Chapter I
Introduction and Research Design

During recent years equity markets have been witnessing increasing volatility and fluctuations. Financial markets are increasingly exposed to macro-economic shocks which affect markets on a global scale from an investor’s point of view the vulnerability of markets has led to increased uncertainty and unpredictability. Market participants have for a long time relied on the notion of efficient markets and rational investor behavior when making financial decisions. However, the idea of fully rational investors who always maximize their utility and demonstrate perfect self control is becoming inadequate.

In recent year’s market inefficiency in the form of anomalies and irrational behavior have been observed frequently. The recent downturn in the US economy exemplifies a situation that indicates both unpredictability and irrational reaction. The Indian stock market has seen turbulent times in the recent past. It has experienced a sharp dip in 2008 from the heights of 2006, followed by a series of ups and down in the subsequent years till 2013. This was the period when markets observed sharp swings in sentiments in a very short span of time. (Subash R. 2012)

Researchers have pointed out time and again that investor’s irrationality is an inevitable reality (Statman M.1999). An actual investor can not conform to the ‘rational’ assumptions of the standard finance theories. Investors are not the calculative utility maximizing machines as the traditional theories believe them to be. Investors are led by their sentiments and are prone to make cognitive errors. They may lack self control be overconfident about their abilities miscalculate information, over react or follow the crowd without thinking. These errors of investors can get projected in the form of market anomalies like speculative bubbles like the real estate bubble of 2006. These events call for the understanding of investor behavior. Behavioral finance deals with the influence of psychology on the behavior of financial practitioner’s and its subsequent impact on stock market. In recent times researchers have recognized the presence of behavioral biases that offer a more realistic insight into the functioning of stock markets and its participants.
Traditional Approach to Investor Behavior:

During the mid-eighteenth century considered as classical in economics the concept of utility was introduced. In 1844 John Stuart Mill introduced the concept of rational economic man or homo economics who tries to maximize his economic well being given the constraints he faces. The three underlying assumptions for this agent are:

- Perfect rationality
- Perfect self interest and
- Perfect information

These assumptions become the basis of the traditional financial framework that sought equilibrium solutions by maximizing marginal utilities of individuals subject to situational constraints (Pompian M. 2011) of individuals representing this paradigm is uniform as their main focus is on optimizing their marginal gains. It has been stated by Statman M. (1999) that “standard finance is built on the pillars of the arbitrage principles of Miller and Modiglioni, the portfolio principles of Markowitz, the capital asset pricing theory of Sharpe, Lintner, and Black and the option pricing theory of black, scholars and Merton”. The basic assumption of standard finance theories is based on rationality of people.

The concept of rational economic man describes humans as rational and self interested agents who try to maximize their utility using rational assessment. Rational investors act to maximize their expected utility that is calculated as weighted sums of utility values multiplied by their respective probabilities. It categorizes the decision makers into risk averse, risk neutral and risk loving individuals.

Behavioral Finance Approach:

Researchers have been observing that traditional theories get significantly violated in actual market conditions. The essence of standard finance theories are captured into four foundation blocks.
i. Investors are rational
ii. Markets are efficient
iii. Investors should design their portfolio according to the rules of mean variance portfolio and
iv. Expected returns are a function of risk and return alone.

Behavioral finance offers an alternative for each of these blocks. It states that investors are normal and irrational. The markets are not efficient even when they are difficult to beat. Investors do not design their portfolio on mean variance theory and the expected returns are measured by more than risk (Statman M. 2008).

**Behavioral Biases:**

Behavioral finance captures the role of behavioral biases in investor decision making. Shefrin H. (2000) broadly classifies these biases into two types:

1. Heuristic driven biases and
2. Frame dependent biases

Heuristic Biases: Shefrin H. (2000) recognized that financial practitioners use rules of thumb or heuristics to process data and make decisions. For instance people believe that future performance of the stock can be best predicted by past performance. The author categorizes such biases under heuristic theme which includes overconfidence, anchoring and adjustment reinforcement learning, excessive optimism and pessimism.

Frame dependent biases:

The decision process of financial practitioners is also influenced by the way they frame their options. The theme includes biases like narrow framing, mental accounting and disposition effect.
**Behavioral Biases**

- Heuristic driven biases
  - Over confidence
  - Excessive Optimism (pessimism)
  - Availability
  - Anchoring and Adjustment

- Frame dependent biases
  - Loss Aversion
  - Narrow framing
  - Mental Accounting
  - Disposition Effect

**Decision Making and Behavioral Biases:**

Decisions making is a process of choosing of particular alternative from many available alternative. It is a multistep process involving analysis of various personal technical and situational factors. There are no exceptions in the case of making decisions in the stock markets either. Taking investment decisions is the most crucial challenge faced by investors. Some personal factors such as age, education, income etc counts in decision making. On the technical side investment decisions can be derived from various models of finance in the Capital Asset Pricing Model (CAPM). Decisions should not be reached without considering situational factors that take into account like the market environment and the market psychology etc. Effective decision making in the stock market requires an understanding of human nature in a global perspective on top of financial skills. Thus cognitive psychology should be given importance in the process of decision making (Chandra 2008). As a result of the bull market from 2004 to 2007 and the subsequent financial crisis there has been a lot of fresh focus on the irrational investor. “Behavioral Finance is becoming an integral part of decision making process because it heavily influences the investors’ performance”. (Banerjee 2011)

Behavioral bias refers to a pattern of variations in judgment that occurs in particular situations which may sometimes lead to perceptual alteration, inaccurate
judgment, illogical interpretation, or what is called irrationality. (Gordon-2011) Investors may be inclined toward various types of behavioral biases which lead them to make cognitive errors. People may make predictable non optimal choices when faced with difficult and uncertain decisions because of heuristic simplifications. Behavioral biases, abstractly, are defined in the same way as systematic errors in judgment (Chen. et. al 2007)

Researchers distinguish a long list of specific biases applying over fifty of these individuals investor behavior in recent studies. When one considers derivative and undiscovered biases awaiting application in personal finance, the list of systematic investor errors seems very long indeed. Research that is more brilliant seeks to categorize the biases according to some kind of meaningful framework. Some authors refer to biases as heuristics (rules of thumb), while others call them beliefs, judgments or preferences, still other scholars classify biases along cognitive or emotional lines. While “this sort of bias taxonomy” is helpful an underlying theory about why people operate under bias has not been produced. Instead of a universal theory of investment behavior, behavioral finance research relies on broad collection of evidence pointing to the ineffectiveness of human decision making in various economic decision making circumstances (Pompian 2006)

**Biases, Effects on Investors and Consequences:**

There are numerous identified psychological biases in Behavioral finance literature. Each has its implications on financial decision making and behavior. Table No.1.1 shows the nine biases analyzed in the present study their key effects and investors and its consequences.
<table>
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<tr>
<th>Name of the Bias</th>
<th>Key Effect on Investor</th>
<th>Consequences</th>
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<tbody>
<tr>
<td>Overconfidence</td>
<td>Too many trades too much risk, failure to diversify.</td>
<td>Pay too much brokerage and taxes, chance of high losses.</td>
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<tr>
<td>Representativeness</td>
<td>Tendency to associates new event to a known event and make investments based on it.</td>
<td>Purchasing over priced stocks</td>
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<td>Herding</td>
<td>Lack of individuality in decision making.</td>
<td>Bubbles and bubble bursts</td>
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<tr>
<td>Anchoring</td>
<td>Tendency to consider logically irrelevant price level as important in the process of decision making</td>
<td>Missed investment opportunities or bad entry timing into the market.</td>
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<tr>
<td>Cognitive Dissonance</td>
<td>Ignore new information that contradicts known beliefs and decision</td>
<td>Reduced ability to make rational and fair investment decisions</td>
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<tr>
<td>Regret Aversion</td>
<td>Selling winners too soon, holding looses too long</td>
<td>Reduced returns</td>
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Gamblers Fallacy | Taking too much risk after a lucky win. | Chance of high losses
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Mental accounting | Low or no diversification | Irrational and negative effects on returns
Hindsight | The tendency to feel that a past event was obvious when it really was not at onset | Incorrect/over simplicities of decision making

Behavioral biases affect the clarity in thinking process and consequently lead to suboptimal decisions. Temporary successes can make investors overconfident. The fear of being odd man out and then falling leads to herd behavior. The security in of losing a winning spree and the hope of gaining on a losing stock can result in disposition effect. Getting overwhelmed by bullish or bearish trends in markets can lead to excessive optimism or pessimism. All these biases make us irrational and we start making blunders. These blunders are so deep that they can impact the entire economy. Some of the examples are subprime crisis and dot com bubble. In Indian context our stock market has seen turbulent times in the recent past. It has experienced a sharp dip in 2008 from the heights of 2006 followed by a series of ups and downs in the subsequent years till 2013. This was the period when markets observed sharp swings in sentiments in a very short span of time. Thus a research based on investor behavior becomes relevant. The present study is an attempt in this direction.

The objective of this thesis is to check if the average individual investor participating in the Indian stock market is rational at all times. The focus is on nine identified behavioral biases namely;
Effects of these factors on the decision making process of portfolio investors in North Karnataka India have been analyzed.

Objectives of the study

The present study is conducted with the following objectives

1. To examine the average individual investor participation in the Indian stock market
2. To study the effect of the nine biases identified in the study on the investment decisions with reference to socio demographic characteristics of the investors.
3. To identify and communicate the investor fraternity about the errors in investment decision.
4. To study the impact of irrational behavior of investors on the stock market
5. To evaluate the degree of explosive to the biases
6. To offer suggestions to the findings of the study.

Significance of the Study

Investors are prone to various types of behavioral biases such behavioral biases lead to cognitive errors in their investment activities. Investors are inclined to make predictable, non-optimal choices when faced with different difficult and uncertain decisions become of heuristic supplications. These behaviors which are
basic to human nature effect all types of investors both professional and others. Understanding these biases investors can educate themselves about the various biases they are likely to exhibit and take steps towards avoiding them and improve their effectiveness in their investment activities. Some common mistakes made by investors are selling too soon while booking profits, holding too long while facing losses, buying overpriced stocks based on market sentiments. Based on the outcome of the research study, brokerage firms and stock exchanges can conduct awareness programs for their investors to reduce the incidence of errors in their investment decisions.

**Scope of the Study and Limitations:**

The broad frame work of the research work will be

1. Comparative analyses of the behavioral pattern of the respondent investors taking into account their personal profiles like education, occupational status.
2. The study covers respondent investors spread over a geographical coverage of select district Head Quarters of North Karnataka region. The study has a chronological coverage of 2012-16

**Limitations of the Study:**

The study is conducted in the selected districts in north Karnataka region. Hence the findings are not universal

**Hypotheses:**

H\(_{11}\): There is association between Herding & Representativeness with socio economic demographic characteristics.

H\(_{22}\): There is association between Overconfidence, Anchoring and Herding with socio economic demographic characteristics.

H\(_{33}\): There is association between Cognitive dissonance and Regret Aversion with socio economic demographic characteristics.

H\(_{44}\): There is association between Gamblers Fallacy and Mental Accounting with socio economic demographic characteristics.
Research methodology:

The study is an empirical survey. It is exploratory and descriptive in nature. The study covers a total number of 600 selected investors from brokerage firms in north Karnataka region. The study is focused on the investment decisions of investors and the effects of the behavioral factors. The individual investors are likely to have limited knowledge about application of traditional theories in decision making and are more prone to making psychological mistakes. The primary analysis was focused on determining whether behavioral factors affect investor’s decision to buy or sell or hold stocks.

Sources and Method of Data Collection:

The study is based both on primary and secondary data. Primary data is obtained from individual portfolio investors through a structured questionnaire administered to them.

Secondary data is collected from journals, websites and published data from official and other sources.

Research design:

The sampling design of the research study consists of

- **Study Area**: The geographical coverage of the study area is confined to north Karnataka districts head quarters of 7 districts viz. Bijapur, Belgaum, Bagalkot, Uttara Kannada, Dharwad, Haveri, Gadag.
- **Financial Institution**: Few financial institution in the study area are selected at random for the field survey.
- **Respondents**: Investing clients are selected from each sample financial institution at random.
Sample profile:

One of the primary aims of the study is to focus on real investors, as they are more likely to have limited knowledge about the application of behavioral theories in decision making and hence gullible to psychological errors. The sample profile criteria of the respondents selected from 7 districts out of 13 districts of North Karnataka. Hyderabad Karnataka region’s 6 districts had been excluded from the study due to its economic backwardness.

Data presentation analysis and interpretation:

The data collected is processed and analyzed using statistical tools like percentages, averages scaling techniques, chi square etc. Hypotheses developed are tested using SPSS software and are made to highlight some significant trends.

Organization of the study:

The research study is presented in the following chapters

Chapter -1  Introduction and Research Design

Chapter – 2  Behavioral Finance and Behavioral Biases - Conceptual Parameters

Chapter – 3  Review of Literature

Chapter – 4  North Karnataka – A Socio-Economic Profile

Chapter – 5  Profiles of Respondent Investors

Chapter – 6  Influence of Behavioral Biases on investment Decisions - An Analysis (Part –I)

Chapter – 7  Influence of behavioral Biases on Investment Decisions – An analysis (Part- II)

Chapter-8  Summary of Findings, Conclusions and suggestions