceptible to self-attribution bias, purchases an investment and it comes down in value, then it is attributed to his bad luck or some external factors

Does Self Attribution Lead to Overconfidence?

Studies have shown strong association between self attribution and overconfidence. According to Hirshleifer(2001) , Overconfidence and self-attribution are static and dynamic counterparts. Self attribution causes individuals to learn to be overconfident rather than converging to an accurate self-assessment. Billet and Qian(2005) explore managerial self-attribution bias in mergers and acquisitions by looking at the sequence of deals made by individual acquirers. They examined the history of acquirers from 1985-2002 of US public companies and found that self attribution of past success leads to hubris in decision making. This confidence developed from past acquisition leads to value destructive deals suggesting that overconfidence stems from self attribution bias.

Terrance Odean and Simon Gervais in their book 'Learning to be Overconfident ' have developed a model that describes how novice traders who are self attributive and successful ,eventually become overconfident and take high risk in investment . This is because they take inadequate degree of responsibility and fail to learn from losses as they attribute losses to external factors. Gervais and Ordean's study has proved that traders who are both young and successful trade the most and demonstrate the most overconfident.

Feng Li(2010) studied the relationship between Self Attribution Bias & overconfidence, using two settings that reflect manager's belief about future cash flows. The study revealed that managers have self serving attribution bias which leads to overconfidence.

Implication of Self- Attribution Bias to the investor

Michael pompian is of the view that people who are susceptible to self attribution bias, are not able to perceive mistakes and consequently are unable to learn from their mistakes. Secondly investors who disproportionately credit themselves when desirable outcomes do arise, they become detrimentally overconfident in their own market savvy.

- Self attribution investors can after a period of successful investing, such as few months to a year, believe that their success is due to their acumen as investors rather than to factors out of their control. This behavior can lead to taking on too much risk as the investors become too confident in their behavior.
- This bias often leads to too much trading than is prudent.
- Leads investors to hear what they want to hear. This may lead investors to make and hold purchases that they should not.
- May lead investors to hold under diversified portfolios

Objectives of the study

- To study the role of overconfidence and self attribution bias amongst mutual fund investors
- To understand if the level of overconfidence bias and self attribution differs according to gender
- And to find out whether self attribution leads to overconfidence.

Hypothesis to be tested

1. ***Men*** **are** more ***overconfident*** than women
2. **Self** Attribution Bias is greater for men than women
3. **Self Attributive** investors are more overconfident

Methodology

It is an empirical study and is both descriptive and analytical in nature. To test the above mentioned hypothesis , the primary data was collected from a sample of 309 mutual fund investors .It was a convenient method of sampling and majority of the data was collected from investors who walked into CAMS (Computer Age Management Service Ltd.) who are the registar and transfer agent for all mutual funds. The collected data was analysed through various statistical techniques like percentages and graphs.

It uses mainly ANOVA to test the significant difference between two variable and **correlation** to test the association between overconfidence and self attribution.

RESULTS

Table 1: **Demographic Profile of the Respondents**

The analysis of the above table is presented below.

- **Gender:** 74.1 percent of respondents are male and 25.9 percent of respondents are females.
- **Marital Status:** 71.2 percent of respondents are married and 28.8 percent of respondents are unmarried.

Table 1: Gender			Table 2: Marital Status			Table 3: Education		
	Count	Percent		Count	Percent		Count	Percent
Male	229	74.1	Married	218	71.2	High School	22	7.1
Female	80	25.9	Unmarried	88	28.8	Graduate	166	53.7
Total	309	100	Total	306	100	Post Graduates	121	39.2

Table 4: Type of investor			Table 5: Occupation			Table 6: Experience		
	Count	Percent		Count	Percent		Count	Percent
Direct	204	66.2	Finance	137	44.5	Less than 2 years	91	29.6
Indirect	104	33.8	Non Finance	171	55.5	2 years and above	216	70.4
Total	308	100	Total	308	100	Total	309	100

- **Education:** Majority of the respondents are graduates(53.7%) followed by post graduates constituting 53.7 percent and respondents who have completed high school education is 7.1 percent.

- **Type of Investors:** 66.2 percent of the respondents are direct investors ie investors who make their own investment decisions and 33.8 percent of investors are indirect investors i.e they consult a financial advisor for their investment decisions.

- **Occupation:** 55.5 percent of sample respondents are employed in areas not related to finance and 44.5 percent of respondents have work experience related to finance

- **Experience:** 29.6 percent of investors are novice investors that is with less than 2 years of experience and 70.4 percent of investors are experienced meaning they have more than 2 years of experience.

Overconfidence & Gender

Ho: There is no difference in the overconfidence level between men and women

H1: Men are more overconfident than women

Table 2.1: Overconfidence vs. Gender

Attributes	Gender	N	Mean	Std. Dev.	F-Value	Sig.
Relative to other drivers, how good are you on road?	Male	224	2.75	.893	2.691	.102
	Female	76	2.55	.944		
	Total	300	2.70	.904		
how good are you on your job?	Male	224	2.98	.751	.723	.396
	Female	79	2.90	.744		
	Total	303	2.96	.749		
How do you rate your personal level of investment?	Male	224	2.61	.840	12.693	.000*
	Female	79	2.22	.842		
	Total	303	2.50	.859		

Relative to other investors , how good are you?	Male	225	2.53	.824	11.053	.001*
	Female	79	2.18	.764		
	Total	304	2.44	0.822		
How do you rate your ability to have predicted the 2008 recession(financial crisis)	Male	221	2.14	.908	10.399	.001*
	Female	78	1.78	.677		
	Total	299	2.05	.867		
Overconfidence	Male	228	2.5983	.55685	13.974	.000*
	Female	79	2.3278	.54648		
	Total	307	2.5287	.56584		

**Significant at 0.05 level*

To prove the above said hypothesis, ANOVA test is used, it is a mean based statistical test, used for testing the significance of Hypothesis, when there is one dependent variable and more than two levels or groups of Independent variable. In other words, to understand the statistical significant differences between or among two or more groups or level of independent variables on dependent variables. The above Table2.1 shows the perception of the respondents categorized based on their gender. The mean score for 'Relative to other drivers, how good are you on road?' given by the male respondents is 2.75 and by female respondents is 2.55. The ANOVA output shows an F value of 2.691 and sig. value is 0.102. Since the sig value >0.05, the mean difference is not significant which implies that difference in response based on gender is not statistically significant.

The mean score for 'how good are you on your job? given by the male respondents is 2.98 and by female respondents is 2.90. The ANOVA output shows an F value of 0.723 and sig. value is 0.396. Since it the sig. value >0.05 the mean difference is not significant which implies that difference in response based on gender is not significant. The mean score for 'How do you rate your personal level of investment?' given by the male respondents is 2.61 and by female respondents is 2.22. The ANOVA output shows an F value of 12.693 and significant value is 0.000. Since it the sig. value <0.05 the mean difference is significant which implies that difference in response based on gender is statically significant. The mean score for 'Relative to other investors , how good are you?' given by the male respondents is 2.53 and by female respondents is 2.18. The ANOVA output shows an F value of 11.053 and the sig. value is 0.001. Since the sig. value <0.05, the mean difference is significant which implies that difference in response based on gender is statiscally significant. The mean score for 'how do you rate your ability to have predicted the 2008 recession(financial crisis)' given by the male respondents is 2.75 and by female respondents is 2.55. The ANOVA output shows an F value of 10.399 and sig. value is 0.001. Since the sig. value <0.05 the mean difference is significant which implies that difference in response based on gender is statistically significant.

The mean score for 'Overconfidence' given by the male respondents is 2.5983 and by female respondents is 2.3278. The ANOVA output shows an F value of 13.974 and sig. value is 0.000. Since the sig. value <0.05 the mean difference is significant which implies that difference in response based on gender is statistically significant. So. the test shows that men are more overconfident than women and the null hypothesis is rejected.

Analysis 5: Self Attribution Vs Gender

Ho: There is no significant difference between the gender and self attribution among investors

H1: There is significant difference between gender and self attribution among investors

Table 3.1 : Self Attribution Vs Gender

	Gender	N	Mean	Std. Dev.	F-Value	Sig.
After making an investment ,and you overhear a news report with negative implications... how likely are you to seek information that could confirm that you made a bad decision?	Male	226	2.19	0.83		
	Female	79	2.19	0.786		
	Total	305	2.19	0.818	0.02	0.096
When returns to your portfolio increases, to what do you believe the change in performance is mainly due to?	Male	228	1.7	0.601		
	Female	80	1.94	0.603		
	Total	308	1.76	0.61	9.43	0.002
After you made a successful trade, how likely are you to put your profits to work in a quick, subsequent trade,rather than letting the money idle until you are sure you have located another good investment?	Male	228	2.09	0.805		
	Female	80	2.1	0.821		
	Total	308	2.09	0.808	0.006	0.94
Suppose your investment was less successful, what do you think is the reason?	Male	228	1.96	0.738		
	Female	79	1.91	0.624		
	Total	307	1.95	0.71	0.333	0.565
Self attribution	Male	228	1.9861	0.43183		
	Female	80	2.0375	0.37005		
	Total	308	1.9995	0.42053	0.884	0.348

Table2.1 shows the perception of the respondents categorized based on their gender. The mean score for 'After making an investment, assume that you overhear a news report that has negative implications regarding the potential outcome of the investment you have just executed. How likely are you then to seek information that could confirm that you have made a bad decision?' given by male investors is 2.19, and by female respondents is 2.19.The ANOVA output shows an F value of .002 and sig. value of 0.964. Since it the sig. value is > 0.05, the mean difference is not statistically significant . The mean score for 'When returns to your portfolio increases, to what do you believe the change in performance is mainly due to? given by male respondents is 1.70, and by female respondents is 1.94. The ANOVA output shows an F value of 9.439 and the sig. value is 0.002. Since the sig. value <0.05 the mean difference is significant, which implies that there is significant difference in response based on investor gender .The mean score for 'After you have made a successful trade, how likely are you to put your profits to work in a quick , subsequent trade, rather than letting the money idle until you have located another good investment?' given by male respondents is 2.09 and by female respondents is 2.10. The ANOVA output shows an F value of 0.006 and the sig. value is 0.940. Since the sig. value is> 0.05 ,the mean difference is not significant which implies that difference in response based on investor's gender is not statically significant. The mean score for 'Suppose your investment was less successful, what do you think is the reason? given by male respondents is 1.96 and by female repondent's is 1.91. The ANOVA output shows an F value of 0. 333 and sig. value is 0.565. Since the sig. value is > 0.05 the mean difference is not significant.

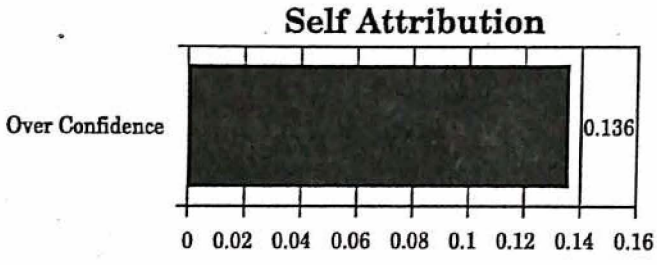
The mean score for 'Self Attribution' of respondents based on their genders given by male respondents is 1,9861 and by female respondents is 2.0375. The ANOVA output shows an F value of 0.884 and the sig. value is 0.348. Since the sig. value is >0.005, the mean difference between respondents based on their gender is not significant which implies that the self attribution has no significant relationship with the gender of the respondents and the null hypothesis is accepted.

Overconfidence and Self Attribution

Ho: There is no significant relationship between Overconfidence and Self Attribution

H1: There is a significant relationship between Overconfidence and Self Attribution

	Over Confidence
Self Attribution	0.136
Sig. (1-tailed)	.009
N	306



To find the degree of association between Overconfidence and Self Attribution, a correlation analysis was done. As shown above the relationship is positive with 0.136 and the sig. value is 0.009. As the sig. value <0.05.the association is significant implying that there is a clear correlation between self attribution and overconfidence. So, the null hypothesis is rejected.

Summary of Findings & Conclusion

The Analysis of the data has led to the following findings :-

1. Men are more overconfident than women
2. There is no significant relationship with the gender of the respondents and their level of self attribution.
3. There is a clear correlation between self attribution and overconfidence suggesting self attribution can lead to overconfidence

Conclusion

A review of earlier studies has shown contradicting relationships with the demographic variables and overconfidence and self attributive bias. However most studies repeatedly suggested a strong association between overconfidence and self attribution. This study also in line with earlier studies, finds a significant association between overconfidence and self attribution. People who are self attributive and who have been successful initially, tend to become overconfident eventually. This overconfidence leads to excessive trading and making investment decisions which are unfavorable. An awareness and understanding on the hold of bias amongst investors can help both the direct investors and financial advisors to make rational choices in investment.

References

- De Bondt, W.F.M. and Thaler, 1985, Does the stock market Overreact?, Journal of Finance 40, 793-805.
- Colin Camerer and Dan Lovallo (1999), 'Over Confidence and Excess Entry: An Experimental Approach' ,The American Economic Review, Vol. 89,No.1, pg. 306-318
- Barber and Odeon, T,2000,"Trading is Hazardous to your wealth. The Common Stock Investment Performance of Individual Investor's", Journal of Finance, 55, No.2,pp.773-806
- Michael. M. Pompian and john M. Longo (2004) , A New Paradigm for practical application of Behavioural Finance: Creating Investment Programs based on Personality Types and Gender to Produce Better Investment Outcomes, Journal of Wealth Management, Fall 2004,Pg. 9 toPg.
- Lewellen, W.G., Lease, R.C. and Schlarbaum, G.G., 1977, .Patterns of Investment Strategy and
- Behavior among Individual Investors,. Journal of Business, L 1997, 296.333
- Bradley, G. W. (1978). Self-Serving Biases in the Attribution Process: A reexamination of the Fact or Fiction Question. Journal of Personality and Social Psychology. 36, 56-71.
- Heider, F. The psychology of interpersonal relations. New York: Wiley, 1958.
- Miller, D. T., & Ross, M. (1975). Self-serving biases in attribution of causality: Fact or fiction? Psychological Bulletin, 82, 213-225.
- Zuckerman, M.1979, Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory, Journal of Personality, 47, 245-28.
- Schlenker, B. R. 1980. Impression Management: The Self-concept, Social Identity, and Interpersonal Relations. Monterey, CA: Brooks/Cole.
- Hirshleifer, David, 2001, Investor Psychology and Asset Pricing, Journal of Finance 56, 1533-1597.s
- Billet, M. T., Qian, Y., 2005. Are Overconfident Managers Born or Made? Evidence of Self-Attribution Bias from Frequent Acquirers. Working Paper (University of Iowa).
- Feng Li, 2010, ' manager's Self Serving Attribution Bias and Corporate Financial Policies', Conference at Stephen M. Ross, School of Business, University of Michigan