

# **Overconfidence, Risk Tolerance and Investment Strategy: A Study of Capital Market Investors in India**

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## **Abstract**

*Traditional finance theories postulate that capital markets are efficient and that investors are rational. Markowitz, Fama and Samuelson pioneered thinking in traditional finance in the fifties and sixties. Later on, objections were raised on the assumption of rationality of investors. One actual behavioural trait exhibited by investors, which is far from being rational, is overconfidence. The present paper investigates the existence of overconfidence among investors, their risk tolerance levels and their impact on investment strategies adopted by them. The study showed significant levels of overconfidence that can impact investors' strategy. Investors do fall into very distinctive categories of risk tolerance levels. They can be risk taking and risk averse, but majority are risk neutral. Investors can have distinctive levels of risk attitude/tolerance and overconfidence, but it is found that their risk attitude does not impact or determine their overconfidence.*

**Keywords:** Traditional finance, Behavioural finance, Overconfidence, Risk tolerance.

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## 1. Introduction

The primary role of the capital market in any economy is to ensure mobilization of capital and its allocation to various productive avenues in an efficient manner. Firms should be able to make appropriate production and investment decisions as well. All market participants make their investment decisions on information gathered from various sources. An individual, investing in stocks of firms, would attempt to minimize risks and maximize returns. In the traditional approach to decisions on investments and stock portfolio selection, investors were expected to follow a framework based on expected performance of investments and his risk appetite. This foundation later came to be referred to as the modern portfolio theory (Markowitz, 1952).

For an investor going for an investment in a stock, his future risks and returns depend largely on two things: one, the future trends in stock price, and two, the price he pays for the purchase. This inevitably raises two questions: one, whether the purchase price paid by the investor is correct and two, whether the future price trends can be predicted accurately. The concept of efficient-market hypothesis has been extensively used to provide answer to the first question. Prices at any time in the market fully reflect all available information on the stock, provided the capital markets are efficient. Thus, prices paid by investors are always correct, thereby, making it impossible to consistently generate above normal trading gains. Empirical evidence is scarce to reject efficiency of markets (Fama, 1965). As to the second question, there have been arguments and counter-arguments regarding whether the past history of a stock's price can be effectively used to accurately predict the future price of the stock. Many chartist theories, assuming that past behaviour of a stock price is rich in information content of its future behaviour, postulate that future prices can be predicted. History repeats itself so that patterns in past prices repeat in the future, thus facilitating better investment decisions and better returns. The theory of random walk is in complete contrast with the chartist's assumptions (Fama, 1970).

In competitive markets, prices display changes over time that takes the form of a random walk, with no predictable bias. It means that if prices are properly anticipated, next period's price differences are uncorrelated with, or completely independent of, previous period's price differences. If numerous sequences of prices are observed, it will turn out that, on an average, there

exists no upward or downward shift anywhere. This means one thing – there is no way of making profits by extrapolating past changes in prices by charts or by mathematics (Samuelson, 1965).

### ***Fallacy of Traditional Finance***

Traditional finance theories that have attempted to define investment decisions are primarily normative in nature. They define a prescribed behaviour that the investors should ideally follow to construct a portfolio, rather than a behaviour that is actually followed (Fabozzi, Gupta & Markowitz, 2002). This raises the question on whether investors are really rational. This is because, where it is postulated on one hand that capital markets are efficient to reflect true and fair prices, irrational investors on the other hand can thwart the correct prices. They can cause the market prices to move away from the fair price. The simplest description of human behaviour would assume that people are motivated by self-interest and can be calculating when valuable opportunities arise, learning from others' success. It does not mean that investors can be irrational or thoughtless. It implies that investors can be biased by various external social influences, perceptive skills and simplified thumb rules in their decision making (Andreassen, 1993).

Irrational investors can cause price deviations in the short-run (bring down prices by selling, being pessimistic), but rational investors, stepping in, would correct the prices immediately (bring up prices by buying, being optimistic and seeing opportunity to buy at low prices) (Friedman, 1953). But this argument has suffered theoretical criticisms. Strategies adopted by rational investors to correct prices can be very risky and costly, making it ineffective to practice. Thus, mispricing remains unchallenged, casting serious doubts on market efficiency (Barberis & Thaler, 2002).

A number of studies in the field of behavioural finance empirically have shown that overconfidence influences the investment strategies adopted by investors. However, such studies are done mostly in Western countries and not in the Indian context. Therefore, the present study intends to analyze the levels of overconfidence exhibited by equity investors in India and understand the relationship between overconfidence and investment strategy.

The attempt is to verify whether Indian investors are far from being rational as is assumed by traditional finance theories. It is also intended to understand the risk-taking capacity of investors that can influence the way they behave in the market. The role of overconfidence and risk capacity in guiding investing behaviour is also studied.

## **2. Literature Review**

Review of literature is done in three areas: behavioural finance in general, overconfidence, and risk perception in investing.

### **2.1 Behavioural Finance**

The fallacy of traditional or standard finance assuming rationality of investors is that it ignores the emotional and cognitive weaknesses that affect them (Statman, 1995). There are common investment mistakes that are caused by these weaknesses. Traditional finance fails to address actual investment behaviour and its consequences (Baker & Nofsinger, 2001). Traditional finance can be very satisfying and simple only if its predictions about the market and investors are confirmed. Moreover, it has been proved over the years that market and investor behaviour cannot be easily understood under the traditional framework. Behavioural finance is the new approach to financial markets to respond to the difficulties faced by the traditional framework. The new approach argues that many phenomena in the financial markets can be better understood using models which accept that agents are not fully rational (Barberis & Thaler, 2002). It integrates classical economics and finance with psychology and decision-making sciences, attempting to explain two things – one, why anomalies have been observed in finance literature, and two, how investors systematically make errors in judgment. These errors or mental mistakes can cause investors to form biased expectations regarding the future, which in turn causes the securities to be mispriced (Fuller, 1998). There are investors who are prone to committing errors that can be minor or fatal, seriously damaging their wealth (Shefrin, 2000). Such investors take risks that they do not acknowledge, experience outcomes that are not anticipated, commit unjustified trading, and end up blaming themselves or others for the outcome (Kahneman & Piepe, 1998). There has been extensive amount of work done on the types of mistakes committed by investors, casting doubts over the existence of rationality.

Investors can bias their investment decisions by having their judgment based on stereotypes, causing them to buy stock that represents desirable qualities, rather than intrinsically good ones. In cognitive dissonance, investors may tend to reject or ignore their recollections or beliefs about the poor past performance of their investments and even try to remember that their investments had performed better than what it actually did (Akerlof & Dickens, 1982). Investors can also be biased by their preference for stocks that are more familiar to them, putting too much faith in them. They, forcing themselves to believe that familiar stocks are better than even diversified portfolio, can excessively trade in such stocks. Familiarity bias can compel investors to prefer and buy stocks of firms that have a very local business presence (Huberman, 2001). Investors can tend to be affected by their swings of mood in their analysis and judgment of investments. They can also suffer from optimism bias causing failure in critical investment analysis and ignoring negative information on their stocks.

Fischer and Gerhardt (2007) identified the basic behavioural factors affecting investor as: fear, love, greed, optimism, herd instinct, the focus on the recent experience, and overconfidence. Hon-Snir, Kudryavtsev, and Cohen (2012) examined five behavioural biases in decision-making process in the stock market and differences of possible individual solutions due to these behavioural deviations such as disposition effect, herd behaviour, availability heuristic, gambler's fallacy and hot-hand fallacy. Bikas, Daiva, and Lina (2012), explained the psychological effects of investing activities. Gholizadeh and Iraj (2013) identified meaningful relationship between behavioral biases such as, compatibility, familiar concept, realistic belief, fresh point, irreversibility and investment decisions among investors in Tehran stock market.

## **2.2 Overconfidence**

Investors can also be misled to excessively believe in their capabilities of selecting better-performing stocks. They can consider their knowledge of stocks to be much better and their predictions of future markets to be more accurate. Overconfidence can also be very pervasive and act as a trap (Belsky & Gilovich, 1999). It can be said that investors also fall into the error of wrongly interpreting information to confirm their prior beliefs particularly where they possess very limited capacity or experience to manage information effectively. Even in cases where investors had actually experienced setbacks

in their stock investments, when they were asked, they were sure that the future expected returns of their portfolios would generate above-average returns (Baker & Nofsinger, 2002). Investors can overestimate the accuracy of the market information available to them and exhibit biases in the way they interpret the information. They believe more in their valuation of stock and are less concerned about what others believe about the stock (Barber & Odean, 1999). It has also been proved that overconfidence in investors can lead to high levels of trading activity (Barber & Odean, 2001). Glaser and Weber (2007), tested the hypothesis that overconfident investors will trade more than rational investors by correlating individual overconfidence scores with several measures of trading volume of individual investors. Rostami and Zohreh (2015) found out that there is a significant relationship between overconfidence bias and investing in Tehran stock exchange.

### **2.3 Risk Perception**

Risk is commonly defined in negative terms. It is used to denote the probability of suffering losses, or having actions that involve unpredictable dangers. But when it comes to defining risk in finance and investments, it simply refers to uncertainty of returns – the extent of variation that occurs in the actual returns generated from the expected in the course of a particular choice of investment decision (Andreassen, 1993). Under the concept of rationality, risk in investments can include losses as well as gains, since it is not the direction (up or down) of movement of returns, but the magnitude that is important.

Risk and its evaluation are very important in the matter of investment decisions. Random variations in returns and its volatility make accurate predictions of risk very difficult. Underestimation of risk can cause very poor investment decisions (Biais & Weber, 2008). Shafi, Muhammad, Mubashir, Imran, and Kashif (2011) suggested strong relationship between risk perception and investment decision.

### **2.4 Overconfidence, Risk Tolerance and Investment Strategy**

Investors need not necessarily be always rational when it comes to decisions about their investments. It is also known that investors can be classified on the basis of their risk tolerance levels. While some can be extremely averse to risk taking, there can be some who love it. Jauhari (2011) clustered the

behaviour of an Indian investor investing in various instruments into “fundamental perspective”, “acquaintance perspective”, “public perspective”, and “individual perspective”. Rakesh (2014) analysed the behaviour of individual investor in Indian stock market and concluded that investors assimilate the objectives of saving, the factors influencing the saving, and the sources of information for decision making.

Literature talks about overconfidence that can lead to irrational investment decisions. It also talks about the varying levels of risk tolerance among investors which can cause changes in the investment strategy. But most of the studies in this regard are undertaken in Western countries. Most of the studies on risk tolerance are undertaken from traditional-finance perspective, and not from the behavioural-finance perspective. Not much studies are undertaken on the relationship between risk tolerance and overconfidence. There exist gaps in the literature pertaining to the relationship between overconfidence and investment strategy in the Indian context, risk tolerance and investment strategy from behavioural-finance perspective and relationship between risk tolerance and overconfidence.

### **3. The Scope of Study**

The present study is undertaken in the framework of behavioural finance, which tries to establish the relationship between behavioural anomalies – overconfidence, risk tolerance and investment strategy. A number of studies in the field of behavioural finance, empirically have shown that overconfidence influences the investment strategies adopted by investors. However, such studies are done mostly in Western countries and not in the Indian context. Therefore, the present study intends to analyze the levels of overconfidence exhibited by equity investors in India and understand the relationship between overconfidence and investment strategy in India. The attempt is to verify whether Indian investors are far from being rational as is being postulated in traditional finance theories. It is also intended to understand the risk-taking capacity of investors that can influence the way they behave in the market. Thus, the role of overconfidence and risk-taking capacity as guiding investing behaviour is studied.

#### **3.1 Objectives of the Study**

The following are the objectives of the present study:

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- i) To evaluate the level of overconfidence exhibited by investors,
  - ii) To evaluate the level of risk tolerance of investors,
  - iii) To identify the investment strategies adopted by investors,
  - iv) To reveal the relation between risk tolerance and overconfidence of investors, and
  - v) To identify the effect of risk tolerance and overconfidence on investment strategy.

### 3.2 Research Methodology

Stock investors of different age groups and gender, from different parts of India formed the population under the present study. A sample of 100 investors, who had at least one year of previous investment experience were selected through purposive sampling technique. Twenty investors each were selected from five different States of India – Kerala, Karnataka, Madhya Pradesh, Jharkhand, and Punjab to constitute the sample. The sample profile is given in Table 1.

**Table 1: Sample Profile**

<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Up to 25	4	2	6
26 - 35	18	7	25
36 – 45	21	16	37
46 – 55	10	14	24
Above 55	5	3	8
<b>Total</b>	<b>58</b>	<b>42</b>	<b>100</b>

Primary data were collected through a structured questionnaire. The questionnaire administered to investor respondents consisted of three parts – part one, aimed to evaluate investors' level of overconfidence; part two, to evaluate their risk tolerance level; and part three, to evaluate investment



strategies. The questionnaire was developed based on the variables - overconfidence, risk tolerance and investment strategies - identified from previous studies, contextualized into Indian scenario and finalized after discussion with investment experts.

The questionnaire consisted of different statements pertaining to the three parts mentioned above. The responses were marked on a five-point scale of agreement to the given statements – highly disagree (HDA), disagree (DA), neutral (N), agree (A) and highly agree (HA). The scoring pattern of responses was like this: one for “highly disagree”, two for “disagree”, etc. on an ascending scale culminating with five for “highly agree”.

Reliability and validity of estimates were tested using different statistical tools. Chronbach’s alpha estimate showed a value of 0.78 indicating high reliability. A pilot study was conducted among 25 per cent of the sample. Overconfidence was measured on the basis of respondents’ level of response towards the statements included in the questionnaire. The statements do not purport to directly measure the investors’ overconfidence in investments, rather overconfidence is considered as a natural behavioural anomaly, which preexist among investors who are essentially human, exposed or subjected to fallibility. This view is drawn from the existing literature.

#### **4. Results and Discussion**

The results of the study are grouped into five parts. They are:

Part One: Overconfidence among Investors,

Part Two: Risk Tolerance among Investors,

Part Three: Relation between Levels of Risk Tolerance and Overconfidence,

Part Four: Investment Strategies, and

Part Five: Impact of Overconfidence and Risk Attitude on Investment Strategy Adoption.

Major findings of the study are given under the five headings below:

## Part One: Overconfidence among Investors

Levels of overconfidence were evaluated through a set of statements, attempted to reveal whether the investors were far from being rational. The following were the statements:

Statement 1: *Indian national flag has red colour in its upper part.*

Statement 2: *Dr. Manmohan Singh has his doctorate degree in politics.*

Statement 3: *Tomato is a vegetable.*

Statement 4: *S&P CNX Nifty includes thirty stocks.*

Statement 5: *NSE is bigger than BSE in terms of market capitalization.*

All these statements are obviously false. They were mixed with other statements that were true to ensure unbiased responses. Mean scores, standard deviation and skewness were calculated for response to each statement. One sample t-test was employed to evaluate whether there existed statistically significant levels of overconfidence among the investors. Test value was set as one, denoting the absence of overconfidence. Tables 2 and 3 give the results.

**Table 2: Levels of Overconfidence among Respondents**

Overconfidence Level	Mean	SD	Skewness
Statement 1	3.550	1.60	- 0.589
Statement 2	2.625	1.46	0.647
Statement 3	3.850	1.27	- 0.942
Statement 4	3.000	1.52	- 0.092
Statement 5	2.925	1.42	0.026

Mean scores were plotted very near to or above three, denoting positive agreement to the statements (Table 2). The t-test reveals that the mean response in all the five cases was significantly different from the test value at 95 per cent confidence level (Table 3). This shows that there existed statistically significant levels of overconfidence among investors. The finding does raise objections over rationality of investors, as is assumed in traditional

**Table 3: Levels of Overconfidence among Respondents - One Sample t-test**

Overcon- fidence	Test Value = 1				95% Confidence Interval of the Difference	
	t	df	Sig.	Mean Difference	Lower	Upper
Statement 1	10.07	39	0.00	2.55	2.038141	3.061859
Statement 2	7.03	39	0.00	1.625	1.157389	2.092611
Statement 3	14.17	39	0.00	2.85	2.443199	3.256801
Statement 4	8.33	39	0.00	2.00	1.514165	2.485835
Statement 5	8.57	39	0.00	1.925	1.470471	2.379529

finance theories. Investors may take decisions on capital market investments that are far from rational.

### Part Two: Risk Tolerance among Investors

Levels of risk tolerance of investors were evaluated through a set of statements. The attempt was to identify the level to which risk in investment was tolerated by the investors. They may be classified as risk averse, risk neutral or risk taker. The following were the statements:

Statement 1: *I prefer an income of (Rs. 1, 00,000 with 60 % certainty + 40 % risk of zero income) than a Rs. 60,000 of certain income.*

Statement 2: *If an investment opportunity comes, I would borrow money to invest.*

Statement 3: *My investment period is 5 years. The stock I just bought fell by 20 %. I would buy more of it.*

Statement 4: *When I hear the word “risk” in money matters, I prefer to explain it as “opportunity”.*

Statement 5: *When I take a major financial decision, I am concerned always about possible losses.*

High levels of agreement to the first four statements denote higher risk taking capacity of investors, whereas disagreement denotes risk aversion. In case

of statement five, agreement denotes risk aversion and disagreement denotes higher risk tolerance. These statements were mixed with other statements to ensure unbiased response. Frequencies of responses give an indication of risk attitude of investors. Mean scores, standard deviation and skewness were calculated for response to each statement (Table 4).

**Table 4: Risk Attitude among Respondents**

Risk Attitude	Opinion of Respondents					Mean	SD	Skewness
	HDA	DA	N	A	HA			
Statement 1	5	28	13	38	18	3.350	1.210	-0.269
Statement 2	30	15	20	33	3	2.625	1.295	-0.066
Statement 3	3	23	20	45	10	3.375	1.030	-0.387
Statement 4	3	20	25	45	8	3.350	0.975	-0.427
Statement 5	13	55	13	18	3	2.425	1.010	0.766

On an average, investors exhibited substantial levels of risk neutral attitude, with mean scores hovering around three. Nearly sixty per cent of investors exhibited risk neutral attitude, whereas as nearly twenty per cent each exhibited risk aversion and risk taking attitude.

### **Part Three: Relation between Risk Tolerance and Overconfidence**

It was attempted to establish the existence of relation or association that exist between risk attitude and overconfidence of investors. It may be argued that risk takers are overconfident by nature. There is enough empirical proof of investors overestimating their capacity of stock selection, performance of portfolio and assimilation of market information. If investors can be overconfident in their investment decisions, what drives it? Is it their risk tolerance levels that make investors overconfident? Can it be said that an investor who enjoys risk tends to underestimate the intricacies of investments and overestimate their capacity to outperform the market. To identify the existence of association between risk attitude and overconfidence, Somers' D test was performed. Table 5 gives the details.

**Table 5: Somers' D - Association between Risk Attitude and Overconfidence**

<b>Dependent Variable: Overconfidence</b>	<b>Value</b>	<b>Direction</b>	<b>Significance (5 % Level)</b>
Statement 1	0.003	negative	0.983
Statement 2	0.122	positive	0.299
Statement 3	0.006	positive	0.968
Statement 4	0.035	negative	0.757
Statement 5	0.178	positive	0.125

It was found that there existed very little association between risk attitude (independent) and overconfidence (dependent). In no cases, was the association found to be statistically significant (at 95 % confidence level). The study provides evidence that risk attitude of the investors does not determine levels of their overconfidence. Thus, a risk taker is not driven to higher levels of overconfidence by his risk-loving attitude.

#### **Part Four: Investment Strategies**

Investors may individually differ in their strategies adopted for investments. For example, some investors may borrow money to make investments, being optimistic about funding debt services through superior returns from investments. Bearish markets can mean doom to some, forcing themselves out of the market, but others may grab the opportunity and enter the market. Investors were asked to specify their perception in different strategies of investments. The following were the statements:

Statement 1: *Normally a high-priced stock, which lately fell continuously, can be a good buy.*

Statement 2: *Stocks which caused losses previously will not be bought again.*

Statement 3: *Stock which fell after buying, will be sold later only at its purchase price, to avoid loss.*

Statement 4: *Frequent buying and selling of equity can ensure better than average returns.*

Statement 5: *It is very easy to pick good equity shares.*

Statement 6: *Predicting future values of a share to maximize returns is easy.*

Statement 7: *Above-average returns in stock investment is a skill.*

Statement 8: *Knowledge of markets can generate high returns in under-diversified portfolios.*

Statement 9: *My favorite stock is slightly down. Negative news on it from market need not be always true.*

Statement 10: *Favourite stocks, but if very highly priced, is not a good buy.*

The nature of investment strategy adopted by investors was evaluated. Mean scores, standard deviation and skewness were calculated for response to each statement (Table 6).

**Table 6: Investment Strategies**

Investment Strategy	Opinion of Respondents					Mean	SD	Skewness
	HDA	DA	N	A	HA			
Statement 1	8	23	23	40	8	3.175	1.107	-0.364
Statement 2	3	65	23	8	3	2.425	0.781	0.953
Statement 3	8	53	23	15	3	2.525	0.933	0.720
Statement 4	10	35	23	30	3	2.800	1.067	0.021
Statement 5	10	45	28	13	5	2.575	1.010	0.649
Statement 6	13	43	33	10	3	2.475	0.933	0.475
Statement 7	10	40	20	30	0	2.700	1.020	0.037
Statement 8	10	25	45	0	20	3.750	0.900	-0.363
Statement 9	8	20	18	53	3	3.225	0.050	-0.758
Statement 10	3	23	23	43	10	3.350	1.030	-0.321

There is a strong belief among the investors that the bad news about their bearish favourite stock need not be always true. They also believe that a favourite stock, if it is highly priced, is not a good buy. It sheds light to a finding that investors are unwilling to bear the cost of investing in an

expensive favourite stock, but on the other hand, they are willing to suffer losses from holding on to their poor-performing favourite stock. There is also solid belief among investors that an expensive stock can be a good buy in its bearish trend. Investors also believe that frequent reshuffling of portfolio can increase returns and that generation of such higher returns is an investment skill.

Investors pursued a strategy of buying back stocks that previously had caused losses. They also reported being ready to suffer temporary losses, by selling off a stock bought, if its price fell, after buying. It indicates that investors were unwilling to hold on to a loss-making stock, but would buy it back later at favourable prices. Investors found that picking the right stock was not very easy, and that it was difficult to predict future stock prices to maximize returns.

### **Part Five: Effect of Overconfidence and Risk Attitude on Investment Strategy**

Attempt was made to identify whether the risk attitude and levels of overconfidence of investors impacted the investment strategies adopted by investors. For example, what makes an investor believe that a stock, which was sold off for making losses in portfolio previously, can be bought back later? Is it his risk attitude or is it his overconfidence that makes him decide so? To identify the existence of impact of risk attitude and overconfidence on adoption of investment strategies, a regression analysis was performed. Table 7 gives the results.

It is very important to note that the risk attitude of the investors does not impact any of the decisions on investment strategies. None of the values are statistically significant at 5 % level of significance. In contrast, it is found that overconfidence of investors did significantly impact the investment strategies adopted.

Investors belief that a normally high-priced stock in a bearish trend is a good buy was significantly (0.003 significance value) impacted by their overconfidence. Changes in overconfidence level (predictor) caused 47.2 per cent of changes in their investment strategy of belief of good buy of bearish stock (dependent). Investors belief that frequent buying and selling can

**Table 7: Effect of Overconfidence and Risk Attitude on Investment Strategy – Regression Results**

Investment Strategies	R <sup>2</sup>	Overconfidence		Risk Attitude	
		Value	Sig.	Value	Sig.
Normally a high-priced stock, which lately fell continuously, can be a good buy	0.472	0.760	0.003	0.200	0.463
Stocks which caused losses previously will not be bought again	0.280	0.260	0.160	-0.166	0.416
Stock which fell after buying, will be sold later only at its purchase price, to avoid loss	0.347	0.433	0.045	0.272	0.256
Frequent buying and selling of equity can ensure better than average returns	0.385	0.600	0.016	0.061	0.818
It is very easy to pick good equity shares	0.226	0.331	0.169	0.01	0.97
Predicting future values of a share to maximize returns is easy	0.268	0.356	0.107	0.142	0.561
Above-average returns in stock investment is a skill	0.450	0.630	0.006	-0.130	0.600
Knowledge of markets can generate high returns in under-diversified portfolios	0.408	-0.486	0.018	0.175	0.434
My favorite stock is slightly down. Negative news on it from market need not be always true	0.220	0.329	0.189	-0.034	0.902
Favourite stocks, but if very highly priced, is not a good buy	0.267	-0.376	0.122	0.096	0.720

increase returns and that the generation of above-average returns was a skill were also positively impacted by overconfidence levels.

To be noted is the finding that overconfidence of investors had a negative impact (-0.486 value) on their belief that knowledge of markets can generate higher returns in underdiversified portfolios. It is evident from the finding that overconfident investors can underplay the significance of diversification and hold underdiversified portfolio and try to invest in less-known stocks, on which their knowledge is very poor.



## **5. Limitations of the Study**

The study concentrates only on one investment bias – that is over confidence. It does not cover the effect of any other investment bias on investment strategy. The study was conducted using a small sample. Inherent limitations of a small sample survey can be present in this study although efforts were made to solve this problem by making the sample more representative of the population.

## **6. Conclusion**

The present study attempted to evaluate the levels of overconfidence and risk attitude of Indian capital market investors and find insights on various strategies adopted by them. It also attempted to: (i) identify whether there exists any relationship between risk attitude and overconfidence, and (ii) identify whether risk attitude and overconfidence impacted investment beliefs and strategies. The findings emerged from the study are as follows. First, investors need not necessarily be rational when it comes to stock investments. There existed significant levels of overconfidence in their behaviour that can impact their investment activities. This is against the postulations of traditional finance theories. Second, investors do fall into very distinctive categories of risk tolerance levels. There can be risk taking and risk-averse investors, but majority are risk neutral. Third, while investors can have distinctive levels of risk attitude/tolerance and overconfidence, their risk attitude does not impact or determine their overconfidence. That is, a risk taker need not necessarily be overconfident in investment decisions, or a risk averse investor need not be low on overconfidence. Fourth, investors are more sentimental regarding their favourite stocks. They tend to believe that bad news on their favourite stock need not always be true. This may prompt investors in holding on to loss-making favourite stocks. They also tend to stay away from an expensive favourite stock. Fifth, frequent portfolio revision was done to generate higher returns which was considered to be an investment skill. Prediction of future markets to maximise returns was believed to be difficult. Sixth, risk attitude/tolerance of investors was found not to impact investment strategies adopted. Finally, overconfidence of investors was found to significantly affect investment strategies. The impact of overconfidence is very evident particularly when it comes to decisions on buying a bearish loss-making stock, postponing sales of a poor stock to avoid losses, frequency of stock trading to improve returns, investment skills etc.

## 7. Implications of the Study and Future Direction of Research

Investors are not necessarily rational with regard to their stock market investments, and hence investment strategies can better be designed after considering various investment biases. Also, investors do fall into very distinctive categories of risk tolerance levels. There can be risk-taking and risk-averse investors, but majority are risk-neutral. Future studies can be undertaken in the same area by adding more number of investment biases. Studies can also be undertaken by expanding the list of investment strategies. This study can even be extended by incorporating other investment alternatives.

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